PUBLIC VERSION

UNITED STATES INTERNATIONAL TRADE COMMISSION

Washington, D.C.

In the Matter of **CERTAIN PORTABLE BATTERY JUMP STARTERS AND COMPONENTS THEREOF (II)**	**Inv. No. 337-TA-1359**

FINAL INITIAL DETERMINATION ON VIOLATION OF SECTION 337

Administrative Law Judge Monica Bhattacharyya

(July 5, 2024)

Appearances:

For Complainant The NOCO Company:

Meredith M. Wilkes, David B. Cochran, John C. Evans, and Susan M. Gerber of Jones Day in Cleveland, OH; Vishal V. Khatri, Yuri Kalish, and Evan P. Tassis of Jones Day in Washington, DC; Anna E. Raimer of Jones Day in Houston, TX; Joseph D. Farley of Jones Day in Columbus, OH; Marlee R. Hartenstein of Jones Day in Pittsburgh, PA

For Respondents Shenzhen Carku Technology Co., Ltd., Metasee LLC, Ace Farmer LLC, Shenzhen Gooloo Ecommerce Co., Ltd., Gooloo Technologies LLC, Hulkman LLC, Shenzhenshi Xinmeitemuxiangbao Zhuangyouxiangongsi, Aukey Technology Co., Ltd., Shenzhenshi Shoudiankejiyouxiangongsi, ChangShaHongMaoKai KeJiYouXianGongSi, and Shenzhenshi Daosishangmao Youxiangongsi d/b/a Fanttik Direct, Shenzhen Konghui Trading Co., Ltd. Youxiangongsi:

John P. Schnurer, Kevin J. Patariu, John D. Esterhay, Kyle R. Canavera, Wei Yuan, Ji Wang, and Eric Mass of Perkins Coie LLP in San Diego, CA

For Respondent ADC Solutions Auto LLC (d/b/a Type S)

Beau Jackson and Bernardo Zito Porto of Husch Blackwell LLP in Kansas City, MO; Jennifer E. Hoekel, Paul L. Smelcer, and Samantha R. Sweet of Husch Blackwell LLP in St. Louis, MO; Stephen P. Bosco of Husch Blackwell LLC in Washington, DC

For the Office of Unfair Import Investigations:

Claire K. Comfort, Margaret D. Macdonald, and Jeffrey T. Hsu of the U.S. International Trade Commission in Washington, DC.

DELTRAN EX1060
IPR2024-01219

Pursuant to the Notice of Investigation, (EDIS Doc. ID 794468), 88 Fed. Reg. 23686-87 (Apr. 18, 2023), and Commission Rule 210.42, this is the administrative law judge's final initial determination on violation in the matter of *Certain Portable Battery Jump Starters and Components Thereof (II)*, Commission Investigation No. 337-TA-1359. 19 C.F.R. § 210.42(a)(1)(i).

For the reasons discussed herein, it is the undersigned's final initial determination that there has not been a violation of section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337, in the importation into the United States, the sale for importation, and/or the sale within the United States after importation of certain portable battery jump starters and components thereof by reason of infringement of claims 1, 3, 10, and 14 of U.S. Patent No. 9,770,992; claims 1, 11, and 16 of U.S. Patent No. 10,328,808; claims 1, 19, 32, 39, and 54 of U.S. Patent No. 11,447,023; or claims 1, 2, 18, and 54 of U.S. Patent No. 11,584,243.[1]

[1] The remaining claims identified in the Notice of Investigation were terminated. On November 27, 2023, the undersigned granted NOCO's motion for partial termination of the investigation as to claims 2, 4-9, 11-13, and 15-21 of the '992 patent, claims 2-10, 12-15, and 17 of the '808 patent, claims 2-16 of the '452 patent, claims 2-16 of the '213 Patent, claims 2-4, 6-18, 20-23, 25-28, 31, 33, 35-38, and 41-53 of the '023 patent, and claims 3-9, 15-17, 19-25, 29, 30, 32, 33, 35-44, 46-49, 51-53, and 55-57 of the '243 patent. Order No. 18 (Nov. 27, 2023), *unreviewed by* Comm'n Notice, EDIS Doc. ID 810829 (Dec. 21, 2023). On January 9, 2024, the undersigned granted NOCO's motion to partially terminate the investigation based on withdrawal of the '452 and '213 patents. Order No. 24, EDIS Doc. ID 811685 (Jan. 9, 2024), *unreviewed by* Comm'n Notice, EDIS Doc. ID 813586 (Feb. 7, 2024). On February 9, 2024, the undersigned granted NOCO's motion to partially terminate the investigation based on withdrawal of claims 5, 24, 29-30, and 40 of the '023 patent and claims 10-13, 26-28, and 50 of the '243 patent, as well as withdrawal of allegations against Respondents Shenzen Take Tools Co. Ltd., Shenzhenshi Dianjia Teechnology Co., Ltd. d/b/a Yesper Direct, Guangshou Sihao Trading Co., Ltd. d/b/a Snailhome (Audew), Shenzhen Winplus Shenzhen Pinwang Industrial Technology Co., Ltd., Winplus North American, Inc., and Winplus NA, LLC. Order No. 26, EDIS Doc. ID 813823 (Feb. 9, 2024), *unreviewed by* Comm'n Notice, EDIS Doc. ID 813934 (March 11, 2024).

DELTRAN EX1060
IPR2024-01219

TABLE OF CONTENTS

I. BACKGROUND 1

A. Procedural History 1

B. The Parties 4

1. Complainant 4

2. Respondents 5

C. Products at Issue 8

1. Accused Products 9

2. Domestic Industry Products 9

3. Non-Accused Products for which Adjudication is Sought 10

D. Witness Testimony 11

1. Party Witnesses 11

2. Third-Party Witness 12

3. Expert Witnesses 12

4. Deposition Designations 12

II. STATUTORY AUTHORITY, JURISDICTION, AND IMPORTATION 14

A. Statutory Authority 14

B. Personal Jurisdiction 14

C. *In Rem* Jurisdiction and Importation 14

III. LEGAL STANDARDS 15

A. Infringement 15

1. Claim Construction 16

2. Direct Infringement 17

3. Literal Infringement 17

B. Invalidity 17
1. Obviousness 18
2. Written Description & Enablement 19
C. Domestic Industry 20
IV. ADJUDICATION OF THE REDESIGN PRODUCTS 22
A. Legal Standard 24
B. Adjudication of the Carku Revised Cables 24
1. Importation 25
2. Sufficiently Fixed in Design and Sufficiently Disclosed in Discovery 28
C. Adjudication of the Carku Revised Jump Starters 32
1. Importation 32
2. Sufficiently Fixed in Design and Sufficiently Disclosed in Discovery 33
D. Adjudication of the ADC Revised Products 37
1. Sufficiently Fixed in Design and Sufficiently Disclosed in Discovery 38
V. THE ASSERTED PATENTS 42
A. The '992 & '808 Patents 42
1. Ownership 42
2. Specification 42
3. Asserted Claims 44
B. The '023 and '243 Patents 47
1. Ownership 47
2. Specification 47
3. Asserted Claims 48
C. Level of Ordinary Skill in the Art 53
D. Claim Construction 54

DELTRAN EX1060
IPR2024-01219

1. "USB Input Circuit" / "USB Charge Circuit" 55
2. "USB Input Connector" 68
VI. INFRINGEMENT 69
A. The '992 Patent 69
1. Claim 1 70
2. Claim 3 81
3. Claim 10 81
4. Claim 14 81
5. The Carku Revised Cables 85
B. The '808 Patent 86
1. Claim 1 86
2. Claim 11 89
3. Claim 16 89
4. The Carku Revised Cables 91
C. The '023 Patent 91
1. The Carku Accused Products 91
2. The ADC Accused Products 126
D. The '243 Patent 160
1. The Carku Accused Products 160
2. The ADC Accused Products 171
VII. DOMESTIC INDUSTRY – TECHNICAL PRONG 182
A. The '992 Patent 182
1. Claim 1 182
2. Claim 3 188
3. Claim 10 188

4. Claim 14 188
B. The ’808 Patent 192
1. Claim 1 192
2. Claim 11 193
3. Claim 16 193
C. The ’023 Patent 195
1. Claim 1 196
2. Claim 19 205
3. Claim 32 206
4. Claim 39 207
5. Claim 54 212
D. The ’243 Patent 218
1. Claim 1 218
2. Claim 2 222
3. Claim 18 224
4. Claim 54 226
VIII. INVALIDITY AND UNENFORCEABILITY 228
A. The ’992 Patent 228
1. Obviousness in View of Sodemann 228
2. Obviousness in view of Sodemann and Errato 247
B. The ’808 Patent 254
1. Obviousness in view of Sodemann 254
2. Obviousness in view of Sodemann and Errato 257
C. The ’023 Patent 258
1. Obviousness in view of Richardson and Zhou 258

2. Obviousness in view of Richardson, Zhou, and Zhang 278

3. Obviousness in view of E-Power 21 and E-Power 10 280

4. Obviousness in view of E-Power 21, E-Power 10, and Zhang 311

5. Invalidity Under 35 U.S.C. § 112 313

6. Unenforceability 322

D. The '243 Patent 323

1. Obviousness in view of Richardson, Zhou or LT1618, and Thomason 323

2. Obviousness in view of Richardson, Zhou or LT1618, Thomason and Xinfang 334

3. Obviousness in view of E-Power 21, E-Power 10, and Thomason.... 335

4. Invalidity Under 35 U.S.C. § 112 343

5. Unenforceability 343

IX. DOMESTIC INDUSTRY – ECONOMIC PRONG 343

A. Domestic Investments and Allocation Methodology 344

1. Plant and Equipment 345

2. Labor or Capital 350

B. Significance 352

X. CONCLUSIONS OF LAW 359

The following abbreviations may be used in this Initial Determination:

Tr.	Hearing Transcript
Dep. Tr.	Deposition Transcript
JX	Joint Exhibit
CX	Complainant's exhibit
CPX	Complainant's physical exhibit
CDX	Complainant's demonstrative exhibit
RX	Respondents' exhibit
RPX	Respondents' physical exhibit
RDX	Respondents' demonstrative exhibit
SDX	Staff's demonstrative exhibit
CPHB	Complainant's pre-hearing brief (EDIS Doc. ID 812465)
CIB	Complainant's initial post-hearing brief (EDIS Doc. ID 816641)
CRB	Complainant's post-hearing reply brief (EDIS Doc. ID 817805)
RPHB	Respondents' pre-hearing brief (EDIS Doc. ID 812487)
RIB	Respondents' initial post-hearing brief (EDIS Doc. ID 816653)
RRB	Respondents' post-hearing reply brief (EDIS Doc. ID 817846)
SPHB	Staff's pre-hearing brief (EDIS Doc. ID 813475)
SIB	Staff's initial post-hearing brief (EDIS Doc. ID 816634)
SRB	Staff's post-hearing reply brief (EDIS Doc. ID 817818)

DELTRAN EX1060
IPR2024-01219

I. BACKGROUND

A. Procedural History

The Commission instituted this investigation in response to a complaint filed by Complainant The NOCO Company ("NOCO" or "Complainant") on February 13, 2023 (EDIS Doc. ID 790212). 88 Fed. Reg. 10539-40, EDIS Doc. ID 790655 (Feb. 21, 2023). A First Amended Complaint was filed on March 13, 2023 (EDIS Doc. ID 792318). 88 Fed. Reg. 17618-19, EDIS Doc. ID 793015 (Mar. 23, 2023). The First Amended Complaint alleges violations of section 337 of the Tariff Act of 1930, as amended, by reason of infringement of certain claims of U.S. Patent No. five U.S. patents, U.S. Patents Nos. 9,770,992 ("the '992 patent"), 10,328,808 ("the '808 patent"), 10,981,452 ("the '452 patent"), 11,254,213 ("the '213 patent"), 11,447,023 ("the '023 patent") and by reason of common law trade dress infringement and false designation of origin, and false advertising and unfair competition.[2] *Id.* The Commission ordered institution of this investigation to determine "whether there is a violation of subsection (a)(1)(B) in the importation into the United States, the sale for importation, or the sale within the United States after importation of certain portable battery jump starter products and components . . . by reason of infringement of one or more of claims 1-21 of the '992 patent; claims 1-17 of the '808 patent; claims 1-16 of the '452 patent; claims 1-16 of the '213 patent; and claims 1-54 of the '023 patent and 15-18 of the '739 patent and claims 1-15 of the '254 patent; and whether an industry in the United States exists as required by subsection (a)(2) of section 337." ("Notice of Investigation"; 88 Fed. Reg. 23686-87, EDIS Doc. ID 794468 (Apr. 18, 2023)). The investigation was instituted

[2] The Commission severed these allegations into a separate investigation. *See* 88 Fed. Reg. 23688 (April 18, 2023); *see also* 19 C.F.R. § 210.10(a)(6) ("The Commission may determine to institute multiple investigations based on a single complaint where necessary to allow efficient adjudication."). The investigation addressing these causes of action is captioned as *Certain Portable Battery Jump Starters and Components Thereof (III)*, Inv. No. 337-TA-1360. The instant investigation is limited to NOCO's allegations based on patent infringement. *See* Notice of Investigation.

DELTRAN EX1060
IPR2024-01219

upon publication of the Notice of Investigation in the *Federal Register* on April 18, 2023. The Notice of Investigation named the following entities as Respondents: Shenzhen Carku Technology Co., Ltd. ("Carku"); Aukey Technology Co., Ltd.; Metasee LLC; Ace Farmer LLC; Gooloo Technologies LLC; Shenzhen Konghui Trading Co., Ltd., d/b/a Hulkman Direct; HULKMAN LLC; Shenzhen Take Tools Co. Ltd.; Shenzhenshi Daosishangmao Youxiangongsi d/b/a/ Fanttik Direct; Shenzhenshi Dianjia Technology Co., Ltd. d/b/a Yesper Direct; Shenzhenshi Xinmeitemuxiangbao Zhuangyouxiangongsi d/b/a Thikpo (Spanarci); Guangzhou Sihao Trading Co., Ltd d/b/a Snailhome (Audew) also d/b/a Shenzhen Xinshu Trading Co. Ltd.; ChangShaHongMaoKai KeJiYouXianGongSi d/b/a TopdonStarter; Shenzhenshi Shoudiankejiyouxiangongsi d/b/a Solvtin; Shenzhen Winplus Shenzhen Pinwang Industrial Technology Co., Ltd.; Winplus North America, Inc.; Winplus NA, LLC; and ADC Solutions Auto LLC d/b/a Type S Auto ("ADC"). Notice of Investigation at 23686-87. The Office of Unfair Import Investigations is also a party to the investigation. *Id*.

Pursuant to Order No. 6, the target date of this investigation was set to be October 21, 2024. Order No. 6, EDIS Doc. ID 797327 (May 26, 2023), *unreviewed by* Comm'n Notice, EDIS Doc. ID 799269 (June 26, 2023).

Shortly after institution, on May 26, 2023, the undersigned granted NOCO's motion to amend the First Amended Complaint and Notice of Investigation to assert claims 1-13, 15-30, 32, 33, 35-44, and 46-57 of U.S. Patent No. 11,584,243 ("the '243 patent"). Order No. 5, EDIS Doc. ID 797326 (May 26, 2023), *unreviewed by* Comm'n Notice, EDIS Doc. ID 799269 (June 26, 2023). NOCO filed its Second Amended Complaint on June 1, 2023. EDIS Doc. ID 797671. On August 20, 2023, Respondents filed responses to the Second Amended Complaint and Notice of Investigation disputing NOCO's allegations with respect to infringement and domestic

DELTRAN EX1060
IPR2024-01219

industry and asserting certain affirmative defenses. EDIS Doc. IDs 798973 ("ADC Response"), 798975 ("Carku Response"), 798967 ("Aukey Response"), 798992 ("Shenzhenshi Shoudiankejiyouxiangongsi Response"), 798994 ("ChangShaHongMaoKai Response").

A *Markman* hearing was held on October 31, 2023. *See Markman* Tr., EDIS Doc. ID 807556 (Oct. 31, 2023). On December 14, 2023, the undersigned issued an order addressing claim construction for the asserted patents. *See* Order No. 20, EDIS Doc. ID 810414 (Dec. 14, 2023).

On November 27, 2023, the undersigned granted NOCO's motion for partial termination of the investigation as to claims 2, 4-9, 11-13, and 15-21 of the '992 patent, claims 2-10, 12-15, and 17 of the '808 patent, claims 2-16 of the '452 patent, claims 2-16 of the '213 Patent, claims 2-4, 6-18, 20-23, 25-28, 31, 33, 35-38, and 41-53 of the '023 patent, and claims 3-9, 15-17, 19-25, 29, 30, 32, 33, 35-44, 46-49, 51-53, and 55-57 of the '243 patent. *See* Order No. 18, EDIS Doc. ID 809239 (Nov. 27, 2023), *unreviewed by* Comm'n Notice, EDIS Doc. ID 810829 (Dec. 21, 2023). On January 9, 2024, the undersigned granted NOCO's motion to partially terminate the investigation based on withdrawal of the '452 and '213 patents. Order No. 24, EDIS Doc. ID 811685 (Jan. 9, 2024), *unreviewed by* Comm'n Notice, EDIS Doc. ID 813586 (Feb. 7, 2024). On February 9, 2024, the undersigned granted NOCO's motion to partially terminate the investigation based on withdrawal of claims 5, 24, 29-30, and 40 of the '023 patent and claims 10-13, 26-28, and 50 of the '243 patent, as well as withdrawal of allegations against Respondents Shenzen Take Tools Co. Ltd., Shenzhenshi Dianjia Teechnology Co., Ltd. d/b/a Yesper Direct, Guangshou Sihao Trading Co., Ltd. d/b/a Snailhome (Audew), Shenzhen Winplus Shenzhen Pinwang Industrial Technology Co., Ltd., Winplus North American, Inc., and Winplus NA,

DELTRAN EX1060
IPR2024-01219

LLC. Order No. 26, EDIS Doc. ID 813823 (Feb. 9, 2024), *unreviewed by* Comm'n Notice, EDIS Doc. ID 815934 (Mar. 11, 2024).

An evidentiary hearing was held on February 26 to March 1, 2024, with additional hearing testimony from witness Mr. Rick Stanfield held on March 14, 2024. *See* Order No. 7, EDIS Doc. ID 798419 (June 13, 2023); Order No. 31, EDIS Doc. ID 814489 (Feb. 20, 2024); Ltr. re Stanfield Testimony, EDIS Doc. ID 814758 (Feb. 22, 2024). The parties filed initial post-hearing briefs on March 22, 2024, and filed reply post-hearing briefs on April 5, 2024.

As of the evidentiary hearing, the remaining claims at-issue in this investigation are claims 1, 3, 10, and 14 of the '992 patent, claims 1, 11, and 16 of the '808 patent, claims 1, 19, 32, 39, and 54 of the '023 patent, and claims 1, 2, 18, and 54 of the '243 patent. The remaining Respondents are ADC Solutions Auto, LLC (d/b/a Type S), Shenzhen Carku Technology Co., Ltd., Metasee LLC, Ace Farmer LLC, Shenzhen Gooloo Ecommerce Co., Ltd., Gooloo Technologies LLC, Hulkman LLC, Shenzhenshi Xinmeitemuxiangbao Zhuangyouxiangongsi, Aukey Technology Co., Ltd., Shenzhenshi Shoudiankejiyouxiangongsi, ChangShaHongMaoKai KeJiYouXianGongSi, and Shenzhenshi Daosishangmao Youxiangongsi.

B. The Parties

1. Complainant

The Complainant is The NOCO Company ("NOCO"). Notice of Investigation at 23686. NOCO is a privately held Ohio corporation headquartered in Glenwillow, Ohio. *See* Second Amended Complaint, EDIS Doc. ID No. 797671 at ¶¶ 1, 15-16. NOCO owns the Asserted Patents. *See* CX-0019; CX-0020; CX-0023; CX-0129 (patent assignments for each of the

DELTRAN EX1060
IPR2024-01219

Asserted Patents).

2. Respondents

The parties organized the remaining thirteen Respondents into two groups: (1) Carku and the Respondents it supplies (the "Carku Respondents"), and (2) ADC.

a. Carku Respondents

i. Shenzhen Carku Technology Co., Ltd.

Respondent Shenzhen Carku Technology Co., Ltd. Shenzhen Carku Technology Co., Ltd. ("Carku") is a Chinese company with a principal place of business in Longhua New District, China. *See* RPHB at 9; Second Am. Compl. ¶¶ 19-20. Carku-manufactured jump starter products are purchased and then imported and sold by many different entities, [redacted]. Carku-manufactured jump starter products are sold under many different brand names. *See id.*

ii. Metasee LLC

Respondent Metasee LLC is a Texas company with a principal place of business in Pearland, Texas. Second Am. Compl. ¶ 29; Carku Response ¶ 29. Metasee LLC imports or sells after importation accused jump starters [redacted]. *See* EDIS Doc. ID 805904 (Joint Stipulation of NOCO and Carku Respondents); *id.* at Ex. 1 ((Stipulated Carku Subject Products).

iii. Ace Farmer LLC

Ace Farmer LLC is a Texas company with a principal place of business in Houston, Texas. Second Am. Compl. ¶ 32; Carku Response ¶ 32. Ace Farmer LLC imports or sells after importation accused jump starters [redacted]. *See* EDIS Doc. ID 805904 (Joint Stipulation of NOCO and Carku Respondents); *id.* at Ex. 1 (Stipulated Carku Subject Products).

iv. Gooloo Technologies LLC

Gooloo Technologies LLC is a Chinese company with a principal place of business in Shenzhen, China. *See* RPHB at 8. Gooloo Technologies imports or sells for importation jump starters [redacted], which are sold under the brand name "Gooloo." *See* EDIS Doc. ID 805904 (Joint Stipulation of NOCO and Carku Respondents); *id.* at Ex. 1 (Stipulated Carku Subject Products).

v. Shenzhen Gooloo E-Commerce Co., Ltd.

Shenzhen Gooloo E-Commerce Co. Ltd. is a Chinese company with a principal place of business in Shenzhen, China. *See* RPHB at 8. Shenzhen Gooloo E-Commerce Co. Ltd. imports or sells for importation jump starters [redacted], which are sold under the brand name "Gooloo." *See* EDIS Doc. ID 805904 (Joint Stipulation of NOCO and Carku Respondents); *id.* at Ex. 1 (Stipulated Carku Subject Products).

vi. Hulkman LLC

Hulkman LLC is a California company with a principal place of business in Santa Clara, CA. *See* RPHB at 8. Hulkman LLC imports or sells after importation accused jump starters [redacted] *See* EDIS Doc. ID 805904 (Joint Stipulation of NOCO and Carku Respondents); *id.* at Ex. 1 (Stipulated Carku Subject Products).

vii. Shenzhenshi Xinmeitemuxiangbao Zhuangyouxiangongsi

Shenzhenshi Xinmeitemuxiangbao Zhuangyouxiangongsi is a Chinese company with a principal place of business in Shenzhen, China. *See* RPHB at 9; Second Am. Compl. Shenzhenshi Xinmeitemuxiangbao Zhuangyouxiangongsi imports or sells for importation accused jump starters [redacted]. *See* EDIS Doc. ID 805904 (Joint Stipulation of NOCO and Carku Respondents); *id.* at Ex. 1 (Stipulated Carku Subject Products).

viii. Aukey Technology Co., Ltd.

Aukey Technology Co., Ltd. is a Chinese company with a principal place of business in Shenzhen, China. *See* Second Am. Compl. ¶¶ 24-28; Aukey Response ¶¶ 24-28. Carku has sold Hulkman-branded, Tacklife-branded, Fanttikbranded, and ENGinDOT-branded jump starter products to Aukey Technology Co. *See* CX-1180C.496-498. Aukey Technology Co., Ltd. imports and sells accused jump starters [redacted]. *See* EDIS Doc. ID 805904 (Joint Stipulation of NOCO and Carku Respondents); *id.* at Ex. 1 (Stipulated Carku Subject Products).

ix. Shenzhenshi Shoudiankejiyouxiangongsi

Shenzhenshi Shoudiankejiyouxiangongsi is a Chinese company with a principal place of business in Shenzhen, China. *See* RPHB at 10. Shenzhenshi Shoudiankejiyouxiangongsi imports or sells for importation jump starters [redacted]. *See* EDIS Doc. ID 805904 (Joint Stipulation of NOCO and Carku Respondents); *id.* at Ex. 1 (Stipulated Carku Subject Products).

x. ChangShaHongMaoKai KeJiYouXianGongSi

ChangShaHongMaoKai KeJiYouXianGongSi is a Chinese company with a principal place of business in HuNan, China. *See* RPHB at 8. ChangShaHongMaoKai KeJiYouXianGongSi imports or sells for importation jump starters [redacted]. *See*

EDIS Doc. ID 805904 (Joint Stipulation of NOCO and Carku Respondents); *id.* at Ex. 1 (Stipulated Carku Subject Products).

xi. Shenzhen Konghui Trading Co., Ltd.

Shenzhen Konghui Trading Co., Ltd. is a Chinese company with a principal place of business in Shenzhen, China. *See* RPHB at 9. Shenzhen Konghui Trading Co., Ltd. imports or sells for importation jump starters [redacted]. *See* EDIS Doc. ID 805904 (Joint Stipulation of NOCO and Carku Respondents); *id.* at Ex. 1 (Stipulated Carku Subject Products).

xii. Shenzhenshi Daosishangmao Youxiangongsi

Shenzhenshi Daosishangmao Youxiangongsi is a Chinese company with a principal place of business in Shenzhen, China. *See* RPHB at 9. Shenzhenshi Daosishangmao Youxiangongsi imports or sells for importation jump starters [redacted]. *See* EDIS Doc. ID 805904 (Joint Stipulation of NOCO and Carku Respondents); *id.* at Ex. 1 (Stipulated Carku Subject Products).

b. ADC Solutions LLC (d/b/a Type S)

ADC Solutions Auto LLC (d/b/a Type S) ("ADC") is a Delaware company with a principal place of business in Costa Mesa, California. *See* RPHB at 7. ADC imports and sells certain accused jump starter products, which are sold primarily under the brand name "Type S." *See* EDIS Doc. ID 813324 (Joint Stipulation of NOCO and ADC); *id.* at Ex. 1.

C. Products at Issue

The products at issue are "portable battery-powered devices that are used to jump-start batteries in automobiles, trucks, and other vehicles, and related accessories and components, namely, cases, battery cables, and clamps." Notice of Investigation at 23686. The products accused of infringement are certain portable battery jump starters and components thereof that are (1) manufactured [redacted] imported and/or sold by the Carku Respondents; or (2)

manufactured and imported and/or sold by ADC. CIB at 11-13. For the domestic industry requirement, NOCO relies on relies on certain portable battery jump starters and components thereof made and sold by NOCO. *Id.*

1. Accused Products

The accused products are certain portable battery jump starters and components thereof [redacted] ("Carku Accused Products") or ADC ("ADC Accused Products").

a. Carku Accused Products

The complete list of Carku Accused Products is attached hereto as Appendix A, which is Exhibit CX-0256C, redacted to remove references to source code. Eight models are accused of infringing the '992 and the '808 patent: Fanttik T8 Apex, Fanttik T8 Max, Fanttik T8 1300 AMP, Hulkman Alpha 85S, Hulkman Alpha 65, Hulkman Alpha 85, Hulkman Alpha 100, and Spanarci Zeta 2000. *See* CX-0256C. Those eight models, plus the additional products in CX-0256C are accused of infringing the '023 and '243 patents. *Id.*

b. ADC Accused Products

The complete list of ADC Accused Products is attached hereto as Appendix B, which is Exhibit CX-0259C, redacted to remove references to source code.[3]

2. Domestic Industry Products

The NOCO DI products are identified in CX-0262C. *See* CIB at 12; CX-0262C. For the '992 and '808 patents, the relevant products are the GB20, GB40, GB50, and GBX45 (the "Group I DI Products"). *See* CIB at 166. For the '023 and '243 patents, the relevant products are the GB20, GB40, GB50, GB70, GB150, GBX45, GBX55, GBX75, and GBX155. *See id.*

[3] ADC is not accused of infringing the '992 or '808 patents.

3. Non-Accused Products for which Adjudication is Sought

The Carku Respondents seek adjudication of several redesigns. Relevant to the '992 and '808 patents, the Carku Respondents seek adjudication of six revised models of jumper cables: Hulkman Alpha 65, 85, 85S (Rev. A), Spanarci Jumper Cable (Rev. A), Hulkman Alpha 100 Jumper Cable (Rev. A), Hulkman Alpha 100 Jumper Cable (Rev. B), Fanttik T8 (Apex and 1300) Jumper Cable (Rev. A), and Fanttik T8 Max Jumper Cable (Rev. A) ("Carku Revised Cables"). RIB at 30; SIB at 26; RDX-0008C.78.[4]

Relevant to the '023 and '243 patents, the Carku Respondents seek adjudication of seventeen redesigned jump starter products, including redesign models Hulkman Alpha 85 (RPX-0042), Hulkman Alpha 85S (Rev. A) (RPX-0013), Hulkman Alpha 85 (Rev. A) (RPX-0016), Hulkman Alpha 65 (Rev. A) (RPX-0017), Topdon JS-300 (Rev. A) (RPX-0018), Fanttik T8 1300 AMP (Rev. A) (RPX-0025), Asperx AX2500 (Rev. A) (RPX-0028), Asperx AX3500 (Rev. A) (RPX-0029), Yesper Armor (RPX-0043), Spanarci Zeta 2000 Jumper Starter (Rev. A) (RPX-0001), Gooloo GT 4000S (Rev. A) (RPX-0002), Fanttik T8 Max (Rev. A) (RPX-0014), Gooloo GT4000 (Rev. A) (RPX-0015), Fanttik T8 Apex (JS-278 jumpstarter) (Rev. A) (RPX-

[4] The Carku Respondents also reference additional "Unaccused Products" and identify certain non-infringement arguments for those products. *See, e.g.*, RIB at 30, 39, 54 (referring to the "Cable Patents Unaccused Products" as distinct from the "Cable Patents Unaccused Revised Products"). The Carku Respondents did not provide sufficient information to establish that these products should be adjudicated (including the extent to which these products were sufficiently disclosed during discovery as products for which adjudication would be sought) and thus they are not adjudicated in this ID. *See Certain Audio Players and Controllers, Components Thereof, and Prods. Containing the Same*, Inv. No. 337-TA-1191, Comm'n Op., 2022 WL 355867, at n.19 (Feb. 1, 2022) (limiting LEO to products adjudicated and stating that,"[w]here a product has not been accused by the complainant, it is incumbent upon a respondent to put a particular product at issue during discovery, and in its substantive arguments before the ALJ, if it wants a particular product to be explicitly adjudicated as not infringing") (citing *Oligosaccharides*). In *Certain Audio Players*, the respondent had sought a carve-out from an exclusion order for non-accused products that *inter alia* "are within the scope of the Investigation and for which Google provided technical information and other discovery." *See Certain Audio Players*, Respondent Google's Submission on Remedy, Bond, and Public Interest, EDIS Doc. ID 758487, at 14-15 (Dec. 2, 2021).

DELTRAN EX1060
IPR2024-01219

0019), Yesper ARMOR PRO/PRO 2 (Rev. A) (RPX-0024); Hulkman Alpha 100 (Rev. A) (RPX-0026), and Andeman Battery Jump Starter 2000A (RPX-0027).[5] RIB at 103-05.

ADC seeks adjudication of three redesigned models, [redacted], which ADC submits do not infringe the '023 and '243 patents. RIB at 27-28.

D. Witness Testimony

The parties presented testimonial evidence in this investigation in the form of live testimony and deposition designations.

1. Party Witnesses

NOCO presented testimony from Mr. Johnathan Nook, Chief Visionary Officer and President of NOCO (Tr. at 87:14-15), Ms. Andrea Hacker Davidson, Director of Boost Development at NOCO (*id*. at 176:9-11), and Mr. Jeffrey Weiner, Chief Financial Officer of NOCO (*id*. at 242:21-22). Respondents presented testimony from Mr. Zhifeng ("Michael") Zhang, CEO and General Manager of Carku (*id*. at 639:10-11), Mr. Ming Cheng, Research & Development Manager at Carku (*id.* at 705:25-706:1), Mr. Steve Lehman, Vice President of ADC and Chief Corporate Development Officer of ADC Solutions Holdings, LLC (*id.* at 1005:22-1006:5). Respondents also called, as an adverse direct witness, Mr. Rick Stanfield, Chief Technical Officer at NOCO (*id.* at 1336:2-5).

[5] The Carku Respondents also reference a more extensive list of redesigned products, CX-0258C, but information and evidence at the hearing was only presented as to the more limited subset of sixteen models. *See* RDX-0008C.0004; Tr. (Ricketts) at 1144:21-1145:20 (identifying the two groups of revised jump starter products tested based on their chipsets); RIB at 103-05.

DELTRAN EX1060
IPR2024-01219

2. Third-Party Witness

Certain third-party witnesses testified at the hearing. Respondents presented testimony from Mr. Bryan Legates, a third-party witness previously employed by Linear Technologies. (*Id.* at 658:14-18).

3. Expert Witnesses

NOCO's first expert witness was Dr. Ayman Fayed, who was admitted as an expert in the field of electrical and computer engineering, including power management technologies, to provide testimony related to infringement, validity, and the technical prong of the domestic industry requirement. Tr. at 350:8-538:5, 950:22-1003:6 (expert qualification at 355:16-18). NOCO also called Mr. John Jarosz, who was admitted as an expert in the economics of intellectual property protection. Tr. at 581:21-636:8 (expert qualification at 587:8-17).

Respondents' first expert witness was Dr. David Ricketts, who was admitted as an expert in the field of electrical and computer engineering, including power management technologies and battery-charging system design. Tr. at 720:2-776:9, 813:9-911:2, 912:6-949:4, 1142:13-1195:17, 1203:4-1223:4 (expert qualification at 722:21-723:8). Respondents also called Dr. Mark Horenstein, who was admitted as an expert in in the field of electrical and computer engineering, including electrical design and power electronics. Tr. at 1033:7-1052:5, 1092:21-1140:1 (expert qualification at 1093:5-16). Respondents' last expert witness was Mr. Ryan LaMotta, who was admitted as an expert on economic issues, including domestic industry and bonding. Tr. at 1224:15-1271:4 (expert qualification at 1226:22-1227:6).

4. Deposition Designations

Several designated deposition transcripts were received into evidence: Xingliang (Leon) Lei, Sales Manager at Carku at CX-0155C; Xue Li, Product Manager at Metasee, LLC at CX-

0156C, CX-0169C; Wenhua Zhao, Director at Metasee, LLC at CX-0158C, CX-0165C; Xuejiao Jiang, Human Resources Manager at Shenzhen Konghui Trading Company Limited at CX-0159C; Bo Wu, Director of Legal Department at Aukey Technology Company Ltd. at CX-0160C, Wulin Yu, Operations Manager at Shenzhenshi Daosishangmao Youxiangonsi at CX-0161C; Enpeng Bai, Marketing Manager at Shenzhen Konghui Trading Company Ltd. at CX-0162C;Yang Jun, Supervisor for Research & Development at Shenzhen Konghui Trading Company Ltd. at CX-0163C; Ming (Frank) Li, Chief Executive Officer at Hulkman LLC at CX-0164C; Yanping Zhuo, Manager at Aukey Technology Company Ltd. at CX-0166C; Fan Shi, Amazon Sales Director at Shenzhenshi Daosishangmao Youxiangonsi at CX-0167C; Liying Zhang, Category Planner at Ace Farmer, LLC at CX-0168C, CX-0170C; Yushui Lin, Manager at Ace Farmer, LLC at CX-0171C; Steve Lehman, Vice President of ADC and Chief Corporate Development Officer of ADC Solutions Holdings, LLC at CX-0172C; Derek Underhill, Owner at Distoric Design Group, LLC at CX-0173C; Benson Leung, President at ADC at CX-0174C; Jing Lu, Chair of the Board and General Manager at [redacted] at CX-0175C; Zhifeng Zhang, General Manager and Co-Founder at Carku at CX-0176C; Ming Cheng, Manager at Carku at CX-0177C; Andrea Hacker Davidson, Director of Boost Development at NOCO at RX-4090C; Vincent Lam, Chief Operating Officer at NOCO at RX-4091C; Jonathan Nook, Chief Visionary Officer and President at NOCO at RX-4094C; Rick Stanfield, Chief Technical Officer at NOCO at RX-4095C; Jeffrey Weiner, Chief Financial Officer at NOCO at RX-4098C; Linda Szymanski, Procurement and Compliance Manager at NOCO at RX-4096C; and Bryan Legates, former Design Director at Linear Technologies at RX-4092C.

II. STATUTORY AUTHORITY, JURISDICTION, AND IMPORTATION

A. Statutory Authority

The Commission has statutory authority over the present investigation. *See Certain Video Security Equipment and Sys., Related Software, Components Thereof, and Prods. Containing Same*, Inv. No. 337-TA-1281, Comm'n Op., EDIS Doc. ID 794569, at 9-10 (Apr. 19, 2023).

B. Personal Jurisdiction

Respondents have submitted to the personal jurisdiction of the Commission by answering the Second Amended Complaint and Notice of Investigation, participating in discovery, appearing at hearings, and filing motions and briefs. *See Certain Miniature Hacksaws*, Inv. No. 337-TA-237, Initial Determination at 4, 1986 WL 379287, at *1 (Oct. 15, 1986), *unreviewed in relevant part by* Comm'n Action and Order, 1987 WL 450871 (Jan. 15, 1987).

Respondents do not dispute the Commission's personal jurisdiction in this investigation. *See* RIB at 29; CIB at 14.

C. *In Rem* Jurisdiction and Importation

The Commission has *in rem* jurisdiction over the accused products by virtue of their importation into the United States. *See Sealed Air Corp. v. U.S. Int'l Trade Comm'n*, 645 F.2d 976, 985-86 (C.C.P.A. 1981) (holding that the Commission's jurisdiction over imported articles is sufficient to exclude such articles). A complainant need only prove importation of a single accused product to satisfy the importation element. *Certain DC-DC Controllers & Prods. Containing the Same*, Inv. No. 337-TA-698, Order No. 29, EDIS Doc. ID 428773, at 3 (June 18, 2010); *Certain Purple Protective Gloves*, Inv. No. 337-TA-500, Order No. 17, EDIS Doc. ID 215648, at 5 (Sept. 23, 2004).

NOCO and the Carku Respondents filed a Joint Stipulation whereby "Each of the Carku Respondents stipulate that at least one unit of the Carku Accused Products listed in Exhibit 1

DELTRAN EX1060
IPR2024-01219

("Carku Subject Products") has been imported into the United States and/or has been sold for importation into the United States, and/or sold within the United States after importation by Respondents since January 1, 2022." *See* EDIS Doc. ID 805904 (Joint Stipulation of NOCO and Carku Respondents) at ¶ 3; *see also id*. at ¶ 6. NOCO and ADC similarly filed a Joint Stipulation whereby "ADC stipulates that at least one unit of the ADC Accused Products listed in Exhibit1 ("ADC Subject Products") has been imported into the United States and/or has been sold for importation into the United States, and/or sold within the United States after importation by ADC since January 1, 2022." *See* EDIS Doc. ID 813324 (Joint Stipulation of NOCO and ADC) at ¶ 3; *see also* RIB at 29 ("ADC and the Carku Respondents have each entered into an importation stipulation with NOCO.").

Respondents do not dispute the Commission's *in rem* jurisdiction in this investigation over the accused products that have been imported into the United States. *See* RIB at 29; *see also* Tr. (Staff) at 77:4-6 ("[I]mportation is no longer a disputed issue.")

III. LEGAL STANDARDS

A. Infringement

Section 337(a)(1)(B)(i) prohibits "[t]he importation into the United States, the sale for importation, or the sale within the United States after importation by the owner, importer, or consignee, of articles that—(i) infringe a valid and enforceable United States patent or a valid and enforceable United States copyright registered under title 17[.]" 19 U.S.C. § 1337(a)(1)(B)(i). The Commission has held that the word "infringe" in Section 337(a)(1)(B)(i) "derives its legal meaning from 35 U.S.C. § 271, the section of the Patent Act that defines patent infringement." *Certain Elec. Devices with Image Processing Sys., Components Thereof, &*

Associated Software, Inv. No. 337-TA-724, Comm'n Op., EDIS Doc. ID 467105, at 13-14 (Dec. 21, 2011).

Infringement must be proven by a preponderance of the evidence. *SmithKline Diagnostics, Inc. v. Helena Labs. Corp.*, 859 F.2d 878, 889 (Fed. Cir. 1988). The preponderance of the evidence standard "requires proving that infringement was more likely than not to have occurred." *Warner-Lambert Co. v. Teva Pharms. USA, Inc.*, 418 F.3d 1326, 1341 n.15 (Fed. Cir. 2005).

1. Claim Construction

"An infringement analysis entails two steps. The first step is determining the meaning and scope of the patent claims asserted to be infringed. The second step is comparing the properly construed claims to the device accused of infringing." *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976 (Fed. Cir. 1995) (*en banc*), *aff'd*, 517 U.S. 370 (1996) (internal citation omitted). "[T]he construction of claims is simply a way of elaborating the normally terse claim language[] in order to understand and explain, but not to change, the scope of the claims." *Embrex, Inc. v. Serv. Eng'g Corp.*, 216 F.3d 1343, 1347 (Fed. Cir. 2000) (alterations in original) (quoting *Scripps Clinic v. Genentech, Inc.*, 927 F.2d 1565, 1580 (Fed. Cir. 1991)). "[O]nly those [claim] terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy." *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999). The words of a claim "'are generally given their ordinary and customary meaning,'" which is "the meaning that the term would have to a person of ordinary skill in art" as of the date that the patent application was filed. *Phillips v. AWH Corp.,* 415 F.3d 1303, 1312-13 (Fed. Cir. 2005) (*en banc*) (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)).

DELTRAN EX1060
IPR2024-01219

2. Direct Infringement

A patent claim is directly infringed when a respondent "makes, uses, offers to sell, or sells any patented invention, within the United States, or imports into the United States any patented invention" without consent of the patent owner. 35 U.S.C. § 271(a).

3. Literal Infringement

A complainant must prove either literal infringement or infringement under the doctrine of equivalents. Literal infringement requires the patentee to prove that the accused device meets each and every limitation of the asserted claim(s). *Frank's Casing Crew & Rental Tools, Inc. v. Weatherford Int'l, Inc.*, 389 F.3d 1370, 1378 (Fed. Cir. 2004). "If even one limitation is missing or not met as claimed, there is no literal infringement." *Elkay Mfg. Co. v. EBCO Mfg. Co.*, 192 F.3d 973, 980 (Fed. Cir. 1999) (internal quotation marks omitted). Literal infringement is a question of fact. *Finisar Corp. v. DirecTV Grp.*, Inc., 523 F.3d 1323, 1332 (Fed. Cir. 2008).

B. Invalidity

It is the respondents' burden to prove invalidity, and the burden of proof never shifts to the patentee to prove validity. *Scanner Techs. Corp. v. ICOS Vision Sys. Corp. N.V.*, 528 F.3d 1365, 1380 (Fed. Cir. 2008). "Under the patent statutes, a patent enjoys a presumption of validity, *see* 35 U.S.C. § 282, which can be overcome only through facts supported by clear and convincing evidence[.]" *SRAM Corp. v. AD-II Eng'g, Inc.*, 465 F.3d 1351, 1357 (Fed. Cir. 2006); *see also Microsoft Corp. v. i4i Ltd. P'ship*, 564 U.S. 91, 100-114 (2011) (upholding the "clear and convincing" standard for invalidity).

The clear and convincing evidence standard placed on the party asserting an invalidity defense requires a level of proof beyond the preponderance of the evidence. Although not susceptible to precise definition, "clear and convincing" evidence has been described as evidence

DELTRAN EX1060
IPR2024-01219

that produces in the mind of the trier of fact "an abiding conviction that the truth of a factual contention is 'highly probable.'" *Price v. Symsek*, 988 F.2d 1187, 1191 (Fed. Cir. 1993) (quoting *Buildex, Inc. v. Kason Indus., Inc.,* 849 F.2d 1461, 1463 (Fed. Cir. 1988)).

1. Obviousness

Pursuant to 35 U.S.C. § 102, a patent claim is invalid as obvious if: "the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains." 35 U.S.C. § 103(a). "Obviousness is a question of law based on underlying questions of fact." *Scanner Techs.*, 528 F.3d at 1379. The underlying factual determinations include: "(1) the scope and content of the prior art, (2) the level of ordinary skill in the art, (3) the differences between the claimed invention and the prior art, and (4) objective indicia of non-obviousness." *Id.* at 1380 (citing *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966)). These factual determinations are often referred to as the "*Graham* factors."

A critical inquiry in determining the differences between the claimed invention and the prior art is whether there is a reason to combine the prior art references. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418-21 (2007). In *KSR*, the Supreme Court rejected the Federal Circuit's rigid application of a "teaching-suggestion-motivation" test—while the Court stated that "it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does," it described a more flexible analysis:

> Often, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether

> there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue . . . . As our precedents make clear, however, the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.

Id. at 418. Applying *KSR*, the Federal Circuit has held that, where a patent challenger contends that a patent is invalid for obviousness based on a combination of prior art references, "the burden falls on the patent challenger to show by clear and convincing evidence that a person of ordinary skill in the art would have had reason to attempt to make the composition or device . . . and would have had a reasonable expectation of success in doing so." *PharmaStem Therapeutics, Inc. v. ViaCell, Inc.*, 491 F.3d 1342, 1360 (Fed. Cir. 2007).

2. Written Description & Enablement

To satisfy the written description requirement of Section 112, a patent must "reasonably convey[] to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date." *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc) (explaining the "hallmark" of an adequate written description is "disclosure"). An applicant establishes it was in possession of the invention "by describing the invention[ ] with all its claimed limitations." *Lockwood v. Am. Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997) (emphasis omitted). This description can be made using "words, structures, figures, diagrams, formulas, etc." *Id.* A patentee can also "rely on information that is 'well-known in the art' to satisfy written description." *Streck, Inc. v. Rsch. & Diagnostic Sys., Inc.*, 665 F.3d 1269, 1285 (Fed. Cir. 2012) (citation omitted).

Whether a specification complies with the written description requirement is a question of fact judged from the perspective of a person of ordinary skill. *See Falko-Gunter Falkner v. Inglis*, 448 F.3d 1357, 1363 (Fed. Cir. 2006); *AbbVie Deutschland GmbH & Co., KG v. Janssen*

DELTRAN EX1060
IPR2024-01219

Biotech, Inc., 759 F.3d 1285, 1300 (Fed. Cir. 2014). Lack of written description must be established by clear and convincing evidence. *Invitrogen Corp. v. Clontech Labs.*, 429 F.3d 1052, 1072 (Fed. Cir. 2005).

To satisfy the separate enablement requirement of Section 112, the written description must provide description that enables an artisan of ordinary skill to practice the full scope of the claimed invention without undue experimentation. *Wyeth & Cordis Corp. v. Abbott Labs.*, 720 F.3d 1380, 1384 (Fed. Cir. 2013). "That some experimentation is necessary does not preclude enablement; the amount of experimentation, however, must not be unduly extensive." *Atlas Powder Co. v. E.I. du Pont De Nemours & Co.*, 750 F.2d 1569, 1576 (Fed. Cir. 1984). A challenger must prove invalidity based on non-enablement by clear and convincing evidence. *MagSil Corp. v. Hitachi Glob. Storage Techs., Inc.*, 687 F.3d 1377, 1380 (Fed. Cir. 2012). Enablement is a question of law based on underlying facts. *Wyeth*, 720 F.3d at 1384.

C. Domestic Industry

In patent-based proceedings under section 337, a complainant must establish that an industry "relating to the articles protected by the patent . . . exists or is in the process of being established" in the United States. 19 U.S.C. § 1337(a)(2). Under Commission precedent, the domestic industry requirement of section 337 consists of a "technical prong" and an "economic prong." *See, e.g., Alloc, Inc. v. Intl Trade Comm'n,* 342 F.3d 1361, 1375 (Fed. Cir. 2003).

To meet the technical prong, the complainant must establish that it practices at least one claim of the asserted patent. *Certain Point of Sale Terminals & Components Thereof*, Inv. No. 337-TA-524, Order No. 40 at 17-18, EDIS Doc. ID 230409 (Apr. 11, 2005). "The test for satisfying the 'technical prong' of the industry requirement is essentially [the] same as that for

infringement, *i.e.*, a comparison of domestic products to the asserted claims." *Alloc*, 342 F.3d at 1375.

With respect to the "economic prong," subsection (3) of Section 337(a) provides:

> For purposes of paragraph (2), an industry in the United States shall be considered to exist if there is in the United States, with respect to the articles protected by the patent, copyright, trademark, mask work, or design concerned –
>
> (A) significant investment in plant and equipment;
> (B) significant employment of labor or capital; or
> (C) substantial investment in its exploitation, including engineering, research and development, or licensing.

19 U.S.C. § 1337(a)(3).

Expenditures may be counted toward satisfaction of the domestic industry requirement "as long as those investments pertain to the complainant's industry with respect to the articles protected by the asserted IP rights." *Certain Television Sets, Television Receivers, Television Tuners, & Components Thereof*, Inv. No. 337-TA-910, Comm'n Op. at 68, 2015 WL 6755093, at *36 (Oct. 30, 2015); *accord, e.g.*, *Certain Marine Sonar Imaging Devices, Including Downscan & Sidescan Devices, Prods. Containing the Same, & Components Thereof*, Inv. No. 337-TA-921, Comm'n Op., 2016 WL 10987364, at *40 (Jan. 6, 2016) ("Navico's allocation methodology reasonably approximates the warranty and technical customer support expenditures relating to the LSS-1 product.") (*citing Certain Ground Fault Circuit Interrupters & Prods. Containing Same*, Inv. No. 337-TA-739, Comm'n Op. at 74-75, 79-81 (June 8, 2012)). Subsections (A), (B), and (C) are listed in the disjunctive, and accordingly, the domestic industry investments in plant and equipment or labor and capital can include expenditures that relate to engineering or research and development. *Certain Solid State Storage Drives, Stacked Electronics Components, & Prods. Containing Same*, Inv. No. 337-TA-1097, Comm'n Op., EDIS Doc. ID 649139, at 14

DELTRAN EX1060
IPR2024-01219

(June 29, 2018) ("[T]he text of the statute, the legislative history, and Commission precedent do not support narrowing subsections (A) and (B) to exclude non-manufacturing activities, such as investments in engineering and research and development.").

Whether a complainant satisfies the economic prong is not analyzed according to a rigid mathematical formula. *Certain Male Prophylactic Devices*, Inv. No. 337-TA-546, Comm'n Op., EDIS Doc. ID 279161, at 39 (Aug. 1, 2007). The decision is made on a case-by-case basis and requires "an examination of the facts in each investigation, the article of commerce, and the realities of the marketplace." *Id.* Although Section 337(a)(3) describes the economic activities as "significant" and "substantial," a complainant does not need to show any "minimum monetary expenditure," and a complainant does not "need to define or quantify the industry itself in absolute mathematical terms." *Certain Stringed Musical Instruments & Components Thereof*, Inv. No. 337-TA-586, Comm'n Op., EDIS Doc. ID 300615, at 26 (May 16, 2008). "A precise accounting [of the complainant's domestic investments] is not necessary, as most people do not document their daily affairs in contemplation of possible litigation." *Id*.

IV. ADJUDICATION OF THE REDESIGN PRODUCTS

The Carku Respondents and ADC seek adjudication of certain redesigned products. Relevant to the '992 and '808 patents, the Carku Respondents seek adjudication of six jumper cables with revised plug designs: Hulkman Alpha 65, 85, 85S (Rev. A), Spanarci Jumper Cable (Rev. A), Hulkman Alpha 100 Jumper Cable (Rev. A), Hulkman Alpha 100 Jumper Cable (Rev. B), Fanttik T8 (Apex and 1300) Jumper Cable (Rev. A), and Fanttik T8 Max Jumper Cable (Rev. A) (collectively, the "Carku Revised Cables"). RIB at 30. Relevant to the '023 and '243 patents,

DELTRAN EX1060
IPR2024-01219

the Carku Respondents seek adjudication of seventeen models of revised jump starters with revised USB charging firmware (the "Carku Revised Jump Starters").[6] RIB at 105.

ADC also seeks adjudication of three redesigned models, [redacted]. RIB at 27-28.

Prior to the hearing, the undersigned denied NOCO's motion *in limine* seeking to exclude evidence, testimony, or argument regarding the Carku Respondents' redesigned products. *See* Order No. 33, EDIS Doc. ID 814523, at 5 (Feb. 20, 2024) ("Upon review of the parties' arguments and submissions, the undersigned agrees with Staff that whether the Carku Respondents' redesign products are ripe for adjudication is an issue that should be decided based on a full evidentiary record. The parties have identified disputed factual issues regarding at least the fixation of the design of the Carku Respondents' redesign products that cannot be decided *in limine*."). The undersigned also denied NOCO's motion *in limine* seeking to exclude evidence, testimony, or argument regarding ADC's redesigns. *See* Order No. 35, EDIS Doc. ID 814634, at 4 (Feb. 21, 2024) ("Upon review of the parties' arguments and submissions, the undersigned finds that whether the ADC Respondents' redesign products are ripe for adjudication is an issue that should be decided based on the full evidentiary record. The parties have identified disputed factual issues regarding at least the fixation of the design of the ADC Respondents' redesign

[6] The redesigns are models Hulkman Alpha 85 (RPX-0042), Hulkman Alpha 85S (Rev. A) (RPX-0013), Hulkman Alpha 85 (Rev. A) (RPX-0016), Hulkman Alpha 65 (Rev. A) (RPX-0017), Topdon JS-300 (Rev. A) (RPX-0018), Fanttik T8 1300 AMP (Rev. A) (RPX-0025), Asperx AX2500 (Rev. A) (RPX-0028), Asperx AX3500 (Rev. A) (RPX-0029), Yesper Armor (RPX-0043), Spanarci Zeta 2000 Jumper Starter (Rev. A) (RPX-0001), Gooloo GT 4000S (Rev. A) (RPX-0002), Fanttik T8 Max (Rev. A) (RPX-0014), Gooloo GT4000 (Rev. A) (RPX-0015), Fanttik T8 Apex (JS-278 jumpstarter) (Rev. A) (RPX-0019), Yesper ARMOR PRO/PRO 2 (Rev. A) (RPX-0024); Hulkman Alpha 100 (Rev. A) (RPX-0026), and Andeman Battery Jump Starter 2000A (RPX-0027).

DELTRAN EX1060
IPR2024-01219

products that cannot be decided *in limine*."). Whether these products should be adjudicated is addressed below.

A. Legal Standard

The Commission has stated that it has a "policy in favor of adjudicating redesigns to prevent subsequent and potentially burdensome proceedings that could have been resolved in the first instance in the original Commission investigation." *Certain Human Milk Oligosaccharides and Methods of Producing the Same*, Inv. No. 337-TA-1120, Comm'n Op., EDIS Doc. ID 712205, at 18 (June 8, 2020) ("*Oligosaccharides*"). The Commission considers four factors (the "*Oligosaccharides* factors") to determine whether a redesigned product should be adjudicated: "(1) whether the product is within the scope of the investigation; (2) whether it has been imported; (3) whether it is sufficiently fixed in design; and (4) whether it has been sufficiently disclosed by respondent during discovery." *Id.* (citing *Certain Two-Way Radio Equipment and Sys., Related Software, & Components Thereof*, Inv. No. 337-TA-1053, Comm'n Op., 2018 WL 8648379, at *13-14 (Dec. 18, 2018)).

B. Adjudication of the Carku Revised Cables

The Carku Respondents contend that the six Carku Revised Cables should be adjudicated in this investigation because Carku "designed and produced revised cables" and "each of these products has been manufactured, has been imported—indeed each was in the courtroom during trial—and is ready for manufacturing at scale." RIB at 30. While NOCO does not dispute that the Carku Revised Cables are within the scope of this investigation, NOCO argues that the Carku Respondents have not met their burden on the other three *Oligosaccharides* factors. CIB at 25-29; CRB at 12-13; RRB at 7. These disputed factors are discussed below.

DELTRAN EX1060
IPR2024-01219

1. Importation

The Carku Respondents assert that the redesigned products were imported, including the physical exhibits of the Carku Revised Cables "present in the courtroom throughout the duration of the evidentiary hearing." RRB at 7; *see also* RIB at 38; RPX-0003; RPX-0004; RPX-0020; RPX-0021; RPX-0022; RPX-0023. The Carku Respondents assert that the importation occurred during fact discovery; specifically, two of the six Carku Revised Cables were made available on September 13, 2023, and the remaining four Carku Revised Cables were imported and made available as of October 2, 2023. RRB at 8. Fact discovery closed on October 27, 2023. *See* Order No. 7.

NOCO contends that the importation of "just a handful of physical samples" does not satisfy the importation requirement. CIB at 36-37. Further, NOCO contends that the samples "are not even complete products, they are merely samples of plugs" and there was no evidence as to "which, if any, of the jump starters these samples were associated with," and thus there is no "importation of a complete product that uses these redesigned plugs." CIB at 36. NOCO also argues that there are not "firm plans to import their other redesign products in the future," which distinguishes the present case from instances where the importation factor was found to be met.

Staff agrees with the Carku Respondents that samples of the Carku Revised Cables were imported and made available for inspection during fact discovery, as well as introduced into evidence at the hearing. *See* SIB at 27. Staff asserts that "battery cables" and "clamps" were specifically defined in the Notice of Investigation as products within the scope of this investigation, and that the '992 patent is drawn to "'jumper cable devices,' which is precisely what the redesigned products are." SRB at 10.

DELTRAN EX1060
IPR2024-01219

The evidence of record demonstrates that the Carku Respondents imported physical samples of the Carku Revised Cables.[7] *See* RPX-0003; RPX-0004; RPX-0020; RPX-0021; RPX-0022; RPX-0023; RDX-0008C.78; Tr. (Zhang) at 688:9-11 ("[Q]: Has Carku imported redesigned products into the United States during this investigation? [A]: Yes."). As to NOCO's argument that they were unsure "which, if any, of the jump starters these samples were associated with" (CIB at 36), the undersigned finds that the Carku Respondents clearly link each of the revised cable products to particular jump starter product(s) in interrogatory responses, pre- and post-hearing briefing, and in pre-hearing exhibit lists for the Carku Revised Products. *See, e.g.*, EDIS Doc. ID 812479 at Ex. D (January 23, 2024 Trial Exhibit List attached to Respondents' Pre-Hearing Statement) at 169 (identifying, for example, RPX-0003 (CAR.NOCO.II.PHYS.003) as "Hulkman Alpha 65, 85, 85S Jumper Cable (Rev. A)"); *id.* at 169-70 (similar for CAR.NOCO.II.PHYS.004, .012, .013, 014,.015); RIB at 30; EDIS Doc. ID 813924 at Ex. 3 (Interrog. Resps. Oct. 9, 2023) at 40 (identifying, *e.g.*, "Hulkman Alpha 85 with Hulkman Alpha 65, 85, 85S Jumper Cable (Rev. A) (CAR.NOCO.II.PHYS.003)"); *id.* at 40-42 (similar for CAR.NOCO.II.PHYS.004, .012, .013, 014., 015); *id.* at 316 (identifying, *e.g.*, that "a physical copy of Hulkman Alpha 65, 85, 85S Jumper Cable (Rev. A) (CAR.NOCO.II.PHYS.003)" has been made available for inspection in association with product "Hulkman Alpha 65 with Hulkman Alpha 65, 85, 85S Jumper Cable (Rev. A)"); *id.* at 315-321 (similar for CAR.NOCO.II.PHYS.004, .012, .013, 014, .015); EDIS Doc. ID 813929 at Ex. 5 (Sept. 13, 2023 K. Patariu Email) (identifying "Hulkman 65, 85, 855 Jumper Cable (Rev. A)" and "Spanarci Jumper Cable (Rev. A)" as available for inspection); EDIS Doc. ID 813929 at Ex.

[7] This appears undisputed. *See* CIB at 36 ("And even though the Carku Respondents imported some physical samples . . .").

DELTRAN EX1060
IPR2024-01219

14 (Oct. 2, 2023 K. Patariu Email) (identifying "Hulkman Alpha 100 Jumper Cable (Rev. A)," and "Hulkman Alpha 100 Jumper Cable (Rev. B)," "Fanttik T8 (Apex and 1300 AMP) jumper cable (Rev. A)," "Fanttik T8 Max jumper cable (Rev. A)" as products available for inspection). The parties stipulated that the accused jump starter products with which the Carku Revised cables are linked were imported. *See* EDIS Doc. ID 805904 (Joint Stipulation of NOCO and Carku Respondents) at ¶ 3.[8] The evidence thus demonstrates that both parts of the complete device—the jumper cable and the jump starter—have, accordingly, been imported.

Further, NOCO's argument that there were "no firm plans to import any other redesigned products" is unpersuasive. The Commission has held that "importation" in the context of section 337 means "importation by a respondent without regard to purpose." *Certain Integrated Circuits, Processes for Making Same and Prods. Containing Same*, Inv. No. 337-TA-450, Order No. 15, EDIS Doc. ID 61084 at 7 (Nov. 2, 2001) (granting summary determination of importation with respect to marketing samples), *not reviewed by* Comm'n Notice, 66 Fed. Reg. 64061 (Dec. 11, 2001); *see also Certain Abrasive Prods. Made Using a Process for Making Powder Preforms and Prods. Containing Same*, Inv. No. 337-TA-449, Initial Determination, EDIS Doc. ID 60726, at 61 (Feb. 8, 2002) (finding importation where samples were provided to customer), *not reviewed by* Comm'n Notice, EDIS Doc. ID 60727 (Mar. 29, 2002). Evidence that physical samples were imported for use as exhibits—as the redesigned products were here—has been

[8] This, accordingly, differentiates the present investigation from instances where redesigned "components" were not adjudicated. *See, e.g.*, *Certain Unmanned Aerial Vehicles & Components Thereof*, Inv. No. 337-TA-1131, Comm'n Op., 2020 WL 5407477, at *13 (Sept. 8, 2020) (affirming ALJ decision not to adjudicate rotor assembly components where the component were "without a clear connection to a complete or accused UAV product"). In *Unmanned Aerial Vehicles*, the Commission indicated that redesigned "constituent parts for a complete UAV, including the accused UAVs," would be appropriately adjudicated. *Id.* (emphasis omitted). Here, the Carku Revised Cables are "constituent parts" of the accused portable battery jump starters.

DELTRAN EX1060
IPR2024-01219

found to be sufficient evidence of importation. *See, e.g.*, *Certain Electronic Devices, Including Streaming Players, Televisions, Set Top Boxes, Remote Controllers, and Components Thereof*, Inv. 337-TA-1200, Initial Determination, EDIS Doc. ID 747669, at 89 (July 9, 2021) (citing shipping labels for physical exhibits as evidence of importation); *Certain Electrical Connectors and Cages, Components Thereof, and Prods. Containing the Same*, Inv. No. 337-TA-1241, Initial Determination, EDIS Doc. ID 767918, at 34 (Mar. 11, 2022) (finding that importation factor weighed in favor of adjudication where "physical samples of certain Redesign Products were produced in the United States by Luxshare in discovery").

The undersigned therefore finds that this factor weighs in favor of adjudication.[9]

2. Sufficiently Fixed in Design and Sufficiently Disclosed in Discovery

The Carku Respondents contend that the Carku Revised Cables are sufficiently fixed in design and "ready for manufacturing at scale." RIB at 30. The Carku Respondents contend that they disclosed details of the modifications beginning on June 2, 2023. RRB at 10-11. The evidence shows that design files were produced and referenced in interrogatory responses regarding redesigns during the July 28, 2023 through October 12, 2023 time period. *See* RRB at 11-12; RX-3079C (Response to Interrogatory No. 11) at 588-611; RIB at 30. Fixed physical samples were available beginning September 13, 2023, and physical samples were made available for of all six of the Carku Revised Cables by October 2, 2023. RRB at 8-12; *see also* EDIS Doc. ID 813929 at Ex. 5 (Sept. 13, 2023 K. Patariu Email) (identifying "Hulkman 65, 85, 855 Jumper Cable (Rev. A)" and "Spanarci Jumper Cable (Rev. A)" as available for inspection); EDIS Doc. ID 813929 at Ex. 14 (Oct. 2, 2023 K. Patariu Email) (identifying "Hulkman Alpha

[9] The undersigned also notes that "while importation may be relevant to the inquiry, actual importation of the redesign is not a mandatory requirement." *Oligosaccharides*, Comm'n Op. at 18 n.21.

DELTRAN EX1060
IPR2024-01219

100 Jumper Cable (Rev. A)," and "Hulkman Alpha 100 Jumper Cable (Rev. B)," "Fanttik T8 (Apex and 1300 AMP) jumper cable (Rev. A)," "Fanttik T8 Max jumper cable (Rev. A)" as products available for inspection). Staff agrees that the Carku Revised Cables are fixed in design, given the actual physical samples, and that the Carku Revised Cables were sufficiently disclosed during fact discovery, and indeed, prior to the deadline for supplements for burden contention interrogatory responses. SRB at 10-11. Staff contends that if NOCO believed the details of the redesigns were made available too close to the close of fact discovery, they could have—but did not—sought an extension. SRB at 11.

NOCO's arguments regarding *Oligosaccharides* factors 3 and 4 are closely related. NOCO first argues that the products are not sufficiently fixed because the Carku Respondents are "not committed" to the redesigns and that the redesigns "were only recently imported and only for litigation." *See* CIB at 36-37. Because the Commission "does not require that a redesign involve a commercial product in order to be adjudicated," that the Carku Revised Cables have not yet been commercialized is unpersuasive. *Unmanned Aerial Vehicles*, 2020 WL 5407477, at *13[10]; *Certain Digital Video-Capable Devices & Components Thereof*, Inv. No. 337-TA-1224, Ord. No. 24, 2021 WL 1923351, at *1 (May 3, 2021) (rejecting argument that redesigned products were not sufficiently fixed in design because "'Intel has no plans to commercially release the [] drivers,'" noting that "this is not the test for showing that an alleged redesign is

[10] NOCO also cites to *Unmanned Aerial Vehicles* in support of its argument. CIB at 37. The component design there—a redesigned rotor assembly—had "no clear connection to a complete or accused UAV product," and was found to be insufficiently fixed in design, *inter alia*, because the only product incorporating the redesign imported during the investigation (after the close of fact discovery) was a "'one-off engineering experiment,' and not a 'fixed and final design.'" *Id.* at *14. Here, the Carku Revised Cables were repeatedly and clearly tied to accused jump starters as discussed, *supra*. The evidence also shows that the designs embodied in the imported physical samples are ready for mass production within a few months (depending on tooling needs) and represent sufficiently fixed designs. *See* Tr. (Zhang) at 691:11-17.

sufficiently fixed"). Moreover, Mr. Zhang testified that the Carku Revised Cables are ready for mass production within one to three months, depending on tooling requirements. Tr. (Zhang) at 691:11-17. NOCO criticizes this testimony as "unsupported," CIB at 38, but the undersigned finds nothing in the record to contradict Mr. Zhang's testimony.[11]

NOCO also repeats its argument that the Carku Respondents did not link the Carku Revised Cables to any of its jump starter products. As discussed *supra*, the undersigned finds the Carku Respondents linked the Carku Revised Cables to its jump starter products in the parties' correspondence, discovery responses, exhibit lists, and briefing. This is related to NOCO's argument that the Carku Respondents' failure to produce "working samples" "made it impossible to NOCO to investigate those products during discovery." *Id.* at 37, 39. That assertion is contrary to the infringement analysis Dr. Fayed conducted on the accused products. Dr. Fayed testified that he "just looked at the cable schematics" in evaluating infringement of the accused products. *See* Tr. (Fayed) 482:4-7; *id.* at 487:12-14 ("[Q]: You didn't physically inspect an actual plug to determine where to handle -- to add this boundary; correct? [A] No, I have not, no."); CDX-0006C.125 (listing only schematics, packaging, and user manuals among materials considered). Nor did NOCO seek to obtain additional discovery or inspections regarding these samples.

[11] *Cf. Oligisaccharides*, 2020 WL 3073788, at *12 (finding bacterial strain sufficiently fixed in design where *inter alia* there were records showing that Respondent has "actually produced" certain oligosaccharides using the strain); *Certain Audio Players and Controllers, Components Thereof, and Products Containing Same*, Inv. No. 337-TA-1191, Order No. 19, 2020 WL 6441406, at *2 (Sept. 4, 2020) ("Google has produced source code for the alleged redesigns and has made physical devices incorporating the source code available for inspection . . . The evidence therefore shows that the redesigns are sufficiently fixed such that an infringement determination can be made."); *Certain Flocked Swabs, Prods. Containing Flocked Swabs, and Methods of Using Same*, Inv. No. 337-TA-1279, Initial Determination, EDIS Doc. ID 787166, at 36 (Jan. 3, 2023) ("[T]he fact that [Respondent] may ultimately use a different redesign product does not mean that the particular redesigns already manufactured and provided in litigation were not sufficiently fixed"), *unreviewed in relevant part by* Comm'n Notice, EDIS Doc. ID 792679 (March 17, 2023).

DELTRAN EX1060
IPR2024-01219

The record further shows that discovery regarding the Carku Revised Cables was sufficiently produced during fact discovery. As of September 13, 2023, Carku had manufactured, imported, and made available for inspection two of the Carku Revised Cables, and provided responses to an interrogatory regarding redesigns explaining the basis for non-infringement. *See* EDIS Doc. ID 813929 at Ex. 5 (Sept. 13, 2023 K. Patariu Email) (identifying two Carku "Rev A" products as available for inspection); RX-3079C (Response to Interrogatory No. 11) at 588-595 (identifying "stepped" connector as design around). This was approximately 6 weeks before the close of fact discovery. *See* Order No. 7 (setting close of fact discovery to be October 27, 2023). All of the Carku Revised Cables were available for inspection as of October 2, 2023, and Carku's interrogatory responses were updated by October 12, 2023 to include design documents for the revised products. *See* EDIS Doc. ID 813929 at Ex. 14 (Oct. 2, 2023 K. Patariu Email) (identifying "Hulkman Alpha 100 Jumper Cable (Rev. A)," "Hulkman Alpha 100 Jumper Cable (Rev. B)," "Fanttik T8 (Apex and 1300 AMP) jumper cable (Rev. A)," "Fanttik T8 Max jumper cable (Rev. A)" as products available for inspection); RX-3079C at 610-617; RIB at 30; Respondents' Exhibit List (EDIS Doc. ID 816626); Part IV.B.1. *supra*. Under the circumstances here, the fourth *Oligosaccharides* factor has been satisfied. *Cf. Oligosaccharides*, Comm'n Op., at 21 (finding disclosure sufficient for adjudication where certain disclosure took place well before the close of fact discovery and interrogatories were fully updated on the close of fact discovery, noting that if "Glycosyn and its expert deemed such evidence to be insufficient, Glycosyn could and should have taken available procedural steps").

* * *

Accordingly, each of the *Oligosaccharides* factors weighs in favor of adjudicating the Carku Revised Cables in this Investigation.

DELTRAN EX1060
IPR2024-01219

C. Adjudication of the Carku Revised Jump Starters

In addition to the Carku Revised Cables, the Carku Respondents also seek to have sixteen additional redesigns relevant to the ’023 and ’243 patents adjudicated. These designs revise the MCU and USB chipset firmware in the jump starter packs. RIB at 103. The Carku Respondents contend that notice of the nature of these redesigns was timely provided to NOCO during fact discovery, and these devices, their source code, and schematics, were timely produced and/or made available for inspection. *See* RIB at 103. While NOCO does not dispute that the Carku Revised Cables are within the scope of this investigation, NOCO argues that the Carku Respondents have not met their burden on the other three *Oligosaccharides* factors. CIB at 133-135; CRB at 75-78; RRB at 56-57. These disputed factors are discussed below.

1. Importation

The Carku Respondents assert that the redesigned products were imported, including the physical exhibits of the Carku Revised Jump Starters “in the courtroom at the hearing.” *See* RRB at 57; RDX-0008C.36 (listing RPX exhibits for revised devices based on SC2001/SC8905 and SC2001/SC8812 chipsets).

NOCO argues that the Carku Respondents have failed to show importation, as only a few samples—used as physical exhibits—were imported, and that there are no plans to import additional redesign products. CIB at 133.[12]

The evidence of record demonstrates that the Carku Respondents imported physical samples of the Carku Revised Jump Starters. RDX-0008C.36 (listing RPX exhibits for revised

[12] Staff asserts that two of the Carku Revised Jump Starters, the Hulkman Alpha 85 (SC2001/SC8905) (RPX-42) and Yesper Armor (SC2001/SC8812) (RPX-43) are appropriately adjudicated in this investigation. SIB at 86. Staff does not address the remaining 14 Carku Revised Jump Starters. SIB at 85-87; SRB at 52-54.

DELTRAN EX1060
IPR2024-01219

devices based on SC2001/SC8905 and SC2001/SC8812 chipsets). Moreover, importation occurred during fact discovery. Specifically, the Spanarci Zeta 2000 Jump Starter (Rev. A) (RPX-001), Gooloo GT 4000S (Rev. A) (RPX-0002), were made available on September 13, 2023, *see, e.g.*, CIB at 135; EDIS Doc. ID 813929 at Ex. 5 (Sept. 13, 2023 K. Patariu Email) (identifying "Spanarci Zeta 2000 Jump Starter (Rev. A)" and "Gooloo GT 4000S (Rev. A)" as available for inspection). Thirteen additional Carku Revised Jump Starters were imported and made available as of October 2, 2023. *See* EDIS Doc. ID 813929 at Ex. 14 (Oct. 2, 2023 K. Patariu Email) (identifying "Hulkman Alpha 85s (Rev. A)" "Fanttik T8 Max (Rev. A)" "Gooloo GT4000 (Rev. A)" "Hulkman Alpha 85 (Rev. A)" "Hulkman Alpha 65 (Rev. A)" "Topdon (Rev. A)" "Fanttik T8 Apex (JS-278 jumpstarter) (Rev. A)" "Gooloo ARMOR PRO/PRO 2 (Rev. A)" "Fanttik T8 1300 AMP (Rev. A)" "Hulkman Alpha 100 (Rev. A)" "Andeman Battery Jump Starter 2000A Peak 20000mAh (Rev. A)" "ASPERX AX2500 (Rev. A)" and "ASPERX 3500A (Rev. A)" as products available for inspection). Fact discovery closed on October 27, 2023. *See* Order No. 7.

Further, NOCO's argument that there were "no plans" to import additional redesigned products is not persuasive, as discussed *supra* with respect to the Carku Revised Cables.

The undersigned therefore finds this factor weighs in favor of adjudication.[13]

2. Sufficiently Fixed in Design and Sufficiently Disclosed in Discovery

The Carku Respondents assert that the Carku Revised Jump Starters are sufficiently fixed in design and ready to be implemented in mass production. RRB at 57. The Carku Respondents assert that they disclosed details of the modifications, including physical samples, during fact

[13] Additionally, as noted above, *supra*, "while importation may be relevant to the inquiry, actual importation of the redesign is not a mandatory requirement." *Oligosaccharides*, Comm'n Op. at 18 n.21.

DELTRAN EX1060
IPR2024-01219

discovery. RRB at 57. Relying on the testimony of CEO Michael Zhang, the Carku Respondents assert that the design of the Carku Revised Jump Starters is final and that the products "could be imported at commercial scale in short order." RIB at 105 (citing Tr. (Zhang) at 688:21-690:23).

NOCO's arguments regarding *Oligosaccharides* factors 3 and 4 are closely related. NOCO argues that the redesigns are not sufficiently fixed because they are "literally taped together to create legal arguments, as opposed to genuine products." CIB at 133-34. NOCO contends that the products are not commercially viable and will work only with "rare and expensive" 20-volt USB chargers. CIB at 134. The Commission, however, "does not require that a redesign involve a commercial product in order to be adjudicated." *Unmanned Aerial Vehicles*, 2020 WL 5407477, at *13; *Certain Digital Video-Capable Devices & Components Thereof*, Inv. No. 337-TA-1224, Ord. No. 24 at *1, 2021 WL 1923351 (May 3, 2021) (rejecting argument that redesigned products were not sufficiently fixed in design because "'Intel has no plans to commercially release the [] drivers,'" noting that "this is not the test for showing that an alleged redesign is sufficiently fixed"); *see also* n.10-11 *supra.* Nor is a commercially viable or "workable" product required. *See Certain Mobile Devices with Multifunction Emulators*, Inv. No. 337-TA-1170, Initial Determination, EDIS Doc. ID 738549, at 10-16 (Mar. 16, 2021) (finding redesign sufficiently fixed even though design did not "seem to be commercially feasible"). Moreover, Mr. Zhang testified that the Carku Revised Jump Starters are ready for mass production. Tr. (Zhang) at 690:19-23 ([Q]: Mr. Zhang, what would it take for Carku to mass produce each of the products identified in slide 35? [A]: We are ready, so I can extract [sic] our colleagues in the company to immediately proceed with the mass production."); RDX-0003.35. NOCO criticizes Mr. Zhang's testimony as "not credible" and merely "read[ing] from

DELTRAN EX1060
IPR2024-01219

lawyer-prepared slides," CRB at 75, but the undersigned finds nothing in the record to contradict Mr. Zhang's testimony.

NOCO further argues that the redesigns were not sufficiently disclosed in discovery because "only four" physical samples and source code were produced in September of 2023, with the remaining physical samples available on October 9, 2023, shortly before the contentions deadline. CIB at 135. NOCO also argues that two of the physical exhibits (RPX-0042 and RPX-0043) addressed at the hearing were not disclosed in discovery and that "when NOCO asked to review source code, the Carku Respondents refused." CIB at 135.

Upon review of the evidence of record, the undersigned finds that, except for RPX-0042 and RPX-0043, discovery regarding the Carku Revised Jump Starters was sufficiently produced during discovery and that these products should be adjudicated. By July 28, 2023, Carku disclosed the details of the modifications to the chipsets in interrogatory responses regarding redesigns, including why such modifications did not infringe. *See* RX-3079C (Response to Interrogatory No. 11) at 589. These details were updated and supplemented on October 9 and October 12, 2023, including by reference to specific physical samples implementing the redesign. *See id*. at 596-97, 606-610. As of September 13, 2023, [redacted] had manufactured, imported, and made available for inspection two of the Carku Revised Jump Starters. CIB at 135; EDIS Doc. ID 813929 at Ex. 5 (Sept. 13, 2023 K. Patariu Email) (identifying "Spanarci Zeta 2000 Jump Starter (Rev. A)" and "Gooloo GT 4000S (Rev. A)" as available for inspection). This was approximately six weeks before the close of fact discovery. *See* Order No. 7 (setting close of fact discovery to be October 27, 2023). All of the remaining Carku Revised Jump Starters—with the exception of RPX-0042 and RPX-0043—were available for inspection as of October 2, 2023 and were identified in response to an interrogatory on redesigns. *See* EDIS Doc. ID 813929 at

Ex. 14 (Oct. 2, 2023 K. Patariu Email) (identifying twelve Carku Revised Jump Starters introduced as physical exhibits as available for inspection); RX-3079C at 606-610. The evidence further indicates that the source code in which the redesign was implemented was made available during discovery and NOCO reviewed the redesigned source code. *See, e.g.*, EDIS Doc. ID 813349 at Ex. 30 (Nov. 7, 2023 Email fr. K. Canavera) (NOCO reviewed source code for Carku Revised Products on two visits, amounting to five full days); EDIS Doc. ID 813929 at Ex. 6 (Source Code Review Log); RX-3079C (Response to Interrogatory No. 3) at 470-483 (October 11, 2023 response stating that "source code has been made available for inspection" for various "Rev." products). NOCO never sought to compel additional opportunities to review redesign source code or sought additional time to provide expert analysis on these revised designs.[14]

With respect to RPX-0042 and RPX-0043, however, Respondents have not sufficiently shown that the *Oligosaccharides* factors favor adjudication. Respondents' interrogatory responses regarding redesigns do not identify these products (which correspond to CAR.NOCO.II.PHYS.034 and CAR.NOCO.II.PHYS.035). *See* CRB at 76; RX-3079C (Response to Interrogatory No. 11) at 606-610.[15] While these products were presumably disclosed by Dr. Ricketts in his expert report (*see* SRB at 53)[16], the undersigned finds that such

[14] NOCO stated in its Motion *in limine* No. 3 that Carku's counsel ultimately "agreed to allow NOCO time to review its new source code." Compl. MIL 3, EDIS Doc. ID 813349, at 4. Further, although NOCO sought to compel additional source code printouts, *see* Teleconference Tr., EDIS Doc. ID 809671 (Dec. 1, 2023), counsel asserted that the requested printouts required "no additional analysis" and "no additional review." *Id.* at 25:14-16.

[15] The Carku Respondents relied on RX-3079C to show its disclosures regarding redesigns when briefing Complainant's Motion *in limine* No. 3. *See* EDIS Doc. ID 813929, at 2-6.

[16] Respondents' opposition to Complainant's Motion *in limine* No. 3 indicates that Dr. Ricketts provided his analysis in a rebuttal report. *See* EDIS Doc. ID 813929, at 21 and Ex. 21. Staff additionally notes that Complainant did not "specifically object" to Dr. Ricketts's testimony on RPX-0042 and RPX-0043. SRB at 53. In light of Order No. 33, however, NOCO did not waive its objections to adjudication of the Carku Revised Jump Starters.

DELTRAN EX1060
IPR2024-01219

disclosure after fact discovery was untimely and did not provide Complainant a sufficiently fair opportunity to assess these products and fair notice that these products were at issue, or show that these products were sufficiently fixed during fact discovery. The undersigned thus declines to adjudicate RPX-0042 and RPX-0043.[17,18]

* * *

Accordingly, except for RPX-0042 and RPX-0043, each of the *Oligosaccharides* factors weighs in favor of adjudicating the Carku Revised Jump Starters in this Investigation.

D. Adjudication of the ADC Revised Products

ADC asserts that the three ADC Revised Products ([redacted]) should be adjudicated in this investigation because "ADC presented lay and expert testimony, physical samples, and documentary evidence establishing such redesigns have been imported, are fixed in design, and ripe for adjudication." RIB at 89. While NOCO does not

[17] While NOCO specifically identified RPX-0042 and RPX-0043 as not being disclosed during discovery, Respondents' reply brief did not address those exhibits. *See* CIB at 135; RRB at 56-57. The undersigned notes that the record indicates that on October 27, 2023 (the final day of fact discovery), Respondents sent an email indicating that certain samples were available for inspection, designated as "CAR.NOCO.II.PHYS.032 Hulkman Alpha 100" and "CAR.NOCO.II.PHYS.033 Yesper Armor Pro." *See* EDIS Doc. ID 813929 at Ex. 34 (Oct. 27, 2023 K. Patariu email). Neither of these designations clearly corresponds to RPX-0042 (which is identified in Respondents' Exhibit List as Hulkman Alpha 85 (not Hulkman Alpha 100) and as CAR.NOCO.II.PHYS.034 (not CAR.NOCO.II.PHYS.032). While RPX-0043 is identified in Respondents' Exhibit List as "Yesper Armor Pro," it is identified as CAR.NOCO.II.PHYS.035, not CAR.NOCO.II.PHYS.033 (as in the production email). In addition, the production email does not indicate that these samples are redesigns, and neither of the product names in the production email clearly corresponds to product names for redesigns provided in Respondents' interrogatory responses (which designate the Hulkman Alpha 85 and Yesper Armor Pro redesigns as having a "Rev" label). *See* RX-3079C at 606-610. Thus, to the extent this email was intended to be a production email for RPX-0042 and RPX-0043, the evidence fails to show that they were sufficiently disclosed during fact discovery as redesigns to be adjudicated.

[18] To the extent the Carku Respondents seek to import these products, and in the event an exclusion order is issued, the Carku Respondents may take advantage of other procedures to obtain adjudication of RPX-0042 and RPX-0043. *See generally Certain Audio Players*, Comm'n Op., 2022 WL 355867, at n.19. To the extent Respondents argue that RPX-0042 and RPX-0043 simply operate in the same manner as the other redesigned products, and therefore should be adjudicated in the same way, this is an issue that NOCO did not get a fair chance to explore during discovery.

DELTRAN EX1060
IPR2024-01219

dispute that the ADC Revised Products are within the scope of this investigation or that the products were imported, NOCO argues that the ADC has not met its burden on the other two *Oligosaccharides* factors, and that "binding corporate deposition testimony" establishes that the designs "are not fixed," "there are no plans to make or import them, and that they were hypotheticals conceived by ADC's lawyers." CIB at 135-142; CRB at 78-80; RRB at 42. These disputed factors are discussed below.

1. Sufficiently Fixed in Design and Sufficiently Disclosed in Discovery

ADC asserts that the ADC Revised Products are sufficiently fixed in design, as physical samples of the three redesigns were physical exhibits at the hearing and ADC disclosed source code, schematics, bills of material, and flow charts for each product. RIB at 90-91. Relying on the testimony of the Steve Lehman, Vice President and Chief Corporate Development Officer at ADC, ADC states that the designs were fixed and the products could be scaled to commercial production. RIB at 91 (citing Tr. (Lehman) at 1005:21-25, 1012:10-16, 1014:3-8, 1014:18-23, 1015:11-16). To the extent that NOCO contends the redesigns are not "commercially viable," ADC argues that commercial viability is not a prerequisite for adjudication. RIB at 92 (citing, *inter alia*, *Certain Elec. Connectors & Cages*, Inv. No. 337-TA-1241, 2022 WL 1124999 at *26 (Mar. 11, 2022). ADC also contends that details regarding the redesigns were timely disclosed during fact discovery. RIB at 92. By September 8, 2023, approximately seven weeks before the close of fact discovery, ADC contends that physical samples of the ADC Redesigned Products were available for inspection. RRB at 43. Moreover, Dr. Fayed, NOCO's expert, addressed certain technical aspects of the redesigns in his expert report. RRB at 43.

Staff agrees that the ADC Revised Products are fixed in design, given that the redesigns were reduced to physical prototypes that were imported and tested by ADC's expert. SIB at 93.

DELTRAN EX1060
IPR2024-01219

Moreover, Staff relies on testimony from ADC's corporate designee, Benson Leung, that although the products were still in the design phase, the products were "[redacted]" and that "[redacted]" and that no further changes to the [redacted] were planned. *See* SRB at 59 (citing CX-0174C (Leung Dep. Tr.) at 147:2-157:9, 147:25, 149:9-13, 153:13-24, 155:22-156:2, 159:5-8).

NOCO argues that deposition testimony from Mr. Leung, ADC's corporate designee, establishes that the products were not sufficiently fixed in design because he testified that they were "[redacted]," in the "[redacted]," "[redacted]," and still needed "[redacted]" CIB at 136 (citing CX-0174C (Leung Dep. Tr.) at 152:25-153:3, 155:5-7, 148:22-149:13, 156:17-19). NOCO argues that Mr. Lehman's testimony at the hearing that the redesigns were fixed and ready to be scaled to production is contrary to Mr. Leung's "binding" corporate testimony, and that, moreover, Mr. Lehman in deposition stated that he was not familiar with the redesign products. CIB at 136 (citing CX-0172C (Lehman Dep. Tr.) at 136:6-19). NOCO argues that Mr. Lehman's testimony should be struck or disregarded. CIB at 140. NOCO also argues that differences between the schematics and prototypes indicate that the designs are not fixed and are "purely a 'legal argument.'" CIB at 140-41. NOCO argues that because Mr. Lehman's testimony that the designs are fixed is contrary to Mr. Leung's testimony, it constitutes new "facts" that were not disclosed during discovery.

The undersigned finds that, based on the evidence of record, discovery regarding the ADC Revised Products was timely produced. As of September 8, 2023, ADC identified and described three redesign models in response to interrogatories, and disclosed photographs, schematics, bills of materials, and logic flow diagrams, in addition to notifying NOCO that physical prototypes would be made available for inspection on September 18, 2023. *See* Compl.

DELTRAN EX1060
IPR2024-01219

MIL No. 4, EDIS Doc. ID 813356 at Exs. 1-21; ADC Resp. to Compl. MIL No. 4, EDIS Doc. ID 813930 at Exs. A, 106-07, Ex. C. On September 18, 2023, ADC made source code and physical samples available for inspection. *See* ADC Resp. to Compl. MIL No. 4, EDIS Doc. ID 813930 at Ex. C. This was approximately five weeks before the close of fact discovery. *See* Order No. 7 (setting close of fact discovery to be October 27, 2023). Dr. Fayed, moreover, evaluated the ADC Revised Products in his expert report, and at the hearing, acknowledged the availability of "product names, source code file path, the schematics, all of the data that was made available to us" regarding the ADC Revised Products. *See* Tr. (Fayed) at 374:20-375:2; CDX-0006C.29. According to the Commission, "extensive discovery" is not required, but rather, "discovery that is sufficient for the complainant to assess the features relevant to the asserted patent claims." *See Oligosaccharides* at 20 n.22.

The purported conflict between Mr. Lehman and Mr. Leung's testimony does not change that the details of the products were timely disclosed. Although Mr. Leung testified at deposition that the product design ***could*** change, he also testified that "[redacted]." CX-0174C (Leung Dep. Tr.) at 148:22-149:13. He also stated that the redesigns were "[redacted]." *Id.* at 149:9-13. He also testified that no changes to the [redacted] of the redesigns were planned. *Id.* at 160:5-8. This is not, contrary to NOCO's arguments, facially inconsistent with Mr. Lehman's testimony that the redesigns were "fixed" and could be commercially scaled up, if needed. *See* Tr. (Lehman) at 1013:22-1015:16. Nor is Mr. Lehman's testimony facially inconsistent with his own deposition testimony that he was unfamiliar with the redesign products referenced solely by product model number. Tr. (Lehman) at 1026:16-1028:2. Mr. Lehman was not asked at deposition about the redesigns, other than by

reference to model number, which Mr. Lehman admitted that he was not always familiar with. Tr. (Lehman) at 1031:2-6. The disclosure factor, then, weighs in favor of adjudication.

Moreover, the fact that a redesign has not been completely "finalized" or that it requires further testing prior to commercial production is not required under Commission precedent for a design to be considered sufficiently fixed.[19] *See Certain Powered Cover Plates*, Inv. No. 337-TA-1124, Remand Initial Determination, 2020 WL 1504740, at *8 (January 30, 2020) (holding that the fact that the redesigned "products 'do not appear to be ready for release and sale as commercial products,' . . . is not a bar to consideration by the Commission"); *Certain Movable Barrier Operator Sys. & Components Thereof*, Inv. No. 337-TA-1209, Comm'n Op., 2022 WL 795701, at *17 (Mar. 11, 2022) ("Regulatory approval is not necessary for adjudication of a redesigned product."); *Certain Mobile Devices with Multifunction Emulators*, Inv. No. 337-TA-1170, Initial Determination, EDIS Doc. ID 738549, at 10-16 (Mar. 16, 2021) (finding redesign sufficiently fixed even though respondent had not completed "testing necessary to be released to the market").

* * *

Accordingly, each of the *Oligosaccharides* factors weighs in favor of adjudicating the ADC Revised Products in this Investigation.

[19] NOCO's citation to *Certain Cloud-Connected Wood Pellet Grills* is inapposite. There, the respondent had taken "no tangible steps" to design or implement the alleged redesign. *Certain Cloud-Connected Wood-Pellet Grills*, Inv. No. 337-TA-1237, Initial Determination, 2021 WL 6337517, at *29 (Dec. 6, 2021). Here, ADC produced design documents, schematics, source code, bills of materials, and working prototypes that Dr. Horenstein tested. Redesigns are regularly adjudicated in similar circumstances. *See, e.g.*, *id.* at *28 ("The design document, RX-0277C, demonstrates that the [first redesign] is sufficiently fixed in design."); *Certain Electronic Devices, Including Streaming Players, Televisions, Set Top Boxes, Remote Controllers, and Components Thereof*, Inv. 337-TA-1200, Initial Determination, EDIS Doc. ID 747669, at 90-91 (July 9, 2021) (redesign products were found to be sufficiently fixed in design where respondents produced physical samples in discovery, although the documentation for the redesign products had not been updated and the products were not ready for mass production).

DELTRAN EX1060
IPR2024-01219

V. THE ASSERTED PATENTS

A. The ’992 & ’808 Patents

U.S. Patent No. 9,770,992 (“the ’992 patent,” JX-0001) is titled “Portable Vehicle Battery Jump Start Apparatus With Safety Protection And Jumper Cable Device Therefor” and names Jonathan Nook, William Nook, Rick Stanfield, and Derek Underhill as inventors. ’992 patent, cover. The patent issued from an application filed on February 11, 2015, is a divisional of U.S. Application No. 14/325,938 filed on July 8, 2014 (now U.S. Patent No. 9,007,015), and claims priority to international application No. PCT/US2014/045434 filed on July 3, 2014. *Id*.

U.S. Patent No. 10,328,808 (“the ’808 patent,” JX-0002) shares the same title and inventors as the ’992 patent, is an indirect continuation of the ’992 patent, and claims priority to the same international patent application. ’808 patent, cover. The patent issued from an application filed on March 15, 2018 and is a continuation of U.S. Application No. 15/691,884 filed on August 31, 2017, which is a continuation of the application that issued as the ’992 patent. *Id.*

1. Ownership

The ’992 and ’808 patents are assigned to NOCO. *See* ’992 patent, cover; ’808 patent, cover; CX-0019; CX-0020; CIB at 14. Respondents do not dispute that NOCO has standing to assert the ’992 and ’808 patents as the owner and assignee. *See generally* RIB; RRB.

2. Specification

The patents have similar, but not identical, specifications. Both patents disclose a jumper cable device for use with a handheld battery charger boost device. The jumper cable device includes (1) “a plug 401”; (2) “[a] pair of cables 402*a* and 402*b*”; (3) “battery terminal clamps 403*a* and 403*b*”; and (4) “a downwardly tapering connection” between the body of the plug 401 and cables 402*a* and 402*b*:

DELTRAN EX1060
IPR2024-01219

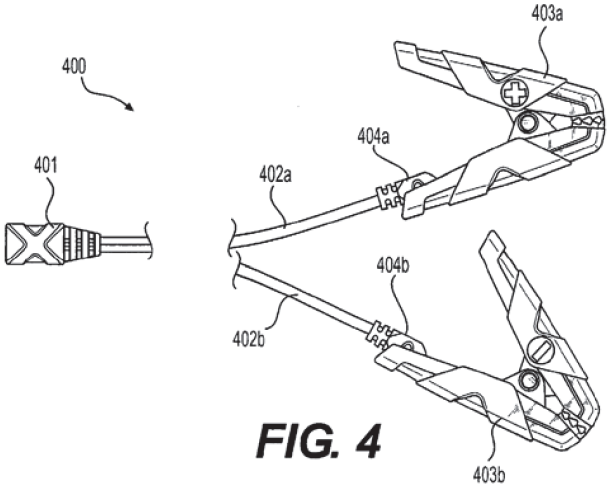
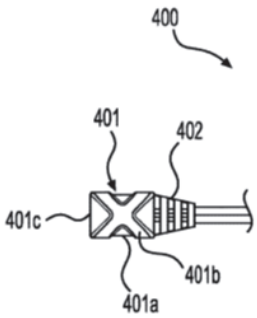


FIG. 4

'992 patent, Fig. 4, 7:54-59; '808 patent, Fig. 4,[20] 7:53-58. The plug is configured so that it will only fit into the port of the handheld jump starter device in a single orientation, ensuring that the jumper cables can only be plugged into the jump starter in the proper orientation (*e.g.*, corresponding to either positive or negative polarity). '992 patent, 7:54-63; '808 patent, 7:55-63.

The '992 patent describes the plug of Fig. 4 as having "a uniform width along its body." The "body of the plug 401" is further described and depicted as "provided with a protrusion (*e.g.* X-shaped protrusion)." '992 patent, Fig. 4, 8:12-18.

The '808 patent, which applicant stated added "no new matter" (JX-0008.13) provides additional identifications regarding parts of the plug in Figure 4, *see* left, and descriptions regarding the plug 401, which the specification states has a "uniform or substantially uniform width" along the length of the plug body:



> The plug 401 (FIG. 4) comprises a plug body 401*a* having a uniform or substantially uniform width W along the length of the plug body 401*a*, as shown in FIG. 4. The plug body 401*a* of

[20] Figure 4 of the '808 patent, depicted in part below, includes additional structural callouts for "plug body 401*a*," "surface protrusion 401*b*," "downwardly tapering transition 402," and "flat end 401*c*." '808 patent, Fig. 4, 8:14-29.

> the plug 401 is provided with a surface protrusion 401*b* (*e.g.* X-shaped surface protrusion) extending above the outer surface of the plug body 401*a* of the plug 401. The plug body 401*a* is a continuous plug body along the length and width of the plug body, and rectangular-shaped.

'808 patent, Fig. 4, 8:14-22. Further, the specification states that "[a] downwardly tapering transition 402 is provided between the plug body 401*a* and the pair of cables 402*a* and 402*b*." '808 patent, 8:22-24.

3. Asserted Claims

NOCO asserts claims 1, 3, 10, and 14 of the '992 patent and claims 1, 11, and 16 of the '808 patent against the Carku Respondents.[21] CIB at 14, 39. NOCO also relies on these same claims for purposes of the domestic industry requirement. *Id*. at 23, 44. The asserted claims of the '992 patent are reproduced below (with claim limitation identifiers added[22]):

1. [1pre] A jumper cable device for use with a handheld battery charger booster device for charging a battery, the jumper cable device comprising:

   [1a] a single plug having one end configured to fit into a single output port of the handheld battery charger booster device having an internal power supply, the single plug configured to provide both a positive polarity electrical connection and a negative polarity electrical connection configured to cooperate with the single output port of the handheld battery charger booster device; and

   [1b] a pair of cables having cable ends integrated with the plug, the pair of cables having opposite cable ends configured to separately connect to the terminals of the battery being charged,

   [1c] wherein a body of the single plug has a uniform width, and

   [1d] wherein the single plug is configured so that the single plug will only fit into the single outlet port of the handheld battery charger booster device in a single orientation to ensure a proper orientation of positive polarity

[21] The '992 and '808 patents are not asserted against ADC.

[22] NOCO and Staff use substantially the same identifiers to refer to the claim limitations, which the undersigned adopts herein. *See, e.g.*, CIB at 17; SIB at 28.

and negative polarity cable connections between the pair of cable and the single output port of the handheld battery charger booster device.

3. The jumper cable device according to claim 1, wherein the plug does not have any exposed prongs.

10. The jumper cable device according to claim 1, further comprising a downwardly tapering connection located between the single plug and the cables.

14. [14pre] A jumper cable device for use with a handheld battery charger booster device for charging a battery, the jumper cable device comprising:

[14a] a single plug having one end configured to fit into a single output port of a handheld battery charger booster device having an internal power supply, the plug providing both positive and negative polarity connections with the handheld battery charger booster device, the plug being configured so that the plug will only fit into the output port in a specific orientation, the plug not having any exposed prongs;

[14b] a pair of cables having cable ends integrated with the plug; and

[14c] a pair of battery terminal clamps respectively connected to opposite cable ends of the pair of cables,

[14d] wherein a body of the single plug has a uniform width, and

[14e] wherein the single plug is configured so that the single plug will only fit into the single outlet port of the handheld battery charger booster device in a single orientation to ensure a proper orientation of positive polarity and negative polarity cable connections between the pair of cable and the single output port of the handheld battery charger booster device.

'992 patent, cls. 1, 3, 10 and 14.

The asserted claims of the '808 patent are reproduced below (with claim limitation identifiers added):

1. [1pre] A jumper cable device for use with a jump starter having an internal power supply and an output port for connecting with the jumper cable device, the jumper cable device comprising:

[1a] a single plug having one end configured to fit into the output port of the jump starter, the single plug configured to provide both a positive

polarity electrical connection and a negative polarity electrical connection with the output port of the jump starter; and

[1b] a pair of battery cables having cable ends integrated with the plug, the pair of battery cables having opposite cable ends configured to separately connect to the terminals of the battery being charged,

[1c] wherein a body of the single plug has a uniform or substantially uniform width along a length of the body, and

[1d] wherein the single plug is configured so that the single plug will only fit into the output port of the jump starter in a single orientation to ensure a proper orientation of positive polarity electrical connection and the negative polarity electrical connection between the plug and the output port of the lump [sic] starter.

11. The jumper cable device according to claim 1, further comprising a downwardly tapering connection located between the single plug and the pair of battery cables.

16. [16pre] A battery jumper cable device for use with a jump starter having a power supply or battery and an output port for connecting to the jumper cable device, the jumper cable device comprising:

[16a] a single rectangular-shaped plug having a uniform or substantially uniform width along a length of the plug, the connection end of the plug is configured to fit into the output port of the jump starter, the output port of the jump starter providing both a positive polarity electrical connection and a negative polarity electrical connection between the output port of the jump starter and the plug of the jumper cable device; and

[16b] a positive battery cable and a negative battery cable electrically connecting the plug to a positive battery connector and negative battery connector for connecting the positive battery cable and negative battery cable to the battery being charged,

[16c] wherein the plug is structured so that the plug will only fit into the output port of the jump starter in a single orientation to ensure a proper orientation of the positive polarity electrical connection and negative polarity electrical connection between the outlet output port of the jump starter and the plug of the jumper cable device.

’808 patent, cls. 1, 11 and 16.

B. The ’023 and ’243 Patents

The ’023 and ’243 patents are part of the same patent family as the ’992 and ’808 patents and the ’023 patent shares the same title and inventors. The ’243 patent, despite being a continuation in the same patent family, is separately titled “Jump Starting Device With USB.” ’243 patent, cover. The ’023 and ’243 patents ultimately claim priority to the same international application No. PCT/US2014/045434, filed on July 3, 2014. ’023 patent, cover; ’243 patent, cover. U.S. Patent No. 11,447,023 (“the ’023 patent,” JX-0005) issued from an application filed on June 24, 2019, is a continuation of U.S. Application No. 15/921,792, filed on March 15, 2018 (now the ’808 patent), which was a continuation of U.S. Application No. 15/691,884 (now U.S. Patent No. 10,604,024) filed on August 31, 2017, which was a continuation of the application that issued as the ’992 patent. *Id.*

U.S. Patent No. 11,584,243 (“the ’243 patent,” JX-0006) issued from an application filed on March 16, 2020, is a continuation of U.S. Application No. 15/691,884, filed on August 31, 2017 (now U.S. Patent No. 10,604,024), which was a continuation of the application that issued as the ’992 patent. *Id.*

1. Ownership

The ’023 and ’243 patents are assigned to NOCO. *See* ’023 patent, cover; ’243 patent, cover; CIB at 14; CX-0023; CX-0129. Respondents do not dispute that NOCO has standing to assert the ’023 and ’243 patents as the owner and assignee. *See generally* RIB; RRB.

2. Specification

The specification discloses improvements to jump starters to address situations in which the clamps of jumper cables are “inadvertently brought into contact with each other” while the cables are connected to a charged battery and “when the positive and negative terminals were

DELTRAN EX1060
IPR2024-01219

connected to the opposite polarity terminals in the vehicle to be jumped." '023 patent, 1:17-24. The patent explains that short circuits, sparking, and potential damage to batteries or the user are possible in these situations. *Id.* The specification discloses a preferred embodiment of a jump starter that includes, relevant here, a car battery reverse sensor 10, which monitors the polarity of the connection of the jump starter to the vehicle battery and car battery isolation sensor 12, which "detects whether or not a vehicle battery 72 is present and connected to the booster device." *Id.* at 4:27-39. These sensors provide input to the microcontroller, or MCU, which in turn controls a "smart switch FET circuit" to supply power to the clamps "only when the vehicle battery is determined by the MCU to be present (in response to a detection signal provided by isolation sensor 12) and connected with the correct polarity (in response to a detection signal provided by reverse sensor 10). *Id.* at 4:40-46. The specification discloses that the preferred embodiment may be used to start vehicles with missing batteries, or batteries with voltages too low to be detected by the MCU through the use of a manual override mode. *Id.* at 5:2-10.

The specification also discloses USB charging, through a "USB charge circuit." The disclosed USB charge circuit "uses a standard micro-USB connector 48 allowing standard cables to be used." *Id.* at 7:21-28. The charge circuit includes a DC-DC converter to "upconvert[]" "the 5V potential provided from standard USB chargers . . . to the 12.4 VDC voltage required for charging the internal lithium battery pack." *Id.*

3. Asserted Claims

NOCO asserts claims 1, 19, 32, 39, and 54 of the '023 patent and claims 1, 2, 18, and 54 of the '243 patent. CIB at 48, 142. NOCO also relies on the same claims for purposes of the

DELTRAN EX1060
IPR2024-01219

domestic industry requirement. *Id*. at 100, 107, 155. The asserted claims of the '023 patent are reproduced below (with claim limitation identifiers added[23]):

1. [1pre] A jump starting apparatus configured for boosting or charging a depleted or discharged battery having a positive polarity battery terminal and a negative polarity battery terminal, the jump starting apparatus comprising:

   [1a] a power supply;

   [1b] a positive polarity battery terminal connector configured for connecting the jump starting apparatus to the positive polarity battery terminal of the depleted or discharged battery;

   [1c] a negative polarity battery terminal connector configured for connecting the jump starting apparatus to the negative polarity battery terminal of the depleted or discharged battery;

   [1d] a power switch or circuit configured to turn on power from the power supply to the positive and negative polarity battery terminal connectors;

   [1e] a control system or circuit connected to and controlling the power switch, the control system or circuit configured to detect whether the positive and negative polarity battery terminal connectors have a correct polarity connection with the positive and negative polarity battery terminals of the depleted or discharged battery prior to turning on the power switch or circuit;

   [1f] a USB input circuit connected to the power supply, the USB input circuit comprising a DC/DC converter, the USB input circuit configured for converting power from a USB power source to increase power voltage to the power supply; and

   [1g] a USB input connector connected to the USB input circuit, the USB input connector configured for connecting to the USB power source and providing power input from the USB power source through the USB input connector and the USB input circuit to the power supply.

[23] NOCO and Staff use substantially the same identifiers to refer to the claim limitations, which the undersigned adopts herein. *See, e.g.*, CIB at 17; SIB at 28.

18.[24] The apparatus of claim 1, further comprising a manual override switch configured to activate a manual override mode to enable a user to connect jump start power to the depleted or discharged vehicle battery when a vehicle battery isolation sensor is unable to detect presence of the vehicle battery.

19. The apparatus of claim 18, wherein the control system or circuit is configured to detect actuation of the manual override switch for at least a predetermined period of time before activation of the manual override mode.

32. The apparatus according to claim 1, wherein the DC-DC converter can be turned on and off by a microprocessor.

39. [39pre] A jump starting device for boosting or charging a depleted or discharged battery having a positive polarity battery terminal and a negative polarity battery terminal, the jump starter device comprising:

[39a] a power supply;

[39b] a positive battery terminal connector for connecting the jump starter device to the positive battery terminal of the depleted or discharged battery;

[39c] a negative battery terminal connector for connecting the jump starter device to the negative battery terminal of the depleted or discharged battery;

[39d] a power switch or circuit connected in circuit with the power supply and the positive and negative battery terminal connectors, the power switch configured to turn power on from the power supply to the depleted or discharged battery when the positive and negative battery terminal connectors are properly connected to the positive and negative battery connectors;

[39e] a power switch control system or circuit connected to and controlling the power switch, the power switch control system or circuit configured to detect presence of the depleted or discharged battery when connected between the positive and negative battery terminal connectors and to detect polarity of the depleted or discharged battery when connected between the positive and negative battery terminal connectors;

[24] Not asserted; asserted claim 19 depends from unasserted claim 18.

[39f] a USB input circuit connected to the power supply, the USB input circuit configured for converting power from a USB power source to increase power voltage to the power supply; and

[39g] a USB input connector configured for connecting to the USB power source and providing power input from the USB power source through the USB input connector and the USB input circuit to the power supply.

54. [54pre] A jump starting apparatus configured for boosting or charging a depleted or discharged battery having a positive polarity battery terminal and a negative polarity battery terminal, the jump starting apparatus comprising:

[54a] a power supply;

[54b] a positive polarity battery terminal connector configured for connecting the jump starting apparatus to the positive polarity battery terminal of the depleted or discharged battery;

[54c] a negative polarity battery terminal connector configured for connecting the jump starting apparatus to the negative polarity battery terminal of the depleted or discharged battery;

[54d] a power switch or circuit configured to turn on power from the power supply to the positive and negative polarity battery terminal connectors;

[54e] a control system or circuit connected to and controlling the power switch, the control system or circuit configured to detect whether the positive and negative polarity battery terminal connectors have a correct polarity connection with the positive and negative polarity battery terminals of the depleted or discharged battery and prevent an incorrect polarity connection with the positive and negative polarity battery terminals of the depleted or discharged battery prior to turning on the power switch or circuit;

[54f] a USB input connector;

[54g] a USB input circuit connecting the USB input connector to the power supply, the USB input circuit comprising a DC/DC converter for up-converting the voltage from the USB input connector to the power supply.

DELTRAN EX1060
IPR2024-01219

’023 patent, cls. 1, 18, 19, 32, 39, and 54.

The asserted claims of the ’243 patent are reproduced below (with claim limitation identifiers added[25]):

1. [1pre] A jump starting device for boosting or charging a depleted or discharged battery having a positive battery terminal and a negative battery terminal, the jump starting device comprising:

   [1a] a power supply;

   [1b] a positive battery connector for electrically connecting the jump starting device to the positive battery terminal of the depleted or discharged battery;

   [1c] a negative battery connector for electrically connecting the jump starting device to the negative battery terminal of the depleted or discharged battery;

   [1d] a power switch or switch circuit connected in circuit with the power supply and the positive and negative battery connectors, the power switch or switch circuit configured to switch power on from the power supply to boost or charge the depleted or discharged battery when connected between the positive and negative polarity battery connectors;

   [1e] a USB input connector; and

   [1f] a USB charge circuit electrically connecting the USB input connector to the power supply, the USB charge circuit comprising a DC-DC converter configured to upconvert voltage from the USB input connector to the power supply.

2. The device according to claim 1, wherein the power switch or switch circuit is controlled to turn on power to the depleted or discharged battery only when the jump starting device is connected with correct polarity to the depleted or discharged battery.

[25] NOCO and Staff use substantially the same identifiers to refer to the claim limitations, which the undersigned adopts herein. *See, e.g.*, CIB at 17; SIB at 28.

15.[26] The device according to claim 1, further comprising a USB output connector for providing a power output from the power supply to a USB-chargeable device.

17.[27] The device according to claim 15, wherein the USB output connector is electrically connected to a USB output circuit, the USB output circuit connecting the power supply to the USB output connector.

18. The device according to claim 17, further comprising a microcontroller with a control circuit, the control circuit for the microcontroller allows the USB output circuit to be turned on and off by software control to prevent the power supply getting too low in capacity.

51.[28] The device according to claim 1, wherein the power supply is a rechargeable lithium battery pack.

54. The device according to claim 51, further comprising a rechargeable lithium battery pack voltage measurement circuit configured to monitor the rechargeable lithium battery pack to prevent voltage potential from rising too high during a charging operation and from dropping too low during a discharge operation.

'243 patent, cls. 1, 2, 15, 18, 17, 51, and 54.

C. Level of Ordinary Skill in the Art

For purposes of this investigation and the asserted patents, and as set forth in the *Markman* Order, a person of ordinary skill in the art would have had a bachelor's degree in electrical engineering or its equivalent and two years of experience in electrical engineering with some experience in design of battery charging systems. Further education could also suffice in lieu of experience in the field or significant experience in the field could substitute for formal education. *See* Order No. 20 at 13-14.

[26] Not asserted; asserted claim 18 depends from unasserted claims 15 and 17.

[27] Not asserted; asserted claim 18 depends from unasserted claims 15 and 17.

[28] Not asserted; asserted claim 54 depends from unasserted claim 51.

DELTRAN EX1060
IPR2024-01219

D. Claim Construction

The *Markman* Order (Order No. 20) addressed several claim construction issues. The terms below were disputed by the parties and construed in the *Markman* Order.

Claim Term	Construction
"body of the single plug has a uniform width" ('992 patent, cl. 1)	"the body of the single plug has the same width along the plug body"
"substantially uniform" ('808 patent, cls. 1, 16)	Not indefinite; "largely but not wholly the same"
"USB input circuit" ('023 patent, cls. 1, 39, 54) "USB charge circuit" ('243 patent, cls. 1)	"'a circuit that allows the power supply to be charged from an external power source with a USB charger.' Further, the claimed circuit must be in accordance with the Universal Serial Bus standards known to those of skill in the art at the time of the claimed invention."

The parties also previously agreed that the preambles of each of the asserted independent claims are limiting. *See* EDIS Doc. ID 807614 (Joint Claim Construction Statement).

The *Markman* Order reserved certain issues regarding USB standards related to the "USB input circuit" terms. *See* Order No. 20 at 62. Staff and Respondents also contend that the term "USB input connector" in all of the asserted claims of the '023 and '243 patents requires construction. *See, e,g.*, RIB at 69-70; SIB at 10.[29] Those issues are addressed below[30].

[29] Staff also contends that the term "control system or circuit configured to detect . . . a correct polarity connection" in claims 1 and 54 of the '023 patent and the term "power switch . . ." of claim 1 of the '243 patent may require construction. SIB at 11. Those arguments are addressed in the infringement sections, below.

[30] NOCO identifies certain other terms that had been disputed, but states that "[t]he merits are unaffected" by these terms. Accordingly, it is not necessary to resolve these claim construction issues. *See* CIB at 15, 59.

DELTRAN EX1060
IPR2024-01219

1. "USB Input Circuit" / "USB Charge Circuit"

The parties disputed the constructions of "USB input circuit" and "USB charge circuit" in the '023 and '243 patents. *See* Order No. 20 at 54-62. The undersigned construed the terms as "a circuit that allows the power supply to be charged from an external power source with a USB charger," and specified that "the claimed circuit must be in accordance with the Universal Serial Bus standards known to those of skill in the art at the time of the claimed invention." *Id.* at 57; *see also id.* at 59-60 (citing caselaw interpreting standards-related terms in view of those known at the time of the invention).[31] The undersigned expressly reserved the question of "whether or not the USB-C standard . . . is encompassed by the 'USB input circuit' terms or related 'USB' terms, or whether unidirectional charging is required." *Id.* at 57-58. The undersigned indicated that the parties should address the content of USB standards known to those in the art in their pre-hearing briefs and at the hearing. *Id.* at 58.[32]

---

[31] In its post-hearing briefs, NOCO contends that the terms "USB input circuit" and "USB charge circuit" should be construed to encompass "*any* circuit" that is "connected to the power supply" and "configured for converting power from a USB power source and providing it the power supply." CRB at 72; CIB at 131-32. For the reasons discussed in the *Markman* Order, the terms "***USB*** input circuit" and "***USB*** charge circuit" should be construed in accordance with the USB standards known at the time of the invention. *See* Order No. 20 at 59-61. This is consistent with NOCO's expert declaration provided in connection with the *Markman* process. *See* Compl. *Markman* Br. Ex. 13 (Fayed Decl.) at ¶ 150 ("The '023 and '243 patents reference USB standards, and a POSA would have understood USB standards were as of the July 3, 2014 filing date of the '023 and '243 patents."); *see also id.* ¶ 152 (USB "has evolved tremendously" over time). The undersigned specifically noted in the *Markman* Order that this construction did not preclude a doctrine of equivalents argument. *See* Order No. 20 at 61 n.46.

[32] The undersigned also provided the parties an opportunity to meet-and-confer and to detail any proposals for supplementation of the record in view of the *Markman* Order. Order No. 20 at 62. As set forth in Order No. 23, NOCO requested supplementation as to "USB input circuit" and "USB charge circuit," but did so in an incomplete, non-joint submission that did not comply with the undersigned's *Markman* Order and that was denied. In denying such supplementation, the undersigned further found that the parties had been on clear notice as to the relevance of the subject of NOCO's requested supplementation—*i.e.*, "the content of the USB standards known to those of skill in the art"—prior to the issuance of the *Markman* Order and that both experts were reasonably able to address the scope and content of the relevant USB standards. *See* Order No. 23 at 3-4. Indeed, NOCO's expert witness provided evidence on this topic at the *Markman* hearing and the evidentiary hearing (including evidence contrary to his *Markman* declaration), and NOCO's counsel provided argument on this issue at the *Markman* hearing,

a. Background Regarding USB standards

The term Universal Serial Bus ("USB") is used to refer to certain digital communications specifications that define data transmission and power delivery between electronic devices. *See* Compl. *Markman* Br. Ex. 13 (Fayed Decl.) at ¶ 151. The parties presented evidence as to the scope and content of a number of USB specifications. Relevant here are (1) USB 3.1; (2) USB Power Delivery 1.0; (3) USB-C; and (4) USB Power Delivery 2.0. A brief description of each of these specifications is helpful. Unless noted otherwise, their scope and content is not disputed.

USB 3.1. USB 3.1 was released on July 26, 2013, and as of the priority date of the '023 and '243 patents, it was "the latest generation USB industry-standard." *See* CRB at 19; *see also* CX-0195.40[33] (USB 3.1) ("This document defines the latest generation USB industry-standard, USB 3.1."); RDX-0008C.26. A USB cable according to USB 3.1 includes two mechanically unique connectors[34] or plugs, a type A plug and a type B plug, which are inserted into corresponding mechanically unique ports or receptacles. *See* Tr. (Fayed) at 529:3-8; Tr. (Ricketts) at 938:5-6, 1167:16-18. Power is delivered over a power pin, called V_{BUS}, at a voltage level of 5V. *See* CX-0195.576 (USB 3.1) ("From V_{BUS} on its upstream facing port, a device may only draw (sink) current."); RX-2919.279-80 (USB PD 1.0) ("5V is the USB default that must be supported to provide interoperability with existing Devices."). In a device that complies ***only*** with the USB 3.1 specification, power delivery is strictly unidirectional and flows from the

Markman briefs, and post-hearing briefs. *See* Compl. *Markman* Br. Ex. 13 (Fayed Decl.) ¶¶ 150-155 and Exhibits 3-11 thereto; Tr. (Fayed) at 528:17-531:16; CIB at 50-59; CRB at 18-26; Compl. *Markman* Br. at 45-46; Compl. *Markman* Reply Br. at 19-20. NOCO also opposed Staff's proposal of supplementation to address construction of the term "USB input connector." Order No. 23 at 3 and Attachment A.

[33] The USB 3.1 Specification is also at RX-4107.

[34] The USB specifications use the term "connector" to refer to the plug connectors at the ends of a USB cable. The parties agree, however, that the '023 and '243 patents use the term "USB . . . connector" to refer to what the USB specification calls "ports"—that is, the USB receptacle on the electronic device. *See* CIB at 49; RIB at 70; SRB at 41.

DELTRAN EX1060
IPR2024-01219

"downstream port" (the type-A receptacle/plug) to the "upstream port" (the type-B receptable/plug). *See* Compl. *Markman* Br. Ex. 15 (Ricketts Reb. Decl.) at ¶¶ 29-31 ("[I]n the USB 3.1 specification (and prior ones) power is unidirectional and can only flow from the downstream facing port to the upstream facing port as 'no device shall supply current…at its upstream facing port at any time.'") (quoting CX-0195.576); Compl. *Markman* Br. Ex. 13 (Fayed Decl.) at ¶ 154 ("The unidirectionality of the power flow in the USB standard was enforced through the use of USB type A connectors for the Host device (source of power) and USB type B connectors for the peripherals (receptor of power), which ensures that USB cables can only be connected in one way, i.e. between a host and a peripheral."); Tr. (Ricketts) at 765:24-766:5 ("[I]n the USB 1, 2, 3 specs, power flows from a USB-A connector to a micro-USB.").

USB Power Delivery 1.0. In addition to the standard or "default" USB specifications, the evidence presented at the hearing shows that certain optional specifications were known to those of skill in the art as of the priority date of the invention, which supported greater power delivery capabilities.[35] *See* Tr. (Ricketts) at 1163:18-25. Relevant here, the USB Power Delivery 1.0 specification ("USB PD 1.0") was released on July 5, 2012. *Id.* at 1163:22-23; Tr. (Fayed) at 983:15-21; RX-2919[36] (USB PD 1.0); RDX-0008C.26. The USB PD 1.0 specification enabled greater power delivery, providing between 10 W (2A at 5V) and 100 W (5A at 20V). *See* RX-2919.279; Compl. *Markman* Br. Ex. 13 (Fayed Decl.) at ¶ 154. USB PD 1.0 utilized the same mechanically unique type-A and type-B plugs and receptacles as USB 3.1. *See, e.g.*, Tr. (Hacker Davidson) at 209:19-22; Tr. (Ricketts) at 882:11-14 ("[Q]: I'm going to ask you, Dr. Ricketts:

[35] Another additional specification, USB Battery Charging, was available as early as 2007. *See* Compl. *Markman* Br. Ex. 13 (Fayed Decl.) at ¶ 153.

[36] A duplicate USB PD 1.0 appears at RX-1425.

DELTRAN EX1060
IPR2024-01219

You'd agree that the USB power delivery [1.0] specification is meant to be compatible with existing USB cables; correct? [A]: Correct.").

Also relevant in connection with USB PD 1.0 is the issue of bidirectional power flow. In connection with *Markman* proceedings, NOCO provided a declaration from Dr. Fayed indicating that USB PD 1.0 as introduced in 2012 enforced unidirectional power flow and that bidirectional power flow was only allowed through the later USB-C specification.[37] At the hearing, however, both NOCO and Respondents presented evidence showing that the USB PD 1.0 specification allowed for "dual-role ports" under certain circumstances. RX-2919.29; Tr. (Fayed) at 983:18-21; Tr. (Hacker Davidson) at 209:12-15; Tr. (Ricketts) at 879:12-16. Dual-role ports enabled power negotiation, wherein an upstream port (e.g., a default consumer of power) and a downstream port (e.g., a default provider of power) can engage in power negotiation and switch consumer/provider roles, meaning that the direction of power flow is no longer necessarily unidirectional or fixed. *See* Tr. (Hacker Davidson) at 207:9-18, 208:4-19; Tr. (Ricketts) at 879:12-880:10; RX-2919.17, 29. The plugs themselves are not, however, reversible. *See* Tr. (Fayed) at 984:2-16. A device compliant with USB PD 1.0 completes power negotiation and power transfer over the V_{BUS} pin. Tr. (Cheng) at 717:23-25 ("[T]he negotiation pertaining to PD 1.0 is done through V_{BUS}."); Tr. (Ricketts) at 1181:17-1182:4 ("So in Power Delivery 1.0, the communication is done an entirely different way because they don't have a CC1 or CC2 cable or pins or anything. So they have to use the, the 5-volt power to also have communication."); RX-

[37] *See* Fayed Decl. ¶ 154 (stating that "[i]n 2012, the USB Power Delivery Standard was introduced" and that "[t]he unidirectionality of the power flow in the USB standard was enforced through the use of USB type A connectors for the Host device (source of power) and USB type B connectors for the peripherals (receptor of power."); *id*. ¶ 155 ("Subsequently, the release of USB type C connectors and cables specifications allowed bidirectional power delivery . . . It was only then that the same USB port could be used as an input or as an output from the perspective of power flow.").

DELTRAN EX1060
IPR2024-01219

2919.17 ("This specification defines how USB Devices may negotiate for more current and/or higher or lower voltage over the USB cables (V_{BUS}) than are defined in the [USB 2.0], [USB 3.0], or [BC1.2]."). A version of the USB PD 1.0 specification is cited on the face of the '023 and '243 patents. *See* '023 patent, References Cited ("USB Power Delivery Specification 1.0, Jul. 16, 2012, Exhibit 1045").

USB-C and USB Power Delivery 2.0. The specifications for USB-C and USB Power Delivery 2.0 ("USB PD 2.0") were released on the same day, August 11, 2014, a little more than a month after the July 3, 2014 priority date of the '023 and '243 patents. Tr. (Fayed) at 984:15-16; Tr. (Ricketts) at 1163:22-25; RDX-0008C.26; RX-2970 (USB-C); RX-4126 (USB PD 2.0). USB-C defined a USB cable with a new, single type of plug and receptacle which was reversible, rather than the mechanically unique type-A and type-B plugs and receptacles of USB 3.1. USB-C plugs and ports also added dedicated pins, known as CC1 and CC2, for conducting power negotiation. Tr. (Ricketts) at 1166:2-9; Tr. (Fayed) at 529:3-16; RX-2970.18, 21. The USB PD 2.0 specification enables power negotiation and power transfer over the CC1 and CC2 pins. Tr. (Ricketts) at 1166:2-9, 938:2-13; Tr. (Hacker Davidson) at 236:7-15.

b. Content of USB standards at the time of the invention

The Parties' Positions

The parties dispute whether the terms "USB input circuit," as used in the '023 patent, and "USB charge circuit," as used in the '243 patent, encompass bidirectional power flow, accomplished under the USB PD 1.0 specification and/or the USB-C and USB PD 2.0 specifications. The parties similarly dispute whether the same terms encompass a circuit operating according to the USB-C specification.

NOCO asserts that Respondents' own expert, Dr. Ricketts, agreed that bidirectional power flow was known and enabled by the USB PD 1.0 specification well before the July 3,

DELTRAN EX1060
IPR2024-01219

2014 priority date of the ’023 and ’243 patents. CIB at 49 (citing Tr. (Ricketts) 896:19-897:7)); CRB at 19. Dr. Ricketts’ admissions, NOCO contends, establish that bidirectional power via USB PD 1.0 were known in the art prior to the priority date, via the dual-role port protocols in the USB PD 1.0 specification. *See* CIB 51. NOCO contends that “USB PD” was “a USB standard” that was incorporated by reference into the default USB 3.1 specification. *See* CIB at 52; CRB at 20. NOCO further contends that the Balmefrezol reference in the prosecution history disclosed a “bidirectional ‘USB input circuit’” that was used to both charge the internal battery and supply current to a peripheral device. *See* CIB at 52-53 (citing CX-0735.7 at ¶¶ [0044]-[0045]. NOCO also relies on the testimony of Ms. Hacker Davidson, who testified that NOCO’s DI products are USB PD compliant and allow for bidirectional power flow through the use of dual-role ports. CIB at 53 (citing Tr. (Hacker Davidson) at 208:4-19). NOCO also contends that “USB PD standardized [dual-role ports] under all three USB connector formats, USB-A, -B, and -C.” CIB at 53 (citing Tr. (Hacker Davidson) at 209:19-22). NOCO, again relying on Ms. Hacker Davidson, contends that “USB PD-compliant devices, including USB-C devices, communicate over the data (CC) or power (V_{BUS}) pins in the USB plugs and ports.” CIB at 53-54 (citing Tr. (Hacker Davidson) at 210:10-25). NOCO contends that Dr. Ricketts incorrectly testified that USB-C did not use the V_{BUS} power pin to complete power negotiation, contrary to its reading of the specifications. *See* CIB at 54 (citing RX-2970.15 and RX-4126.41).

NOCO also contends that “as of July 2014, those of skill in the art knew that all three USB connector formats,” including USB-C “were bidirectional under USB PD.” CIB at 55. NOCO relies on articles and presentations disclosing certain details of USB-C prior to the formal issuance of the specification on August 11, 2014 to assert that a skilled artisan would have

understood that USB-C was (1) bidirectional and reversible and (2) would work with USB PD and USB 3.1. CIB at 58-59.

NOCO asserts that the Federal Circuit has previously endorsed the inclusion of draft standards, like USB-C, in the construction of claim terms. CRB at 21 (citing *Advanced Media Networks, LLC v. AT&T Mobility LLC*, 748 F. App'x 308, 312 (Fed. Cir. 2018)). NOCO argues that the USB-C specification was widely disseminated, without access restrictions, to a number of companies and their employees. CRB at 23. Because USB-C was "backward-compatible," NOCO argues that it would work with earlier USB standards, like USB PD 1.0. CRB at 24. Thus, NOCO concludes "[t]he ALJ should construe the USB terms to include bidirectional USB power, including USB-C, based on the intrinsic and extrinsic evidence." CRB at 26.

Respondents, in opposition, contend that the technical details and material features of USB-C and USB PD 2.0 were not released to the public until August 11, 2014, and thus, as of the July 3, 2014 priority date, a person of skill would not have understood the "USB input circuit" terms to encompass USB-C. *See* RIB at 62. Without the technical implementation details of the published specifications, Respondents contend, "it simply was not possible to build a circuit in accordance with the standard." RIB at 63. Respondents assert that the articles and presentations upon which NOCO relies state that changes were still being made as late as June 9, 2014, and that a skilled artisan would not have had the necessary details to build a USB-C compliant circuit before August 11, 2014. *See* RIB at 63 (citing Tr. (Ricketts) at 948:8-23; CX-0746). Relying on Dr. Ricketts, Respondents also state that USB PD 1.0 did not provide the necessary information to build a circuit compliant with USB-C, as an entirely new USB PD specification—USB PD 2.0—was required to implement power delivery over USB-C plugs and receptacles. RIB at 64 ("USB-C was such a departure from existing USB standards that an

DELTRAN EX1060
IPR2024-01219

entirely new Power Delivery specification had to be developed to accommodate it.”). Respondents also point to contemporaneous evidence of record that the inventors were not aware of the “material technical characteristics” of USB-C, including emails between NOCO and a supplier. *See* RIB at 64-65 (citing CX-1299C). Respondents also contend that the ’023 and ’243 patents do not disclose anything regarding a USB-C plug, and instead refer to “standard micro-USB connector[s]” and “standard cables,” which as of July 3, 2014 did not include USB type-C plugs. *See* RIB at 66 (citing ’023 patent, 7:25-29). Respondents also point to a sworn declaration by named inventor Rick Stanfield averring that “the advent of USB-C” after the priority date solved the issues of slow charging that, in part, made the invention non-obvious. RIB at 67 (citing RX-2363.4-5). Respondents further contend that during prosecution, NOCO distinguished prior art USB references disclosing USB outputs as failing to disclose the claimed USB input circuits. Respondents argue that if USB-C with dynamic bidirectional power flow was understood to be part of the claimed “USB input circuit,” a skilled artisan would have understood that the same USB outputs could be used as inputs for charging, making NOCO’s distinctions during prosecution immaterial. *See* RIB at 68. Finally, Respondents contend that USB PD 1.0 is a “non-standard” USB implementation requiring additional circuitry that is not implemented or referenced in the specification of the ’023 or ’243 patents, and is thus not a “USB standard” known to those of skill in the art. *See* RIB at 69.

Staff, like Respondents, contends that USB-C is a later-arising technology that is not one of the USB standards known to those of skill in the art as of the July 3, 2014 invention date of the ’023 and ’243 patents. *See* SIB at 84-85. Staff also argues that the inventors were not in possession of a jump starter device with USB-C technology as of the filing date, and asserts that NOCO did not implement USB-C technology in their own products until late 2019. *See* SIB at

DELTRAN EX1060
IPR2024-01219

84 (citing Tr. (Hacker Davidson) at 221:3-17). Staff contends that although USB PD 1.0 permitted bidirectional power delivery, until USB-C, it was "necessary in an actual device implementation to fix the direction of power delivery." SRB at 43-44.

Discussion

Upon review of the submissions and evidence of record, the undersigned finds that the USB-C and USB PD 2.0 specifications were not among the USB standards known to those of skill in the art at the time of invention. *See* Order No. 20 at 60-62. The evidence of record demonstrates that a skilled artisan would not have possessed and could not have constructed circuitry in accordance with USB-C and USB PD 2.0 until the issuance of the standards on August 11, 2014. Accordingly, evidence that an accused or domestic industry product has circuitry in accordance with these specifications is not sufficient to show that the claim limitation is literally met.

There appears to be no dispute that power delivery was, as a default, unidirectional as of the date of invention. *See* Tr. (Ricketts) at 1164:4-1165:15; RX-2919; *see also* Compl. *Markman* Br. Ex. 13 (Fayed Decl.) ¶¶ 154-55. The experts also agreed at the hearing, however, that USB PD 1.0 (released in 2012), under certain circumstances enabled bidirectional power delivery though "dual-role ports," wherein, via power negotiation over the V_{BUS} pin, the default roles of a provider of power or consumer of power could be switched. *See* Tr. (Fayed) at 983:12-984:20; Tr. (Ricketts) at 880:2-5, 1181:17-1182:4.[38] Accordingly, the "USB input circuit" terms are

[38] Dr. Ricketts testified that a device requires certain additional "isolation components" in order to accomplish communication over V_{BUS} as required to implement USB PD 1.0. Tr. (Ricketts) at 1181:1-1182:1.

broad enough to encompass bidirectional power delivery via USB PD 1.0, which was known in the art prior to the July 3, 2014 filing date of the '023 and '243 patents.[39]

However, the evidence presented at the hearing established that USB-C and USB PD 2.0 were not among the USB specifications known to those of skill in the art as of July 3, 2014. NOCO's evidence establishes, at best, that a draft standard was under development as of July 3, 2014 and that certain anticipated features were disclosed. NOCO's evidence fails to establish that the "USB input circuit" terms encompass the still-under development USB-C technology, or that one of ordinary skill in the art would have been familiar with a "USB input circuit" in accordance with the as-yet unreleased USB-C specification. The articles and presentations cited by NOCO show that the features and details of USB-C are in "development," "preliminary," and "subject to change." *See* CX-0736 ("The new USB Type-C connector, built initially on existing USB 3.1 and USB 2.0 technologies, is ***being developed***"); CX-0739 ("The type-C connector is ***still in development***."); CX-0745.2 ("Mechanical specs (***preliminary***)"); *id.* ("final design ***subject to change***"); CX-0746 ("The new USB Type-C cable and connector under the USB 3.1 specification is ***under development***") (emphases added). And the articles and presentations introduced into evidence, while identifying "key characteristics" and "design goals," fail to identify the details required to possess or implement USB-C power delivery, which are detailed over hundreds of pages in the final specification. CX-0746 (identifying "key characteristics" in

[39] Respondents argue that although USB PD 1.0 was known, the "USB input circuit" terms should not be read as encompassing bidirectional power delivery under USB PD 1.0 because USB PD 1.0 "is not referenced in the specification of the '023 and '243 patents, and the disclosed circuitry in these patents does not enable the bidirectional transfer of data that is a necessary prerequisite to bidirectional charging using PD." *See* RIB at 69. These arguments are unpersuasive. The face of the '023 and '243 patents name as a "reference cited" a document entitled "USB Power Delivery Specification 1.0 , Jul. 16, 2012." *See, e.g.*, '023 patent, References Cited; *see also* JX-0011.1767-77 (USB Power Delivery Specification 1.0 in prosecution history). Moreover, the Federal Circuit has "cautioned against limiting claims to a preferred embodiment." *Comaper Corp. v. Antec, Inc.*, 596 F.3d 1343, 1348 (Fed. Cir. 2010).

DELTRAN EX1060
IPR2024-01219

bullet points); CX-0739 ("[T]here aren't any current renderings or drawings, but what has been laid out are the design goals for the new connector design."); *see also* Tr. (Ricketts) at 740:15-741:14 (public could not get copy of the specification); RRB at 34-35. NOCO's own evidence indicates that even once the USB specification was finalized, "[g]enerally, it takes at least a year before the new cabling will hit the streets." CX-0745.2; *see also* Tr. (Stanfield) at 1349:8 ("No one had USB-C chargers."). Mr. Stanfield, one of the inventors testified that he "didn't have the full details" of the USB-C standard in the 2013/2014 time frame and did not recall receiving a copy of it. Tr. (Stanfield) at 1348:3-17; *see also* RRB at 34-35; CX-1299C; CRB at 74 (stating that August 2014 USB-C standard is after-arising technology). [40]

Moreover, the evidence shows that USB-C differed from previous USB specifications. NOCO did not release a product incorporating USB-C until November 2019 (more than five years after the priority date), and Ms. Hacker Davidson testified that the addition of USB-C into NOCO's own products required "new hardware and software," that "everything has to be done," and that it required "all hands on deck" such that "everybody in the Peoria facility worked on it."

[40] Accordingly, to the extent the claims were construed to encompass USB-C and/or USB PD 2.0 input circuits, such claims would fail for lack of written description and/or enablement. *See* Part VIII.C.5.b *infra*. However, the undersigned finds that the better course is to construe claims such as those here in light of the state of the art at the time of the invention. *See, e.g.*, *Plant Genetic Systems, N.V. v. DeKalb Genetics Corp*., 315 F.3d 1335, 1340 (Fed. Cir. 2003) (law does not "allow[] an inventor to claim what was specifically desired but difficult to obtain at the time the application was filed, unless the patent discloses how to make and use it"); *Chiron Corp. v. Genentech, Inc.*, 363 F.3d 1247, 1263 (Fed. Cir. 2004) (Bryson, J. concurring) ("[T]he proper approach . . . is to address cases of new technology by construing claims, where possible, as they would have been understood by one of skill in the art at the time of the invention, and not construing them to reach the as-yet-undeveloped technology that the applicant did not enable."); *In re Entresto*, MDL No. 20-2930-RGA, 2023 WL 4405464, at *19 n.15 (D. Del. July 7, 2023) (quoting *Chiron* concurrence). NOCO presented evidence indicating that, in 2014, the inventors anticipated that there would be as-yet-undeveloped technology according to not-yet-issued USB standards; this does not mean, however, that the claims should be construed to cover such technology. *See* Tr. (Stanfield) at 1349:4-5 ("And so our intention was for USB to include all of the capability of USB, including what was coming"); Tr. (Nook) at 101:3-8 (explaining decision to include USB feature in 2014 NOCO product because "I just felt that at one point in time down the road, that USB charging would get faster").

Tr. (Hacker Davidson) at 221:14-23; Tr. (Stanfield) at 1352:20-1353:7; RX-0444C (showing timeline of NOCO product development). Consistent with this testimony, Dr. Fayed acknowledged that the "USB standard has evolved tremendously over the years." Compl. *Markman* Br. Ex. 13 (Fayed Decl.) at ¶ 152; *see also* Tr. (Fayed) at 1001:16-10 ("If I was aware that USB-C was coming out [in July 2014], then, obviously, I would have gone into the USB-C direction. It's more convenient."). Dr. Ricketts explained that USB-C has "additional pins, additional signaling" and "does power delivery in a different communication protocol." *See* Tr. (Ricketts cross-examination by NOCO counsel) at 896:11-15; *see also id.* (Ricketts examination by Staff) at 938:5-13 ("Type-C introduced new pins. The challenge is, before, we had mechanically different connectors. The USB-C is the same for the input and the output, so it required additional signaling pins and wires to determine whether it's a source or a sink. So there's additional pins, additional wires in the Type-C.").

Further, the specification and prosecution history of the '023 and '243 patents do not reference USB-C, USB PD 2.0, or any of the anticipated features (such as reversible plugs, enhanced power delivery, or extra pins). *See, e.g.*, Tr. (Ricketts) at 737:8-12 ("[T]here was no disclosure in either of the patents to support USB-C technology, the additional signals pinning that are required for USB technology or even the connector itself.").[41]

[41] Rather, the specification refers to "USB charge circuit 52" as allowing charging through "a standard USB charger" using a "standard micro-USB connector." '023 patent, 7:21-23; *see* RIB at 66. Dr. Fayed testified that USB charging through a "standard micro-USB connector" is slower than that enabled by the USB-C specification. Tr. (Fayed) at 1000:24-1001:6 ("[Q]: If we take a given battery size, is it possible to charge that battery with USB-C technology existing today more quickly than with the 5-volt micro-USB technology described in the patent? [A]: Yes, So the answer to that would a be a yes, because it was – you're asking specifically about micro-USB at the time, and USB-C. So the answer to your question is yes.").

NOCO's citation to *Advanced Media Networks, LLC v. AT&T Mobility LLC*, 748 Fed. Appx. 308 (Fed. Cir. 2018), CIB at 21, is inapposite. There, the Federal Circuit endorsed a construction of "ethernet packet switching protocol" that utilized protocols "defined by the IEEE 802.3 and draft IEEE 802.11 standards as of the filing date of the Patent." 748 F. App'x at 310. The draft IEEE 802.11 standard found to be within the scope of the claims had been in development for nearly five years, was widely referred to in the art as "wireless ethernet" (and the claims referenced a wireless network), and was a "formal technical specification." *Id.* at 312, 314. The "draft IEE 802.11 standard" encompassed by the claims, moreover, was "a draft 802.11 standard issued by the IEEE 802.11 Working Group for public comment." *See, e.g.*, *Advanced Media Networks, LLC v. AT&T Mobility LLC*, No. 3:15-CV-3496-N, 2017 WL 3987201, at *2 (N.D. Tex. Aug. 25, 2017). The district court, in fact, rejected an attempt by the patentee to include within the scope of the "draft 802.11 standard" a document that originated outside the official working group. *Id.* Here, the evidence does not show an equivalent draft "formal technical specification" issued by the USB Implementers Forum that was available to the public as of the priority date.[42] Nor did NOCO introduce into evidence any draft USB-C or USB PD 2.0 standard (or show compliance of any accused product with a draft standard). *See* RIB at 62 n.5.

[42] *Cf. Vizio Inc. v. Int'l Trade Comm'n*, 605 F.3d 1330, 1337 (Fed. Cir. 2010) ("Moreover, we agree with the Commission that the fact that the MPEG-2 standard was the standard used for digital television broadcasts in the United States at the time of the filing of the patent itself suggests that one of ordinary skill in the art would understand the disputed claim terms [referring to "MPEG"] of the '074 patent to refer to the MPEG-2 standard."); *Schering Corp. v. Amgen Inc*., 222 F.3d 1347, 1351-54 (Fed. Cir. 2000) (construing "IFN-α" not to include subtypes unknown to the inventor or those of skill in the art at the time of the patent application); *Mass. Inst. of Tech. and Elecs. for Imaging, Inc. v. Abacus Software*, 462 F.3d 1344, 1353 (Fed. Cir. 2006) (construing "scanner" in accordance with "what was known in the art at the time"); *Fundamental Innovation Sys. Int'l LLC v. Samsung Elecs.*, No. 2:17-cv-145-JRG-RSP, 2018 WL 647734, at *11 (E.D. Tex. Jan. 31, 2018) ("[T]he term 'USB' in the patents-in-suit should be limited to the Universal Serial Bus standards that existed at the time of the claimed invention."); *Extreme Networks, Inc. v. Enterasys Networks, Inc.*, No. 07-C-229-C, 2007 WL 5601497, at *16–17 (W.D. Wis. Nov. 21, 2007) (construing "IEEE 802" as referring to all such standards that existed at the time of the claimed

Accordingly, the evidence demonstrates that USB-C and USB PD 2.0 specifications were not USB standards known to those of skill in the art as of July 3, 2014. The "USB input circuit" terms are construed as "a circuit that allows the power supply to be charged from an external power source with a USB charger." Further, the claimed circuit must be in accordance with the Universal Serial Bus standards known to those of skill in the art at the time of the claimed invention, which does not include the USB-C or USB PD 2.0 specifications.

2. "USB Input Connector"

Staff and Respondents contend that "USB input connector," which appears in claims 1, 39, and 54 of the '023 patent and claim 1 of the '243 patent, should also be construed as excluding USB-C technology. RIB at 69; SRB at 41-42. The parties agree that "USB input connector" refers to the port or receptacle into which the USB plug is inserted. CIB at 48-49; RIB at 70; SRB at 41.

The parties' arguments regarding "USB input connector" are substantially similar to their arguments regarding "USB input circuit." *See* CRB at 40; RIB at 69-70. For the same reasons as discussed above, the undersigned finds that the USB-C specification was not one of the USB standards known to those of skill in the art as of July 3, 2014. "USB input connector" is construed as a port that receives a USB plug.[43] Further, the claimed connector must be in

---

invention, noting that "[a]n invention cannot comply with standards not yet in existence"); *Chrimar Sys., Inc. v. Alcatel-Lucent USA, Inc.*, 6:15-cv-163-JRG-JDL, 2016 WL 1228767, *8-9 (E.D. Tex. Mar. 28, 2016) (limiting "BaseT" to exclude "after-arising BASE-T standards"); *DisplayLink Corp. v. Magic Control Tech. Corp*., 615 F.Supp. 2d 1051, 1057 (N.D. Cal. 2009) (construing "USB" to cover USB specifications at the time the patent application was filed and declining to address future versions since they may "not perform in the same or an equivalent way"); *see generally* Order No. 20 at 58-59.

[43] Further, as provided by the surrounding claim language, the input connector "provide[s] power input." *See, e.g*., '023 patent, cl. 1.

accordance with the Universal Serial Bus standards known to those of skill in the art at the time of the claimed invention, which does not include the USB-C or USB PD 2.0 specifications.[44]

VI. INFRINGEMENT

A. The '992 Patent

NOCO contends that eight Carku Accused Products infringe claims 1, 3, 10 and 14 of the '992 patent. CIB at 11, 16. The accused Carku product models are: Fanttik T8 Apex, Fanttik T8 Max, Fanttik T8 1300 AMP, Hulkman Alpha 85S, Hulkman Alpha 65, Hulkman Alpha 85, Hulkman Alpha 100, and Spanarci Zeta 2000. *See* CX-0256C; CDX-006.125. NOCO alleges that the Hulkman Alpha 85S is representative of each of the accused Hulkman-branded products and the Fanttik T8 Apex product is representative of each of the accused Fanttik-branded products *See* CIB at 16; CX-0256C; Tr. (Fayed) at 432:4-22; CDX-0006.127. The Spanarci Zeta 2000 product is not alleged to be representative of any other product model. Tr. (Fayed) at 432:21-22; CDX-0006.127. Accordingly, NOCO's infringement analysis focuses on three accused products: the Hulkman Alpha 85S, the Fanttik T8, and the Spanarci Zeta 2000.

The only limitation of the '992 patent in dispute as to the accused products relates to

[44] In Order No. 41, Respondents were precluded from presenting "affirmative testimony or evidence" on the "USB input connector term" for purposes other than showing that USB-C ports are outside the scope of the "USB input connector" limitation because of their bidirectional charging capability. *See* Order No. 41, EDIS Doc. ID 814840, at 5 (with regard to the "USB input connector terms . . . any affirmative testimony or evidence presented by Respondents will be considered only in connection with the bidirectional charging issue"). Respondents were not precluded, however, from setting forth other arguments regarding the meaning of "USB input connector" and citing other evidence in support. *See id.* at 5 n.2. The evidence cited above regarding "USB input circuit" and the differences introduced by USB-C was obtained largely from NOCO's witnesses or from cross-examination of Respondents' witnesses and is sufficient on its own to support the holding here regarding "USB input connector." As noted *supra*, NOCO opposed supplementation of the record regarding construction of this term. Order No. 23 at 3 and Attachment A. Moreover, NOCO was on notice as of at least the *Markman* hearing that the term "USB input connector" might implicate issues that overlap with "USB input circuit" and "USB charge circuit." *See* Order No. 20 at 58 n.43; *Markman* Tr. (Staff) at 162:16-19; SRB at 41 n.7.

DELTRAN EX1060
IPR2024-01219

whether the plug body has a "uniform width." *See, e.g.*, RIB at 31 ("The Accused Products do not infringe claim 1 because they do not include element [1c]: "wherein a body of the single plug has a uniform width."). Dr. Fayed testified that each of the products within the Hulkman-branded group have "essentially the same plug design," based on his review of documentation for the accused plugs, and that the group of Fanttik-branded products similarly had "the same design." *See* Tr. (Fayed) 432:9-22, 431:3-9; CX-0006.125, 127; CX-0730C (Fanttik T8 Max); CX-0731C (Fanttik T8 Apex); CX-1709C (Fanttik T8 1300 AMP); CX-1676C (Hulkman Alpha 65); CX-1677C (Hulkman Alpha 85); CX-0729C (Hulkman Alpha 85S); CX-1680C (Hulkman Alpha 100). Staff contends that "[t]he evidence shows that the accused Carku products all have the same plug shape." *See* SIB at 23. The Carku Respondents "disagree" that the identified products are representative, *see* RIB at 28, but introduced no contradictory evidence, testimony, explanation, or argument. *See generally* RIB; RRB. Based on Dr. Fayed's uncontradicted testimony, the evidence shows by a preponderance that the Hulkman Alpha 85S is representative of the accused Hulkman-branded products and that the Fanttik T8 Apex is representative of the accused Fanttik-branded products.[45] For the reasons discussed below, however, the evidence fails to show by a preponderance that the asserted claims of the '992 patent are infringed.

1. Claim 1

a. Claim Limitation [1pre]: "A jumper cable device for use with a handheld battery charger booster device for charging a battery, the jumper cable device comprising:"

[45] This finding is consistent with the Carku Revised Cables. With respect to the redesigned products, the Carku Respondents introduced a single redesigned plug for the Hulkman Alpha 85S, Hulkman Alpha 65, and Hulkman Alpha 85 products, indicating that a single plug design can be used across these products. *See* RDX-0008C.78; RPX-0003.2. Similarly, the Carku Respondents introduced a single redesigned plug for the Fanttik T8 Apex and Fanttik T8 1300 AMP. *See* RDX-0008C.78; RPX-0022.2.

DELTRAN EX1060
IPR2024-01219

The parties agree that the preamble is limiting. *See* Order No. 20 at 6 n.7. Neither the Carku Respondents nor Staff dispute that that this limitation is met. *See* RIB at 31-37; RRB at 13-17; SIB at 22-25; SRB at 3-8. In addition, the undisputed evidence demonstrates that the Carku Accused Products include jumper cable devices for use with a handheld battery charger booster device for charging a battery. *See* Tr. (Fayed) at 432:23-433:6; CDX-0006C.128; *see also* CX-0730C (Fanttik T8 Max); CX-0731C (Fanttik T8 Apex); CX-1709C (Fanttik T8 1300 AMP); CX-1676C (Hulkman Alpha 65); CX-1677C (Hulkman Alpha 85); CX-0729C (Hulkman Alpha 85S); CX-1680C (Hulkman Alpha 100); CX-0733C (Spanarci Zeta 2000).

Accordingly, NOCO has shown that the Carku Accused Products meet Limitation [1pre] of the ’992 patent.

b. Claim Limitation [1a]: “a single plug having one end configured to fit into a single output port of the handheld battery charger booster device having an internal power supply, the single plug configured to provide both a positive polarity electrical connection and a negative polarity electrical connection configured to cooperate with the single output port; and”

Neither the Carku Respondents nor Staff dispute that that this limitation is met. *See* RIB at 31-37; RRB at 13-17; SIB at 22-25; SRB at 3-8. In addition, the undisputed evidence demonstrates that the Carku Accused Products include a single plug having one end configured to fit into a single output port of the handheld battery charger booster device having an internal power supply, the single plug configured to provide both a positive polarity electrical connection and a negative polarity electrical connection configured to cooperate with the single output port of the handheld battery charger booster device, as the plugs of the Carku Accused Products have both terminals—positive and negative—integrated into a single plug, and the plug fits into the output port of each device. *See* Tr. (Fayed) at 433:12-23; CDX-0006C.130; *see also* CX-0034

DELTRAN EX1060
IPR2024-01219

(Hulkman Alpha 85S); CX-0729C (Hulkman Alpha 85S); CX-0035 (Fanttik T8 Apex); CX-0731C (Fanttik T8 Apex); CX-0036 (Spanarci Zeta 2000); CX-0733C (Spanarci Zeta 2000).

Accordingly, NOCO has shown that the Carku Accused Products meet Limitation [1a] of the ’992 patent.

c. Claim Limitation [1b]: “a pair of cables having cable ends integrated with the plug, the pair of cables having opposite cable ends configured to separately connect to the terminals of the battery being charged,”

Neither the Carku Respondents nor Staff dispute that that this limitation is met. *See* RIB at 31-37; RRB at 13-17; SIB at 22-25; SRB at 3-8. In addition, the undisputed evidence demonstrates that the Carku Accused Products include a pair of cables having cable ends integrated with the plug, the pair of cables having opposite cable ends configured to separately connect to the terminals of the battery being charged, as mechanical drawings and instruction manuals for the Carku Accused Products show two cables with a red battery clamp (positive) and a black battery clamp (negative). *See* Tr. (Fayed) at 434:6-17; CDX-0006C.132; *see also* CX-1501C.3 (Hulkman Alpha 85S); CX-0729C (Hulkman Alpha 85S); CX-0730C (Fanttik T8 Apex); CX-0731C (Fanttik T8 Apex); CX-0734C.5 (Spanarci Zeta 2000); CX-0733C (Spanarci Zeta 2000).

Accordingly, NOCO has shown that the Carku Accused Products meet Limitation [1b] of the ’992 patent.

d. Claim Limitation [1c]: “wherein a body of the single plug has a uniform width, and”

The Parties’ Arguments

The parties dispute this limitation. NOCO argues that the plugs of the Carku Accused Products meet this claim limitation. CIB at 18; CRB at 4-5. In particular, NOCO contends that

DELTRAN EX1060
IPR2024-01219

"any variations [in the plug bodies] are either within tolerances, or are protrusions that would not violate the uniform width limitation." CIB at 19. NOCO contends that the Carku Accused Products "clearly resemble Figure 4 of the '992 patent . . . in terms of the width-of-the-cable-plug dimension." CIB at 19-20. NOCO relies on Dr. Fayed's testimony that the variation in the Carku Accused Products is "within tolerances, and if anything, is really no different than the protrusion that is existing in the NOCO devices, for example." CIB at 18-20 (citing Tr. (Fayed) at 435:12-436:3)); CDX-0006C.135; CX-0729C (Hulkman Alpha 85S); CX-0731C (Fanttik T8 Apex); CX-0733C (Spanarci Zeta 2000).

The Carku Respondents argue that limitation [1c] is not met. The Carku Respondents contend that Dr. Fayed admitted that the plugs have "variations in the width," and thus are not uniform in width. RIB at 32 (citing Tr. (Fayed) at 439:9-11). Further, the Carku Respondents assert that Dr. Fayed's analysis was "rhetorical," unsupported, and inconsistent with the claim construction of "uniform width" as requiring "the same width." RIB at 32-33. Dr. Ricketts, the Carku Respondents' expert, introduced evidence at the hearing of measurements taken on the Hulkman Alpha 85S product indicating a 20% difference in width between the end of the plug (which measured 29.3 mm) and the middle of the plug (which measured 24.4 mm). Tr. (Ricketts) at 1191:1-9; RDX-0008C.75; RX-2926; RX-2927. The Carku Respondents contend that one of skill would not consider a 20% difference in width to be "the same width." RIB at 33 (citing Tr. (Ricketts) at 1191:20-1192:2). The Carku Respondents further argue that Dr. Fayed's designation of part of the plug as the "plug body" and part of the plug as a "protrusion" is "arbitrary, and it could be arbitrarily applied to any plug to render it 'uniform' in width." RIB at 34, 37; RRB at 16 ("NOCO and Dr. Fayed do not even attempt to perform any analysis of whether the variations in width of the accused product plug bodies meet the 'protrusion'

DELTRAN EX1060
IPR2024-01219

requirements described by the ALJ in the claim construction order. NOCO and Dr. Fayed simply label them as protrusions, exclude them from consideration, and stop the analysis there."). The Carku Respondents also contend that Dr. Fayed improperly omitted the rear portion of the accused plugs from his "uniform width" analysis because he found them to be a "cable connection" rather than part of the plug body. RIB at 35. Relying on Dr. Ricketts, the Carku Respondents assert that the accused plugs are singular plug bodies, not cable connections, including because the schematics for the plugs depict the rear portions as part of the plugs, not the part of the cables. *Id.* (citing Tr. (Ricketts) at 1194:14-1195:4; CX-0729C (Hulkman Alpha 85S); CX-0731C (Fanttik T8 Apex); CX-0733C (Spanarci Zeta 2000). The Carku Respondents also contend that Dr. Fayed's opinion that the differences in width of the accused products were within manufacturing tolerances is contradicted by the evidence of the actual manufacturing specification for the Hulkman Alpha 85S product, which defines a manufacturing tolerance 50 times smaller—on the order of 0.1 mm—than the approximately 5 mm difference in width of the accused plugs. *See* RIB at 36-37; CX-0729C (Hulkman Alpha 85S); Tr. (Fayed) at 456:4-457:1; RDX-0102.

Staff agrees with the Carku Respondents that limitation [1c] is not met by the Carku Accused Products. SIB at 23-24; SRB at 3-8. Staff asserts that the Carku Accused Products have "substantially varying widths along the plug body" and thus the accused plugs "do[] not literally satisfy the claimed requirement for 'a body of the single plug has a uniform width.'" SRB at 6. Further, Staff contends that it is not sufficient that the "centermost portion of the plug body has a roughly uniform width," SRB at 7-8.[46]

[46] Staff also points out that during prosecution, the "uniform width" limitation was adopted to distinguish the claimed invention of the '992 patent from prior art "stepped" plug configurations with two different

DELTRAN EX1060
IPR2024-01219

In response, NOCO contends that Dr. Fayed's identification of part of the accused plugs as "plug bodies" and part as "protrusions" is consistent with the *Markman* Order. CRB at 4-5. NOCO states that the construction of "uniform width" "treats the body and the protrusions as distinct features," and thus the differences in width between the front of the plug—which NOCO contends is a protrusion, CRB at 4—and the centermost portion—which NOCO contends is part of the "plug body," *id.*—is irrelevant. *Id.* at 4-5. Finally, NOCO argues that the rear of the accused plugs are "downwardly tapering connection[s]," asserting that it does not matter that the accused plugs are singular pieces of plastic, as "protrusions" are also singular with the plug body, but nonetheless excluded from the "plug body."

Discussion

Upon review of the submissions and evidence of record, the undersigned finds that NOCO has not established, by a preponderance of the evidence, that the Carku Accused Products meet the claim requirement "wherein a body of the single plug has a uniform width." As set forth in the *Markman* Order, the term "body of the single plug has a uniform width" requires that the body of the single plug has the same width along the plug body. Order No. 20 at 19. This does not require "absolute mathematical precision and may take into account manufacturing realities." *Id.* at 27 n.23.

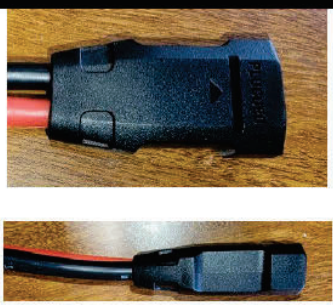
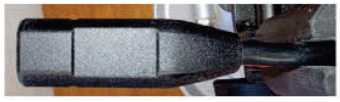
The plugs of the three representative Carku Accused Products are shown in the schematics and photographs below:

Hulkman Alpha 85S	Fanttik T8 Apex	Spanarci Zeta 2000

widths. *See* SRB at 7 n.4; JX-0007.213-217 (Prosecution History); Tr. (Ricketts) at 1189:15-22; RDX-0008C.72; *see also* Order No. 20 at 24-25. Accordingly, Staff contends, the prosecution history "undercuts any argument that the requirement for 'uniform width' does not apply to the entire plug body." SRB at 7 n.4.

DELTRAN EX1060
IPR2024-01219

[redacted]

CX-0034 (Compl. Ex. 21) at 3	CX-0035 (Compl. Ex. 22) at 3	CX-0036 (Compl. Ex. 23) at 3
		
		

Dr. Fayed testified that the accused plugs had "definitely some variations that you can see" in the manufacturing drawings. Tr. (Fayed) at 435:13-25; *id.* at 439:9-12 ("[Y]es, there are some variations in the width."). Neither NOCO nor Dr. Fayed introduced evidence as to the magnitude of these admitted variations or the widths of the Carku Accused Products. Tr. (Fayed) at 482:4-7 ("[Q]: You didn't perform any measurements on the plug itself; right? [A]: No, I have not. I just looked at the cable schematics."). However, Dr. Fayed opined that the plugs were of "uniform width"—which requires "the same width along the plug body," Order No. 20 at 19—because the observed "variation is within tolerances, and if anything, it's really no different than the protrusions that is existing in the NOCO devices, for example." Tr. (Fayed) at 435:19-22. Dr. Fayed explained that under his understanding of the *Markman* Order, "that protrusion was not considered to violate the concept of uniform width." *Id.* at 435:23-25. Dr. Ricketts, the Carku Respondents' expert, testified that the Hulkman Alpha 85S product had a change in width of 20%—approximately 5 mm—between the front of the plug and the middle of the plug and that

this is a significant variation. Tr. (Ricketts) at 1191:1-1192:9; RDX-0008C.75; RX-2926; RX-2927.

NOCO has not shown by a preponderance of the evidence that the "uniform width" limitation is met by the accused products. The schematics show width variations in the plug body. *See supra*. Dr. Fayed's testimony that the observed "variation is within tolerances" and thus of a "uniform width" is not supported by the record as a whole. Tr. (Fayed) at 435:19-22; *id.* at 442:18-19 ("[T]hese variations are, you know, within manufacturing tolerances, of course."); *id.* at 455:455 ("[Q]: You said one reason is that is with – that this variation that we're looking at here is within manufacturing tolerances; right? [A]: Yeah. It lies within that absolutely. Yeah."). NOCO did not introduce evidence that the variation in width in any of the accused plugs was within either the actual manufacturing tolerance or typical manufacturing tolerances. Moreover, as to the Hulkman Alpha 85S product, on cross-examination Dr. Fayed agreed that the manufacturing specification expressly defines the manufacturing tolerance for the plug as +0.0/-0.1 mm. *See* RDX-0102 (annotated version of CX-0729C); Tr. (Fayed) at 456:20-24 ("[Q]: Okay, so my question is: As this is drawn, plus 0.0 or minus 0.1, that's a manufacturing tolerance, isn't it? [A]: I believe so. That would be – yes, that would be."). Dr. Ricketts, the Carku Respondents' expert, similarly testified that manufacturing variations are "a fraction of a millimeter, probably less than .1." Tr. (Ricketts) at 1192:9-12. The only evidence of record of the magnitude of the variation in width is Dr. Ricketts' measurements of the Hulkman Alpha 85S product—which, at approximately 5 mm, is an order of magnitude greater than the actual manufacturing tolerance defined for that product. *Compare* Tr. (Ricketts) at 1191:1-9; RDX-0008C.75; RX-2926; RX-2927; *with* RDX-0102 (annotated version of CX-0729C). Dr. Fayed's

DELTRAN EX1060
IPR2024-01219

testimony as to whether the variations fall within manufacturing tolerances, upon the evidence of record, is not supported and is unreliable.

Second, Dr. Fayed's testimony that the observed width variation is "no different than the protrusions that is existing in the NOCO devices, for example" is likewise insufficient to meet NOCO's burden of proof. Tr. (Fayed) at 435:19-22. Dr. Fayed's demonstrative relating to this point (CDX-0006C.135) provided the annotated drawings shown below:



As held in the *Markman* Order, the '992 patent excludes protrusions such as the "X-shaped protrusion" of Figure 4 of the patent from the claimed "body of a single plug" that must be of "uniform width" for claim 1 of the '992 patent. *See* Order No. 20 at 23.[47] Further, the undersigned rejected the argument that the patent includes the X-shaped protrusion when describing the Figure 4 embodiment's plug body as having "uniform width." *See* Order No. 20 at 22 ("Interpreting the terms consistently in the '808 and '992 patents, the undersigned agrees with Respondents that in the Figure 4 embodiment, the 'X-shaped protrusion' is not part of the plug body described as having 'uniform width.'"). Here, Dr. Fayed did not affirmatively or persuasively testify that that one of ordinary skill in the art would view the front portions of the accused products as having protrusions excludable from the "body of the single plug" assessed

[47] As discussed in the *Markman* Order with regard to the '808 patent, a somewhat different analysis applies to the "uniform or substantially uniform" limitations in that patent, where the X-shaped protrusion provides some guidance. *See* Order No. 20, at 34-35.

for the "uniform width" requirement. *See* Order No. 20 at 23-24; RRB at 15-16.[48] Accordingly, Dr. Fayed's testimony that "that protrusion" (referring to the NOCO devices shown in the patent) was "not considered to violate the concept of uniform width" (Tr. (Fayed) at 435:23-25) fails to support a finding of infringement as there is no persuasive evidence that the front portions of the ***accused*** plugs include a "protrusion."

The Carku Respondents additionally argue that the "narrowed rear portion of the plug" should be considered as part of the "plug body," and that there is additional variation in width when these portions are considered. *See* RIB at 34; RRB at 16. However, at the *Markman* hearing, the undersigned explicitly raised the question of distinguishing the rear "taper" and the plug body, and the parties indicated that the tapered rear portion shown in the asserted patents was excluded from the claimed plug body having "uniform" width. *See Markman* Tr. at 12:13-20; *id.* (Compl. counsel) at 11:22-12:1, 12:21-13:11 ("I think the parties are in agreement that it excludes the tapered end or any other part of that plug."); Compl. *Markman* Presentation, EDIS Doc. ID 807612, slide 7; *Markman* Tr. (Resp. counsel) at 24:8-14 ("So if I were to pull up on slide 9, for instance, this whole body here, and I think Mr. Khatri said their position is that the whole -- everything to the left of the taper is the body of the single plug. That would be, with some exception we'll talk about in a moment for the X-shaped protrusion, that would be our position as well."); Resp. *Markman* Presentation, EDIS Doc. ID 807605, slide 9; Order No. 20 at

[48] As discussed in the *Markman* Order, the X-shaped "protrusion" depicted in the '992 and '808 patents is a structural feature that extends "above the outer surface" of the plug body. *See* Order No. 20 at 23-24. Determining whether a particular plug geometry includes a "protrusion" is a fact-specific inquiry (*id.* at 27 n.24), and NOCO has failed to show by a preponderance that one of skill in the art would identify any such protrusion exists in the accused products. As noted by Respondents, without evidence distinguishing the plug body from any asserted protrusions, "uniform width" could be arbitrarily imposed onto a plug body of any shape, rendering the "uniform width" requirement meaningless. *See* RRB at 15. As discussed in the *Markman* Order, during prosecution the claims at issue were distinguished from the prior art based on the "uniform width" requirement, strongly weighing against an interpretation that would render the limitation meaningless. *See* Order No. 20 at 25.

DELTRAN EX1060
IPR2024-01219

15, n.15. In view of this record, the Carku Respondents have not persuasively demonstrated that the rear tapering portions of the Carku Accused Products should be considered part of the "body of the single plug" for purposes of evaluating whether this claim limitation is met. And regardless of this issue, NOCO has failed to carry its burden to establish infringement of limitation [1c]—"wherein a body of the single plug has a uniform width"—for the reasons previously discussed.

NOCO, therefore, has not shown by a preponderance of the evidence that the Carku Accused Products meet Limitation [1c] of the '992 patent.

e. Claim Limitation [1d]: "wherein the single plug is configured so that the single plug will only fit into the single outlet port of the handheld battery charger booster device in a single orientation to ensure a proper orientation of positive polarity and negative polarity cable connections between the pair of cable and the single output port of the handheld battery charger booster device."

Neither the Carku Respondents nor Staff dispute that that this limitation is met. *See* RIB at 31-37; RRB at 13-17; SIB at 22-25; SRB at 3-8. In addition, the undisputed evidence demonstrates that the Carku Accused Products have a single plug configured so that the single plug will only fit into the single outlet port of the handheld battery charger booster device in a single orientation to ensure a proper orientation of positive polarity and negative polarity cable connections between the pair of cables and the output port of the handheld battery charger booster device, as Dr. Fayed explained that the two terminals of the plugs (and corresponding port) have slightly different shapes, and thus can only be plugged in one way. *See* Tr. (Fayed) at 436:12-25; CDX-0006C.137; *see also* CX-0034 (Hulkman Alpha 85S); CX-0729C (Hulkman Alpha 85S); CX-0035 (Fanttik T8 Apex); CX-0731C (Fanttik T8 Apex); CX-0036 (Spanarci Zeta 2000); CX-0734C (Spanarci Zeta 2000).

Accordingly, NOCO has shown that the Carku Accused Products meet Limitation [1d] of the '992 patent.

***

Accordingly, for the reasons discussed above, the evidence fails to show by a preponderance that claim 1 is infringed by the Carku Accused Products.

2. Claim 3

Claim 3 depends from claim 1 and requires in addition that "the plug does not have any exposed prongs." The parties do not dispute that this added limitation is met. *See* RIB at 39; SIB at 32; Tr. (Fayed) at 437:7-15; CDX-0006C.139. However, as held *supra*, the evidence fails to show infringement of claim 1 by the Carku Accused Products. Therefore, the evidence does not show infringement of claim 3. *See Wahpeton Canvas Co. v. Frontier, Inc.*, 870 F.2d 1546, 1552 n.9 (Fed. Cir. 1989) ("One who does not infringe an independent claim cannot infringe a claim dependent on (and thus containing all the limitations of) that claim.").

3. Claim 10

Claim 10 depends from claim 1 and requires in addition "a downwardly tapering connection located between the single plug and the cables." The parties do not dispute that this added limitation is met. *See* RIB at 39; SIB at 32; Tr. (Fayed) at 437:22-438:5; CDX-0006C.141. However, as held *supra*, the evidence fails to show infringement of claim 1 by the Carku Accused Products. Therefore, the evidence does not show infringement of claim 10. *See Wahpeton*, 870 F.2d at 1552 n.9.

4. Claim 14

a. Claim Limitation [14pre]: "A jumper cable device for use with a handheld battery charger booster device for charging a battery, the jumper cable device comprising:"

DELTRAN EX1060
IPR2024-01219

The parties agree that the preamble is limiting. *See* Order No. 20 at 6. Neither the Carku Respondents nor Staff dispute that that this limitation is met. *See* RIB at 31-39; RRB at 13-18; SIB at 22-25; SRB at 3-8. In addition, the undisputed evidence demonstrates that the Carku Accused Products include jumper cable devices for use with a handheld battery charger booster device for charging a battery, for the same reasons as discussed with respect to claim 1. *See* Tr. (Fayed) at 432:23-433:6; *id.* at 438:11-16; CDX-0006C.128, 143; *see also* CX-0730C (Fanttik T8 Max); CX-0731C (Fanttik T8 Apex); CX-1709C (Fanttik T8 1300 AMP); CX-01676C (Hulkman Alpha 65); CX-1677C (Hulkman Alpha 85); CX-0729C (Hulkman Alpha 85S); CX-1680C (Hulkman Alpha 100); CX-0733C (Spanarci Zeta 2000).

Accordingly, NOCO has shown that the Carku Accused Products meet Limitation [14pre] of the ’992 patent.

b. Claim Limitation [14a]: “a single plug having one end configured to fit into a single output port of a handheld battery charger booster device having an internal power supply, the plug providing both positive polarity and negative polarity connections with the handheld battery charger booster device, the plug being configured so that the plug will only fit into the output port in a specific orientation, the plug not having any exposed prongs;”

Neither the Carku Respondents nor Staff dispute that that this limitation is met. *See* RIB at 31-39; RRB at 13-18; SIB at 22-25; SRB at 3-8. In addition, the undisputed evidence demonstrates that the Carku Accused Products have a single plug having one end configured to fit into a single output port of the battery charger booster device having an internal power supply such that the single plug will only fit into the output port of the handheld battery charger booster device in a specific orientation, for the same reasons as discussed with respect to claim 1, including that Dr. Fayed explained that the two terminals of the plugs (and corresponding port) have slightly different shapes, and thus can only be plugged in one way. *See* Tr. (Fayed) at

DELTRAN EX1060
IPR2024-01219

436:12-25; *id.* at 438:11-16; CDX-0006C.137, 143; *see also* CX-0034 (Hulkman Alpha 85S); CX-0729C (Hulkman Alpha 85S); CX-0035 (Fanttik T8 Apex); CX-0731C (Fanttik T8 Apex); CX-0036 (Spanarci Zeta 2000); CX-0734C (Spanarci Zeta 2000). Further, the evidence demonstrates that the Carku Accused Products have a plug without exposed prongs. *See* Tr. (Fayed) at 437:8-15; 438:11-16; CDX-0006C.139, 143; CX-0729C (Hulkman Alpha 85S); CX-0731C (Fanttik T8 Apex); CX-0733C (Spanarci Zeta 2000).

Accordingly, NOCO has shown that the Carku Accused Products meet Limitation [14a] of the ’992 patent.

c. Claim Limitation [14b]: “a pair of cables having cable ends integrated with the plug; and”

Neither the Carku Respondents nor Staff dispute that that this limitation is met. *See* RIB at 31-39; RRB at 13-18; SIB at 22-25; SRB at 3-8. In addition, the undisputed evidence demonstrates that the Carku Accused Products include a pair of cables having cable ends integrated with the plug. *See* Tr. (Fayed) at 434:6-17; *id.* at 438:11-16; CDX-0006C.132, 143; *see also* CX-1501C.3 (Hulkman Alpha 85S); CX-0729C (Hulkman Alpha 85S); CX-0730C (Fanttik T8 Apex); CX-0731C (Fanttik T8 Apex); CX-0734C.5 (Spanarci Zeta 2000); CX-0733C (Spanarci Zeta 2000).

Accordingly, NOCO has shown that the Carku Accused Products meet Limitation [14b] of the ’992 patent.

d. Claim Limitation [14c]: “a pair of battery terminal clamps respectively connected to opposite cable ends of the pair of cables;”

Neither the Carku Respondents nor Staff dispute that that this limitation is met. *See* RIB at 31-39; RRB at 13-18; SIB at 22-25; SRB at 3-8. In addition, the undisputed evidence demonstrates that the Carku Accused Products include a pair of battery terminal clamps, as

mechanical drawings and instruction manuals for the Carku Accused Products show two cables with a red battery clamp (positive) and a black battery clamp (negative). *See* Tr. (Fayed) at 434:6-17; *id.* at 438:11-16; CDX-0006C.132, 143; *see also* CX-1501C.3 (Hulkman Alpha 85S); CX-0729C (Hulkman Alpha 85S); CX-0730C (Fanttik T8 Apex); CX-0731C (Fanttik T8 Apex); CX-0734C.5 (Spanarci Zeta 2000); CX-0733C (Spanarci Zeta 2000).

Accordingly, NOCO has shown that the Carku Accused Products meet Limitation [14c] of the ’992 patent.

e. Claim Limitation [14d]: “wherein a body of the single plug has a uniform width, and”

The parties dispute this limitation, which is identical to Limitation [1c]. For the same reasons discussed above in the context of the Limitation [1c], *supra* Part VI.A.1.d., the undersigned finds that Dr. Fayed’s analysis fails to show, by a preponderance of the evidence, that the Carku Accused Products meet this limitation.

f. Claim Limitation [14e]: “wherein the single plug is configured so that the single plug will only fit into the single outlet port of the handheld battery charger booster device in a single orientation to ensure a proper orientation of positive polarity and negative polarity cable connections between the pair of cable and the single output port of the handheld battery charger booster device.”

Neither the Carku Respondents nor Staff dispute that that this limitation is met. *See* RIB at 31-39; RRB at 13-18; SIB at 22-25; SRB at 3-8. In addition, the undisputed evidence demonstrates that the Carku Accused Products have a single plug configured so that the single plug will only fit into the single outlet port of the handheld battery charger booster device in a single orientation to ensure a proper orientation of positive polarity and negative polarity cable connections between the pair of cables and the output port of the handheld battery charger booster device, for the same reasons as discussed with respect to claim 1, including because Dr.

Fayed explained that the two terminals of the plugs (and corresponding port) have slightly different shapes, and thus can only be plugged in one way. *See* Tr. (Fayed) at 436:12-25; *id.* at 438:11-16; CDX-0006C.137; *see also* CX-0034 (Hulkman Alpha 85S); CX-0729C (Hulkman Alpha 85S); CX-0035 (Fanttik T8 Apex); CX-0731C (Fanttik T8 Apex); CX-0036 (Spanarci Zeta 2000); CX-0734C (Spanarci Zeta 2000).

Accordingly, NOCO has shown that the Carku Accused Products meet Limitation [14e] of the '992 patent.

* * *

Accordingly, for the reasons discussed above, the evidence fails to show by a preponderance that the Carku Accused Products infringe claims 1, 3, 10 or 14 of the '992 patent.

5. The Carku Revised Cables

As discussed, *supra*, the undersigned finds that adjudication of the Carku Revised Cables is appropriate. NOCO has not accused the six Carku Revised Cables or products incorporating them of infringement of the '992 or '808 patents. *See* RIB at 28; CIB at 35-40; Tr. (Fayed) at 488:1-3 ("I -- actually, I am not aware that they have revised -- proposed revised products like revised plugs."). NOCO's post-hearing briefs contain no infringement arguments regarding the Carku Revised Cables. According, any such arguments have been waived and NOCO has failed to meet its burden of proof. *Oligosaccharides*, Comm'n Op., 2020 WL 3073788, at *13 (June 8, 2020) (burden of establishing infringement lay with complainant with respect to non-accused, adjudicated product); Ground Rule 13.1. Carku is therefore entitled to a finding of non-infringement as to the asserted claims of the '992 patent (and '808 patent).[49]

[49] In addition, Dr. Ricketts provided expert testimony that the Carku Revised Cables do not infringe the '992 or '808 patents. *See* Tr. (Ricketts) at 1192:24-1193:3. Staff agrees that the evidence fails to show infringement. *See* SIB at 25-28.

DELTRAN EX1060
IPR2024-01219

B. The ’808 Patent

The same Carku Accused Products accused of infringing the ’992 patent are accused of infringing claims 1, 11, and 16 of the ’808 patent, and the same representative Hulkman-branded, Fanttik-branded, and Spanarci categorization is used. *See* CIB at 39; CX-0256C. For the same reasons as discussed above with respect to the ’992 patent, the undersigned finds that NOCO has met its burden on representativeness.

The only limitations of the ’808 patent in dispute as to the accused products relate to (1) the uniformity or substantial uniformity of plug body or plug width; and (2) whether the plugs are “rectangular-shaped.” *See* RIB at 54, 57; SIB at 49-51. For the reasons set forth below, the evidence does not show by a preponderance that the Carku Accused Products infringe the asserted claims of the ’808 patent.

1. Claim 1

a. Claim Limitation [1pre]: “A jumper cable device for use with a jump starter having an internal power supply and an output port for connecting with the jumper cable device, the jumper cable device comprising:”

The parties agree that the preamble is limiting. *See* Order No. 20 at 8 n.8. Neither the Carku Respondents nor Staff dispute that this limitation is met. *See* RIB at 54-56; SIB at 49-51. The evidence shows that this limitation is met by the Carku Accused Products for the same reasons as Limitation [1pre] of the ’992 patent. *See* Part VI.A.1.a. *supra*; CIB at 40.

b. Claim Limitation [1a]: “a single plug having one end configured to fit into the output port of the jump starter, the single plug configured to provide both a positive polarity electrical connection and a negative polarity electrical connection with the output port of the jump starter; and”

Neither the Carku Respondents nor Staff dispute that this limitation is met. *See* RIB at 54-56; SIB at 49-51. The evidence shows that this limitation is met by the Carku Accused

DELTRAN EX1060
IPR2024-01219

Products for the same reasons as Limitation [1a] of the '992 patent. *See* Part VI.A.1.b. *supra*; CIB at 40.

c. Claim Limitation [1b]: "a pair of battery cables having cable ends integrated with the plug, the pair of battery cables having opposite cable ends configured to separately connect to the terminals of the battery being charged;"

Neither the Carku Respondents nor Staff dispute that this limitation is met. *See* RIB at 54-56; SIB at 49-51. The evidence shows that this limitation is met by the Carku Accused Products for the same reasons as Limitation [1b] of the '992 patent. *See* Part VI.A.1.c. *supra*; CIB at 40.

d. Claim Limitation [1c]: "wherein a body of the single plug has a uniform or substantially uniform width along a length of the body, and"

The parties dispute whether the Carku Accused Products meet this claim limitation. NOCO contends that this limitation is met based on the same evidence cited for limitation [1c] of the '992 patent, arguing in addition that at least the "substantially uniform width" requirement is met. *See* CIB at 41. The Carku Respondents likewise cite the same arguments and evidence as for claim limitation [1c] of the '992 patent, arguing *inter alia* that this limitation is not met because there is a variation of 20% in the middle portion. *See* RIB at 55 (citing Tr. (Ricketts) at 1188:21-1193:20); RRB at 30-31. The Carku Respondents also note the narrowing portion "towards the rear of the plug" and cite the evidence relied upon with respect to limitation [1c] of the '992 patent. *See* RIB at 55. Staff similarly argues that this claim limitation is not met, citing to evidence regarding the Hulkman Alpha85S product. *See* SIB at 49-50.

Upon review of the arguments and record evidence, the undersigned finds that NOCO has not shown, by a preponderance, that this limitation is met by the Carku Accused Products. As discussed in the *Markman* Order, the term "substantially uniform" has its plain and ordinary

meaning, which is "largely but not wholly the same." Order No. 20 at 36. Further, the intrinsic evidence provides certain guidance for determining the meaning of "uniform or substantially uniform width," including Figure 4 of the '808 patent inclusive of the X-shaped protrusion (which the intrinsic evidence as a whole indicates is a plug with "uniform or substantially uniform width), as well as "Ref 1" from the prosecution history (which the intrinsic evidence indicates does not have "uniform or substantially uniform" width). *See* Order No. 20 at 33-35.

In his testimony regarding the Carku Accused Products, Dr. Fayed did not persuasively apply this guidance from the patent. *See* Tr. (Fayed) at 435:19-436:3, 440:16-441:4. In connection with the Hulkman Alpha 85S product, for example, Dr. Ricketts provided undisputed testimony of a 20% variation in width between two portions of the plug body that he testified was a "significant variation." Tr. (Ricketts) at 1191:1-1192:9; RDX-0008C.75; RX-2926; RX-2927. This testimony was unrebutted by Dr. Fayed or NOCO. Particularly in light of this example, Dr. Fayed's brief and highly generalized testimony regarding variations in width (which analysis does not utilize the full guidance from the patent identified in the *Markman* Order, including the prosecution history) is insufficient to show that Dr. Fayed reliably assessed the "uniform or substantially uniform" width requirement. *See* Order No. 20 at 33-34. Accordingly, the evidence fails to show by a preponderance that this limitation is met by the Carku Accused Products.

e. Claim Limitation [1d]: "wherein the single plug is configured so that the single plug will only fit into the output port of the jump starter in a single orientation to ensure a proper orientation of positive polarity electrical connection and the negative polarity electrical connections between the plug and the output port of the lump [sic] starter."

Neither the Carku Respondents nor Staff dispute that this limitation is met. *See* RIB at 54-56; SIB at 49-51. The evidence shows that this limitation is met by the Carku Accused

Products for the same reasons as Limitation [1d] of the '992 patent. *See* Part VI.A.1.e. *supra*; CIB at 40.

***

Accordingly, for the reasons discussed above, the evidence fails to show by a preponderance that claim 1 is infringed by the Carku Accused Products.

2. Claim 11

Claim 11 depends from claim 1 and requires in addition a "downwardly tapering connector located between the single plug and the pair of battery cables." The parties do not dispute that this added limitation is met. *See* RIB at 56-57; SIB at 49-51. However, as held *supra*, the evidence fails to show infringement of claim 1 by the Carku Accused Products. Therefore, the evidence does not show infringement of claim 11. *See Wahpeton*, 870 F.2d at 1552 n.9.

3. Claim 16

a. Claim Limitation [16pre]: "A battery jumper cable device for use with a jump starter having a power supply or battery and an output port for connecting to the jumper cable device, the jumper cable device comprising:"

The parties agree that the preamble is limiting. *See* Order No. 20 at 8 n.8. Neither the Carku Respondents nor Staff dispute that this limitation is met. *See* RIB at 57-58; SIB at 51-52. The evidence shows that this limitation is met by the Carku Accused Products for the same reasons as Limitation [1pre] of the '808 patent. *See* Part VI.B.1.a. *supra*; CIB at 42.

b. Claim Limitation [16a]: "a single rectangular-shaped plug having a uniform or substantially uniform width along a length of the plug, the connection end of the plug is configured to fit into the output port of the jump starter, the output port of the jump starter providing both a positive polarity electrical connection and a negative polarity electrical connection between the output port of the jump starter and the plug of the

jumper cable device; and"

The parties dispute this limitation's requirement of a "rectangular-shaped plug" that has "a uniform or substantially uniform width along a length of the plug." CIB at 42-43; RIB at 57-58; RRB at 31; SIB at 51-52. For the reasons discussed above with respect to Limitation [1c] of the '808 patent, Part VI.B.1.d. *supra*, the evidence fails to show by a preponderance that at least the "uniform or substantially uniform width" requirement is met by the Carku Accused Products. Accordingly, the evidence fails to show by a preponderance that this limitation is met by the Carku Accused Products.

c. Claim Limitation [16b]: "a positive battery cable and a negative battery cable electrically connecting the plug to a positive battery connector and negative battery connector for connecting the positive battery cable and negative battery cable to the battery being charged,"

Neither the Carku Respondents nor Staff dispute that this limitation is met. *See* RIB at 57-58; SIB at 51-52. The evidence shows that this limitation is met by the Carku Accused Products for the same reasons as Limitation [1b] of the '808 patent. *See* Part VI.B.1.c. *supra*; CIB at 43.

d. Claim Limitation [16c]: "wherein the plug is structured so that the plug will only fit into the output port of the jump starter in a single orientation to ensure a proper orientation of the positive polarity electrical connection and negative polarity electrical connection between the outlet output port of the jump starter and the plug of the jumper cable device."

Neither the Carku Respondents nor Staff dispute that this limitation is met. *See* RIB at 57-58; SIB at 51-52. The evidence shows that this limitation is met by the Carku Accused Products for the same reasons as Limitation [1d] of the '808 patent. *See* Part VI.B.1.e. *supra*; CIB at 43.

DELTRAN EX1060
IPR2024-01219

4. The Carku Revised Cables

For the reasons discussed in Part VI.A.5 *supra*, Carku is entitled to a finding of non-infringement by the Carku Revised Cables as to the claims at issue of the '808 patent.

C. The '023 Patent

1. The Carku Accused Products

NOCO contends that approximately one hundred and two Carku Accused Products infringe claims 1, 19, 32, 39, and 54 of the '023 patent. CIB at 11-12. The Carku Accused Products are identified in CX-0256C. NOCO alleges that the Carku Accused Products share common hardware and software features and may be grouped into "Group A" and "Group B" based on whether they utilize a "USB controller chip" and thus have bidirectional USB power, or whether they lack a USB controller chip, and thus do not have bi-directional power. CIB at 62. Further, NOCO contends that the "Group A" and "Group B" products may be further subdivided based on whether the circuitry of the alleged reverse polarity circuit—which NOCO contends use the same circuitry and components—is located within the jumper cables or within the jump starter battery pack. CIB at 62. Relying on Dr. Fayed, NOCO contends that source code analysis and comparison supports the groupings because the same functions and identifiers, only at different line numbers. CIB at 63-64 (citing Tr. (Fayed) at 369:13-23). NOCO contends that the Fanttik T8 Max is representative of Group A products with the alleged reverse polarity circuit implemented in the jump starter battery pack, while the Solvtin S6 Pro is representative of Group A products with the alleged reverse polarity circuit implemented in the jumper cables. CIB at 62-63. NOCO contends that the Astro AI is representative of Group B products with the alleged reverse polarity circuit implemented in the jump starter battery pack, while the Gooloo GP4000

DELTRAN EX1060
IPR2024-01219

is representative of products with the alleged reverse polarity circuit implemented in the jumper cables. CIB at 62-63.

The Carku Respondents contend that Dr. Fayed's representative analysis is insufficient, and that evidence at the hearing indicates that some Group B products implement the DC-DC converter functionality in different ways. RRB at 49 (citing Tr. (Fayed) at 392:4-24). Further, the Carku Respondents assert that a "Type-C protocol chip," which the Carku Respondents contend is a USB control chip, appears in the schematic for the Gooloo GP4000 product, which is alleged to be representative of products without a USB controller chip. RRB at 50. The Carku Respondents also contend that NOCO did not present evidence as to Limitations [1f], [39g], and [54f] as to the Solvtin S6 Pro or Astro AI product. RRB at 50.

Staff asserts that NOCO failed to satisfy its burden to establish representativeness. SIB at 77-80. Staff contends that the record does not demonstrate that the Group A and Group B features all have the same features as the analyzed products for purposes of infringement, including because the record is unclear as to "what other differences might or might not exist." SIB at 78. Staff cites to Dr. Fayed's testimony that "some lines of source code" are different in the Group B products, Tr. (Fayed) at 516:22-24, and that DC-DC conversion is implemented in different functionality. Tr. (Fayed) at 392:4-24.

In response, NOCO argues that "Respondents and the Staff offer no evidence, nor even any valid reason, to question Dr. Fayed's representativeness analysis." CRB at 28. NOCO asserts that Staff and Respondents must "identify a specific material difference or other relevant distinction" in order to effectively challenge Dr. Fayed's representative analysis. CRB at 28 (citing *Certain Portable Battery Jump Starters & Components Thereof*, Inv. No. 337-TA-1256,

DELTRAN EX1060
IPR2024-01219

Initial Determination, 2022 WL 1658137, at *132 (Apr. 29, 2022) (rejecting challenge to representativeness analysis where respondents failed to "argue specific material differences")).

Based on review of the submissions and the evidence of record, the undersigned finds that NOCO has met its burden on representativeness. The disputed limitations for the '023 and '243 patents involve elements of the alleged polarity detection circuit and the USB input circuit and connectors. *See* RRB at 50-56; CRB at 31; SIB at 80-85. Evidence provided at the hearing established that every Carku Accused Product uses the same USB charging technology, USB-C, and support the same USB charging standards or protocols. *See* Tr. (Cheng) at 716:7-17 ("[Q]: How many of the Carku products accused of infringement in this case have USB-C charging functionality? [A]: 102. [Q]: What USB power delivery protocol version do the Carku accused products support? [A]: PD 2.0 version, and the higher version, or versions. And also, the QC version for the non-USB protocol version."). Moreover, evidence at the hearing indicate that many of the accused products use the same USB controller chipsets to implement the USB functionality. *See* RDX-008C.36; Tr. (Ricketts) at 1176:5-12 ("[Q]: Would other products containing this same circuit board and the same chipset, would you expect them to have the same charging functionality that you just described? [A]: Yeah. The charging function is dictated by these chips in the software. So updating the software, they would operate in the same manner with respect to the chipsets that I tested."). As to the alleged polarity detection circuit, the divisions made by Dr. Fayed account for whether the polarity detection circuit is implemented in the jumper cable or in the jump starter battery pack, and there is no evidence that the alleged polarity detection circuits operate differently in the unanalyzed products.[50]

[50] Indeed, the Carku Respondents contend that each of the four representative products "operate in a similar manner" with respect to the alleged polarity detection circuits. *See* RRB at 51.

DELTRAN EX1060
IPR2024-01219

The undersigned is unconvinced that Dr. Fayed's testimony regarding the source code differences undermines his representativeness analysis. *See* SIB at 78 (citing Tr. (Fayed) at 516:22-24). Dr. Fayed testified that the relevant lines of source code were not "precisely the same" (although he testified some were identical) and that "the same functions may appear in different line numbers," but this does not establish that the products and source code do not perform the same functions in the same way. Tr. (Fayed) at 516:6-24; *see also* Tr. (Fayed) at 516:3 ("The things that I was looking for [in the source code] were identical."). Nor does Dr. Fayed's testimony about the implementation of DC-DC conversion in the Group B products (Tr. (Fayed) at 391:4-24) undermine his representativeness analysis. That the Carku Accused Products include a DC-DC converter (relevant to Limitations [1f], [39g], and [54f]) is not in dispute; rather, the Carku Respondents dispute only whether the Carku Accused Products implement USB technology that is within the scope of the claims. *See, e.g.*, RRB at 53-55.[51]

Based on Dr. Fayed's testimony, and the lack of persuasive countervailing evidence, the evidence shows by a preponderance that Fanttik T8 Max is representative of products with a USB controller chip and the alleged reverse polarity circuit implemented in the jump starter battery pack; the Solvtin S6 Pro is representative of products with a USB controller chip with the alleged reverse polarity circuit implemented in the jumper cables; the Astro AI is representative of products without a USB controller chip and the alleged reverse polarity circuit implemented in the jump starter battery pack; and the Gooloo GP4000 is representative of products without a USB controller chip with the alleged reverse polarity circuit implemented in the jumper cables.

[51] The Carku Respondents' argument that the schematics for the Gooloo GP4000 product, which is alleged to be representative of products without a USB controller chip, includes a USB controller chip, RRB at 50, is unsupported by expert testimony or evidence [redacted] As the Carku Respondents themselves acknowledge, the parties should not "ask[] the Administrative Law Judge to compare schematics." RRB at 50.

a. Claim 1

i. Claim Limitation [1pre]: "A jump starting apparatus configured for boosting or charging a depleted or discharged battery having a positive polarity battery terminal and a negative polarity battery terminal, the jump starting apparatus comprising:"

The parties agree that the preamble is limiting. *See* EDIS Doc. ID 807614 (Joint Claim Construction Statement). Neither the Carku Respondents nor Staff dispute that that this limitation is met. *See* RIB at 96-103; RRB at 50-56; SIB at 77-85; SRB at 44-52. In addition, the undisputed evidence demonstrates that the Carku Accused Products are jump starting devices configured to boost or charge a depleted battery with a positive and negative polarity terminal. *See* Tr. (Fayed) at 378:15-25; CDX-0006C.35; *see also* CX-0718C (Fanttik T8 Max user manual); CX-0725C (Gooloo GP4000 user manual).

Accordingly, NOCO has shown that the Carku Accused Products meet Limitation [1pre] of the '023 patent.

ii. Claim Limitation [1a]: "a power supply"

Neither the Carku Respondents nor Staff dispute that that this limitation is met. *See* RIB at 96-103; RRB at 50-56; SIB at 77-85; SRB at 44-52. In addition, the undisputed evidence demonstrates that the Carku Accused Products include a power supply, specifically, an internal battery. *See* Tr. (Fayed) at 379:12-18; CDX-0006C.38; *see also* CX-0718C (Fanttik T8 Max user manual); CX-0725C (Gooloo GP4000 user manual).

Accordingly, NOCO has shown that the Carku Accused Products meet Limitation [1a] of the '023 patent.

DELTRAN EX1060
IPR2024-01219

iii. Claim Limitation [1b]: "a positive polarity battery terminal connector configured for connecting the jump starting apparatus to the positive polarity battery terminal of the depleted or discharged battery;"

Neither the Carku Respondents nor Staff dispute that that this limitation is met. *See* RIB at 96-103; RRB at 50-56; SIB at 77-85; SRB at 44-52. In addition, the undisputed evidence demonstrates that the Carku Accused Products include a positive polarity battery terminal connector for connecting the jump starter to a positive battery terminal; specifically, each model includes a jumper cable with a red battery clamp (positive). *See* Tr. (Fayed) at 380:6-15; CDX-0006C.41; *see also* CX-0718C (Fanttik T8 Max user manual); CX-0725C (Gooloo GP4000 user manual).

Accordingly, NOCO has shown that the Carku Accused Products meet Limitation [1b] of the '023 patent.

iv. Claim Limitation [1c]: "a negative polarity battery terminal connector configured for connecting the jump starting apparatus to the negative polarity battery terminal of the depleted or discharged battery;"

Neither the Carku Respondents nor Staff dispute that that this limitation is met. *See* RIB at 96-103; RRB at 50-56; SIB at 77-85; SRB at 44-52. In addition, the undisputed evidence demonstrates that the Carku Accused Products include a negative polarity battery terminal connector for connecting the jump starter to a negative battery terminal; specifically, each model includes a jumper cable with a black battery clamp (negative). *See* Tr. (Fayed) at 381:2-9; CDX-0006C.44; *see also* CX-0718C (Fanttik T8 Max user manual); CX-0725C (Gooloo GP4000 user manual).

Accordingly, NOCO has shown that the Carku Accused Products meet Limitation [1c] of the '023 patent.

DELTRAN EX1060
IPR2024-01219

v. Claim Limitation [1d]: "a power switch or circuit configured to turn on power from the power supply to the positive and negative polarity battery terminal connectors;"

Neither the Carku Respondents nor Staff dispute that that this limitation is met. *See* RIB at 96-103; RRB at 50-56; SIB at 77-85; SRB at 44-52. In addition, the undisputed evidence demonstrates that the Carku Accused Products include a power switch or circuit configured to turn on power from the power supply to the positive and negative battery terminal connectors. Specifically, Dr. Fayed testified that the Fanttik T8 Max includes [redacted] Dr. Fayed testified that the Solvtin S6 Pro and Gooloo GP4000 operate similarly, except that the circuitry is inside the jumper cable, rather than the jump starter battery pack. *See* Tr. (Fayed) at 383:7-17 ("[redacted]"); CDX-0006C.48; *see also* RX-2941C (Solvtin S6 Pro schematic); RX-3750C (Gooloo GP4000 schematic). As to the Astro AI, Dr. Fayed testified that it includes [redacted]

Accordingly, NOCO has shown that the Carku Accused Products meet Limitation [1d] of the '023 patent.

DELTRAN EX1060
IPR2024-01219

vi. Claim Limitation [1e]: "a control system or circuit connected to and controlling the power switch, the control system or circuit configured to detect whether the positive and negative polarity battery terminal connectors have a correct polarity connection with the positive and negative polarity battery terminals of the depleted or discharged battery prior to turning on the power switch or circuit;"

The Parties' Arguments

The parties dispute this limitation. NOCO argues that the Carku Accused Products include the claimed control system or circuit controlling the power switch, which is configured to detect a "correct polarity connection" between the battery terminal connectors (e.g., clamps) and the battery terminals of a depleted or discharged battery. CIB at 70. Relying on Dr. Fayed's testimony, NOCO asserts that in the Fanttik T8 Max, when the clamps are connected with correct polarity, the circuit branch comprised of the [redacted] If, however, the clamps are connected with the wrong polarity, the group of components will [redacted] Dr. Fayed testified that the Solvtin S6 Pro and Gooloo GP4000 use "an identical circuit" to the Fanttik T8 Max and "operate the same way." Tr. (Fayed) at 387:3-9; CDX-0006C.55; RX-2941C (Solvtin S6 Pro schematic); RX-3750C (Gooloo GP4000 schematic). As to Astro AI, Dr. Fayed testified that it operated according to the "same principles," but looked slightly different. Tr. (Fayed) at 387:10-19. There, [redacted]

DELTRAN EX1060
IPR2024-01219

[redacted]. NOCO contends that polarity is a "binary" question, and thus the use a reverse polarity detection circuit like the ones in the Carku Accused Products meets the limitation of "detecting . . . a correct polarity connection." CIB at 72-73. Further, NOCO contends that the concept of "polarity" is meaningless when not connected to a battery, and that the Carku Accused Products operate "precisely" as disclosed and claimed in the '023 patent. CIB at 73-74.

The Carku Respondents contend that the control circuit in their products "is only able to give a sensing output when the connection is in the reverse (not correct) polarity." RIB at 97-98, 99-100. The Carku Respondents contend that their "reverse connection detection circuit" does not distinguish between correct polarity and other "non-correct polarity conditions," such as disconnected clamps or clamps connected with reverse polarity to a battery of less than [redacted] volts. RIB at 98, 99-100. That is, the Carku Respondents argue both experts agree that the [redacted]

Staff argues that if an accused circuit is a reverse polarity detection circuit (*i.e.*, detects that polarity is not correct), the claims as written also require detection of the connection of a battery, such that the system detects "a correct polarity connection with the positive and negative polarity battery terminals." SIB at 80-81; SRB at 48-49. Because the Carku Accused Products utilize reverse polarity circuits, and do not detect whether a battery is present, Staff argues that the Carku Accused Products do not meet Limitation [1e]. SIB at 81-82.

DELTRAN EX1060
IPR2024-01219

In response, NOCO contends that the claims require a connection to a battery, and thus the operation of the circuit if disconnected is "irrelevant." CRB at 33. NOCO also states that polarity is only relevant when connected to a battery, and that because polarity is binary, a reverse polarity circuit also determines whether there is a "correct polarity connection" as required by the claim. CRB at 33. NOCO argues that the specification describes the preferred embodiment as implementing polarity detection in a "reverse sensor" that determines "polarity," "correct polarity," and "reverse polarity." *See* CRB at 33 (citing '023 patent, 4:27-29, 4:40-43, 5:27-50). NOCO asserts that the exclusion of "reverse polarity" circuits from the claims would be "presumptively incorrect" because it would exclude the preferred embodiment described in the specification. CRB at 34 (citing *Sequoia Tech., LLC v. Dell Tech., Inc.*, 66 F.4th 1317, 1327 (Fed. Cir. 2023) (excluding preferred embodiment from claims "is rarely, if ever correct"). NOCO also contends that Staff's position—that the claims requires both presence and reverse polarity detection—is contrary to claim differentiation principles, as dependent claim 5 adds a limitation requiring battery presence detection. CRB at 34. Further, NOCO contends that Dr. Fayed testified that the Carku Accused Products include a presence detector in association with Limitation [39e], which the Carku Respondents have not challenged. CRB at 35 (citing Tr. (Fayed) at 361:1-18).

Discussion

Upon review of the submissions and evidence of record, the undersigned finds that NOCO has established, by a preponderance of the evidence, that the Carku Accused Products meet the claim requirement "a control system or circuit connected to and controlling the power switch, the control system or circuit configured to detect whether the positive and negative polarity battery terminal connectors have a correct polarity connection with the positive and

negative polarity battery terminals of the depleted or discharged battery prior to turning on the power switch or circuit."

The parties and experts do not materially dispute the operation of the reverse polarity detection circuits in the Carku Accused Products. *See, e.g.*, RIB at 51-53; RDX-0150; RDX-0008C.16; Tr. (Fayed) at 462:6-472:15; Tr. (Ricketts) at 1151:11-1152:2; RDX-0301. The reverse polarity detection circuits in the Carku Accused Products will, if connected with proper polarity to a vehicle battery, respond to that condition by [redacted] Conversely, if connected with reverse polarity to a battery with a voltage greater than [redacted] *See, e.g.*, Tr. (Fayed) at 385:10-387:1; Tr. (Ricketts) at 1149:8-1151:10. The parties and experts also agree that the reverse polarity detection circuit will not prevent power from flowing in two additional circumstances: (1) if the clamps are disconnected; and (2) if the clamps are connected with reverse polarity to a battery with a voltage of less than [redacted]. *See, e.g.*, RDX-0301 (graphic summarizing testimony from Dr. Fayed and Dr. Ricketts as to how the reverse polarity detection circuit in the Carku Accused Products operates). The Carku Respondents contend that

[52] There is evidence that the Carku Accused Products utilize additional circuits and inputs before sending power to the clamps. *See, e.g.*, Tr. (Fayed) at 408:23-410:6 (describing the separate "presence detector" circuit in the Carku Accused Products); Tr. (Ricketts) at 1216:9-1217:23 (discussing the alleged presence detector circuit in the Carku Accused Products that provides the [redacted]). The undersigned understands, then, that the [redacted] signal is necessary but not sufficient for power to ultimately flow to the clamps.

these additional circumstances establish non-infringement, because the reverse polarity detection circuit responds to certain conditions other than "correct" or "incorrect" polarity.

First, the undersigned agrees with NOCO that the asserted claims refer to operation in the context of a connection to a depleted or discharged vehicle battery, and thus the circuit's response when disconnected does not establish non-infringement. The '023 patent is directed towards vehicle jump-starter devices.[53] More specifically, the preamble of claim 1, which the parties agree is limiting and which the parties do not dispute is met by the accused products, requires "A jump starting apparatus configured for boosting or charging a depleted or discharged battery." '023 patent, cl. 1. Prior to limitation [1e], the claims then require positive polarity and negative polarity battery terminal connectors "configured for connecting the jump starting apparatus" to the "battery terminal[s] of the depleted or discharged battery." '023 patent, cl. 1. The claims, then, refer to certain operation within the context of a connection to a depleted or discharged vehicle battery.[54] The Carku Respondents' argument that the reverse polarity

[53] *See, e.g.*, '023 patent, Title ("Portable Vehicle Battery Jump Start Apparatus With Safety Protection and Jumper Cable Device Thereof"), Abstract ("A handheld device for jump starting a vehicle engine . . ."), 1:8-10 ("The present invention relates generally to apparatus for jump-starting a vehicle having depleted or discharged battery."), 3:14-16 ("Accordingly, there exists a need in the art for further improvements to vehicle jump start devices."), 3:21-22 ("In accordance with an aspect of the invention, apparatus is provided for jump starting a vehicle engine"), 4:27-28 ("car battery reverse sensor 10 monitors the polarity of the vehicle battery"); *see also* cl. 18 (incorporated into asserted claim 19, "the apparatus of claim 1, further comprising a manual override switch configured to activate a manual override mode to enable a user to connect jump start power to the depleted or discharged vehicle battery when a vehicle battery isolation sensor is unable to detect presence of a vehicle battery.").

[54] Similar language appears in the other asserted claims of the '023 and '243 patents. The evidence further indicates that when the clamps are not connected to anything, there is no polarity to detect. *See* Tr. (Ricketts) at 1203:14-1204:24 ("[Q]: So Dr. Ricketts, if there's no connection between the clamps and the vehicle battery, such as when the clamps are disconnected from the vehicle battery, then there's no correct polarity to detect; right? [A]: There would be no correct polarity connection at the battery terminals, no."); Tr. (Fayed) at 532:25-533:5, 10-11 ("Because if – it's meaningless to ask what that polarity is if a battery is not connected, right. I mean, essentially, the output of that circuit is a 'don't care' as far as the device is concerned if there is no cable connected. . . . The cable is unplugged, it's meaningless to even ask what the polarity is.").

detection circuit does not prevent power from flowing when the clamps are disconnected from any battery, then, does not establish non-infringement. *See* CRB at 33.

Further, the record evidence shows that the identified reverse polarity detection circuits are labeled in the schematics of the Carku Accused Products as accomplishing [redacted] *See, e.g.*, RX-2941C.2 (Solvtin S6 Pro and Gooloo GP4000 smart cable schematic); RX-2942C.7 (AstroAI 118 schematic); RX-4080C.2 (Fanttik T8 Max schematic); RDX-0008C.15. The user manuals for the Carku Accused Products also advertise that the products detect when the battery terminals have a "correct" connection or when they are "incorrectly connected" with reverse polarity. *See, e.g.*, CX-725C.7-8 (Gooloo GP4000 user manual) ("Solid green light: This indicates that the ***connection is correct*** and powered on. . . . Solid red light: This indicates that the ***positive and negative terminals are incorrectly connected***.") (emphasis added); CX-0781C.1 (Fanttik T8 Max user manual) (display screen returns "ERROR" when "'+' and '-' poles of battery clips reversed"). Dr. Ricketts similarly agreed that the Carku Accused Products "at least, are detecting reverse polarity." Tr. (Ricketts) at 1215:5-9.

The specification of the '023 patent explains that a reverse polarity detection circuit—*e.g.*, "reverse car battery sensor 10"—detects a "correct polarity" connection. *See* '023 patent, 5:27-36 (describing the operation of reverse car battery sensor 10 as "[i]f the battery 72 is connected to the terminals of the booster device with the correct polarity, the optocoupler LED 11 will not conduct current, and is therefore turned off, providing a "1" or high output signal to the MCU 1."); *see also* Tr. (Horenstein) at 1134:17-19 ("In the '023 Patent, the signal for reverse polarity connection is provided by one of its optocoupler, the 4N17 optocoupler."). The evidence

demonstrates, then, that the Carku Accused Products—which undisputedly "detect[] reverse polarity"—operate to detect "correct polarity" similarly to the "reverse car battery sensor 10" in the preferred embodiment of the specification. *See* CIB at 74-75; CRB at 32-34.

The Carku Respondents have not introduced persuasive evidence that the "limited accuracy" of its reverse polarity detection circuit (RIB at 98)—[redacted]—results in a circuit that is unable to detect a "correct polarity connection" as claimed. As discussed *supra*, the evidence demonstrates that the product literature—including both internal schematics and consumer-facing user manuals—describe the identified polarity protection circuit as operating to detect whether the clamps are connected to a vehicle battery with reverse or correct polarity. The Carku Respondents' expert, Dr. Ricketts agreed that when connected to a 10-volt vehicle battery—which he did not dispute would already be a "significantly depleted" vehicle battery, Tr. (Ricketts) at 1212:14-17—the circuit would detect a correct polarity condition [redacted] *id.* at 1212:18-1213:2, and detect a reverse polarity condition [redacted], *id.* at 1213:3-14. In the context of use with a vehicle battery, as contemplated by the claims and product literature for the Carku Accused Products, the record evidence and expert testimony demonstrate by a preponderance of the evidence that, to one of skill in the art, the reverse polarity protection circuits in the Carku Accused Products are configured to detect whether the positive and negative polarity battery terminal connectors have a correct polarity connection prior to turning on the power switch or circuit. *Cf. Hilgraeve Corp. v. Symantec Corp.*, 265 F.3d 1336, 1343 (Fed. Cir. 2001) ("in determining whether a product claim is infringed, we have held

that an accused device may be found to infringe if it is reasonably capable of satisfying the claim limitations").[55]

The undersigned also disagrees with Staff that Limitation [1e] requires a battery presence sensor circuit in addition to a reverse polarity detection circuit in order to "detect a correct polarity connection." Staff's argument—that both a battery presence sensor circuit and a reverse polarity detection circuit are required to detect "a correct polarity connection"—is at odds with the specification, which, as discussed above, describes a reverse polarity detection circuit in the preferred embodiment that detects "correct polarity." *See* '023 patent, 5:27-36 (describing the operation of reverse car battery sensor 10 as "[i]f the battery 72 is connected to the terminals of the booster device ***with the correct polarity***, the optocoupler LED 11 will not conduct current, and is therefore turned off, providing a "1" or high output signal to the MCU 1.") (emphasis added); *see also* Tr. (Horenstein) at 1134:17-19 ("In the '023 Patent, the signal for reverse polarity connection is provided by one of its optocoupler, the 4N17 optocoupler.").[56] Moreover, even if a battery presence sensor was required, Dr. Fayed's unchallenged testimony with respect to Limitation [39e] establishes that the Carku Accused Products include a battery presence

[55] Moreover, the evidence indicates that vehicle batteries may conventionally have voltages significantly larger [redacted], including when "depleted or discharged" as contemplated by the claim. *See, e.g.*, Tr. (Ricketts) at 1212:14-17 (not disputing that a vehicle battery of 10 volts would be "a significantly depleted car battery"); Tr. (Horenstein) at 1116:3-7 (similar). *See also* '023 patent, 4:8-9 ("At the heart of the handheld battery booster is a lithium polymer battery pack 21, which stores sufficient energy to jump start a vehicle engine served by a conventional 12 volt lead-acid or valve regulated lead-acid battery."); CX-0718C.1 (Fanttik T8 Max user manual) ("T8 Max Designed to jump start 12-Volt lead-acid batteries.").

[56] Claim 5 of the '023 patent provides *inter alia* the further limiting feature of the control circuit configured to "detect a presence of the depleted battery." However, such a detection is not necessary for all claims; the specification provides a preferred embodiment of the invention involving a manual override that can operate if "the battery voltage is so low that automatic detection by the MCU is not possible." '023 patent, 5:3-6.

sensor, [redacted] *See, e.g.*, Tr. (Fayed) at 408:23-410:6; Tr. (Ricketts) at 1210:20-1212:6.[57]

The evidence thus shows by a preponderance that in circumstances referenced by the claims, the reverse polarity detection circuit in the Carku Accused Products responds to correct and incorrect polarity by closing or failing to close a power switch. *See* RIB at 51-53; RDX-150; RDX-0008C.16; Tr. (Fayed) at 462:6-472:15; Tr. (Ricketts) at 1151:11-1152:2; RDX-301. That is sufficient for infringement. *Cf. Hilgraeve*, 265 F.3d at 1343. Accordingly, NOCO has shown that the Carku Accused Products meet Limitation [1e] of the '023 patent.

vii. Claim Limitation [1f]: "a USB input circuit connected to the power supply, the USB input circuit comprising a DC/DC converter, the USB input circuit configured for converting power from a USB power source to increase power voltage to the power supply; and"

The parties dispute this limitation. NOCO argues that the Carku Accused Products include the claimed USB input circuit with a DC/DC converter. CIB at 81. Specifically, NOCO contends that schematics for the Fanttik T8 Max product, which is representative of Group A, show a DC/DC converter chip (SC8812A), which converts power from the USB port. *See* Tr. (Fayed) at 391:22-392:31; CDX-0006C.61; RX-2940C (Fanttik T8 Max schematic). As to the Gooloo GP4000, NOCO contends that the circuit schematic show DC/DC conversion

[57] Staff, but not the Carku Respondents, further argues that Limitations [1e] and [39e] are not met because there is no single "control circuit" that receives signals from both the identified presence detection circuit and the reverse polarity detection circuit, relying on testimony from Dr. Ricketts. *See* SIB at 83. NOCO contends that this is a belated and incorrect claim construction argument. CRB at 48. To the extent Staff contends that the control system for the power switch must ***directly*** receive the signals from the reverse polarity detection circuit and/or battery presence sensor, this is not required by the claim language, which states only that the claimed control system be "configured to detect . . . a correct polarity connection with the positive and negative polarity terminals of the depleted or discharged battery." '023 patent, cl. 1. Dr. Ricketts' testimony that the identified power switch is "controlled by two signals" indicating presence and polarity is sufficient to meet the "configured to" language even if battery presence detection were required in conjunction with reverse polarity detection to satisfy Limitation [1e]. Tr. (Ricketts) at 1210:20-1212:6; *id.* at 1216:6-12:17:23, 1211:24-1212:6.

DELTRAN EX1060
IPR2024-01219

implemented in a series of discrete circuit components. Tr. (Fayed) at 392:11-15; CDX-0006C.62; RX-3382C (Gooloo GP4000 schematic).

The Carku Respondents argue that Dr. Fayed failed to apply the undersigned's claim construction, because he did not identify which USB standards or specification the alleged USB input circuits operate in accordance with. RIB at 101; RRB at 53-54. The Carku Respondents also contends that NOCO only addressed the Fanttik T8 Max and Gooloo GP4000 products, and did not address the Solvtin S6 Pro or Astro AI products identified as representative. RIB at 101. Finally, the Carku Respondents contend that their products include USB-C ports, which are outside the scope of the claim language. RIB at 101; RRB at 54-55.

Staff argues that the Carku Accused Products do not infringe because the only USB input connector in the Carku Accused Products is a combined USB-C input/output port and associated USB-C power delivery circuit. SIB at 85; SRB at 51-52.

In response, NOCO contends that Dr. Fayed did not separately address the Solvtin S6 Pro and Astro AI products because the differences between the Group A products (the Fanttik T8 Max and Solvtin S6 Pro) and Group B products (the Gooloo GP4000 and Astro AI) was only relevant as to Limitations [1d] and [1e]. CRB at 39 n.5. NOCO also contends that any determination that "USB input circuit" or "USB input connector" excludes "USB-C" is only relevant as to Group A, because only Group A implements "bidirectional" USB-C technology, while Group B is unidirectional. CRB at 38 n.4. NOCO also contends—without identifying any products—that "devices that do not have USB-C at all but only have micro-USB input would also be considered unidirectional." *Id.*

Upon review of the submissions and evidence of record, the undersigned finds that NOCO has not established, by a preponderance of the evidence, that the Carku Accused Products

satisfy the limitation "a USB input circuit a USB input circuit connected to the power supply, the USB input circuit comprising a DC/DC converter, the USB input circuit configured for converting power from a USB power source to increase power voltage to the power supply." As discussed above in connection with claim construction, Part V.D.1 *supra*, the undersigned construed the term "USB input circuit" as "a circuit that allows the power supply to be charged from an external power source with a USB charger." Further, the claimed circuit must be in accordance with the Universal Serial Bus standards known to those of skill in the art at the time of the claimed invention, which does not include the USB-C or USB PD 2.0 specifications.

The dispute is limited to whether the identified circuits are in accordance with a USB standard within the scope of the claims. The Carku Respondents do not dispute the presence of a DC/DC converter or the remainder of the claim language. Evidence provided at the hearing established that every Carku Accused Product uses the same USB charging technology (USB-C) and supports the same USB charging standards or protocols. *See* Tr. (Cheng) at 716:7-17 ("[Q]: How many of the Carku products accused of infringement in this case have USB-C charging functionality? [A]: 102. [Q]: What USB power delivery protocol version do the Carku accused products support? [A]: PD 2.0 version, and the higher version, or versions. And also, the QC version for the non-USB protocol version."); Tr. (Zhang) at 717:23-25 (Carku products "do not use V_{BUS} to do the negotiation"). Because the USB PD 2.0 and USB-C specifications are not within the scope of the claim, NOCO has not established infringement as to the Carku Accused Products.[58]

[58] Nor is there an exception for "unidirectional" USB-C charging. As discussed above in connection with claim construction, the undersigned construed the terms as "a circuit that allows the power supply to be charged from an external power source with a USB charger," and specified that "the claimed circuit must be in accordance with the Universal Serial Bus standards known to those of skill in the art at the time of

Because USB-C input circuits are not within the scope of the claims, NOCO has not shown that the Carku Accused Products meet Limitation [1f] of the '023 patent.[59]

viii. Claim Limitation [1g]: "a USB input connector connected to the USB input circuit, the USB input connector configured for connecting to the USB power source and providing power input from the USB power source through the USB input connector and the USB input circuit to the power supply."

The parties dispute this limitation. NOCO asserts that the Carku Accused Products meet this Limitation because they include USB-C input connectors. CIB at 83 (citing Tr. (Fayed) at 399:2-9, 399:10-14).

The Carku Respondents and Staff contend that Limitation [1g] is not met because the only input connectors identified are USB-C connectors, which are outside the scope of the claims. *See* RIB at 101; RRB at 54-55; SIB at 85; SRB at 52.

Upon review of the submissions and evidence of record, the undersigned finds that NOCO has not established, by a preponderance of the evidence, that the Carku Accused Products meet the claim requirement "a USB input circuit a USB input circuit connected to the power supply, the USB input circuit comprising a DC/DC converter, the USB input circuit configured for converting power from a USB power source to increase power voltage to the power supply." As discussed above regarding claim construction, Part V.D.2. *supra*, "USB input connector" is construed as a port that receives a USB plug. Further, the claimed connector must be in

---

the claimed invention." Order No. 20 at 57. USB-C was not a Universal Serial Bus standard known to those of skill in the art as of July 3, 2014. *See* Part V.D.1. *supra.*

[59] Although the *Markman* Order noted that a doctrine of equivalents argument was not precluded by the construction of "USB charge circuit" or "USB input circuit," NOCO did not assert such an argument for either the Carku or ADC products. *See* Order No. 20 at 61 n.46.

accordance with the Universal Serial Bus standards known to those of skill in the art at the time of the claimed invention, which does not include the USB-C or USB PD 2.0 specifications.

As with Limitation [1g], the dispute is limited to whether the USB input connector is in accordance with a standard within the scope of the claims. For all the reasons discussed above with respect to Limitation [1g], *supra*, the undersigned finds that the evidence of record establishes that all of the Carku Accused Products use USB-C input connectors.[60]

Because USB-C input connectors are not within the scope of the claims, NOCO has not shown that the Carku Accused Products meet Limitation [1g] of the '023 patent.

***

Accordingly, for the reasons discussed above, the evidence fails to show by a preponderance that claim 1 of the '023 patent is infringed by the Carku Accused Products.

b. Claim 19

Claim 19 depends from claim 18, which in turn depends from claim 1, and requires in addition "further comprising a manual override switch configured to activate a manual override mode to enable a user to connect jump start power to the depleted or discharged vehicle battery when a vehicle battery isolation sensor is unable to detect presence of the vehicle battery" and "wherein the control system or circuit is configured to detect actuation of the manual override switch for at least a predetermined period of time before activation of the manual override mode." As held *supra*, the evidence fails to show infringement of claim 1 by the Carku Accused Products. Therefore, the evidence does not show infringement of claim 19. *See Wahpeton*, 870 F.2d at 1552 n.9.

c. Claim 32

[60] NOCO also did not assert a doctrine of equivalents argument for this limitation.

DELTRAN EX1060
IPR2024-01219

Claim 32 depends from claim 1 and requires in addition "the DC-DC converter [to] be turned on and off by a microprocessor." As held *supra*, the evidence fails to show infringement of claim 1 by the Carku Accused Products. Therefore, the evidence does not show infringement of claim 32. *See Wahpeton*, 870 F.2d at 1552 n.9.

d. Claim 39

i. Claim Limitation [39pre]: "A jump starting device for boosting or charging a depleted or discharged battery having a positive polarity battery terminal and a negative polarity battery terminal, the jump starter device comprising:"

The parties agree that the preamble is limiting. *See* EDIS Doc. ID 807614 (Joint Claim Construction Statement). Neither the Carku Respondents nor Staff dispute that that this limitation is met. *See* RIB at 96-103; RRB at 50-56; SIB at 77-85; SRB at 44-52. In addition, the undisputed evidence demonstrates that the Carku Accused Products are jump starting devices for boosting or charging a depleted battery with a positive and negative polarity terminal. *See* Tr. (Fayed) at 378:15-25; CDX-0006C.35; CDX-0006C.76; Tr. (Fayed) at 408:9-22; *see also* CX-718C (Fanttik T8 Max user manual); CX-0725C (Gooloo GP4000 user manual).

Accordingly, NOCO has shown that the Carku Accused Products meet Limitation [39pre] of the '023 patent.

ii. Claim Limitation [39a]: "a power supply"

Neither the Carku Respondents nor Staff dispute that that this limitation is met. *See* RIB at 96-103; RRB at 50-56; SIB at 77-85; SRB at 44-52. In addition, the undisputed evidence demonstrates that the Carku Accused Products are jump starting devices configured to boost or charge a depleted battery with a positive and negative polarity terminal. *See* Tr. (Fayed) at

379:12-18; CDX-0006C.38; CDX-0006C.76; Tr. (Fayed) at 408:9-22; *see also* CX-718C (Fanttik T8 Max user manual); CX-725C (Gooloo GP4000 user manual).

Accordingly, NOCO has shown that the Carku Accused Products meet Limitation [39a] of the ’023 patent.

iii. Claim Limitation [39b]: “a positive battery terminal connector for connecting the jump starter device to the positive battery terminal of the depleted or discharged battery;”

Neither the Carku Respondents nor Staff dispute that that this limitation is met. *See* RIB at 96-103; RRB at 50-56; SIB at 77-85; SRB at 44-52. In addition, the undisputed evidence demonstrates that the Carku Accused Products include a positive polarity battery terminal connector for connecting the jump starter to a positive battery terminal; specifically, each model includes a jumper cable with a red battery clamp (positive). *See* Tr. (Fayed) at 380:6-15; CDX-0006C.41; CDX-0006C.76; Tr. (Fayed) at 408:9-22; *see also* CX-718C (Fanttik T8 Max user manual); CX-725C (Gooloo GP4000 user manual).

Accordingly, NOCO has shown that the Carku Accused Products meet Limitation [39b] of the ’023 patent.

iv. Claim Limitation [39c]: “a negative battery terminal connector for connecting the jump starter device to the negative battery terminal of the depleted or discharged battery;”

Neither the Carku Respondents nor Staff dispute that that this limitation is met. *See* RIB at 96-103; RRB at 50-56; SIB at 77-85; SRB at 44-52. In addition, the undisputed evidence demonstrates that the Carku Accused Products include a negative polarity battery terminal connector for connecting the jump starter to a negative battery terminal; specifically, each model includes a jumper cable with a black battery clamp (negative). *See* Tr. (Fayed) at 381:2-9; CDX-

DELTRAN EX1060
IPR2024-01219

0006C.44; CDX-0006C.76; Tr. (Fayed) at 408:9-22; *see also* CX-718C (Fanttik T8 Max user manual); CX-725C (Gooloo GP4000 user manual).

Accordingly, NOCO has shown that the Carku Accused Products meet Limitation [39c] of the '023 patent.

v. Claim Limitation [39d]: "a power switch or circuit connected in circuit with the power supply and the positive and negative battery terminal connectors, the power switch configured to turn power on from the power supply to the depleted or discharged battery when the positive and negative battery terminal connectors are properly connected to the positive and negative battery connectors;"

The parties dispute that that this limitation is met. *See* RIB at 87-88. NOCO asserts that the Carku Accused Products meet Limitation [39d] for the same reasons as with respect to Limitation [1d], which the Carku Respondents did not dispute. CIB at 90.

The Carku Respondents argues that because the Carku Accused Products are imported without the jumper cable device plugged into the handheld battery charger, the "power or switch"—which for some of the products is located in the smart cable—is not "connected in circuit" with the device's power supply. RIB at 102.

Staff contends that Dr. Fayed did not address this limitation, and thus NOCO's evidence is insufficient. SIB at 84.

Upon review of the submissions and evidence of record, the undersigned finds that NOCO has established, by a preponderance of the evidence, that the Carku Accused Products meet the claim requirement "a power switch or circuit connected in circuit with the power supply and the positive and negative battery terminal connectors, the power switch configured to turn power on from the power supply to the depleted or discharged battery when the positive and

negative battery terminal connectors are properly connected to the positive and negative battery connectors."

Claim 39 is an apparatus claim, not a method claim, and "[a]pparatus claims cover what a device is, not what a device does." *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1468 (Fed. Cir. 1990). Unlike method claims, "actual . . . operation in the accused device is not required" for apparatus claims. *Intel Corp. v. ITC*, 946 F.2d 821, 832 (Fed. Cir. 1991). This is consistent with the depiction and description in the '023 patent of a preferred embodiment with a jumper cable unplugged from the handheld battery pack. Tr. (Fayed) 420:24-421:1; '023 patent, Figs. 3 & 4. The "connected in circuit" language, then, is a structural limitation dictating how the relevant circuits are wired, not a requirement that the circuits be live, plugged in, or powered on at importation. *See* CRB at 46.

Both the Federal Circuit and Commission have found direct infringement of apparatus claims requiring similar "connections" by products that are unassembled or not powered on at the time of sale or importation. *High Tech Med. Instrumentation, Inc. v. New Image Indus., Inc.*, 49 F.3d 1551, 1556 (Fed. Cir. 1995) ("[I]f a device is designed to be altered or assembled before operation, the manufacturer may be held liable for infringement if the device, as altered or assembled, infringes a valid patent."); *Certain Non-Volatile Memory Devices and Products Containing the Same*, Inv. No. 337-TA-1046, Comm'n Op., EDIS Doc. ID 659979, at 24-27 (Oct. 26, 2018) (rejecting position that "coupled to" limitation required "devices that are shipped performing the functionality of actively conducting" and finding that the ID erred in requiring "that the memory cells must be powered on at the time of importation for infringement"); *Certain Multiple Mode Outdoor Grills & Parts Thereof*, Inv. No. 337-TA-895, Initial Determination, EDIS Doc. ID 544964, at 63 (Oct. 23, 2014) ("[E]ven if infringement is analyzed

DELTRAN EX1060
IPR2024-01219

at the time of importation, an unassembled device may be found to infringe.") (citing *High Tech*) *unreviewed by* Comm'n Op., EDIS Doc. ID 551825 (Feb. 20, 2015).

Moreover, for the same reasons discussed above in the context of the Limitation [1d], the undersigned finds that the evidence establishes, by a preponderance of the evidence, that the Carku Accused Products include "a power switch or circuit connected in circuit with the power supply and the positive and negative battery terminal connectors, the power switch configured to turn power on from the power supply to the depleted or discharged battery when the positive and negative battery terminal connectors are properly connected to the positive and negative battery connectors."[61]

Accordingly, NOCO has shown that the Carku Accused Products meet Limitation [39d] of the '023 patent.

vi. Claim Limitation [39e]: "a power switch control system or circuit connected to and controlling the power switch, the power switch control system or circuit configured to detect presence of the depleted or discharged battery when connected between the positive and negative battery terminal connectors and to detect polarity of the depleted or discharged battery when connected between the positive and negative battery terminal connectors;"

The parties dispute this limitation. NOCO asserts that the Carku Accused Products satisfy Limitation [39e] for the same reasons as Limitation [1e], and that they additionally meet the requirement that the "power switch control system or circuit" is "configured to detect presence of the depleted or discharged battery." NOCO contends that in the Fanttik T8 Max, the circuit

[61] Dr. Fayed referenced his analysis of Limitation [1d] to find Limitation [39d] met. Tr. (Fayed) at 408:6-22. Although Staff contends that Dr. Fayed did not address the language of Limitation [39d], he testified that his analysis was identical to Limitation [1d], and Staff has not identified a material difference between the language of the two limitations.

[redacted] detects presence of a depleted or discharged battery. Tr. (Fayed) at 409:4-12. If connected to a battery, [redacted] If a battery is not connected, no current will flow and the signal [redacted] Similarly, for the Solvtin S6 Pro, Gooloo GP4000, and Astro AI, NOCO relies on Dr. Fayed's testimony that a nearly identical or very similar presence detection circuit is used. *See* CIB at 93-94 (citing Tr. (Fayed) at 409:22-410:6; RX-2941C (Solvtin S6 Pro schematic); RX-2942C (Astro AI schematic).

The Carku Respondents dispute Limitation [39e] for the same reasons as Limitation [1e]. *See* RIB at 102 ("The Carku Accused Products do not practice at least limitations 39[e], [f], and [g] for the reasons explained above with respect to limitations 1[e], [f], and [g]."); RRB at 56.[62]

Staff argues that Limitation [39e] is not met because there is no single "control circuit" that receives signals from both the identified presence detection circuit and the reverse polarity detection circuit, relying on testimony from Dr. Ricketts. *See* SIB at 83.

For the same reasons as discussed above with respect to Limitation [1e], the undersigned finds that NOCO has established, by a preponderance of the evidence, that the Carku Accused Products are "configured to" "detect polarity of the depleted or discharged battery." Moreover,

[62] The Carku Respondents in their reply post-hearing brief raise an additional non-infringement argument: "NOCO also failed to explain why the accused products meet limitation 39[e] because the products do not connect battery power to the clamps upon connection with correct polarity, but require a voltage drop. Tr. (Ricketts) 1169:8-1170:1; RDX-008C.29." RRB at 56. This argument does not appear in their initial post-hearing brief and is, accordingly, deemed waived. *See* Ground Rule 13.1 ("The [initial] post-hearing brief shall discuss the issues and evidence tried within the framework of the general issues determined by the Commission's Notice of Investigation and those issues that are included in the pre-hearing brief and any permitted amendments thereto. All other issues shall be deemed waived."). To the extent this is a repetition of the Carku Respondents' proposed claim construction of the "when connected" language for the '243 patent, that construction is rejected for the same reasons as discussed with respect to claim 1 of the '243 patent.

DELTRAN EX1060
IPR2024-01219

Dr. Fayed's uncontradicted testimony establishes that the circuit [redacted] detects presence of a depleted or discharged battery. Tr. (Fayed) at 409:4-12; CDX-0006C.77; RX-4940C (Fanttik T8 Max schematic); (Fayed) at 409:22-410:6; RX-2941C (Solvtin S6 Pro schematic); RX-2942C (Astro AI schematic).

As explained above in connection with Limitation [1e], the undersigned does not find Staff's non-infringement argument—that the power switch control system must directly receive signals from a reverse polarity protection circuit and/or a battery presence circuit—to be persuasive.[63] Dr. Ricketts' testimony—the only evidence upon which Staff relies—is, at best, unclear, and Staff's non-infringement position requires interpreting the broad "configured to detect" language as requiring a particular circuitry design or communication path. *See* Tr. (Ricketts) at 1210:20-1212:6 (agreeing that the "the power switch in this circuit is controlled by two signals," one from the reverse polarity protection circuit, and one from the MCU based on the alleged battery presence detection circuit).

Accordingly, NOCO has shown that the Carku Accused Products meet Limitation [39e] of the '023 patent.

vii. Claim Limitation [39f]: "a USB input circuit connected to the power supply, the USB input circuit configured for converting power from a USB power source to increase power voltage to the power supply; and"

The parties dispute this limitation. NOCO asserts that the Carku Accused Products satisfy Limitation [39f] for the same reasons as Limitation [1f]. CIB at 95.

[63] For the same reason, the undersigned rejects Staff's argument that the Carku Accused Products do not meet the "configured to detect presence" limitation because the [redacted] Dr. Ricketts testified that the power switch is "controlled by" two signals, one indicating reverse polarity and one based on battery presence. *See* Tr. (Ricketts) at 1210:20-1212:6.

The Carku Respondents dispute Limitation [39f] for the same reasons as Limitation [1f]. *See* RIB at 102 ("The Carku Accused Products do not practice at least limitations 39[e], [f], and [g] for the reasons explained above with respect to limitations 1[e], [f], and [g]."); RRB at 39.

Staff, like the Carku Respondents, disputes Limitation [39f] for the same reasons as Limitation [1f]. SIB at 84-85; SRB at 51-52.

For the same reasons as discussed above with respect to Limitation [1f], the undersigned finds that the USB-C input circuit in the Carku Accused Products are not within the scope of the claims. Accordingly, NOCO has not shown that the Carku Accused Products meet Limitation [39f] of the '023 patent.

viii. Claim Limitation [39g]: "a USB input connector configured for connecting to the USB power source and providing power input from the USB power source through the USB input connector and the USB input circuit to the power supply."

The parties dispute this limitation. NOCO asserts that the Carku Accused Products satisfy Limitation [39g] for the same reasons as Limitation [1g]. CIB at 96.

The Carku Respondents dispute Limitation [39g] for the same reasons as Limitation [1g]. *See* RIB at 102 ("The Carku Accused Products do not practice at least limitations 39[e], [f], and [g] for the reasons explained above with respect to limitations 1[e], [f], and [g]."); RRB at 39.

Staff, like the Carku Respondents, disputes Limitation [39g] for the same reasons as Limitation [1g]. SIB at 84-85; SRB at 51-52.

For the same reasons as discussed above with respect to Limitation [1f], the undersigned finds that the USB-C input connectors in the Carku Accused Products are not within the scope of the claims. Accordingly, NOCO has not shown that the Carku Accused Products meet Limitation [39g] of the '023 patent.

DELTRAN EX1060
IPR2024-01219

***

Accordingly, for the reasons discussed above, the evidence fails to show by a preponderance that claim 39 of the '023 patent is infringed by the Carku Accused Products.

e. Claim 54

i. Claim Limitation [54pre]: "A jump starting apparatus configured for boosting or charging a depleted or discharged battery having a positive polarity battery terminal and a negative polarity battery terminal, the jump starting apparatus comprising:"

The parties agree that the preamble is limiting. *See* EDIS Doc. ID 807614 (Joint Claim Construction Statement). Neither the Carku Respondents nor Staff dispute that that this limitation is met. *See* RIB at 96-103; RRB at 50-56; SIB at 77-85; SRB at 44-52. In addition, the undisputed evidence demonstrates that the Carku Accused Products are jump starting devices for boosting or charging a depleted battery with a positive and negative polarity terminal. *See* Tr. (Fayed) at 378:15-25; CDX-0006C.35; Tr. (Fayed) at 417:10-17; *see also* CX-0718C (Fanttik T8 Max user manual); CX-0725C (Gooloo GP4000 user manual).

Accordingly, NOCO has shown that the Carku Accused Products meet Limitation [54pre] of the '023 patent.

ii. Claim Limitation [54a]: "a power supply;"

Neither the Carku Respondents nor Staff dispute that that this limitation is met. *See* RIB at 96-103; RRB at 50-56; SIB at 77-85; SRB at 44-52. In addition, the undisputed evidence demonstrates that the Carku Accused Products are jump starting devices configured to boost or charge a depleted battery with a positive and negative polarity terminal. *See* Tr. (Fayed) at 379:12-18; CDX-0006C.38; Tr. (Fayed) at 417:10-17; *see also* CX-0718C (Fanttik T8 Max user manual); CX-0725C (Gooloo GP4000 user manual).

DELTRAN EX1060
IPR2024-01219

Accordingly, NOCO has shown that the Carku Accused Products meet Limitation [54a] of the ’023 patent.

iii. Claim Limitation [54b]: “a positive polarity battery terminal connector configured for connecting the jump starting apparatus to the positive polarity battery terminal of the depleted or discharged battery;”

Neither the Carku Respondents nor Staff dispute that that this limitation is met. *See* RIB at 96-103; RRB at 50-56; SIB at 77-85; SRB at 44-52. In addition, the undisputed evidence demonstrates that the Carku Accused Products include a positive polarity battery terminal connector for connecting the jump starter to a positive battery terminal; specifically, each model includes a jumper cable with a red battery clamp (positive). *See* Tr. (Fayed) at 380:6-15; CDX-0006C.41; Tr. (Fayed) at 417:10-17; *see also* CX-0718C (Fanttik T8 Max user manual); CX-0725C (Gooloo GP4000 user manual).

Accordingly, NOCO has shown that the Carku Accused Products meet Limitation [54b] of the ’023 patent.

iv. Claim Limitation [54c]: “a negative polarity battery terminal connector configured for connecting the jump starting apparatus to the negative polarity battery terminal of the depleted or discharged battery;”

Neither the Carku Respondents nor Staff dispute that that this limitation is met. *See* RIB at 96-103; RRB at 50-56; SIB at 77-85; SRB at 44-52. In addition, the undisputed evidence demonstrates that the Carku Accused Products include a negative polarity battery terminal connector for connecting the jump starter to a negative battery terminal; specifically, each model includes a jumper cable with a black battery clamp (negative). *See* Tr. (Fayed) at 381:2-9; CDX-0006C.44; Tr. (Fayed) at 417:10-17; *see also* CX-0718C (Fanttik T8 Max user manual); CX-0725C (Gooloo GP4000 user manual).

DELTRAN EX1060
IPR2024-01219

Accordingly, NOCO has shown that the Carku Accused Products meet Limitation [54c] of the ’023 patent.

v. Claim Limitation [54d]: “a power switch or circuit configured to turn on power from the power supply to the positive and negative polarity battery terminal connectors;”

Neither the Carku Respondents nor Staff dispute that that this limitation is met. *See* 96-103; RRB at 50-56; SIB at 77-85; SRB at 44-52. In addition, the undisputed evidence demonstrates that the Carku Accused Products include a power switch or circuit configured to turn on power from the power supply to the positive and negative battery terminal connectors. Specifically, Dr. Fayed testified that the Fanttik T8 Max includes a [redacted] switch that is turned on and off [redacted]. *See* Tr. (Fayed) 382:2-383:6; CDX-0006C.47; *see also* RX-2940C.2 (Fanttik T8 Max schematic). Dr. Fayed testified that the Solvtin S6 Pro and Gooloo GP4000 operate similarly, except that the circuitry is inside the jumper cable, rather than the jump starter battery pack. *See* Tr. (Fayed) at 383:7-17 [redacted]); CDX-0006C.48; *see also* RX-2941C (Solvtin S6 Pro schematic); RX-3750C (Gooloo GP4000 schematic); Tr. (Fayed) at 417:10-17. As to the Astro AI, Dr. Fayed testified that it includes a relay switch that [redacted] controls the power to the relay switch. *See* Tr. (Fayed) at 383:18-384:2; CDX-0006C.49; *see also* RX-2942C (Astro AI schematic); Tr. (Fayed) at 417:10-17.

Accordingly, NOCO has shown that the Carku Accused Products meet Limitation [54d] of the ’023 patent.

vi. Claim Limitation [54e]: "a control system or circuit connected to and controlling the power switch, the control system or circuit configured to detect whether the positive and negative polarity battery terminal connectors have a correct polarity connection with the positive and negative polarity battery terminals of the depleted or discharged battery and prevent an incorrect polarity connection with the positive and negative polarity battery terminals of the depleted or discharged battery prior to turning on the power switch or circuit;"

The parties dispute this limitation. NOCO asserts that the Carku Accused Products satisfy Limitation [54e] for the same reasons as Limitation [1e]. CIB at 97-99.

The Carku Respondents dispute Limitation [54e] for the same reasons as Limitation [1e]. *See* RIB at 103 ("The Carku Accused Products do not practice limitation 54[e] for at least the reasons set forth above with respect to limitation 1[e]"); RRB at 56. Staff and the Carku Respondents additionally contend that Dr. Fayed did not address the additional "preventing an incorrect polarity connection" limitation, and that the Carku Accused Products do not prevent an incorrect polarity connection if a connected battery is [redacted]. SIB at 80; RIB at 103.

Staff, like the Carku Respondents, disputes Limitation [54e] for the same reasons as Limitation [1e]. SIB at 80-82; SRB at 54-57.

For the same reasons as discussed above with respect to Limitation [1e], the undersigned finds that the Carku Accused Products satisfy Limitation [54e]. Moreover, Dr. Fayed testified that the reverse polarity detection circuit in the Carku Accused Products will not allow power to flow when connected with "the wrong connection, the wrong polarity." Tr. (Fayed) at 386:16-23.[64]

[64] Moreover, as discussed in connection with Limitation [1e], the undersigned is not persuaded that the fact that the reverse polarity detection circuit will not prevent power from flowing if a battery [redacted] is connected is conventional usage given the '023 patent's focus in the specification and in the claims on depleted or discharged vehicle batteries, which the evidence at the hearing indicated are much

Accordingly, NOCO has shown that the Carku Accused Products meet Limitation [54e] of the ’023 patent.

vii. Claim Limitation [54f]: “a USB input connector”

The parties dispute this limitation. NOCO asserts that the Carku Accused Products satisfy Limitation [54f] for the same reasons as Limitation [1g]. CIB at 99.

The Carku Respondents dispute Limitation [54f] for the same reasons as Limitation [1g]. *See* RIB at 102.

Staff, like the Carku Respondents, disputes Limitation [54f] for the same reasons as Limitation [1g]. SIB at 84-85; SRB at 51-52.

For the same reasons as discussed above with respect to Limitation [1g], the undersigned finds that the USB-C input connectors in the Carku Accused Products are not within the scope of the claims. Accordingly, NOCO has not shown that the Carku Accused Products meet Limitation [54f] of the ’023 patent.

viii. Claim Limitation [54g]: “a USB input circuit connecting the USB input connector to the power supply, the USB input circuit comprising a DC/DC converter for up-converting the voltage from the USB input connector to the power supply.”

The parties dispute this limitation. NOCO asserts that the Carku Accused Products satisfy Limitation [54g] for the same reasons as Limitation [1f]. CIB at 100.

The Carku Respondents dispute Limitation [54g] for the same reasons as Limitation [1f]. *See* RIB at 102 (“The Carku Accused Products do not practice at least limitations 39[e], [f], and [g] for the reasons explained above with respect to limitations 1[e], [f], and [g].”); RRB at 39.

---

higher in voltage. *See* Tr. (Ricketts) at 1212:14-17 (not disputing that a 10 volt car battery would be “significantly depleted”).

Staff, like the Carku Respondents, disputes Limitation [54g] for the same reasons as Limitation [1f]. SIB at 84-85; SRB at 51-52.

For the same reasons as discussed above with respect to Limitation [1f], the undersigned finds that the USB-C input circuit in the Carku Accused Products are not within the scope of the claims. Accordingly, NOCO has not shown that the Carku Accused Products meet Limitation [54g] of the '023 patent.

***

Accordingly, for the reasons discussed above, the evidence fails to show by a preponderance that claims 1, 19, 32, 39, and 54 of the '023 patent are infringed by the Carku Accused Products.

f. The Carku Revised Jump Starters

As discussed, *supra*, the undersigned finds that adjudication of the Carku Revised Jump Starters, except for RPX-0042 and RPX-0043, is appropriate. NOCO did not present any evidence of infringement as to models Hulkman Alpha 85S (Rev. A) (RPX-0013), Hulkman Alpha 85 (Rev. A) (RPX-0016), Hulkman Alpha 65 (Rev. A) (RPX-0017), Topdon JS-300 (Rev. A) (RPX-0018), Fanttik T8 1300 AMP (RPX-0025), Asperx AX2500 (Rev. A) (RPX-0028), Asperx AX3500 (Rev. A) (RPX-0029), Spanarci Zeta 2000 Jump Starter (Rev. A) (RPX-001), Gooloo GT 4000S (Rev. A) (RPX-0002), Fanttik T8 Max (Rev. A) (RPX-0014), Gooloo GT4000 (Rev. A) (RPX-0015), Fanttik T8 Apex (JS-278 jumpstarter) (Rev. A) (RPX-0019), Yesper Armor Pro/Pro 2 (RPX-0024), Hulkman Alpha 100 (Rev. A) (RPX-0026), and Andeman Battery Jump Starter 2000A Peak 20000 mAh (Rev. A) (RPX-0027). *See* RRB at 58; CIB at 133-35 (challenging only the adjudication of the Carku Revised Jump Starters); CDX-0006C.15-21 (excluding redesign models from Group A or Group B). NOCO's post-hearing briefs contain no

DELTRAN EX1060
IPR2024-01219

infringement arguments regarding the Carku Revised Jump Starters. According, any such arguments have been waived and NOCO has failed to meet its burden of proof. *Oligosaccharides*, Comm'n Op., 2020 WL 3073788, at *13 (June 8, 2020) (burden of establishing infringement lay with complainant with respect to non-accused, adjudicated product); Ground Rule 13.1.

Moreover, Dr. Ricketts provided testimony that the adjudicated Carku Revised Jump Starters do not infringe, at least because of software changes implemented in revised products containing chipset [redacted] that does not charge unless the charging input is greater than 16V, which is a high enough voltage that it need not be "upconverted" or "increased" as required by the asserted claims. *See* Tr. (Ricketts) 1173:7-24, 1175:10-16; RDX-0008C.32-33, 36. Similarly, software implemented in the revised products containing the chipset (SC2001/SC8812) do not charge unless the charging input is greater than 16V, which is a high enough voltage that it need not be "upconverted" or "increased." *See id.*[65]

The Carku Respondents are therefore entitled to a finding of non-infringement of the redesign models Hulkman Alpha 85S (Rev. A) (RPX-0013), Hulkman Alpha 85 (Rev. A) (RPX-0016), Hulkman Alpha 65 (Rev. A) (RPX-0017), Topdon JS-300 (Rev. A) (RPX-0018), Fanttik T8 1300 AMP (RPX-0025), Asperx AX2500 (Rev. A) (RPX-0028), Asperx AX3500 (Rev. A) (RPX-0029), Spanarci Zeta 2000 Jump Starter (Rev. A) (RPX-001), Gooloo GT 4000S (Rev. A) (RPX-0002), Fanttik T8 Max (Rev. A) (RPX-0014), Gooloo GT4000 (Rev. A) (RPX-0015), Fanttik T8 Apex (JS-278 jumpstarter) (Rev. A) (RPX-0019), Yesper Armor Pro/Pro 2 (RPX-

[65] Even if Dr. Ricketts' testimony were disregarded, an adjudication of non-infringement would be proper because NOCO failed to meet its burden of proof.

DELTRAN EX1060
IPR2024-01219

0024), Hulkman Alpha 100 (Rev. A) (RPX-0026), and Andeman Battery Jump Starter 2000A Peak 20000 mAh (Rev. A) (RPX-0027) as to the asserted claims of the '023 patent.

2. The ADC Accused Products

NOCO contends that seventeen ADC Accused Products infringe claims 1, 32, 39, and 54[66] of the '023 patent. CIB at 12. The ADC Accused Products are identified in CX-0259C. NOCO alleges that model AC530017 is representative of products with "bidirectional USB power" implemented through a [redacted] ("Group A Products") and model AC56789 is representative of products that lack a [redacted], and thus have "unidirectional" USB power ("Group B Products"). *See* CIB at 64; CX-0259C.

ADC contends that NOCO failed to meet its burden on representativeness. ADC asserts that Dr. Fayed's division of the products based on the presence or absence of a [redacted] was "arbitrary" and ignored differences between the products. *See* RIB at 88. ADC states that Dr. Fayed admitted that products within Group A differed with respect to the types of USB input, "a highly material issue for the infringement analysis." *See* RIB at 88-89 (citing Tr. (Fayed) at 494:12-15).

Staff agrees that "NOCO has not met its burden in showing product representativeness for the ADC 'Group A' and 'Group B' products." SIB at 88. Staff contends that Dr. Fayed's representative products analysis "problematically ignores how some of the unanalyzed ADC products (AC533419 and AC533420) use a bidirectional USB-C input port and USB-C charging circuitry that is substantially different from the USB charging port and USB charging circuitry in" the allegedly representative products. *See* SIB at 88 (citing Tr. (Horenstein) at 1110:4-9).

[66] ADC is not accused of infringing claim 19 of the '023 patent.

Staff contends that the division of products based on the presence of a [redacted] is arbitrary, because there is no requirement for a [redacted] in the claims. SRB at 37.

NOCO responds that ADC and the Staff have offered "no facts to support their varied criticisms" and that "absent a specific material difference or other relevant distinction among products, they fail to challenge Dr. Fayed's representativeness analysis." CRB at 30-31.

Upon review of the evidence of record and the arguments of the parties, the undersigned finds that NOCO has failed to meet its burden on representativeness with respect to the Group A products. Although a complainant may rely upon analysis of a representative product, the complainant "cannot simply assume that the [analyzed products] are representative of the [unanalyzed products]," but rather "must show by a preponderance of the evidence that the products its expert[] analyzed are indeed representative of unanalyzed products." *Certain LED Lighting Devices, LED Power Supplies, & Components Thereof*, Inv. No. 337-TA-1081, Comm'n Op., 2019 WL 7423547, at *7 (July 23, 2019) (quoting *Certain Semiconductor Devices, Semiconductor Device Packages, and Products Containing Same*, Inv. No. 337-TA-1010, Order No. 77 (Mar. 15, 2017), *not reviewed in relevant part*, EDIS Doc. ID 608676 (Apr. 14, 2017). Dr. Fayed testified that he grouped the ADC accused products based on common circuitry themes and an analysis of source code, which was substantially similar in terms of the functions and identifiers relevant to the claim limitations. Tr. (Fayed) at 371:2-13. The disputed limitations for the '023 and '243 patents involve elements of the alleged polarity detection circuit and the USB input circuit and connectors. *See* RIB at 72-87; CRB at 27; SIB at 89-92. With respect to the elements of the polarity detection circuit, the evidence shows that each of the accused ADC products uses [redacted]. *See* Tr. (Horenstein) at 1039:17-1041:9.

DELTRAN EX1060
IPR2024-01219

Because the relevant polarity detection circuitry in each of the accused ADC products is identical, NOCO has established that the identified representative products are, indeed, representative as to this disputed limitation. Tr. (Fayed) at 371:22-372:4.

As to the USB limitations, however, evidence at the hearing established that the some of the unanalyzed ADC products in Group A had different types of USB receptacles; the allegedly representative product for Group A, AC530017, includes both a USB-C and a micro-USB input. *See, e.g.*, Tr. (Fayed) at 493:15-19 (testifying with respect to CX-0293C, the block diagram for AC530017, "[Q]: Okay. Then do you see at the bottom left there's a box that starts with micro? Maybe we can zoom in on that. Micro input – [A]: Yeah, I see it. Micro input, 5-volt, 2 amp, 9 volt, 2-amp. Yes."); CX-0291C.2 ("Input (Micro USB): . . . Input (USB-C)); CDX-0006C.039. But at least the AC533420 and AC533419 products—which are also "Group A" Products—include only a USB-C input. *See* CX-2380.1 ("Fast charge mobile devices on the go with built-in USB-C (in/out) and USB-A (out) charging ports."); CX-0705.2 ("Input (USB-C)"); Tr. (Horenstein) at 1110:4-9; Tr. (Fayed) at 494:7-15 (testifying that an unanalyzed Group A product did not include a "USB micro in").

As discussed with respect to claim construction of the "USB" terms, *supra*, the question of whether or not USB-C technology is within the scope of the claims has been disputed throughout the case. NOCO and Respondents introduced evidence regarding the technical requirements and differences between USB-C technology and previous versions, including micro-USB. *See* Part V.D.1-2. *supra*. The type of USB receptacle and circuit in the accused products is material to infringement, and the evidence presented at the hearing establishes that the allegedly representative Group A product differs from at least some of the unanalyzed Group

DELTRAN EX1060
IPR2024-01219

A products in this material aspect.[67] Because NOCO has failed to carry its burden to establish that the allegedly representative products are indeed representative of unanalyzed products at least as to the "USB input circuit" and "USB input connector" limitations, NOCO has failed to meet its burden to establish infringement as to the unanalyzed Group A ADC accused products. Accordingly, the undersigned finds that NOCO has failed to meet its burden to establish infringement of the '023 and '243 patents by models AC530020, AC532780, AC53791, AC532632, AC532671, AC533654, AC532777, AC533655, AC532781, AC532806, AC533420, AC533419. Accordingly, the only ADC Group A product assessed for infringement below is AC530017.

As to Group B, there is no similar contention that material differences in the unanalyzed products undermine Dr. Fayed's representativeness analysis. Based on Dr. Fayed's uncontradicted testimony, the evidence is sufficient to show that model AC56789 is representative of the Group B products for purposes of alleged infringement of the '023 and '243 patents.

For these reasons and those discussed below, the evidence shows that the asserted claims of the '023 patent are infringed by the AC530017 product and by the Group B products (of which AC56789 is representative). The evidence fails to show that the asserted claims are infringed by the AC530020, AC532780, AC532791, AC532632, AC532671, AC533654, AC532777, AC533655, AC532781, AC532806, AC533420, and AC533419 products.

a. Claim 1

[67] There is no testimony in the record establishing the type of USB receptacle(s) in the remaining unanalyzed Group A products. It is NOCO's burden—not the undersigned's—to parse user manuals and circuit schematics to identify which unanalyzed Group A products share the same USB technology with the allegedly "representative" Group A product.

DELTRAN EX1060
IPR2024-01219

i. Claim Limitation [1pre]: "A jump starting apparatus configured for boosting or charging a depleted or discharged battery having a positive polarity battery terminal and a negative polarity battery terminal, the jump starting apparatus comprising:"

The parties agree that the preamble is limiting. *See* EDIS Doc. ID 807614 (Joint Claim Construction Statement). Neither ADC nor Staff dispute that that this limitation is met. *See* RIB at 70-89; RRB at 36-41; SIB at 87-92; SRB at 54-58. In addition, the undisputed evidence demonstrates that AC530017 and AC56789 are jump starting devices configured to boost or charge a depleted battery with a positive and negative polarity terminal. *See* Tr. (Fayed) at 379:2-6; CDX-0006C.36; *see also* CX-2341 (AC530017 data sheet); CX-2359 (AC56789 data sheet).

Accordingly, NOCO has shown that the AC530017 and AC56789 meet Limitation [1pre] of the '023 patent.

ii. Claim Limitation [1a]: "a power supply"

Neither ADC nor Staff dispute that that this limitation is met. *See* RIB at 70-89; RRB at 36-41; SIB at 87-92; SRB at 54-58. In addition, the undisputed evidence demonstrates that AC530017 and AC56789 include a power supply, specifically, an internal battery. *See* Tr. (Fayed) at 379:19-24; CDX-0006C.39; *see also* CX-2341 (AC530017 data sheet); CX-2359 (AC56789 data sheet).

Accordingly, NOCO has shown that the AC530017 and AC56789 meet Limitation [1a] of the '023 patent.

iii. Claim Limitation [1b]: "a positive polarity battery terminal connector configured for connecting the jump starting apparatus to the positive polarity battery terminal of the depleted or discharged battery;"

Neither ADC nor Staff dispute that that this limitation is met. *See* RIB at 70-89; RRB at 36-41; SIB at 87-92; SRB at 54-58. In addition, the undisputed evidence demonstrates that

DELTRAN EX1060
IPR2024-01219

AC530017 and AC56789 include a positive polarity battery terminal connector for connecting the jump starter to a positive battery terminal; specifically, each model includes a jumper cable with a red battery clamp (positive). *See* Tr. (Fayed) at 380:16-21; CDX-0006C.42; *see also* CX-291C.8 (AC530017 user manual); CX-297C.7 (AC56789 user manual).

Accordingly, NOCO has shown that the AC530017 and AC56789 meet Limitation [1b] of the '023 patent.

iv. Claim Limitation [1c]: "a negative polarity battery terminal connector configured for connecting the jump starting apparatus to the negative polarity battery terminal of the depleted or discharged battery;"

Neither ADC nor Staff dispute that that this limitation is met. *See* RIB at 70-89; RRB at 36-41; SIB at 87-92; SRB at 54-58. In addition, the undisputed evidence demonstrates that AC530017 and AC56789 include a negative polarity battery terminal connector for connecting the jump starter to a negative battery terminal; specifically, each model includes a jumper cable with a black battery clamp (negative). *See* Tr. (Fayed) at 381:16-20; CDX-0006C.45; *see also* CX-0291C.8 (AC530017 user manual); CX-0297C.7 (AC56789 user manual).

Accordingly, NOCO has shown that the AC530017 and AC56789 meet Limitation [1c] of the '023 patent.

v. Claim Limitation [1d]: "a power switch or circuit configured to turn on power from the power supply to the positive and negative polarity battery terminal connectors;"

Neither ADC nor Staff dispute that that this limitation is met. *See* RIB at 70-89; RRB at 36-41; SIB at 87-92; SRB at 54-58. In addition, the undisputed evidence demonstrates that AC530017 and AC56789 include a power switch or circuit configured to turn on power from the power supply to the positive and negative battery terminal connectors. Specifically, Dr. Fayed

DELTRAN EX1060
IPR2024-01219

testified that both products include [redacted]—and that control of these switches allows or disallows power. *See* Tr. (Fayed) at 384:3-20; CDX-0006C.50-51; *see also* CX-0290C ([redacted] schematic); CX-0296C ([redacted] schematic).

Accordingly, NOCO has shown that the AC530017 and AC56789 meet Limitation [1d] of the '023 patent.

vi. Claim Limitation [1e]: "a control system or circuit connected to and controlling the power switch, the control system or circuit configured to detect whether the positive and negative polarity battery terminal connectors have a correct polarity connection with the positive and negative polarity battery terminals of the depleted or discharged battery prior to turning on the power switch or circuit;"

The Parties' Positions

The parties dispute this limitation. NOCO argues that the [redacted] (used with both the AC530017 and AC56789 products) is a control system configured to detect whether the battery terminal connectors have a correct polarity connection with the battery terminals of the depleted or discharged battery prior to turning on the power switch or circuit. CIB at 77. NOCO asserts that user manuals describe the circuit as a "polarity protection circuit," and that the words "polarity protection circuit" are printed on a label on the housing for [redacted]. CIB at 77 (citing RX-1505, CX-0291C.11 (AC530017 user manual), CX-0297C (AC56789 user manual).

ADC argues that the testimony of Dr. Fayed regarding the [redacted] was "conclusory and threadbare," and failed to explain how the [redacted] operates or meets the claim limitation. RIB at 72-73, 74; RRB at 37. ADC contends that the same document upon which Dr. Fayed relies, in addition to testing by Dr. Horenstein and testimony from the third-party

manufacturer of the [redacted], confirms that [redacted], and thus does not meet the limitation of detecting a correct polarity connection with a battery prior to "turning on the power switch or circuit" (claim limitation [1e]). RIB at 73 (citing RX-4093 at 19:17-23 (deposition testimony from Jing Lu, [redacted], RX-4074C.0009 ([redacted] schematic)). ADC contends that the customer-facing user manual was given "outsized weight" and, moreover, does not describe the detection of "correct polarity." RIB at 74. ADC also contends that Dr. Fayed failed to perform any testing of ADC's products and failed to provide evidence that the source code for ADC's products supports his opinion. *See* RIB at 76-77. ADC argues that Dr. Fayed's analysis was a "procedurally improper and poorly articulated doctrine of equivalents theory" that the [redacted] performs "basically" the same thing as claimed. *See* RIB at 77-78; RRB at 37-38. ADC argues that "a generalized capability to prevent reverse polarity conditions" is insufficient to meet the claimed limitation. RRB at 38. ADC states that Dr. Horenstein's analysis affirmatively showed that the ADC products do not practice Limitation [1e], and that NOCO ignored the evidence establishing that the ADC products operate [redacted]. Relying on Dr. Horenstein's explanation of how the [redacted] operates, ADC contends that the [redacted]. RIB at 79-80 (citing Tr. (Horenstein) at 1051:5-21). ADC also asserts that Dr. Horenstein's testing showed that [redacted]

DELTRAN EX1060
IPR2024-01219

[redacted]. RIB at 80-81 (citing Tr. (Horenstein) at 1101:16-25, 1103:11-16). Because the claim requires identifying a correct polarity connection to a "depleted or discharged battery," ADC argues that its [redacted] products do not infringe. RIB at 81-82. ADC further argues that because the [redacted], it is not "detecting a correct polarity." *See* RIB at 82. To the extent the ADC products are found to be within the scope of the claims, ADC argues that its products do not infringe by virtue of the reverse doctrine of equivalents, because the "[redacted] method used in the ADC products is fundamentally different." RIB at 83-85.

NOCO responds that there "is no good faith dispute that the 'Polarity Protection Circuit' . . . does exactly what its name says it does." CRB at 35. NOCO argues that "it defies logic, reason, and common sense" that a "Polarity Protection Circuit" "somehow protects polarity without detecting polarity." CRB at 36. NOCO contends that Dr. Horenstein's concession that the [redacted] is sufficient to meet the claim limitation. *See* CRB at 36-37 (citing Tr. (Horenstein) at 1126:5-10). NOCO also states that ADC's reverse doctrine of equivalents argument "tacitly concedes" literal infringement. CRB at 37 (citing *Texas Instruments, Inc. v. U.S. Int'l Trade Comm'n*, 846 F.2d 1369, 1372 (Fed. Cir. 1988) ("The reverse doctrine of equivalents comes into consideration only when literal infringement is apparent.")).

Staff argues that if an accused circuit is a reverse polarity detection circuit (*i.e.*, detects that polarity is not correct), the claims as written also require detection of the connection of a battery, such that the system detects "a correct polarity connection with the positive and negative polarity battery terminals." SIB at 89; SRB at 55. Because the ADC [redacted], Staff argues that the ADC products do not meet

Limitation [1e]. SIB at 90-91. Staff notes that NOCO did not present any evidence rebutting the evidence and testing demonstrating that the [redacted] SRB at 56. Staff also argues that it is insufficient that the [redacted], because the claims require detecting correct polarity connection to a battery prior to turning on the power switch. SRB at 56-57.

Discussion

Upon review of the submissions and evidence of record, the undersigned finds that NOCO has established, by a preponderance of the evidence, that the AC530017 and AC56789 products (and products of which AC56789 is representative) meet the claim requirement "a control system or circuit connected to and controlling the power switch, the control system or circuit configured to detect whether the positive and negative polarity battery terminal connectors have a correct polarity connection with the positive and negative polarity battery terminals of the depleted or discharged battery prior to turning on the power switch or circuit."

The [redacted] in the ADC products, shown below, [redacted].[68] The [redacted]. Tr. (Horenstein) at 1124:4-1125:7.

[68] ADC argues that Dr. Fayed's testimony regarding the [redacted] was conclusory and failed to explain the operation of the circuit. *See, e.g.*, RRB at 36. Dr. Horenstein, however, testified extensively as to the operation of the [redacted], both on direct and cross-examination. A party may rely upon expert testimony offered by the opposing side's expert to prove its case. *See e.g.*, *Certain Playards & Strollers*, Inv. No. 337-TA-1288, Initial Determination, EDIS Doc. ID 794159, at 104 n.28 (Apr. 11, 2023).

DELTRAN EX1060
IPR2024-01219



RX-4074C.7 (schematic); RDX-0002C.21. Dr. Horenstein described four conditions in which . *See* RDX-0002C.23; Tr. (Horenstein) at 1051:5-21.

There appears to be no dispute that if a depleted or discharged vehicle battery is in the ADC products will close the switch and allow current to flow from the jump starter power supply to the vehicle battery. Tr. (Fayed) at 390:3-8; Tr. (Horenstein) at 1046:9-20 (“

DELTRAN EX1060
IPR2024-01219

[redacted].") (emphasis added); RDX-0002C.20.[69] Likewise, there is no dispute that if a discharged vehicle battery is [redacted] in the ADC products will not close the switch, and no power will flow. Tr. (Fayed) at 390:3-8; Tr. (Horenstein) at 1051:12-13 ("[redacted]").

Nonetheless, ADC argues that its products do not, as required by the claims (1) detect a correct polarity connection; (2) to a battery; (3) before closure of the switch that allows current to flow to the clamps. First, ADC argues that its products do not "detect a correct polarity connection" because its products [redacted]. RIB at 78. Second, ADC argues that its products do not meet the claim limitation because (1) [redacted]. *See* RRB at 37. Each of these arguments is addressed in turn.

ADC first argues that because the [redacted]. The undersigned finds this argument unpersuasive. The parties appear to acknowledge that polarity may be detected via voltage measurement or voltage detection.[70] As Dr. Fayed explained, the difference between [redacted]

[69] The specific context of a "fully depleted battery" is addressed further below.

[70] *See, e.g.*, Tr. (Ricketts) at 1213:3-1215:9 (describing operation of the Carku products, which measure and send voltage signals and agreeing that they are "detecting reverse polarity."); Tr. (Fayed) at 385:10-387:2 (describing operation of the GBX45 product and explaining that "[i]f you connect it properly, what will happen is that line will be at a highest voltage" and "if you happen to have the wrong connection, the wrong polarity, then what happens is as if the voltage at that terminal became negative" and "you can use that – that distinction is used by the other circuit to determine whether it should turn in or off the power switch.").

[redacted] Tr. (Fayed) at 403:22-404:2; *see also* Tr. (Fayed) at 424:23-25. Moreover, Dr. Horenstein testified that the [redacted] Tr. (Horenstein) at 1124:4-1125:7. Additionally, ADC labels the [redacted] "Polarity Protection Circuit" in its user manuals and on the housing for the circuit. *See* Tr. (Fayed) at 412:19-413:8; CX-0291C.11; RX-1505; Tr. (Horenstein) at 1132:14-19 ("[Q]: Dr. Horenstein, you would agree with me that the label "polarity protection circuit status" is shown right here on the physical hardware of the ADC [redacted], and that's a yes or no; correct? [A]: Well, I agree it's there, and I have an understanding of why it's there."). The evidence does not show that the [redacted] means that there is no detection of the claimed correct polarity connection.

Second, ADC argues that its products do not infringe because the [redacted] than a "correct" or "incorrect" polarity connection with a depleted or discharged battery. ADC asserts that because the [redacted] does not "detect" "a correct polarity connection" to a "battery." RIB at 84; RRB at 39. Similarly, ADC asserts that because the [redacted] does not "detect" a "correct polarity connection" with a "battery." The undersigned does not agree that these additional conditions establish non-infringement.

DELTRAN EX1060
IPR2024-01219

As discussed above in connection with the Carku Accused Products, *supra* Part VI.C.1.a.vi, the claims contemplate operation in the context of a depleted or discharged vehicle battery. The response of the circuit when the jump-starter is [redacted] —does not establish non-infringement. *See* Tr. (Horenstein) at 1097:20-21 ([redacted]); *see also* Tr. (Ricketts) at 1203:14-1204:24 ("[Q]: So Dr. Ricketts, if there's no connection between the clamps and the vehicle battery, such as when the clamps are disconnected from the vehicle battery, then there's no correct polarity to detect; right? [A]: There would be no correct polarity connection at the battery terminals, no."). *Cf. Hilgraeve*, 265 F.3d at 1343 ("tests of an accused device under unusual conditions are not necessarily relevant to an infringement analysis"); CRB at 33, 104. [71]

Further, as to Respondents' argument that the ADC [redacted], [72] the '023 patent describes

[71] This analysis is consistent with the ALJ's conclusions in the 1256 investigation. There, the ALJ found for model AC56789—also at issue here—the sensor circuit feeding "pin 10 of the microcontroller" "is configured to detect presence of a vehicle battery connected between the positive and negative polarity vehicle battery terminal connectors." *See Certain Portable Battery Jump Starters & Components Thereof*, Inv. No. 337-TA-1256, ID at 133, EDIS Doc. ID 771159 (April 29, 2022). The ALJ cited, and apparently rejected, a substantively similar argument that the sensor circuit connected to pin 10 could not detect the presence of a battery because the sensor circuit "sees a voltage whether the clamps are connected to a voltage source, such as a battery, or a non-voltage source, like a resistor of vehicle with the battery removed." *Id.* at 133; *see also id.* (quoting (and ultimately declining to credit) argument that "[b]ecause the resistive divider network in question sees a voltage whether or not a voltage source, like a vehicle battery, is connected to the clamps, the resistive divider network is not configured to equate voltage with the presence of a battery when one is connected."). The 1256 investigation addressed U.S. Patent No. 10,604,024, a parent of the '023 and '243 patents. *See, e.g.*, '023 patent, cover.

[72] Staff argues that it is insufficient for infringement that the "the ADC [redacted] does in some circumstances provide reverse polarity protection," SIB at 56, but there is no evidence or argument that the [redacted] in the ADC Accused Products [redacted]. Rather, there are [redacted]

a preferred embodiment of the claimed invention that may require a manual override button to jump start a vehicle with a correct polarity connection, but where the "battery voltage is so low that automatic detection by the MCU is not possible." '023 patent, 5:4-6, 10-14. Given this embodiment, one of skill in the art would understand that the claimed "control system or circuit configured to detect . . . correct polarity" (Limitation [1e]) would not necessarily be responsive to a fully depleted battery connected with correct polarity.[73] *See also Hilgraeve*, 265 F.3d at 1343 ("in determining whether a product claim is infringed, we have held that an accused device may be found to infringe if it is reasonably capable of satisfying the claim limitations")

Moreover, as with the Carku Accused Products, the product literature for the ADC Accused Products identifies the operation of the [redacted] as responding if "the batteries are properly connected" or "the clamps are reversely connected." *See* RX-4074C.9-10 ([redacted] schematic); *see also* CX-0291C.9 (AC530017 user manual) ("Once the clamps are properly connected to the vehicle battery, the LCD Display will read: Ready, Start vehicle ignition."). Accordingly, in the context of use with a vehicle battery, as contemplated by the claims and product literature for the ADC Accused Products, the record evidence and expert testimony demonstrate by a preponderance of the evidence that the [redacted] in the ADC Accused Products are configured to detect whether the positive and negative polarity battery terminal connectors have a correct polarity connection prior to turning on the power switch or

---

responsive to, which as discussed above, does not establish non-infringement. The preponderance of the evidence demonstrates that the [redacted] provides reverse polarity protection, which the '023 patent describes as detecting a "correct polarity" connection. *See supra* Part VI.C.1.a.vi.

[73] Moreover, the "fully depleted" battery case may not be a typical scenario for purposes of a "correct polarity" determination. *See* discussion regarding Carku Accused Products, *supra*. ADC did not introduce any evidence as to the accuracy of ADC's [redacted], and the preponderance of the evidence—including both internal and consumer-facing product literature—demonstrates that the [redacted] in the ADC products operates to detect a correct polarity connection as claimed.

circuit.[74]. *See* Tr. (Fayed) at 390:3-8; Tr. (Horenstein) at 1046:9-20; Tr. (Fayed) at 390:3-8; Tr. (Horenstein) at 1051:12-13.

Because the evidence shows that the [redacted] finds that the [redacted] is within the literal scope of the claims, the undersigned turns next to ADC's reverse doctrine of equivalents argument. RIB at 83-84. The reverse doctrine of equivalents is an equitable doctrine designed "to prevent unwarranted extension of the claims beyond a fair scope of the patentee's invention." *Scripps Clinic & Research Found. v. Genentech, Inc.*, 927 F.2d 1565, 1581 (Fed. Cir. 1991). According to the Supreme Court:

> [W]here a device is so far changed in principle from a patented article that it performs the same or similar function in a substantially different way, but nevertheless falls within the literal words of the claim, the [reverse] doctrine of equivalents may be used to restrict the claim and defeat the patentee's action for infringement.

Graver Tank & Mfg. Co. v. Linde Air Prods. Co., 339 U.S. 605, 608–609 (1950). While the patentee bears the burden of proving infringement, if the patentee establishes literal infringement, the burden shifts to the accused infringer to set forth a *prima facie* case of non-infringement under the reverse doctrine of equivalents. *SRI Int'l v. Matsushita Elec. Corp. of Am.*, 775 F.2d 1107, 1123-24 (Fed. Cir. 1985). The Federal Circuit has previously stated that "[t]he reverse doctrine of equivalents is rarely applied, and this court has never affirmed a finding of non-infringement under the reverse doctrine of equivalents." *Roche Palo Alto LLC v.*

[74] As discussed in connection with the Carku Accused Products, *supra* Part VI.C.1.a.vi, the undersigned does not adopt Staff's argument that to "detect a correct polarity connection," both a battery presence sensor and a reverse polarity detection circuit are required. Staff's related argument as to the ADC Accused Products, SIB at 55-56, is unpersuasive for the same reasons. Further, to the extent a battery presence sensor is required to "detect a correct polarity connection," NOCO has established by a preponderance of the evidence that the [redacted] detects the presence of a battery. *See, e.g.*, Tr. (Fayed) at 390:3-8; Tr. (Horenstein) at 1046:9-20; *see also* CX-291C.9 (AC530017 user manual) ("Once the clamps are properly connected to the vehicle battery, the LCD Display will read: Ready, Start vehicle ignition.").

DELTRAN EX1060
IPR2024-01219

Apotex, Inc., 531 F.3d 1372, 1377 (Fed. Cir. 2008); *see also Tate Access Floors, Inc. v. Interface Architectural Res., Inc.*, 279 F.3d 1357, 1368 (Fed. Cir. 2002).

Here, ADC has failed to set forth a *prima facie* case of non-infringement under the reverse doctrine of equivalents. ADC argues that the [redacted] used in its products is "fundamentally different" because it [redacted]—to determine safety. RIB at 84. In contrast, ADC contends, the invention of the '023 patent operates by using two sensors—a car battery sensor and a reverse polarity sensor—which each send binary signals to the MCU to determine safety. RIB at 84. Under Federal Circuit precedent, reverse doctrine of equivalents is evaluated by determining the "principle" or "equitable scope of the claims" in light of the specification, prosecution history, and the prior art. *Scripps Clinic*, 927 F.2d at 1581. To the extent ADC argues that the principle is the "use of two wholly distinct sensors" to achieve safety, RIB at 84, that assertion is contradicted by testimony from Dr. Ricketts. *See* Tr. (Ricketts) at 1219:4-11 ("[Q]: Can the language of limitation 1[e] ever be met by a control system or circuit that detects a single signal? [A]: A single signal, just to clarify, was that the question? [Q]: Yes. Just on the abstract. [A]: Yes. You could have a correct polarity sensor, and that would meet the limitations of 1[e]."); *see also* Part VIII.C.5.a *infra*. Moreover, the specification of the '023 patent describes problems in the prior art when "the jumper terminals or clamps of the cables were inadvertently brought into contact with each other" or "when the positive and negative terminals were connected to the opposite polarity terminals in the vehicle to be jumped, thereby causing a short circuit." '023 patent, 1:17-24. As Dr. Horenstein testified, the [redacted], and Dr. Fayed testified that there are many ways to implement the types of circuits claimed in the '023 patent. Tr. (Horenstein) at 1051:12-21; RDX-0002C.23; Tr. (Fayed) at

DELTRAN EX1060
IPR2024-01219

404:8-15 ("But ultimately, at the end of the day, if the implementation detail -- and there are many ways that you can implement these types of circuits, right, you can use diode-based, you can use resistance-base, however you want to implement it, the bottom line is, is the circuit capable of telling you if the polarity is incorrect? Does that enable you to go and make a decision whether you turn on the switch or you turn it off?"). ADC has not shown that this is one of the cases in which the reverse doctrine of equivalents may apply.

Accordingly, NOCO has shown that the AC530017 and AC56789 meet Limitation [1e] of the '023 patent.

vii. Claim Limitation [1f]: "a USB input circuit connected to the power supply, the USB input circuit comprising a DC/DC converter, the USB input circuit configured for converting power from a USB power source to increase power voltage to the power supply; and"

The parties dispute this limitation. NOCO argues that models AC530017 and AC56789 include the claimed USB input circuit with a DC/DC converter. CIB at 81. Specifically, NOCO contends that schematics of AC530017 show a DC/DC converter [redacted]. See Tr. (Fayed) at 397:25-398:8; CDX-0006C.63; CX-289C. As to AC56789, NOCO contends that the circuit schematic show [redacted]. Tr. (Fayed) at 398:9-15; CDX-0006C.64; CX-0295C.

ADC argues that Dr. Fayed failed to apply the undersigned's claim construction, because he did not identify which USB standards or specification the alleged USB input circuits operate in accordance with. RIB at 85-86; RRB at 40-41. ADC also contends that the only USB standard that NOCO identified as performed in the ADC products—albeit in connection with Limitation [1f]—was USB-C, which ADC argues is outside the scope of the claims. RRB at 41.

Staff does not address this limitation, except with respect to two unanalyzed products, AC533420 and AC533419, which, as discussed above, the undersigned found non-infringing because NOCO failed to meet its burden on representativeness. SIB at 92; SRB at 58.

Upon review of the submissions and evidence of record, the undersigned finds that NOCO has established, by a preponderance of the evidence, that the AC530017 and AC56789 products meet the claim requirement "a USB input circuit a USB input circuit connected to the power supply, the USB input circuit comprising a DC/DC converter, the USB input circuit configured for converting power from a USB power source to increase power voltage to the power supply." As discussed above in connection with claim construction, the undersigned construed the term "USB input circuit" as "a circuit that allows the power supply to be charged from an external power source with a USB charger." Further, the claimed circuit must be in accordance with the Universal Serial Bus standards known to those of skill in the art at the time of the claimed invention, which does not include the USB-C or USB PD 2.0 specifications.

The dispute is limited to whether the identified circuits are in accordance with a USB standard within the scope of the claims. ADC does not dispute the presence of a DC/DC converter or the remainder of the claim language. Although NOCO and Dr. Fayed generically identified "USB" ports in the AC530017 and AC56789 products without identifying particular standards, other evidence and testimony in the record establish the relevant USB standards. As to AC530017, Dr. Fayed testified on cross-examination from ADC counsel that there was a micro-USB input in the AC530017 product. Tr. (Fayed) at 493:15-19 (testifying with respect to CX-0293C, the block diagram for AC530017, "[Q]: Okay. Then do you see at the bottom left there's a box that starts with micro? Maybe we can zoom in on that. Micro input – [A]: Yeah, I see it. Micro input, 5-volt, 2 amp, 9 volt, 2-amp. Yes."); *id.* at 494:7-15 (testifying that an unanalyzed

DELTRAN EX1060
IPR2024-01219

Group A product did not include a "USB micro in"). Dr. Fayed identified two USB ports in the AC56789 product as relevant to the USB input limitations, which the testimony and product documentation shows are a USB-C input and micro-USB input. *See* Tr. (Fayed) at 399:21-25; CX-0291C.2 ("Input (Micro USB): . . . Input (USB-C)); CDX-0006C.039.[75] ADC has not introduced contrary evidence or testimony.

Because micro-USB inputs are within the scope of the claims, NOCO has shown that the AC530017 and AC56789 meet Limitation [1f] of the '023 patent.

viii. Claim Limitation [1g]: "a USB input connector connected to the USB input circuit, the USB input connector configured for connecting to the USB power source and providing power input from the USB power source through the USB input connector and the USB input circuit to the power supply."

The parties dispute this limitation. NOCO argues that models AC530017 and AC56789 include the claimed USB input connector. CIB at 83-84. CRB at 41. Specifically, NOCO contends that schematics of AC530017 show a USB-C connector. *See* Tr. (Fayed) at 399:15-20; CDX-0006C.69; CX-0289C. As to AC56789, NOCO contends that the circuit schematic include two USB ports. Tr. (Fayed) at 399:21-25; CDX-0006C.70; CX-0295C.

ADC contends that the only USB standard referenced by Dr. Fayed in connection with this limitation was a USB-C circuit, and thus NOCO has failed to satisfy its burden. RIB at 86.

[75] ADC highlighted the presence of the micro-USB port in AC530017 to argue that it was not representative of the "Group A" products, including those which only have a USB-C port, rather than both a micro-USB and USB-C port. After affirmatively eliciting cross-examination testimony from Dr. Fayed on the presence of the micro-USB input in the AC530017 product, ADC may not pick and choose the purposes for which that testimony is used.

DELTRAN EX1060
IPR2024-01219

Staff does not address this limitation, except with respect to two unanalyzed products, AC533420 and AC533419, which, as discussed above, the undersigned found non-infringing because NOCO failed to meet its burden on representativeness. SIB at 92; SRB at 58.

Upon review of the submissions and evidence of record, the undersigned finds that NOCO has established, by a preponderance of the evidence, that the AC530017 and AC56789 products meet the claim requirement "a USB input circuit a USB input circuit connected to the power supply, the USB input circuit comprising a DC/DC converter, the USB input circuit configured for converting power from a USB power source to increase power voltage to the power supply." As discussed above regarding claim construction, "USB input connector" is construed as a port that receives a USB plug. Further, the claimed connector must be in accordance with the Universal Serial Bus standards known to those of skill in the art at the time of the claimed invention, which does not include the USB-C or USB PD 2.0 specifications. *See* Part V.D.2 *supra*.

As with Limitation [1g], the dispute is limited to whether the USB input connector is in accordance with a standard within the scope of the claims. For all the reasons discussed above with respect to Limitation [1g], *supra*, the undersigned finds that the evidence of record—including evidence affirmatively elicited from Dr. Fayed on cross-examination by ADC—establishes that AC530017 and AC56789 include micro-USB inputs, which are in accordance with USB standards known to those of skill in the art at the time of the claimed invention.

NOCO has shown that the AC530017 and AC56789 meet Limitation [1g] of the '023 patent.

***

DELTRAN EX1060
IPR2024-01219

Accordingly, for the reasons discussed above, the evidence shows by a preponderance that claim 1 is infringed by AC530017 and AC56789 (and the Group B products of which AC56789 is representative).

b. Claim 32

As discussed above, the evidence shows by a preponderance that claim 1 is infringed by AC530017 and AC56789. Neither ADC nor Staff dispute that that the additional limitation of claim 32 ("wherein the DC-DC converter can be turned on and off by a microprocessor") is met. *See* RIB at 70-89; RRB at 36-41; SIB at 87-92; SRB at 54-58. In addition, the undisputed evidence demonstrates that AC530017 and AC56789 include a DC-DC converter that can be turned on and off by a microprocessor. Specifically, in AC530017, the [redacted] Tr. (Fayed) at 416:7-12; CDX-0006C.93; CX-0289C (AC530017 schematic). In the AC56789 product, the [redacted]. Tr. (Fayed) at 416:13-19; CDX-0006C.94; CX-0295C (AC56789 schematic).

Accordingly, NOCO has shown that the AC530017 and AC56789 by a preponderance of the evidence that claim 32 of the '023 patent is infringed by AC530017 and AC56789 (and the Group B products of which AC56789 is representative).

c. Claim 39

i. Claim Limitation [39pre]: "A jump starting device for boosting or charging a depleted or discharged battery having a positive polarity battery terminal and a negative polarity battery terminal, the jump starter device comprising:"

The parties agree that the preamble is limiting. *See* EDIS Doc. ID 807614 (Joint Claim Construction Statement). Neither ADC nor Staff dispute that that this limitation is met. *See* RIB

DELTRAN EX1060
IPR2024-01219

at 70-89; RRB at 36-41; SIB at 87-92; SRB at 54-58. In addition, the undisputed evidence demonstrates that AC530017 and AC56789 are jump starting devices for boosting or charging a depleted battery with a positive and negative polarity terminal. *See* Tr. (Fayed) at 379:2-6; CDX-0006C.36; Tr. (Fayed) at 408:6-22; CDX-0006C.76; *see also* CX-2341 (AC530017 data sheet); CX-2359 (AC56789 data sheet).

Accordingly, NOCO has shown that AC530017 and AC56789 meet Limitation [39pre] of the ’023 patent.

ii. Claim Limitation [39a]: “a power supply”

Neither ADC nor Staff dispute that that this limitation is met. *See* RIB at 70-89; RRB at 36-41; SIB at 87-92; SRB at 54-58. In addition, the undisputed evidence demonstrates that AC530017 and AC56789 include a power supply, specifically, an internal battery. *See* Tr. (Fayed) at 379:19-24; CDX-0006C.39; Tr. (Fayed) at 408:6-22; CDX-0006C.76; *see also* CX-2341 (AC530017 data sheet); CX-2359 (AC56789 data sheet).

Accordingly, NOCO has shown that AC530017 and AC56789 meet Limitation [39a] of the ’023 patent.

iii. Claim Limitation [39b]: “a positive battery terminal connector for connecting the jump starter device to the positive battery terminal of the depleted or discharged battery;”

Neither ADC nor Staff dispute that that this limitation is met. *See* RIB at 70-89; RRB at 36-41; SIB at 87-92; SRB at 54-58. In addition, the undisputed evidence demonstrates that AC530017 and AC56789 include a positive polarity battery terminal connector for connecting the jump starter to a positive battery terminal; specifically, each model includes a jumper cable with a red battery clamp (positive). *See* Tr. (Fayed) at 380:16-21; CDX-0006C.42; Tr. (Fayed) at

DELTRAN EX1060
IPR2024-01219

408:6-22; CDX-0006C.76; *see also* CX-291C.8 (AC530017 user manual); CX-297C.7 (AC56789 user manual).

Accordingly, NOCO has shown that AC530017 and AC56789 meet Limitation [39b] of the ’023 patent.

iv. Claim Limitation [39c]: “a negative battery terminal connector for connecting the jump starter device to the negative battery terminal of the depleted or discharged battery;”

Neither ADC nor Staff dispute that that this limitation is met. *See* RIB at 70-89; RRB at 36-41; SIB at 87-92; SRB at 54-58. In addition, the undisputed evidence demonstrates that AC530017 and AC56789 include a negative polarity battery terminal connector for connecting the jump starter to a negative battery terminal; specifically, each model includes a jumper cable with a black battery clamp (negative). *See* Tr. (Fayed) at 381:16-20; CDX-0006C.45; Tr. (Fayed) at 408:6-22; CDX-0006C.76; *see also* CX-291C.8 (AC530017 user manual); CX-297C.7 (AC56789 user manual).

Accordingly, NOCO has shown that AC530017 and AC56789 meet Limitation [39c] of the ’023 patent.

v. Claim Limitation [39d]: “a power switch or circuit connected in circuit with the power supply and the positive and negative battery terminal connectors, the power switch configured to turn power on from the power supply to the depleted or discharged battery when the positive and negative battery terminal connectors are properly connected to the positive and negative battery connectors;”

The parties dispute that that this limitation is met. *See* RIB at 87-88. NOCO asserts that AC530017 and AC56789 meet Limitation [39d] for the same reasons as with respect to Limitation [1d], which ADC did not dispute. CIB at 92.

ADC argues that because ADC's products are imported [redacted], the "power or switch"—[redacted]—is not "connected in circuit" with the device's power supply. RIB at 87-88.

Staff does not address this limitation. SIB at 87-92; SRB at 54-58

Upon review of the submissions and evidence of record, the undersigned finds that NOCO has established, by a preponderance of the evidence, that the AC530017 and AC56789 products meet the claim requirement "a power switch or circuit connected in circuit with the power supply and the positive and negative battery terminal connectors, the power switch configured to turn power on from the power supply to the depleted or discharged battery when the positive and negative battery terminal connectors are properly connected to the positive and negative battery connectors."

As discussed *supra*, Part VI.C.1.d.v, regarding the Carku products, Claim 39 is an apparatus claim, not a method claim, and "[a]pparatus claims cover what a device is, not what a device does." *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1468 (Fed. Cir. 1990). For the reasons discussed *supra*, the "connected in circuit" language is a structural limitation dictating how the relevant circuits are wired, not a requirement that the circuits be live, plugged in, or powered on at importation.

Moreover, for the same reasons discussed above in the context of the Limitation [1d], a preponderance of the evidence shows that models AC530017 and AC56789 include "a power switch or circuit connected in circuit with the power supply and the positive and negative battery terminal connectors, the power switch configured to turn power on from the power supply to the depleted or discharged battery when the positive and negative battery terminal connectors are properly connected to the positive and negative battery connectors."

Accordingly, NOCO has shown that AC530017 and AC56789 meet Limitation [39d] of the ’023 patent.

vi. Claim Limitation [39e]: “a power switch control system or circuit connected to and controlling the power switch, the power switch control system or circuit configured to detect presence of the depleted or discharged battery when connected between the positive and negative battery terminal connectors and to detect polarity of the depleted or discharged battery when connected between the positive and negative battery terminal connectors;”

The parties dispute this limitation. NOCO asserts that models AC530017 and AC56789 satisfy Limitation [39e] for the same reasons as Limitation [1e], and that they additionally meet the requirement that the “power switch control system or circuit” is “configured to detect presence of the depleted or discharged battery.” NOCO contends that the [redacted] CIB at 94-95.

ADC disputes Limitation [39e] for the same reasons as Limitation [1e]. *See* RIB at 87 (“NOCO and Dr. Fayed presented no independent infringement arguments or evidence for independent claim 39, *see, e.g.*, Tr. (Fayed) 410:8-12, and thus their infringement theories fail for at least the reasons set forth for claim 1.”); RRB at 39.

Staff, like ADC, asserts that the [redacted] in ADC’s products is not “configured to detect presence of the depleted or discharged battery,” including because [redacted]. SIB at 91-92; SRB at 57-58.

For the same reasons as discussed above with respect to Limitation [1e], the undersigned finds that NOCO has established, by a preponderance of the evidence, that the [redacted] in the ADC products is “configured to detect presence of the depleted or discharged battery” and to

"detect polarity of the depleted or discharged battery." Again, there appears to be no dispute that if a discharged—and not fully depleted—vehicle battery is [redacted] in the ADC products will detect that condition and allow current to flow from the jump starter power supply to the vehicle battery, in accordance with the claims. Tr. (Fayed) at 390:3-8; Tr. (Horenstein) at 1046:9-20 ("[redacted]") (emphasis added); RDX-0002C.20.

This is also consistent with the ALJ's conclusions in the 1256 investigation, where the ALJ found that in model AC56789—also at issue here—the sensor circuit feeding "pin 10 of the microcontroller" "is configured to detect presence of a vehicle battery connected between the positive and negative polarity vehicle battery terminal connectors." *See Certain Portable Battery Jump Starters & Components Thereof*, Inv. No. 337-TA-1256, Initial Determination, EDIS Doc. ID 7711159, at 133 (April 29, 2022).

Accordingly, NOCO has shown that AC530017 and AC56789 meet Limitation [39e] of the '023 patent.

vii. Claim Limitation [39f]: "a USB input circuit connected to the power supply, the USB input circuit configured for converting power from a USB power source to increase power voltage to the power supply; and"

The parties dispute this limitation. NOCO asserts that models AC530017 and AC56789 satisfy Limitation [39f] for the same reasons as Limitation [1f]. CIB at 96.

ADC disputes Limitation [39f] for the same reasons as Limitation [1f]. *See* RIB at 87-88 ("NOCO and Dr. Fayed presented no independent infringement arguments or evidence for independent claim 39, *see, e.g.*, Tr. (Fayed) 410:8-12, and thus their infringement theories fail for at least the reasons set forth for claim 1."); RRB at 39.

Staff, like ADC, disputes Limitation [39f] for the same reasons as Limitation [1f]. SIB at 92; SRB at 58.

For the same reasons as discussed above with respect to Limitation [1f], the undersigned finds that the micro-USB input circuits in AC530017 and AC56789 satisfy Limitation [39f]. Accordingly, NOCO has shown that AC530017 and AC56789 meet Limitation [39f] of the '023 patent.

viii. Claim Limitation [39g]: "a USB input connector configured for connecting to the USB power source and providing power input from the USB power source through the USB input connector and the USB input circuit to the power supply."

The parties dispute this limitation. NOCO asserts that models AC530017 and AC56789 satisfy Limitation [39g] for the same reasons as Limitation [1g]. CIB at 96.

ADC disputes Limitation [39g] for the same reasons as Limitation [1g]. See RIB at 87-88 ("NOCO and Dr. Fayed presented no independent infringement arguments or evidence for independent claim 39, see, e.g., Tr. (Fayed) 410:8-12, and thus their infringement theories fail for at least the reasons set forth for claim 1."); RRB at 39.

Staff, like ADC, disputes Limitation [39g] for the same reasons as Limitation [1g]. SIB at 92; SRB at 58.

For the same reasons as discussed above with respect to Limitation [1g], the undersigned finds that the micro-USB input connectors in AC530017 and AC56789 satisfy Limitation [39g].

DELTRAN EX1060
IPR2024-01219

Accordingly, NOCO has shown that AC530017 and AC56789 meet Limitation [39g] of the '023 patent.

***

Accordingly, for the reasons discussed above, the evidence shows by a preponderance that claim 39 is infringed by AC530017 and AC56789 (and the Group B products of which AC56789 is representative).

d. Claim 54

i. Claim Limitation [54pre]: "A jump starting apparatus configured for boosting or charging a depleted or discharged battery having a positive polarity battery terminal and a negative polarity battery terminal, the jump starting apparatus comprising:"

The parties agree that the preamble is limiting. *See* EDIS Doc. ID 807614 (Joint Claim Construction Statement). Neither ADC nor Staff dispute that that this limitation is met. *See* RIB at 70-89; RRB at 36-41; SIB at 87-92; SRB at 54-58. In addition, the undisputed evidence demonstrates that AC530017 and AC56789 are jump starting devices for boosting or charging a depleted battery with a positive and negative polarity terminal. *See* Tr. (Fayed) at 379:2-6; CDX-0006C.36; Tr. (Fayed) at 417:10-17; *see also* CX-2341 (AC530017 data sheet); CX-2359 (AC56789 data sheet).

Accordingly, NOCO has shown that AC530017 and AC56789 meet Limitation [54pre] of the '023 patent.

ii. Claim Limitation [54a]: "a power supply;"

Neither ADC nor Staff dispute that that this limitation is met. *See* RIB at 70-89; RRB at 36-41; SIB at 87-92; SRB at 54-58. In addition, the undisputed evidence demonstrates that AC530017 and AC56789 include a power supply, specifically, an internal battery. *See* Tr.

DELTRAN EX1060
IPR2024-01219

(Fayed) at 379:19-24; CDX-0006C.39; Tr. (Fayed) at 417:10-17; *see also* CX-2341 (AC530017 data sheet); CX-2359 (AC56789 data sheet).

Accordingly, NOCO has shown that AC530017 and AC56789 meet Limitation [54a] of the ’023 patent.

iii. Claim Limitation [54b]: “a positive polarity battery terminal connector configured for connecting the jump starting apparatus to the positive polarity battery terminal of the depleted or discharged battery;”

Neither ADC nor Staff dispute that that this limitation is met. *See* RIB at 70-89; RRB at 36-41; SIB at 87-92; SRB at 54-58. In addition, the undisputed evidence demonstrates that AC530017 and AC56789 include a positive polarity battery terminal connector for connecting the jump starter to a positive battery terminal; specifically, each model includes a jumper cable with a red battery clamp (positive). *See* Tr. (Fayed) at 380:16-21; CDX-0006C.42; Tr. (Fayed) at 417:10-17; *see also* CX-291C.8 (AC530017 user manual); CX-297C.7 (AC56789 user manual).

Accordingly, NOCO has shown that AC530017 and AC56789 meet Limitation [54b] of the ’023 patent.

iv. Claim Limitation [54c]: “a negative polarity battery terminal connector configured for connecting the jump starting apparatus to the negative polarity battery terminal of the depleted or discharged battery;”

Neither ADC nor Staff dispute that that this limitation is met. *See* RIB at 70-89; RRB at 36-41; SIB at 87-92; SRB at 54-58. In addition, the undisputed evidence demonstrates that AC530017 and AC56789 include a negative polarity battery terminal connector for connecting the jump starter to a negative battery terminal; specifically, each model includes a jumper cable with a black battery clamp (negative). *See* Tr. (Fayed) at 381:16-20; CDX-0006C.45; Tr. (Fayed)

DELTRAN EX1060
IPR2024-01219

at 417:10-17; *see also* CX-291C.8 (AC530017 user manual); CX-297C.7 (AC56789 user manual).

Accordingly, NOCO has shown that AC530017 and AC56789 meet Limitation [54c] of the ’023 patent.

v. Claim Limitation [54d]: “a power switch or circuit configured to turn on power from the power supply to the positive and negative polarity battery terminal connectors;”

Neither ADC nor Staff dispute that that this limitation is met. *See* RIB at 70-89; RRB at 36-41; SIB at 87-92; SRB at 54-58. In addition, the undisputed evidence demonstrates that AC530017 and AC56789 include a power switch or circuit configured to turn on power from the power supply to the positive and negative battery terminal connectors. Specifically, Dr. Fayed testified that both products include [redacted]. *See* Tr. (Fayed) at 384:3-20; CDX-0006C.50-51; Tr. (Fayed) at 417:10-17; *see also* CX-290C ([redacted] schematic); CX-296C ([redacted] schematic).

Accordingly, NOCO has shown that the AC530017 and AC56789 meet Limitation [54d] of the ’023 patent.

vi. Claim Limitation [54e]: “a control system or circuit connected to and controlling the power switch, the control system or circuit configured to detect whether the positive and negative polarity battery terminal connectors have a correct polarity connection with the positive and negative polarity battery terminals of the depleted or discharged battery and prevent an incorrect polarity connection with the positive and negative polarity battery terminals of the depleted or discharged battery prior to turning on the power switch or circuit;”

The parties dispute this limitation. NOCO asserts that models AC530017 and AC56789 satisfy Limitation [54e] for the same reasons as Limitation [1e]. CIB at 99.

ADC disputes Limitation [54e] for the same reasons as Limitation [1e]. *See* RIB at 87-88 ("NOCO's infringement claim as to claim 54 fails for at least all of the reasons discussed above with respect to claim 1."); RRB at 40.[76]

Staff, like ADC, disputes Limitation [54e] for the same reasons as Limitation [1e]. SIB at 89-91; SRB at 54-57.

For the same reasons as discussed above with respect to Limitation [1e], the undersigned finds that the bridge circuit in the AC530017 and AC56789 products satisfies Limitation [54e]. Accordingly, NOCO has shown that AC530017 and AC56789 meet Limitation [54e] of the '023 patent.

vii. Claim Limitation [54f]: "a USB input connector"

The parties dispute this limitation. NOCO asserts that models AC530017 and AC56789 satisfy Limitation [54f] for the same reasons as Limitation [1g]. CIB at 99.

ADC disputes Limitation [54f] for the same reasons as Limitation [1g]. *See* RIB at 87-88 ("NOCO's infringement claim as to claim 54 fails for at least all of the reasons discussed above with respect to claim 1."); RRB at 40.

[76] ADC also argues that Dr. Fayed "barely addressed claim 54" and only in a "perfunctory statement" that the claim limitations are identical, and thus the analysis is identical. RIB at 88 (citing Tr. (Fayed) at 417:11-17). Dr. Ricketts, however, in his invalidity analysis, with the exception of Limitation [54e], similarly opined that "[a]ll of the limitations that teach Claim 1 would apply to all of the other limitations of Claim 54." Tr. (Ricketts) at 775:8-9. Dr. Ricketts' exception referred to the interpretation of "preventing an incorrect polarity connection," Tr. (Ricketts) at 773:15-775:1. ADC has not alleged that its products do not "prevent an incorrect polarity condition," *See* RIB at 70-89; RRB at 36-41, and indeed, Dr. Horenstein testified that ADC's products [redacted]. Tr. (Horenstein) at 1126:16-20. The undersigned declines to find that limitations that the parties agree are substantively the same must be repetitively addressed in hearing testimony.

DELTRAN EX1060
IPR2024-01219

Staff, like ADC, disputes Limitation [54f] for the same reasons as Limitation [1g]. SIB at 92; SRB at 58.

For the same reasons as discussed above with respect to Limitation [1g], the undersigned finds that the micro-USB input connectors in AC530017 and AC56789 satisfy Limitation [54g]. Accordingly, NOCO has shown that AC530017 and AC56789 meet Limitation [54g] of the '023 patent.

viii. Claim Limitation [54g]: "a USB input circuit connecting the USB input connector to the power supply, the USB input circuit comprising a DC/DC converter for up-converting the voltage from the USB input connector to the power supply."

The parties dispute this limitation. NOCO asserts that models AC530017 and AC56789 satisfy Limitation [54g] for the same reasons as Limitation [1f]. CIB at 99.

ADC disputes Limitation [54g] for the same reasons as Limitation [1f]. *See* RIB at 87-88 ("NOCO's infringement claim as to claim 54 fails for at least all of the reasons discussed above with respect to claim 1."); RRB at 40.

Staff, like ADC, disputes Limitation [54g] for the same reasons as Limitation [1f]. SIB at 92; SRB at 58.

For the same reasons as discussed above with respect to Limitation [1f], the undersigned finds that the micro-USB input circuits in AC530017 and AC56789 satisfy Limitation [54g]. Accordingly, NOCO has shown that AC530017 and AC56789 meet Limitation [54g] of the '023 patent.

***

DELTRAN EX1060
IPR2024-01219

Accordingly, for the reasons discussed above, the evidence shows by a preponderance that claim 54 is infringed by AC530017 and AC56789 (and the Group B products of which AC56789 is representative).

e. The ADC Revised Products

As discussed, *supra*, the undersigned finds that adjudication of the ADC Revised Products is appropriate. NOCO did not present any evidence of infringement as to [redacted]. *See* RIB at 93; CIB at 64-65; CDX-0006C.27 (excluding redesign models from Group A or Group B). NOCO's post-hearing briefs contain no infringement arguments regarding the ADC Revised Products.[77] According, any such arguments have been waived and NOCO has failed to meet its burden of proof. *Oligosaccharides*, Comm'n Op., 2020 WL 3073788, at *13 (June 8, 2020) (burden of establishing infringement lay with complainant with respect to non-accused, adjudicated product); Ground Rule 13.1. Moreover, the uncontradicted evidence of record establishes that the [redacted] products do not infringe, at least because they do not include [redacted]. Dr. Horenstein testified that [redacted] Tr. (Horenstein) at 1106:11-

[77] NOCO does appear to allege that Limitation [1e] of the '243 patent is met as to AC534162 because it has a USB-C port. *See* CIB at 148. Argument as to a single limitation is insufficient to meet NOCO's burden, and further, a USB-C port is outside the scope of the "USB input connector" claims, as detailed *supra*.

1107:13; RDX-0002C.41; RPX-0319; RPX-0320. As to [redacted], Dr. Horenstein testified that it is [redacted]. Tr. (Horenstein) at 1107:14-1108:11; CDX-002C.41-42.

ADC is therefore entitled to a finding of non-infringement of the redesign models [redacted] as to the asserted claims of the '023 patent.

D. The '243 Patent

1. The Carku Accused Products

The same Carku Accused Products accused of infringing the '023 patent are accused of infringing claims 1, 2, 18 and 54 of the '243 patent, and the same representative "Group A" and "Group B" categorization is used. *See* CIB at 144; CX-0256C. The Carku Respondents rely on the same arguments presented as to the '023 patent to challenge Dr. Fayed's representativeness analysis for the '243 patent. *See* RIB at 94-95. For the same reasons as discussed above, the undersigned finds that NOCO has met its burden on representativeness.

Based on Dr. Fayed's testimony, and the lack of persuasive countervailing evidence, the evidence shows by a preponderance that Fanttik T8 Max is representative of products with a USB controller chip and the alleged reverse polarity circuit implemented in the jump starter battery pack; the Solvtin S6 Pro is representative of products with a USB controller chip with the alleged reverse polarity circuit implemented in the jumper cables; the Astro AI is representative of products without a USB controller chip and the alleged reverse polarity circuit implemented in the jump starter battery pack; and the Gooloo GP4000 is representative of products without a USB controller chip with the alleged reverse polarity circuit implemented in the jumper cables.

a. Claim 1

DELTRAN EX1060
IPR2024-01219

i. Claim Limitation [1pre]: "A jump starting device for boosting or charging a depleted or discharged battery having a positive battery terminal and a negative battery terminal, the jump starting device comprising:"

The parties agree that the preamble is limiting. *See* EDIS Doc. ID 807614 (Joint Claim Construction Statement). Neither the Carku Respondents nor Staff dispute that that this limitation is met. *See* RIB at 144-50; RRB at 92-94; SIB at 117-20; SRB at 77-80. In addition, the undisputed evidence demonstrates that the Carku Accused Products are jump starting devices for boosting or charging a depleted battery with a positive and negative polarity terminal. *See* Tr. (Fayed) at 378:15-25; CDX-0006C.35; Tr. (Fayed) at 418:16-419:12; CDX-0006C.102; *see also* CX-718C (Fanttik T8 Max user manual); CX-725C (Gooloo GP4000 user manual).

Accordingly, NOCO has shown that the Carku Accused Products meet Limitation [1pre] of the '243 patent.

ii. Claim Limitation [1a]: "a power supply"

Neither the Carku Respondents nor Staff dispute that that this limitation is met. *See* RIB at RIB at 144-50; RRB at 92-94; SIB at 117-20; SRB at 77-80. In addition, the undisputed evidence demonstrates that the Carku Accused Products include a power supply, specifically, an internal battery. *See* Tr. (Fayed) at 379:12-18; CDX-0006C.38; Tr. (Fayed) at 418:16-419:12; CDX-0006C.102; *see also* CX-718C (Fanttik T8 Max user manual); CX-725C (Gooloo GP4000 user manual).

Accordingly, NOCO has shown that the Carku Accused Products meet Limitation [1a] of the '243 patent.

DELTRAN EX1060
IPR2024-01219

iii. Claim Limitation [1b]: "a positive battery connector for electrically connecting the jump starting device to the positive battery terminal of the depleted or discharged battery;"

Neither the Carku Respondents nor Staff dispute that that this limitation is met. *See* RIB at 144-50; RRB at 92-94; SIB at 117-20; SRB at 77-80. In addition, the undisputed evidence demonstrates that the Carku Accused Products include a positive polarity battery terminal connector for connecting the jump starter to a positive battery terminal; specifically, each model includes a jumper cable with a red battery clamp (positive). *See* Tr. (Fayed) at 380:6-15; CDX-0006C.41; Tr. (Fayed) at 418:16-419:12; CDX-0006C.102; *see also* CX-718C (Fanttik T8 Max user manual); CX-725C (Gooloo GP4000 user manual).

Accordingly, NOCO has shown that the Carku Accused Products meet Limitation [1b] of the '243 patent.

iv. Claim Limitation [1c]: "a negative battery connector for electrically connecting the jump starting device to the negative battery terminal of the depleted or discharged battery;"

Neither the Carku Respondents nor Staff dispute that that this limitation is met. *See* RIB at 144-50; RRB at 92-94; SIB at 117-20; SRB at 77-80. In addition, the undisputed evidence demonstrates that the Carku Accused Products include a negative polarity battery terminal connector for connecting the jump starter to a negative battery terminal; specifically, each model includes a jumper cable with a black battery clamp (negative). *See* Tr. (Fayed) at 381:2-9; CDX-0006C.44; Tr. (Fayed) at 418:16-419:12; CDX-0006C.102; *see also* CX-718C (Fanttik T8 Max user manual); CX-725C (Gooloo GP4000 user manual).

Accordingly, NOCO has shown that the Carku Accused Products meet Limitation [1c] of the '243 patent.

DELTRAN EX1060
IPR2024-01219

v. Claim Limitation [1d]: "a power switch or switch circuit connected in circuit with the power supply and the positive and negative battery connectors, the power switch or switch circuit configured to switch power on from the power supply to boost or charge the depleted or discharged battery when connected between the positive and negative polarity battery connectors;"

The parties dispute this limitation. NOCO contends that Limitation [1d] of the '243 patent is met for the same reasons as Limitation [1d] of the '023 patent, which was not disputed. *See* CIB at 146; Tr. (Fayed) at 418:16-419:12; CDX-0006C.102.

The Carku Respondents, in opposition, argue that the ordinary meaning of the claim language "configured to switch power on . . . when connected between the positive and negative battery connectors" means that power must be switched on "without delay or without awaiting further conditions" at the moment of connection to a battery. RIB at 145-46. Because the Carku Accused Products do not immediately switch power on when connected—for example, because a reverse polarity condition is detected or because a voltage drop indicating a starting attempt is not detected—the Carku Respondents assert that their products do not infringe.[78] RIB at 147. The Carku Respondents explain that their construction is supported by claim differentiation as compared to claim 2, which requires that the power switch is turned on "only when the jump starter is connected with correct polarity." RRB at 92.

Staff, like the Carku Respondents, contends that the "when connected" language requires "a direct relationship between the 'power switch or switch circuit' being configured to turn on and the condition of a 'battery [being] connected between the positive and negative battery

[78] The Carku Respondents also repeat the same argument as with Limitation [39d] of the '023 patent that the power switch is not "in circuit" because the cables are shipped unplugged. RIB at 148. As discussed above, *supra*, in connection with Limitation [39d] of the '023 patent, the "connected in circuit" language is a structural limitation dictating how the relevant circuits are wired, not a requirement that the circuits be live, plugged in, or powered on at importation.

DELTRAN EX1060
IPR2024-01219

connectors." SIB at 118. Staff, unlike Respondents, does not contend that the switch on must be immediate or turn on power in all circumstances, SRB at 78. Staff contends that because the Carku Accused Products require an additional detection of a voltage drop (associated with the user engaging the starter motor of a vehicle), the Carku Accused Products do not meet this limitation. SRB at 78-79.

In response, NOCO argues that the alleged construction is contrary to the specification, which teaches that the switch does not turn on in a variety of situations, including when the clamps are connected to a battery with reverse polarity or when the temperature of the internal battery pack is too high.'243 patent, 5:64-6:5 (the jump starter determines "when it is safe to turn on the smart switch FET 15, thereby connecting the lithium battery pack to the jumper terminals of the booster device[,]" and, if the connection is incorrect, the jump starter "can keep the smart switch FET 15 from being turned on, thus prevent[ing] sparking/short circuiting of the lithium battery pack."), 6:42-44 (circuitry monitoring temperature of "internal lithium battery pack 32" allows the jump starter to "determine when the internal lithium battery is too hot to allow jump-starting, adding safety to the design."). NOCO contends that the specification teaches that the preferred embodiment "shall never" be turned on if connected to a battery with reverse polarity. CRB at 84-85 (citing '243 patent, 5:21-23. The "when connected" language, NOCO asserts, refers to how the power switch turns on power to the clamps, not a particular time window.

Upon review of the submissions and evidence of record, the undersigned finds that NOCO has established, by a preponderance of the evidence, that the Carku Accused Products meet the claim requirement "a power switch or switch circuit connected in circuit with the power supply and the positive and negative battery connectors, the power switch or switch circuit configured to switch power on from the power supply to boost or charge the depleted or

DELTRAN EX1060
IPR2024-01219

discharged battery when connected between the positive and negative polarity battery connectors."

Claims are construed by reference "not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005). The construction urged by the Carku Respondents is contrary to the teachings of the preferred embodiment in the specification, which teaches the use of a number of sensors and control circuits before ultimately turning on power to the clamps, even "when connected" to a battery. *See, e.g.*, '243 patent, 5:64-6:5 (the jump starter determines "when it is safe to turn on the smart switch FET 15, thereby connecting the lithium battery pack to the jumper terminals of the booster device[,]" and, if the polarity connection is incorrect, the jump starter "can keep the smart switch FET 15 from being turned on, thus prevent[ing] sparking/short circuiting of the lithium battery pack."), 6:42-44 (circuitry monitoring temperature of "internal lithium battery pack 32" allows the jump starter to "determine when the internal lithium battery is too hot to allow jump-starting, adding safety to the design."). As the Federal Circuit has explained, "[a] claim construction that excludes a preferred embodiment, moreover, 'is rarely, if ever, correct.'" *SanDisk Corp. v. Memorex Prod., Inc.*, 415 F.3d 1278, 1285 (Fed. Cir. 2005). The Carku Respondents do not address the specification and do not point to any other intrinsic[79] or extrinsic evidence supporting their contention that the plain and ordinary meaning of "when connected" requires the switch to turn on "without delay" or "without awaiting further conditions." RIB at 145-46. The Carku

[79] In their initial post-hearing brief, the Carku Respondents contend that the "when connected" language was added to overcome rejections based on Balmefrezol. *See* RIB at 146. NOCO, in response, points out that the language was already in the claims prior to the Balmefrezol rejection. See CRB at 84 (citing JX-00012.1206-07, 5646-52. Based on the file history, NOCO is correct. *See* RRB at 92-93.

Respondents' argument relies in part on claim differentiation between claim 1 and claim 2, resulting in a construction for claim 1 that Respondents contend "requires the switch to turn on even when connected with reverse polarity." RRB at 92. As discussed above, this interpretation contradicts the specification's teachings. Moreover, the undersigned does not agree that claim differentiation supports Respondents' proposed construction. Under Respondents' proposed construction, a jump starter that meets the additional limitation of claim 2—turning on the power switch "only when" connected with correct polarity—would not meet the limitation of independent claim 1 from which it depends, which Respondents contend must turn on the power switch regardless of a reverse or correct polarity connection.[80]

Staff's proposed construction does not require immediacy or preclude additional device features but appears to require that the power switch be responsive to the connection of a battery. *See* SIB at 118. As discussed above in connection with Limitation [1e] of the '023 patent, Dr. Ricketts testified that the K1 power switch in the Fanttik T8 Max (which is the identified "power switch") "is controlled by two signals, right, the 12-volt_ON signal on the right, and the C_enable signal." Tr. (Ricketts) at 1210:20-1212:6. The 12-volt_ON signal originates in the MCU and is based on the VOUT_SN signal from the alleged battery presence circuit. *See* Tr. (Ricketts) at 1216:6-1217:23, 1211:24-1212:6; *see also* Tr. (Fayed) at 409:4-12; CDX-0006C.77; RX-4940C (Fanttik T8 Max schematic); (Fayed) at 409:22-410:6; RX-2941C; RX-2942C. Dr.

[80] Respondents contend that claim 2 could be met by, for example, a device which "automatically" corrects a reverse polarity connection. RIB at 147. Although Respondents contend that such a device is disclosed in the specification, such a device is disclosed only in the discussion of prior art, and is not identified or described as within the scope of the invention. *See* '023 patent, 2:16-22 (describing a prior art device that "could be used to produce a battery charger that may be connected to a battery without regard to the polarity of the battery"). Rather, the specification describes, as a preferred embodiment, a device which "shall never" switch on power when connected with reverse polarity. *See* '023 patent, 5:12-14.

DELTRAN EX1060
IPR2024-01219

Ricketts' testimony that the identified power switch is "controlled by two signals"—one of which indicates battery presence, *i.e.*, connection—is sufficient to meet Staff's apparent construction of a "direct relationship" between the power switch and the "when connected" condition.[81] For the same reason, that the Carku Accused Products apparently wait for a voltage drop[82] before sending power to the clamps does not change the undisputed testimony by the experts that the identified power switch is "controlled by" two signals, one of which indicates battery presence.

Accordingly, NOCO has shown that the Carku Accused Products meet Limitation [1d] of the '243 patent.

vi. Claim Limitation [1e][83]: "a USB input connector;"

The parties dispute this limitation. NOCO asserts that the Carku Accused Products satisfy Limitation [1e] of the '243 patent for the same reasons as Limitation [1g] of the '023 patent. CIB at 148. The Carku Respondents and Staff dispute Limitation [1e] of the '243 patent for the same reasons as Limitation [1g] of the '023 patent. *See* RIB at 148; RRB at 39; SIB at 119; SRB at 79-80.

[81] To the extent Staff's argument repeats the contention that the power switch must be directly connected to the battery presence sensor circuit, the undersigned finds that argument is unsupported by the evidence of record and the claim language, as explained above in connection with Limitation [1e] of the '023 patent.

[82] The Carku Respondents introduced little evidence or argument about this feature beyond Dr. Ricketts' bare testimony that "the accused products require a voltage drop." *See* Tr. (Ricketts) at 1169:14-1170:2, 1183:10-14, 1185:17-23. On the current record, it is unclear how the voltage drop feature interacts with the relevant signals, switches, or circuits, or how the voltage drop is implemented in the Carku Accused Products. On this record, the evidence fails to show that the "voltage drop" undermines NOCO's evidence regarding the interaction of the power switch and the battery presence sensor signals.

[83] The Carku Respondents break the previous limitation into two parts and use Limitation [1f] to refer to the "input connector" limitation and [1g] to refer to the "charge circuit" limitation. RIB at 145.

For the same reasons as discussed above with respect to Limitation [1g] of the ’023 patent, the undersigned finds that the USB-C input connectors in the Carku Accused Products are not within the scope of the claims. Accordingly, NOCO has not shown that the Carku Accused Products meet Limitation [1e] of the ’243 patent.

vii. Claim Limitation [1f]: “a USB charge circuit electrically connecting the USB input connector to the power supply, the USB charge circuit comprising a DC-DC converter configured to upconvert voltage from the USB input connector to the power supply.”

The parties dispute this limitation. NOCO asserts that the Carku Accused Products satisfy Limitation [1f] of the ’243 patent for the same reasons as Limitation [1f] of the ’023 patent. CIB at 148-49. The Carku Respondents and Staff dispute Limitation [1f] of the ’243 patent for the same reasons as Limitation [1f] of the ’023 patent. *See* RIB at 148; RRB at 39; SIB at 119; SRB at 79-80.

For the same reasons as discussed above with respect to Limitation [1f] of the ’023 patent, the undersigned finds that the USB-C charge circuit in the Carku Accused Products are not within the scope of the claims. Accordingly, NOCO has not shown that the Carku Accused Products meet Limitation [1f] of the ’243 patent.

***

Accordingly, for the reasons discussed above, the evidence fails to show by a preponderance that claim 1 of the ’243 patent is infringed by the Carku Accused Products.

b. Claim 2

Claim 2 depends from claim 1, and requires in addition “wherein the power switch or switch circuit is controlled to turn on power to the depleted or discharged battery only when the jump starting device is connected with correct polarity to the depleted or discharged battery.” As

DELTRAN EX1060
IPR2024-01219

held *supra*, the evidence fails to show infringement of claim 1 by the Carku Accused Products. Therefore, the evidence does not show infringement of claim 2. *See Wahpeton*, 870 F.2d at 1552 n.9.

c. Claim 18

Claim 18 depends from claim 17, which depends from claim 15, which ultimately depends from claim 1 and requires in addition "further comprising a USB output connector for providing a power output from the power supply to a USB-chargeable device" (claim 15), "wherein the USB output connector is electrically connected to a USB output circuit, the USB output circuit connecting the power supply to the USB output connector," (claim 17) and "further comprising a microcontroller with a control circuit, the control circuit for the microcontroller allows the USB output circuit to be turned on and off by software control to prevent the power supply getting too low in capacity" (claim 18).

As held *supra*, the evidence fails to show infringement of claim 1 by the Carku Accused Products. Therefore, the evidence does not show infringement of claim 18. *See Wahpeton*, 870 F.2d at 1552 n.9.

d. Claim 54

Claim 54 depends from claim 51, which ultimately depends from claim 1 and requires in addition "wherein the power supply is a rechargeable lithium battery pack" and "further comprising a rechargeable lithium battery pack voltage measurement circuit configured to monitor the rechargeable lithium battery pack to prevent voltage potential from rising too high during a charging operation and from dropping too low during a discharge operation." As held *supra*, the evidence fails to show infringement of claim 1 by the Carku Accused Products.

DELTRAN EX1060
IPR2024-01219

Therefore, the evidence does not show infringement of claim 54. *See Wahpeton*, 870 F.2d at 1552 n.9; RIB at 149.

***

Accordingly, for the reasons discussed above, the evidence fails to show by a preponderance that claims 1, 2, 18, or 54 of the '243 patent are infringed by the Carku Accused Products.

e. The Carku Revised Jump Starters

As discussed, *supra*, the undersigned finds that adjudication of the Carku Revised Jump Starters, except for RPX-0042 and RPX-0043, is appropriate. NOCO did not present any evidence of infringement as to models Hulkman Alpha 85S (Rev. A) (RPX-0013), Hulkman Alpha 85 (Rev. A) (RPX-0016), Hulkman Alpha 65 (Rev. A) (RPX-0017), Topdon JS-300 (Rev. A) (RPX-0018), Fanttik T8 1300 AMP (RPX-0025), Asperx AX2500 (Rev. A) (RPX-0028), Asperx AX3500 (Rev. A) (RPX-0029), Spanarci Zeta 2000 Jump Starter (Rev. A) (RPX-001), Gooloo GT 4000S (Rev. A) (RPX-0002), Fanttik T8 Max (Rev. A) (RPX-0014), Gooloo GT4000 (Rev. A) (RPX-0015), Fanttik T8 Apex (JS-278 jumpstarter) (Rev. A) (RPX-0019), Yesper Armor Pro/Pro 2 (RPX-0024), Hulkman Alpha 100 (Rev. A) (RPX-0026), and Andeman Battery Jump Starter 2000A Peak 20000 mAh (Rev. A) (RPX-0027). *See* RRB at 58, 94; CIB at 133-35 (challenging only the adjudication of the Carku Revised Jump Starters); CDX-0006C.15-21 (excluding redesign models from Group A or Group B). NOCO's post-hearing briefs contain no infringement arguments regarding the Carku Revised Jump Starters. According, any such arguments have been waived and NOCO has failed to meet its burden of proof. *Oligosaccharides*, Comm'n Op., 2020 WL 3073788, at *13 (June 8, 2020) (burden of

DELTRAN EX1060
IPR2024-01219

establishing infringement lay with complainant with respect to non-accused, adjudicated product); Ground Rule 13.1.

In addition, Dr. Ricketts provided testimony that the adjudicated Carku Revised Jump Starters do not infringe, at least because they do not include "the USB charge circuit comprising a DC-DC converter configured to ***upconvert*** voltage from the USB input connector to the power supply," as required by Limitation [1f]. Tr. (Ricketts) at 1173:7-24, 1188:7-20; RDX-0008C.63; *see also* Part VI.C.1.f.[84]

The Carku Respondents are therefore entitled to a finding of non-infringement of the redesign models Hulkman Alpha 85S (Rev. A) (RPX-0013), Hulkman Alpha 85 (Rev. A) (RPX-0016), Hulkman Alpha 65 (Rev. A) (RPX-0017), Topdon JS-300 (Rev. A) (RPX-0018), Fanttik T8 1300 AMP (RPX-0025), Asperx AX2500 (Rev. A) (RPX-0028), Asperx AX3500 (Rev. A) (RPX-0029), Spanarci Zeta 2000 Jump Starter (Rev. A) (RPX-001), Gooloo GT 4000S (Rev. A) (RPX-0002), Fanttik T8 Max (Rev. A) (RPX-0014), Gooloo GT4000 (Rev. A) (RPX-0015), Fanttik T8 Apex (JS-278 jumpstarter) (Rev. A) (RPX-0019), Yesper Armor Pro/Pro 2 (RPX-0024), Hulkman Alpha 100 (Rev. A) (RPX-0026), and Andeman Battery Jump Starter 2000A Peak 20000 mAh (Rev. A) (RPX-0027) as to the asserted claims of the '243 patent.

2. The ADC Accused Products

The same ADC Accused Products accused of infringing the '023 patent are accused of infringing claims 1, 2, 18 and 54 of the '243 patent, and the same representative "Group A" and "Group B" categorization is used. *See* CIB at 144. ADC relies on the same arguments presented as to the '023 patent to challenge Dr. Fayed's representativeness analysis for the '243 patent. *See*

[84] As noted with respect to the '023 patent and the Carku Revised Jump Starters, even if Dr. Ricketts' testimony is disregarded, a finding of non-infringement is appropriate as to the adjudicated products because NOCO failed to meet its burden of proof.

DELTRAN EX1060
IPR2024-01219

RIB at 88-89, 142-43. For the same reasons as discussed above, the undersigned finds that NOCO has failed to meet its burden on representativeness with respect to the Group A products.

Accordingly, the undersigned finds that NOCO has failed to meet its burden to establish infringement of the '243 patent by models AC530020, AC532780, AC53791, AC532632, AC532671, AC533654, AC532777, AC533655, AC532781, AC532806, AC533420, AC533419. Accordingly, the only ADC Group A product assessed for infringement below is AC530017.

For these reasons and those discussed below, the evidence shows that the asserted claims of the '243 patent are infringed by the AC530017 product and by the Group B products (of which AC56789 is representative). The evidence fails to show that the asserted claims are infringed by the AC530020, AC532780, AC532791, AC532632, AC532671, AC533654, AC532777, AC533655, AC532781, AC532806, AC533420, and AC533419 products.

a. Claim 1

i. Claim Limitation [1pre]: "A jump starting device for boosting or charging a depleted or discharged battery having a positive battery terminal and a negative battery terminal, the jump starting device comprising:"

The parties agree that the preamble is limiting. *See* EDIS Doc. ID 807614 (Joint Claim Construction Statement). Neither ADC nor Staff dispute that that this limitation is met. *See* RIB at 142-44; RRB at 90-92; SIB at 117-20; SRB at 77-80. In addition, the undisputed evidence demonstrates that the ADC Accused Products are jump starting devices for boosting or charging a depleted battery with a positive and negative polarity terminal. *See* Tr. (Fayed) at 379:2-6; CDX-0006C.36; Tr. (Fayed) at 418:16-419:12; CDX-0006C.102; *see also* CX-2341 (AC530017 data sheet); CX-2359 (AC56789 data sheet).

Accordingly, NOCO has shown that the ADC Accused Products meet Limitation [1pre] of the '243 patent.

DELTRAN EX1060
IPR2024-01219

ii. Claim Limitation [1a]: "a power supply"

Neither ADC nor Staff dispute that that this limitation is met. *See* RIB at 142-44; RRB at 90-92; SIB at 117-20; SRB at 77-80. In addition, the undisputed evidence demonstrates that AC530017 and AC56789 include a power supply, specifically, an internal battery. *See* Tr. (Fayed) at 379:19-24; CDX-0006C.39; Tr. (Fayed) at 418:16-419:12; CDX-0006C.102; *see also* CX-2341 (AC530017 data sheet); CX-2359 (AC56789 data sheet).

Accordingly, NOCO has shown that the AC530017 and AC56789 meet Limitation [1a] of the '243 patent.

iii. Claim Limitation [1b]: "a positive battery connector for electrically connecting the jump starting device to the positive battery terminal of the depleted or discharged battery;"

Neither ADC nor Staff dispute that that this limitation is met. *See* RIB at 142-44; RRB at 90-92; SIB at 117-20; SRB at 77-80. In addition, the undisputed evidence demonstrates that AC530017 and AC56789 include a positive polarity battery terminal connector for connecting the jump starter to a positive battery terminal; specifically, each model includes a jumper cable with a red battery clamp (positive). *See* Tr. (Fayed) at 380:16-21; CDX-0006C.42; Tr. (Fayed) at 418:16-419:12; CDX-0006C.102; *see also* CX-291C.8 (AC530017 user manual); CX-297C.7 (AC56789 user manual).

Accordingly, NOCO has shown that the AC530017 and AC56789 meet Limitation [1b] of the '243 patent.

DELTRAN EX1060
IPR2024-01219

iv. Claim Limitation [1c]: "a negative battery connector for electrically connecting the jump starting device to the negative battery terminal of the depleted or discharged battery;"

Neither ADC nor Staff dispute that that this limitation is met. *See* RIB at 142-44; RRB at 90-92; SIB at 117-20; SRB at 77-80. In addition, the undisputed evidence demonstrates that AC530017 and AC56789 include a negative polarity battery terminal connector for connecting the jump starter to a negative battery terminal; specifically, each model includes a jumper cable with a black battery clamp (negative). *See* Tr. (Fayed) at 381:16-20; CDX-0006C.45; Tr. (Fayed) at 418:16-419:12; CDX-0006C.102; *see also* CX-291C.8 (AC530017 user manual); CX-297C.7 (AC56789 user manual).

Accordingly, NOCO has shown that the AC530017 and AC56789 meet Limitation [1c] of the '243 patent.

v. Claim Limitation [1d]: "a power switch or switch circuit connected in circuit with the power supply and the positive and negative battery connectors, the power switch or switch circuit configured to switch power on from the power supply to boost or charge the depleted or discharged battery when connected between the positive and negative polarity battery connectors;"

The parties dispute this limitation. NOCO asserts that the ADC Accused Products satisfy Limitation [1d] of the '243 patent for the same reasons as Limitation [1d] of the '023 patent. CIB at 147-48.

ADC and Staff[85] dispute Limitation [1d] of the '243 patent for the same reasons as Limitation [1e] and Limitation [39e] of the '023 patent, namely that the ADC Accused Products

[85] Staff also argues that the "when connected" language of the claims requires a "direct relationship" between the power switch turning on and the condition of a battery connection. SIB at 118. That argument is addressed above in relation to infringement of Limitation [1d] of the '243 patent by the Carku Accused Products. ADC appears to endorse the Carku Respondents' claim construction of the "when

[redacted] *See* RIB at 142-44; RRB at 90-91; SIB at 119; SRB at 79-80. ADC also argues that Dr. Fayed's referential analysis to Limitation [1d] of the '023 patent fails to satisfy its burden of proof. RRB at 90.

Upon review of the submissions and evidence of record, the undersigned finds that NOCO has established, by a preponderance of the evidence, that the ADC Accused Products meet the claim requirement "a power switch or switch circuit connected in circuit with the power supply and the positive and negative battery connectors, the power switch or switch circuit configured to switch power on from the power supply to boost or charge the depleted or discharged battery when connected between the positive and negative polarity battery connectors." For the same reasons as discussed above with respect to Limitations [1e] and [39e] of the '023 patent, the undersigned finds that the [redacted] in the ADC Accused Products [redacted], and that the identified power switch in the ADC products is responsive to the signal indicating battery presence.

ADC also contends that Dr. Fayed failed to explain how the [redacted] in the ADC accused products "switch power on" when connected to a battery. As with Limitation [1e] of the '023 patent, however, ADC's own expert Dr. Horenstein testified extensively as to the operation of the [redacted] identified as the "power switch" by Dr. Fayed. *See* Tr. (Fayed) at 390:3-8; Tr. (Horenstein) at 1046:9-20 ("[redacted]

connected" language that would cover only "circuits that close at the moment of connection (regardless of polarity)," RIB at 143. That argument is also addressed above in connection with the discussion of alleged infringement by the Carku Accused Products as to Limitation [1d] of the '243 patent.

[redacted].").

Accordingly, NOCO has shown that the AC530017 and AC56789 meet Limitation [1d] of the '243 patent.

vi. Claim Limitation [1e]: "a USB input connector"

The parties dispute this limitation. NOCO asserts that the ADC Accused Products satisfy Limitation [1e] of the '243 patent for the same reasons as Limitation [1g] of the '023 patent. CIB at 148.

ADC and Staff dispute Limitation [1e] of the '243 patent for the same reasons as Limitation [1g] of the '023 patent. *See* RIB at 142-44; RRB at 90-91; SIB at 119; SRB at 79-80.

For the same reasons as discussed above with respect to Limitation [1g] of the '023 patent, the undersigned finds that For all the reasons discussed above with respect to Limitation [1g] of the '023 patent, the undersigned finds that the evidence of record—including evidence affirmatively elicited from Dr. Fayed on cross-examination by ADC—establishes that AC530017 and AC56789 include micro-USB inputs, which are in accordance with USB standards known to those of skill in the art at the time of the claimed invention.

Accordingly, NOCO has shown that the AC530017 and AC56789 meet Limitation [1e] of the '243 patent.

DELTRAN EX1060
IPR2024-01219

vii. Claim Limitation [1f]: "a USB charge circuit electrically connecting the USB input connector to the power supply, the USB charge circuit comprising a DC-DC converter configured to upconvert voltage from the USB input connector to the power supply."

The parties dispute this limitation. NOCO asserts that the ADC Accused Products satisfy Limitation [1f] of the '243 patent for the same reasons as Limitation [1f] of the '023 patent. CIB at 148-49.

ADC and Staff dispute Limitation [1f] of the '243 patent for the same reasons as Limitation [1f] of the '023 patent. *See* RIB at 142-44; RRB at 90-91; SIB at 119; SRB at 79-80.

For the same reasons as discussed above with respect to Limitation [1f] of the '023 patent, the undersigned finds that although NOCO and Dr. Fayed generically identified "USB" ports in the AC530017 and AC56789 products without identifying particular standards, other evidence and testimony in the record establish the relevant USB standards. As to AC530017, Dr. Fayed testified on cross-examination from ADC counsel that there was a micro-USB input in the AC530017 product. Tr. (Fayed) at 493:15-19 (testifying with respect to CX-0293C, the block diagram for AC530017, "[Q]: Okay. Then do you see at the bottom left there's a box that starts with micro? Maybe we can zoom in on that. Micro input – [A]: Yeah, I see it. Micro input, 5-volt, 2 amp, 9 volt, 2-amp. Yes."); *id.* at 494:7-15 (testifying that an unanalyzed Group A product did not include a "USB micro in"). Dr. Fayed identified two USB ports in the AC56789 product as relevant to the USB input limitations, which the testimony and product documentation shows are a USB-C input and micro-USB input. *See* Tr. (Fayed) at 399:21-25; CX-0291C.2 ("Input (Micro USB): . . . Input (USB-C)); CDX-0006C.039.

Because micro-USB inputs are within the scope of the claims, NOCO has shown that the AC530017 and AC56789 meet Limitation [1f] of the '243 patent.

DELTRAN EX1060
IPR2024-01219

***

Accordingly, for the reasons discussed above, the evidence shows by a preponderance that claim 1 is infringed by AC530017 and AC56789 (and the Group B products of which AC56789 is representative).

b. Claim 2

Claim 2 depends from claim 1, and requires in addition "wherein the power switch or switch circuit is controlled to turn on power to the depleted or discharged battery only when the jump starting device is connected with correct polarity to the depleted or discharged battery." As discussed above, the evidence shows by a preponderance that claim 1 is infringed by AC530017 and AC56789.

NOCO contends that the additional limitation of claim 2 is satisfied for the same reasons as Limitation [1e] of the '023 patent. *See* CIB at 149-50 (citing Tr. (Fayed) at 421:17-18).

ADC disputes infringement of claim 2 of the '243 patent for the same reasons as Limitation [1e] of the '023 patent. *See* RIB at 144; RRB at 92. Staff does not separately address claim 2 of the '243 patent. *See* SIB at 119; SRB at 77-79.

For all the reasons discussed above with respect to Limitation [1e] of the '023 patent, the undersigned finds that NOCO has established by a preponderance of the evidence that AC530017 and AC56789 practice the additional limitation of claim 2. Accordingly, for the reasons discussed above, the evidence shows by a preponderance that claim 2 is infringed by AC530017 and AC56789 (and the Group B products of which AC56789 is representative).

c. Claim 18

Claim 18 depends from claim 17, which depends from claim 15, which ultimately depends from claim 1 and requires in addition "further comprising a USB output connector for

DELTRAN EX1060
IPR2024-01219

providing a power output from the power supply to a USB-chargeable device" (claim 15), "wherein the USB output connector is electrically connected to a USB output circuit, the USB output circuit connecting the power supply to the USB output connector," (claim 17) and "further comprising a microcontroller with a control circuit, the control circuit for the microcontroller allows the USB output circuit to be turned on and off by software control to prevent the power supply getting too low in capacity" (claim 18).

As discussed above, the evidence shows by a preponderance that claim 1 is infringed by AC530017 and AC56789. Neither ADC nor Staff separately dispute that that the additional limitations of claim 18 are met. *See* RIB at 144; RRB at 92; SIB at 118-20; SRB at 77-79. In addition, the undisputed evidence demonstrates that AC530017 and AC56789 include a USB output connector, connected to the power supply, and configured to be turned on and off by the microcontroller. Specifically, in AC530017, the [redacted] to turn the USB-A output circuit on and off. Tr. (Fayed) at 416:7-12; CDX-0006C.93; CX-0289C (AC530017 schematic); CX-2341 (AC530017 data sheet) ("USB-A Output"). Similarly, in the AC56789 product, the [redacted] to turn the USB-A output circuit on and off. *See* Tr. (Fayed) at 427:1-6; CDX-0006C.110; CX-0295C (AC56789 schematic); CX-0297C.3 (AC56789 user manual) ("USB-A Output Voltage: 5V 2.4A").[86]

Accordingly, NOCO has shown by a preponderance of the evidence that claim 18 of the '243 patent is infringed by AC530017 and AC56789 (and the Group B products of which AC56789 is representative).

d. Claim 54

[86] No party has sought to construe "USB output connector" or "USB output circuit," or suggested that infringement depends on whether "USB output circuit" or "USB output connector" are construed as excluding the USB-C or USB PD 2.0 specifications.

Claim 54 depends from claim 51, which ultimately depends from claim 1 and requires in addition "wherein the power supply is a rechargeable lithium battery pack" and "further comprising a rechargeable lithium battery pack voltage measurement circuit configured to monitor the rechargeable lithium battery pack to prevent voltage potential from rising too high during a charging operation and from dropping too low during a discharge operation."

As discussed above, the evidence shows by a preponderance that claim 1 is infringed by AC530017 and AC56789. Neither ADC nor Staff separately dispute that that the additional limitations of claim 54 are met. *See* RIB at 144; RRB at 92; SIB at 118-20; SRB at 77-79. In addition, the undisputed evidence demonstrates that AC530017 and AC56789 include a rechargeable lithium-ion battery pack and a voltage measurement circuit as claimed. Specifically, AC530017 and AC56789 include [redacted], respectively, which serves as a voltage measuring circuit and contains [redacted]. Tr. (Fayed) at 428:22-429:12; CDX-0006C.116-17; CX-0289C.1 (AC530017 schematic); CX-0295C (AC56789 schematic). As discussed with respect to claim [1a] of the '023 patent, AC530017 and AC56789 include lithium-ion battery packs. *See* Tr. (Fayed) at 379:19-24; CDX-0006C.39; *see also* CX-2341 (AC530017 data sheet); CX-2359 (AC56789 data sheet).

Accordingly, NOCO has shown by a preponderance of the evidence that claim 54 of the '243 patent is infringed by AC530017 and AC56789 (and the Group B products of which AC56789 is representative).

e. The ADC Revised Products

As discussed, *supra*, the undersigned finds that adjudication of the ADC Revised Products is appropriate. NOCO did not present any evidence of infringement as to [redacted],

DELTRAN EX1060
IPR2024-01219

[redacted]. *See* RIB at 93; CIB at 64-65; CDX-0006C.27 (excluding redesign models from Group A or Group B). NOCO's post-hearing briefs contain no infringement arguments regarding the ADC Revised Products.[87] Accordingly, any such arguments have been waived and NOCO has failed to meet its burden of proof. *Oligosaccharides*, Comm'n Op., 2020 WL 3073788, at *13 (June 8, 2020) (burden of establishing infringement lay with complainant with respect to non-accused, adjudicated product); Ground Rule 13.1.

Moreover, the uncontradicted evidence of record establishes that the [redacted] products do not infringe, at least because they do not include "the USB charge circuit comprising a DC-DC converter configured to ***upconvert*** voltage from the USB input connector to the power supply," as required by Limitation [1f]. Dr. Horenstein testified that [redacted] Tr. (Horenstein) at 1106:11-1107:13; RDX-0002C.41; RPX-0319; RPX-0320. As to [redacted], Dr. Horenstein testified that it is [redacted] Tr. (Horenstein) at 1107:14-1108:11; CDX-002C.41-42.

ADC is therefore entitled to a finding of non-infringement of the redesign models [redacted] as to the asserted claims of the '243 patent.

[87] NOCO does appear to allege that Limitation [1e] of the '243 patent is met as to [redacted] because it has a USB-C port. *See* CIB at 148. Argument as to a single limitation is insufficient to meet NOCO's burden, and further, a USB-C port is outside the scope of the "USB input connector" claims, as detailed *supra*.

DELTRAN EX1060
IPR2024-01219

VII. DOMESTIC INDUSTRY – TECHNICAL PRONG

A. The ’992 Patent

NOCO contends that its GB20, GB40, GB50, and GBX45 products practice claims 1, 3, 10 and 14 of the ’992 patent. CIB at 12, 23-24; CX-0262C. NOCO alleges that the GBX45 product is representative for the ’992 patent technical domestic industry analysis, citing CX-0717 in support. *See* CIB at 23. NOCO contends that each of the GB20, GB40, GB50, and GBX45 use the same jumper cable device, which includes the plug, designated as the GBC003. *See* CIB at 24; CX-0717. Staff agrees that the evidence shows that the products use “an identical jumper cable device.” SIB at 28. The Carku Respondents “disagree” that the identified products are representative, *see* RIB 29, but introduced no contradictory evidence, testimony, explanation, or argument. *See generally* RIB; RRB. The uncontradicted evidence shows that the GBX45 is representative of each of the GB20, GB40, GB50, and GBX45.

The only specific limitation of the ’992 patent in dispute as to the domestic industry products relates to the plug design (specifically, the uniformity of plug width as claimed in Limitations [1c] and [14d]). *See* RIB at 39 (“Dr. Fayeds [sic] domestic technical industry [sic] analysis provides no reliable analysis for the ‘uniform width’ features of limitations 1[c] and 14[d] of the ’992 Patent”). For the reasons set forth below, the evidence shows by a preponderance that the technical prong of the domestic industry requirement is met as to claims 1, 3, 10 and 14 of the ‘992 patent.

1. Claim 1

a. Claim Limitation [1pre]: “A jumper cable device for use with a handheld battery charger booster device for charging a battery, the jumper cable device comprising:”

The parties agree that the preamble is limiting. *See* Order No. 20 at 6. Neither the Carku Respondents nor Staff dispute that that this limitation is practiced. *See* RIB at 39-40; RRB at 18;

DELTRAN EX1060
IPR2024-01219

SIB at 28-34; SRB at 12-13. In addition, the undisputed evidence demonstrates that the GBX45 products include jumper cable devices for use with a handheld battery charger booster device for charging a battery. *See* Tr. (Fayed) at 433:7-11; CDX-0006C.129.

Accordingly, NOCO has shown that the NOCO DI Products practice Limitation [1pre] of the '992 patent.

b. Claim Limitation [1a]: "a single plug having one end configured to fit into a single output port of the handheld battery charger booster device having an internal power supply, the single plug configured to provide both a positive polarity electrical connection and a negative polarity electrical connection configured to cooperate with the single output port; and"

Neither the Carku Respondents nor Staff dispute that that this limitation is practiced. *See* RIB at 39-40; RRB at 18; SIB at 28-34; SRB at 12-13. In addition, the undisputed evidence demonstrates that the NOCO DI Products include a single plug having one end configured to fit into a single output port of the handheld battery charger booster device having an internal power supply, the single plug configured to provide both a positive polarity electrical connection and a negative polarity electrical connection configured to cooperate with the single output port of the handheld battery charger booster device, as the plug of the GBX45 has both terminals—positive and negative—integrated into a single plug, and the plug fits into the output port of each device. *See* Tr. (Fayed) at 433:24-434:4 ("Both terminals are integrated in one single plug, and there is an output port that you plug into."); CDX-0006C.131; *see also* CX-715C; CX-716C; CX-714.

Accordingly, NOCO has shown that the NOCO DI Products practice Limitation [1a] of the '992 patent.

c. Claim Limitation [1b]: "a pair of cables having cable ends integrated with the plug, the pair of cables having opposite cable ends configured to separately connect to the terminals of the battery being charged,"

Neither the Carku Respondents nor Staff dispute that that this limitation is practiced. *See* RIB at 39-40; RRB at 18; SIB at 28-34; SRB at 12-13. In addition, the undisputed evidence demonstrates that the NOCO DI Products include a pair of cables having cable ends integrated with the plug, the pair of cables having opposite cable ends configured to separately connect to the terminals of the battery being charged, as photos of the GBX45 show two cables with a red battery clamp (positive) and a black battery clamp (negative). *See* Tr. (Fayed) at 434:18-21 CDX-0006C.133; *see also* CX-714; CX-713.

Accordingly, NOCO has shown that the NOCO DI Products practice Limitation [1b] of the ’992 patent.

d. Claim Limitation [1c]: “wherein a body of the single plug has a uniform width”

The parties dispute this limitation. NOCO argues that the plugs of the NOCO DI Products meet this claim limitation. CIB at 25-26; CRB at 6-7. In particular, NOCO contends that mechanical drawings of the GBC0003 plug, which is the plug in the GBX45 product, “plainly matches Figure 4 [of the ’992 patent] and thus has the claimed ‘uniform width.’” CRB at 7.

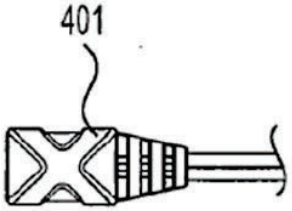
The Carku Respondents argue that limitation [1c] is not practiced. The Carku Respondents contend that Dr. Fayed admitted that the NOCO plugs “do have some variations,” and thus are not uniform in width. RIB at 39 (citing Tr. (Fayed) at 436:4-11). The Carku Respondents assert that Dr. Fayed’s analysis is not “reliable analysis for the ‘uniform width’ features” of Limitation [1c]. RIB at 39; RRB (“As explained in Respondents’ Post-hearing Brief, NOCO lacks any reliable analysis for the ‘uniform width’ features of limitations 1[d] and 14[d] of the ’992 Patent.”).

DELTRAN EX1060
IPR2024-01219

Staff agrees with NOCO that Limitation [1c] is practiced by the NOCO DI Products. SIB at 29-32; SRB at 3-8. Staff asserts that Figure 4 of the '992 patent and the GBX45 plug have a "nearly identical X-shaped protrusion," which is not considered to be part of the plug body. SRB at 13-14.

Upon review of the submissions and evidence of record, the undersigned finds that NOCO has established, by a preponderance of the evidence, that the NOCO DI Products include the limitation "wherein a body of the single plug has a uniform width."

Here, NOCO relied on a technical drawing of the plug in the GBX45 product, which Dr. Fayed testified depicted a "uniform width" plug body. CX-1291C; Tr. (Fayed) at 436:4-11. The technical drawing is very similar—indeed, Staff and NOCO contend "nearly identical"—to the Figure 4 embodiment described as having the claimed "uniform width" plug body:

GBC0003 Plug CX-1291C	**Figure 4 '992 Patent**
[redacted]	

See also '808 patent, Fig. 4. At the *Markman* hearing, the Carku Respondents asserted that the same technical drawing[88] "supports the construction we've proposed," namely, that the plug body must have the "same width," exclusive of the X-shaped protrusion. *See Markman* Tr.

[88] *Compare* CX-1291C (depicting the GBC0003 plug in the GBX45 product) *with* EDIS Doc. ID 807612 (NOCO's *Markman* Demonstratives) at 11 (depicting the same technical drawing).

DELTRAN EX1060
IPR2024-01219

(Carku Respondents) at 30:7-18 (the "specification for one of NOCO's products" shown at slide 11 of NOCO's *Markman* demonstrative "actually supports the construction we've proposed"); *see also* Tr. (Carku Respondents) at 25:12014 ("We disagree that the X-shaped protrusion [in Figure 4] is part of the body of the plug."). The undersigned ultimately adopted that construction, holding that in the Figure 4 embodiment in the '992 and '808 patents, the "X-shaped protrusion" is not part of the plug body described as having "uniform width." Order No. 20 at 22. Since the *Markman* hearing, the Carku Respondents have not identified any testimony or evidence differentiating the X-shaped protrusion in the technical drawings of NOCO's plugs from the X-shaped protrusion depicted and described in the '992 and '808 patents. The Carku Respondents' seemingly inconsistent position now—*i.e.*, that the technical drawing does not disclose a uniform width plug body—is unpersuasive and unsupported. *See* RIB at 39 (citing no evidence).

Rather, the Carku Respondents' only argument as to why Limitation [1c] is not satisfied is that Dr. Fayed testified that the NOCO DI Products "do have some variation." RIB at 39. But Dr. Fayed's full testimony is that the NOCO DI Products "do have some variation ***due to the protrusion.***" Tr. (Fayed) at 436:5-11. As discussed above, there is no evidence that the X-shaped protrusion in NOCO's DI Products should be treated differently than the substantially similar X-shaped protrusion described and depicted in the '992 and '808 patents as separate from the plug body. *See, e.g.*, '808 patent, 8:17-20 (the "X-shaped surface protrusion" is an element that "extend[s] above the outer surface of the plug body" and is not part of the plug body itself); '992 patent, 8:12-18 ("The body of the plug 401 is provided with a protrusion (e.g. X-shaped protrusion).").[89]

[89] Unlike in his infringement analysis, Dr. Fayed affirmatively testified that the X-shaped portions of the NOCO DI Products are protrusions, which is further supported by the patent specification and by

DELTRAN EX1060
IPR2024-01219

NOCO, therefore, has shown by a preponderance of the evidence that the NOCO DI Products practice Limitation [1c] of the '992 patent.

e. Claim Limitation [1d]: "wherein the single plug is configured so that the single plug will only fit into the single outlet port of the handheld battery charger booster device in a single orientation to ensure a proper orientation of positive polarity and negative polarity cable connections between the pair of cable and the single output port of the handheld battery charger booster device."

Neither the Carku Respondents nor Staff dispute that that this limitation is practiced. *See See* RIB at 39-40; RRB at 18; SIB at 28-34; SRB at 12-13. In addition, the undisputed evidence demonstrates that the NOCO DI Products have a single plug configured so that the single plug will only fit into the single outlet port of the handheld battery charger booster device in a single orientation to ensure a proper orientation of positive polarity and negative polarity cable connections between the pair of cables and the output port of the handheld battery charger booster device, as Dr. Fayed explained that the two terminals of the plugs (and corresponding port) have slightly different shapes, and thus can only be plugged in in a single orientation. *See* Tr. (Fayed) at 437:1-6; CDX-0006C.138; CX-1291C.

Accordingly, NOCO has shown that the NOCO DI Products practice Limitation [1d] of the '992 patent.

* * *

Accordingly, for the reasons discussed above, the evidence shows by a preponderance that claim 1 is practiced by the NOCO DI Products.

Respondents' arguments at the *Markman* hearing. *See, e.g.*, Tr. (Fayed) at 436:5-11; *see also* Tr. (Fayed) at 439:13-16 (referencing "the X protrusion" and the "protrusion in the NOCO device -- in the NOCO plug"); *id.* at 455:1-2 (referencing "the protrusion on the NOCO plug"). The Carku Respondents introduced no contrary testimony or evidence; Dr. Ricketts testified only that Dr. Fayed did not provide "any analysis of the actual width of the plug." Tr. (Ricketts) at 1194:3-11.

DELTRAN EX1060
IPR2024-01219

2. Claim 3

As held *supra*, the evidence shows that claim 1, from which claim 3 depends, is practiced by the NOCO DI Products. Claim 3 additionally recites the limitation "wherein the plug does not have any exposed prongs." Neither the Carku Respondents nor Staff dispute that that this additional limitation is practiced. *See* RIB at 39-40; RRB at 18; SIB at 28-34; SRB at 12-13. In addition, the undisputed evidence demonstrates that the NOCO DI Products include a plug without any exposed prongs. Specifically, Dr. Fayed testified that the plugs in the GBX45 are "internal." *See* Tr. (Fayed) at 437:16-21; CDX-0006C.140; CX-0714; CX-1291C.

Accordingly, NOCO has shown that the NOCO DI Products practice claim 3 of the '992 patent.

3. Claim 10

As held *supra*, the evidence shows that claim 1, from which claim 10 depends, is practiced by the NOCO DI Products. Claim 10 additionally recites the limitation "further comprising a downwardly tapering connection located between the single plug and the cables." Neither the Carku Respondents nor Staff dispute that that this additional limitation is practiced. *See* RIB at 39-40; RRB at 18; SIB at 28-34; SRB at 12-13. In addition, the undisputed evidence demonstrates that the NOCO DI Products include a "downwardly tapering connection located between the single plug and the cables." *See* Tr. (Fayed) at 438:6-10; CDX-0006C.142; CX-0714; CX-1291C.

Accordingly, NOCO has shown by a preponderance of the evidence that the NOCO DI Products practice claim 10 of the '992 patent.

4. Claim 14

a. Claim Limitation [14pre]: "A jumper cable device for use with a handheld battery charger booster device for charging a

DELTRAN EX1060
IPR2024-01219

battery, the jumper cable device comprising:"

The parties agree that the preamble is limiting. *See* Order No. 20 at 6. Neither the Carku Respondents nor Staff dispute that that this limitation is practiced. *See* RIB at 39-40; RRB at 18; SIB at 28-34; SRB at 12-13. In addition, the undisputed evidence demonstrates that the NOCO DI Products include jumper cable devices for use with a handheld battery charger booster device for charging a battery, for the same reasons as discussed with respect to claim 1. *See* Tr. (Fayed) at 433:7-11; CDX-0006C.129.

Accordingly, NOCO has shown that the NOCO DI Products practice Limitation [14pre] of the '992 patent.

b. Claim Limitation [14a]: "a single plug having one end configured to fit into a single output port of a handheld battery charger booster device having an internal power supply, the plug providing both positive polarity and negative polarity connections with the handheld battery charger booster device, the plug being configured so that the plug will only fit into the output port in a specific orientation, the plug not having any exposed prongs;"

Neither the Carku Respondents nor Staff dispute that that this limitation is practiced. *See* RIB at 39-40; RRB at 18; SIB at 28-34; SRB at 12-13. In addition, the undisputed evidence demonstrates that the NOCO DI Products have a single plug having one end configured to fit into a single output port of the battery charger booster device having an internal power supply such that the single plug will only fit into the output port of the handheld battery charger booster device in a specific orientation and the plug does not have exposed prongs, for the same reasons as discussed with respect to claim 1 and claim 3, including that Dr. Fayed explained that the two terminals of the plugs (and corresponding port) have slightly different shapes, and thus can only be plugged in one way and that the prongs of the plug are "internal." *See* Tr. (Fayed) at 433:24-

DELTRAN EX1060
IPR2024-01219

434:4 ("Both terminals are integrated in one single plug, and there is an output port that you plug into."); Tr. (Fayed) at 437:16-21; CDX-0006C.131; *see also* CX-715C; CX-716C; CX-714.

Accordingly, NOCO has shown that the NOCO DI Products practice Limitation [14a] of the '992 patent.

c. Claim Limitation [14b]: "a pair of cables having cable ends integrated with the plug; and"

Neither the Carku Respondents nor Staff dispute that that this limitation is practiced. *See* RIB at 39-40; RRB at 18; SIB at 28-34; SRB at 12-13. In addition, the undisputed evidence demonstrates that the NOCO DI Products include a pair of cables having cable ends integrated with the plug, for the same reasons as discussed with respect to claim 1, including that photos of the GBX45 show two cables with a red battery clamp (positive) and a black battery clamp (negative). *See* Tr. (Fayed) at 434:18-21 CDX-0006C.133; *see also* CX-714; CX-713.

Accordingly, NOCO has shown that the NOCO DI Products practice Limitation [14b] of the '992 patent.

d. Claim Limitation [14c]: "a pair of battery terminal clamps respectively connected to opposite cable ends of the pair of cables;"

Neither the Carku Respondents nor Staff dispute that that this limitation is practiced. *See* RIB at 39-40; RRB at 18; SIB at 28-34; SRB at 12-13. In addition, the undisputed evidence demonstrates that the NOCO DI Products include a pair of battery terminal clamps, as photographs for the GBX45 product show two cables with a red battery clamp (positive) and a black battery clamp (negative). *See* Tr. (Fayed) at 438:21-25; CDX-0006C.144; CX-1291C.

Accordingly, NOCO has shown that the NOCO DI Products practice Limitation [14c] of the '992 patent.

e. Claim Limitation [14d]: "wherein a body of the single plug has

DELTRAN EX1060
IPR2024-01219

a uniform width, and"

The parties dispute this limitation, which is identical to Limitation [1c]. For the same reasons discussed above in the context of the Limitation [1c], the undersigned finds that the evidence shows that the NOCO DI Products practice the "wherein a body of the single plug has a uniform width" limitation.

f. Claim Limitation [14e]: "wherein the single plug is configured so that the single plug will only fit into the single outlet port of the handheld battery charger booster device in a single orientation to ensure a proper orientation of positive polarity and negative polarity cable connections between the pair of cable and the single output port of the handheld battery charger booster device."

Neither the Carku Respondents nor Staff dispute that that this limitation is practiced. *See* RIB at 39-40; RRB at 18; SIB at 28-34; SRB at 12-13. In addition, the undisputed evidence demonstrates that the NOCO DI Products have a single plug configured so that the single plug will only fit into the single outlet port of the handheld battery charger booster device in a single orientation to ensure a proper orientation of positive polarity and negative polarity cable connections between the pair of cables and the output port of the handheld battery charger booster device, for the same reasons as discussed with respect to claim 1, including because Dr. Fayed explained that the two terminals of the plugs (and corresponding port) have slightly different shapes, and thus can only be plugged in one way. *See* Tr. (Fayed) at 437:1-6; CDX-0006C.138; CX-1291C.

Accordingly, NOCO has shown that the NOCO DI Products practice Limitation [14e] of the '992 patent.

DELTRAN EX1060
IPR2024-01219

B. The ’808 Patent

NOCO contends that its GB20, GB40, GB50, and GBX45 products practice claims 1, 11, and 16 of the ‘808 patent. CIB at 12, 44-47; CX-0262C. NOCO alleges that the GBX45 product is representative for the ’808 patent technical domestic industry analysis. *See* CIB at 44. For the reasons discussed above regarding the ‘992 patent, the evidence shows by a preponderance that the GBX45 product is representative of the asserted DI products.

The only limitation of the ’808 patent in dispute as to the DI products relates to the plug design (specifically, the shape and uniformity or substantial uniformity of plug or plug body width). *See* RIB at 54, 57. For the reasons set forth below, the evidence shows by a preponderance that the technical prong of the domestic industry requirement is met as to claims 1, 11 and 16 of the ’808 patent.

1. Claim 1

a. Claim Limitation [1pre]: “A jumper cable device for use with a jump starter having an internal power supply and an output port for connecting with the jumper cable device, the jumper cable device comprising:”

The parties do not dispute this limitation. *See* RIB at 58; SIB at 54. The evidence shows that this limitation is met for the same reasons discussed regarding Limitation [1pre] of the ’992 patent. *See* Part VII.A.1.a. *supra*; CIB at 44.

b. Claim Limitation [1a]: “a single plug having one end configured to fit into the output port of the jump starter, the single plug configured to provide both a positive polarity electrical connection and a negative polarity electrical connection with the output port of the jump starter; and”

The parties do not dispute this limitation. *See* RIB at 58; SIB at 54. The evidence shows that this limitation is met for the same reasons discussed regarding Limitation [1a] of the ’992 patent. *See* Part VII.A.1.b. *supra*; CIB at 44.

DELTRAN EX1060
IPR2024-01219

c. Claim Limitation [1b]: "a pair of battery cables having cable ends integrated with the plug, the pair of battery cables having opposite cable ends configured to separately connect to the terminals of the battery being charged;"

The parties do not dispute this limitation. *See* RIB at 58; SIB at 55. The evidence shows that this limitation is met for the same reasons discussed regarding Limitation [1b] of the '992 patent. *See* Part VII.A.1.c. *supra*; CIB at 44-45.

d. Claim Limitation [1c]: "wherein a body of the single plug has a uniform or substantially uniform width, and"

The Carku Respondents dispute that this limitation is met. *See* RIB at 58. The evidence shows by a preponderance that this limitation is met for the reasons discussed regarding Limitation [1c] of the '992 patent. *See* Part VII.A.1.d. *supra*; CIB at 44; SIB at 55-56.

e. Claim Limitation [1d]: "wherein the single plug is configured so that the single plug will only fit into the output port of the jump starter in a single orientation to ensure a proper orientation of positive polarity electrical connection and the negative polarity electrical connections between the plug and the output port of the lump [sic] starter."

The parties do not dispute this limitation. *See* RIB at 58; SIB at 57. The evidence shows that this limitation is met for the same reasons discussed regarding Limitation [1d] of the '992 patent. *See* Part VII.A.1.e. *supra*; CIB at 45.

2. Claim 11

The parties do not dispute this limitation. *See* RIB at 58; SIB at 57. The evidence shows that this limitation is met for the same reasons discussed regarding claim 10 of the '992 patent. *See* Part VII.A.3. *supra*; CIB at 45-46.

3. Claim 16

a. Claim Limitation [16pre]: "A battery jumper cable device for use with a jump starter having a power supply or battery and an output port for connecting to the jumper cable device, the jumper cable device comprising:"

DELTRAN EX1060
IPR2024-01219

The parties do not dispute this limitation. *See* RIB at 58; SIB at 58. The evidence shows that this limitation is met for the same reasons discussed regarding Limitation [1pre] of the '808 patent. *See* CIB at 44.

b. Claim Limitation [16a]: "a single rectangular-shaped plug having a uniform or substantially uniform width along a length of the plug, the connection end of the plug is configured to fit into the output port of the jump starter, the output port of the jump starter providing both a positive polarity electrical connection and a negative polarity electrical connection between the output port of the jump starter and the plug of the jumper cable device; and"

The Carku Respondents dispute that this limitation is met. The evidence shows by a preponderance that the plug of the DI products has a "uniform or substantially uniform width along a length of the plug." *See* Part VII.A.1.d *supra*; CIB at 45, 47; SIB at 58. In addition, the evidence shows by a preponderance the plug of the DI products is "rectangular shaped" and that the DI products meet the other requirements of this limitation. *See* CIB at 46; Tr. (Fayed) at 441:24-442:3; CDX-00016.157; SIB at 58.

c. Claim Limitation [16b]: "a positive battery cable and a negative battery cable electrically connecting the plug to a positive battery connector and negative battery connector for connecting the positive battery cable and negative battery cable to the battery being charged,"

The parties do not dispute this limitation. *See* RIB at 58; SIB at 59. The evidence shows that this limitation is met for the same reasons discussed regarding Limitation [1b] of the '992 patent. *See* Part VII.A.1.c. *supra*; CIB at 47.

d. Claim Limitation [16c]: "wherein the plug is structured so that the plug will only fit into the output port of the jump starter in a single orientation to ensure a proper orientation of the positive polarity electrical connection and negative polarity electrical connection between the outlet output port of the jump starter and the plug of the jumper cable device."

DELTRAN EX1060
IPR2024-01219

The parties do not dispute this limitation. *See* RIB at 58; SIB at 59-60. The evidence shows that this limitation is met for the same reasons discussed regarding Limitation [1d] of the '992 patent. *See* VII.A.1.e. *supra*; CIB at 47.

C. The '023 Patent

NOCO contends that its GB20, GB40, GB50, GB70, GB150, GBX45, GBX55, GBX75, and GBX155 products practice claims 1, 19, 32, 39, and 54 of the '023 patent. CIB at 100, 166; CX-0262C. NOCO alleges that the GB50 product is representative of the "Genius Boost" or "GB" line of products, which do not include a USB controller, and the GBX45 is representative of the "Genius BoostX" or "GBX" line of products, which do include a USB controller. CIB 100; Tr. (Fayed) at 375:13-24; CDX-0006C.030. Dr. Fayed testified that he compared the source code for NOCO's products, which reinforced his representativeness analysis because the functions "although in different line numbers, [] they do the same thing, and they all appear in the source code of these products. Tr. (Fayed) at 377:20-25; 378:1-8. ADC and the Carku Respondents "disagree" that the identified products are representative, *see* RIB 29, but introduced no contradictory evidence, testimony, explanation, or argument. *See generally* RIB; RRB. Staff does not address the alleged representativeness of the domestic industry products for the '023 and '243 patents. *See generally* SIB; SRB. Based on Dr. Fayed's uncontradicted testimony, the evidence shows by a preponderance that the GB50 is representative of the "Genuis Boost" or "GB" products and that the GBX45 is representative of the "Genius BoostX" or "GBX" products.

The only limitations of the '023 patent in dispute as to the domestic industry products relate to the detection of "a correct polarity connection" (as in Limitations [1e], [39e], and [54e]), the prevention of "an incorrect polarity connection" (in Limitation [54e]), and whether the

DELTRAN EX1060
IPR2024-01219

domestic industry products include a "USB input circuit" and "USB input connector" that are in accordance with a USB standard within the scope of the claims (as in Limitations [1f], [1g], [39f], [39g], [54f], and [54g]). For the reasons set forth below, the evidence shows by a preponderance that the technical prong of the domestic industry requirement is met as to claims 1, 19, 39, and 54 of the '023 patent as to the GB products. The evidence does not show that the GBX products practice claims 1, 19, 39, or 54 of the '023 patent.

1. Claim 1

a. Claim Limitation [1pre]: "A jump starting apparatus configured for boosting or charging a depleted or discharged battery having a positive polarity battery terminal and a negative polarity battery terminal, the jump starting apparatus comprising:"

The parties agree that the preamble is limiting. *See* EDIS Doc. ID 807614 (Joint Claim Construction Statement). Neither Respondents nor Staff dispute that that this limitation is met. *See* RIB at 105-109; RRB at 58-62; SIB at 94-109; SRB at 60-66. In addition, the undisputed evidence demonstrates that the NOCO DI Products are jump starting devices configured to boost or charge a depleted battery with a positive and negative polarity terminal. *See* Tr. (Fayed) at 379:7-11; CDX-0006C.37; *see also* CX-0711 (GB50 data sheet); CX-0710 (GBX45 data sheet).

Accordingly, NOCO has shown that the NOCO DI Products meet Limitation [1pre] of the '023 patent.

b. Claim Limitation [1a]: "a power supply"

Neither Respondents nor Staff dispute that that this limitation is met. *See* RIB at 105-109; RRB at 58-62; SIB at 94-109; SRB at 60-66. In addition, the undisputed evidence demonstrates that the NOCO DI Products include a power supply, specifically, an internal battery. *See* Tr.

DELTRAN EX1060
IPR2024-01219

(Fayed) at 379:25-380:5; CDX-0006C.40; *see also* CX-0711 (GB50 data sheet); CX-0710 (GBX45 data sheet).

Accordingly, NOCO has shown that the NOCO DI Products meet Limitation [1a] of the '023 patent.

c. Claim Limitation [1b]: "a positive polarity battery terminal connector configured for connecting the jump starting apparatus to the positive polarity battery terminal of the depleted or discharged battery;"

Neither Respondents nor Staff dispute that that this limitation is met. *See* RIB at 105-109; RRB at 58-62; SIB at 94-109; SRB at 60-66. In addition, the undisputed evidence demonstrates that the NOCO DI Products include a positive polarity battery terminal connector for connecting the jump starter to a positive battery terminal; specifically, each model includes a jumper cable with a red battery clamp (positive). *See* Tr. (Fayed) at 380:22-381:1; CDX-0006C.43; *see also* CX-0711 (GB50 data sheet); CX-0710 (GBX45 data sheet).

Accordingly, NOCO has shown that the NOCO DI Products meet Limitation [1b] of the '023 patent.

d. Claim Limitation [1c]: "a negative polarity battery terminal connector configured for connecting the jump starting apparatus to the negative polarity battery terminal of the depleted or discharged battery;"

Neither Respondents nor Staff dispute that that this limitation is met. *See* RIB at 105-109; RRB at 58-62; SIB at 94-109; SRB at 60-66. In addition, the undisputed evidence demonstrates that the NOCO DI Products include a negative polarity battery terminal connector for connecting the jump starter to a negative battery terminal; specifically, each model includes a jumper cable with a black battery clamp (negative). *See* Tr. (Fayed) at 381:21-25; CDX-0006C.46; *see also* CX-0711 (GB50 data sheet); CX-0710 (GBX45 data sheet).

DELTRAN EX1060
IPR2024-01219

Accordingly, NOCO has shown that the NOCO DI Products meet Limitation [1c] of the '023 patent.

e. Claim Limitation [1d]: "a power switch or circuit configured to turn on power from the power supply to the positive and negative polarity battery terminal connectors;"

Neither Respondents nor Staff dispute that that this limitation is met. *See* RIB at 105-109; RRB at 58-62; SIB at 94-109; SRB at 60-66. In addition, the undisputed evidence demonstrates that the NOCO DI Products include a power switch or circuit configured to turn on power from the power supply to the positive and negative battery terminal connectors. Specifically, Dr. Fayed testified that the GB50 includes relay switches connected in parallel, and by controlling the solenoids connected to the relay switches, the switch is turned on or off. *See* Tr. (Fayed) 384:21-385:4; CDX-0006C.52; *see also* CX-1280C.2 (GB50 schematic). Dr. Fayed testified that the GBX45 product operates similarly, using relay switches connected in parallel and turned on and off via solenoids. *See* Tr. (Fayed) at 385:5-9; CDX-0006C.53; *see also* CX-1286C.5 (GBX45 schematic).

Accordingly, NOCO has shown that the NOCO DI Products meet Limitation [1d] of the '023 patent.

f. Claim Limitation [1e]: "a control system or circuit connected to and controlling the power switch, the control system or circuit configured to detect whether the positive and negative polarity battery terminal connectors have a correct polarity connection with the positive and negative polarity battery terminals of the depleted or discharged battery prior to turning on the power switch or circuit;"

The Parties' Arguments

The parties dispute this limitation. Relying on Dr. Fayed, NOCO contends that the "polarity detection circuit" in the NOCO DI Products satisfies Limitation [1e]. CIB at 103-104.

DELTRAN EX1060
IPR2024-01219

Specifically, Dr. Fayed testified that the polarity detection circuit [redacted] Tr. (Fayed) at 390:17-391:15. [redacted] *Id.* [redacted][90] These two inputs, according to Dr. Fayed, determine whether to turn on the power switch or not. *Id.*; *see also* CDX-0006C.59-60; CX-1280C.2 (GB50 schematic); CX-1286C.1 (GBX45 schematic).

Respondents contend that the polarity detection circuit in the NOCO DI Products is a reverse polarity detection circuit and cannot distinguish between a "correct" polarity connection and clamps that are disconnected. RIB at 107. Consistent with Respondents' non-infringement arguments, Respondents contend that detecting "the absence of a reverse polarity connection" is insufficient to satisfy the claim language of "detect[ing]" "a correct polarity connection" or the safety objectives of the '023 patent. RRB at 60.

Staff argues that the NOCO DI Products satisfy Limitation [1e] because [redacted], and that signals from both of these circuits are received by the MCU. SIB at 96 (citing Tr. (Fayed) at 527:21-528:16).[91]

[90] Dr. Fayed testified about [redacted] Respondents reference [redacted] *See* RRB at 59. Despite the differences in nomenclature, the parties appear to agree on how the circuit responds to (1) reverse polarity; (2) correct polarity; and (3) disconnected from the battery. *See, e.g.*, RRB at 59; CRB at 51.

[91] Staff's Reply brief acknowledges that NOCO did not rely on the battery presence sensor circuit in contending that Limitation [1e] is satisfied in its post-hearing brief and at the hearing. SRB at 63. Staff

Discussion

Upon review of the submissions and evidence of record, the undersigned finds that NOCO has established, by a preponderance of the evidence, that the NOCO DI Products meet the claim requirement "a control system or circuit connected to and controlling the power switch, the control system or circuit configured to detect whether the positive and negative polarity battery terminal connectors have a correct polarity connection with the positive and negative polarity battery terminals of the depleted or discharged battery prior to turning on the power switch or circuit."

The evidence shows that the reverse polarity detection circuit in the NOCO DI Products will, if connected with proper polarity to a vehicle battery, respond to that condition by [redacted] which is necessary[92] to allow power to flow to the clamps. *See, e.g.*, Tr. (Fayed) at 390:17-391:15; Tr. (Ricketts) at 1178:6-23. Conversely, if connected with reverse polarity, the reverse polarity detection circuit will respond to that condition and [redacted] which will prevent the identified power switch from turning on and will prevent power from flowing. *See, e.g.*, Tr. (Fayed) at 390:17-391:15; Tr. (Ricketts) at 1178:6-23. The parties also agree that the reverse polarity detection circuit will fail to close the power switch if the battery is disconnected from the clamps. *See, e.g.*, CRB at 51; RRB at 59. Respondents argue

---

maintains its position because "when the other evidence of record is also considered, the evidence shows that the domestic industry products satisfy the "control system or circuit…" limitation under the Staff's claim interpretation." *Id.*

[92] As with the Carku Accused Products, there is evidence that the NOCO DI products utilize additional circuits and inputs before sending power to the clamps. *See, e.g.*, Tr. (Fayed) at 411:15-212:5 (describing the separate "presence detector" circuit in the NOCO DI Products); Tr. (Ricketts) at 1186:18-23 (describing that the NOCO DI Products do not close the power switch [redacted]). The undersigned understands, then, that [redacted] is necessary but not sufficient for power to ultimately flow to the clamps.

that the inability of the circuit to distinguish between "correct polarity" and "disconnected battery" means that the NOCO DI Products cannot "detect" a "correct polarity connection."

As discussed above, *supra*, with respect to infringement of Limitation [1e], the claims refer to the context of a depleted or discharged battery. *See* Part VI.C.1.a.vi. *supra*; Tr. (Ricketts) at 1203:14-1204:24; Tr. (Fayed) at 532:25-533:5, 10-11. Accordingly, that the NOCO DI Products are unable to distinguish between "correct" polarity and a disconnected battery does not establish that the reverse polarity detection circuit does not "detect" a "correct polarity connection."[93] The evidence shows that in the circumstances contemplated by the claims—that is, connection to a depleted or discharged vehicle battery—the reverse polarity detection circuit in the NOCO DI Products responds to correct and incorrect polarity by closing or failing to close a power switch. *See* RIB at 59; Tr. (Fayed) at 390:17-391:15; Tr. (Ricketts) at 1151:11-1152:2. As discussed *supra* with respect to infringement, this is sufficient to show that the claim limitation is met.

Accordingly, NOCO has shown that the NOCO DI Products meet Limitation [1e] of the '023 patent.

g. Claim Limitation [1f]: "a USB input circuit connected to the power supply, the USB input circuit comprising a DC/DC converter, the USB input circuit configured for converting power from a USB power source to increase power voltage to the power supply; and"

The parties dispute this limitation. NOCO argues that the NOCO DI Products include the claimed USB input circuit with a DC/DC converter. CIB at 105-106. Specifically, NOCO

[93] The undersigned also, as discussed *supra*, disagrees with Staff that the claims require both a battery presence detection circuit and a reverse polarity detection circuit, and to require that the control system or circuit controlling the power switch receive signals directly from both of those circuits. If, however, the claims were construed as Staff argues, the undersigned agrees that the NOCO DI Products would still practice Limitation [1e].

DELTRAN EX1060
IPR2024-01219

contends that schematics for the GB50 include a DC-DC converter chip and that schematics for the GBX45 [redacted] Tr. (Fayed) at 398:16-399:1; CDX-0006C.65-66; CX-1280C.4 (GB50 schematic); CX-1286C.2 (GBX45 schematic).

Respondents argue that Dr. Fayed failed to identify what USB standard the identified circuits operate in accordance with, and that the GBX45 products do not practice the limitation because they use USB-C. RIB at 107-08. Respondents contend that the GBX45 products use only USB PD 2.0 to negotiate data transfer and are missing the hardware to perform power negotiation in accordance with earlier USB standards, such as USB PD 1.0. RIB at 107 (citing Tr. (Ricketts) at 1180:22-1182:15.

Staff argues that the evidence shows that the Genius Boost or GB line of products (represented by GB50) have a micro-USB port and a DC-DC converter that practice Limitation [1f]. SIB at 97-98 (citing CX-1280C (GB50 schematic)). Staff, however, agrees with Respondents that the Genius BoostX or GBX products (of which GBX45 is representative) all use USB-C technology that is outside the scope of the claims, and thus, do not practice Limitation [1f].

Upon review of the submissions and evidence of record, the undersigned finds that NOCO has established that the GB50 (and the products of which it is representative) satisfy Limitation [1f]. NOCO has not, however, established by a preponderance of the evidence that the GBX45 (and the products of which it is representative) satisfy the limitation "a USB input circuit a USB input circuit connected to the power supply, the USB input circuit comprising a DC/DC converter, the USB input circuit configured for converting power from a USB power source to increase power voltage to the power supply." As discussed above in connection with claim

construction, the undersigned construed the term "USB input circuit" as "a circuit that allows the power supply to be charged from an external power source with a USB charger." Further, the claimed circuit must be in accordance with the Universal Serial Bus standards known to those of skill in the art at the time of the claimed invention, which does not include the USB-C or USB PD 2.0 specifications.

As with infringement, the dispute is limited to whether the identified circuits are in accordance with a USB standard within the scope of the claims. Respondents do not dispute the presence of a DC/DC converter or the remainder of the claim language. The evidence shows that the GB50 and other GB products include a micro-USB charging input and circuit, and the GBX products use USB-C charging inputs and circuits. *See* Tr. (Hacker Davidson) at 201:16-18 (testifying that all Boost X products have a USB-C port); CRB at 53 (identifying the GBX products as the "DI Products with USB-C ports"); SIB at 98 ("the NOCO Boost X products (GBX45, GBX55, GBX75, and GBX155) all have a USB-C circuit"); RRB at 60-61 (stating that GBX45 completes power negotiation over CC pins); SIB at 97 ("The evidence shows that the NOCO Boost products (GB20, GB40, GB50, GB70, and GB150) all use standard USB circuitry with a micro-USB port."); CX-1280C (GB50 schematic).

Because the USB PD 2.0 and USB-C specifications are not within the scope of the claim, NOCO has not established that the GBX45 and the products for which it is representative practice Limitation [1f]. As to the GB50 product, because micro-USB inputs were disclosed in the USB 3.1 specification and are within the scope of the claims, NOCO has established that the GB50, and the products for which it is representative, practice Limitation [1f].

h. Claim Limitation [1g]: "a USB input connector connected to the USB input circuit, the USB input connector configured for connecting to the USB power source and providing power input from the USB power source through the USB input

DELTRAN EX1060
IPR2024-01219

connector and the USB input circuit to the power supply."

The parties dispute this limitation. NOCO argues that the NOCO DI Products include the claimed USB input connector. CIB at 106-07. Specifically, NOCO contends that schematics for the NOCO DI Products include USB charging input ports Tr. (Fayed) at 400:1-11; CDX-0006C.71-72; CX-1280C.4 (GB50 schematic); CX-1286C.6 (GBX45 schematic).

Respondents dispute this limitation for the same reasons as Limitation [1f]. See RRB at 60.

As with Limitation [1f], Staff argues that the evidence shows that the Genuis Boost or GB line of products (represented by GB50) have a micro-USB port that practices Limitation [1g]. SIB at 98-99 (citing CX-1280C (GB50 schematic)). Staff, however, agrees with Respondents that the Genius BoostX or GBX products (of which GBX45 is representative) all use USB-C technology that is outside the scope of the claims, and thus, do not practice Limitation [1g]. *Id.*

Upon review of the submissions and evidence of record, the undersigned finds that NOCO has established that the GB50 (and the products of which it is representative) satisfy Limitation [1g]. NOCO has not, however, established by a preponderance of the evidence that the GBX45 (and the products of which it is representative) satisfy the limitation "a USB input connector connected to the USB input circuit, the USB input connector configured for connecting to the USB power source and providing power input from the USB power source through the USB input connector and the USB input circuit to the power supply." As discussed above in connection with claim construction, the undersigned construed the term "USB input connector" as "a port that receives a USB plug." Further, the claimed connector must be in

DELTRAN EX1060
IPR2024-01219

accordance with the Universal Serial Bus standards known to those of skill in the art at the time of the claimed invention, which does not include the USB-C or USB PD 2.0 specifications.

As with infringement, the dispute is limited to whether the identified connectors are in accordance with a USB standard within the scope of the claims. As discussed in connection with Limitation [1f], the parties also agree that the GB50 and GB products include a micro-USB charging input and circuit, and the GBX products use USB-C charging inputs and circuits.

Because the USB PD 2.0 and USB-C specifications are not within the scope of the claim, NOCO has not established that the GBX45 and the products for which it is representative practice Limitation [1g]. As to the GB50 product, because micro-USB inputs were disclosed in the USB 3.1 specification and are within the scope of the claims, NOCO has established that the GB50, and the products for which it is representative, practice Limitation [1g].

***

Accordingly, for the reasons discussed above, NOCO has shown by a preponderance of the evidence that the GB50 product (and the GB products for which it is representative) practice claim 1 of the ’023 patent. The evidence fails to show by a preponderance that claim 1 is practiced by the GBX45 product (and the GBX products for which it is representative).

2. Claim 19

Claim 19 depends from claim 18, which in turn depends from claim 1, and requires in addition “further comprising a manual override switch configured to activate a manual override mode to enable a user to connect jump start power to the depleted or discharged vehicle battery when a vehicle battery isolation sensor is unable to detect presence of the vehicle battery” and “wherein the control system or circuit is configured to detect actuation of the manual override

DELTRAN EX1060
IPR2024-01219

switch for at least a predetermined period of time before activation of the manual override mode."

As held *supra*, the evidence fails to show the GBX45 product (and the GBX products it represents) practice claim 1. Therefore, the evidence does not show that the GBX products practice claim 19. *See Wahpeton*, 870 F.2d at 1552 n.9.

As to the GB products, as held *supra*, the evidence shows that claim 1, from which claim 19 ultimately depends, is practiced by GB50 (and the GB products it represents). Neither Respondents nor Staff dispute that that the additional limitations of claim 18 and 19 are practiced. *See* RIB at 108; RRB at 61; SIB at 99-100; SRB at 65. In addition, the undisputed evidence demonstrates that the NOCO DI Products include a "manual override switch" to activate a "manual override mode" and that operates on a time delay. *See* Tr. (Fayed) at 414:18-415:5; CX-708; CX-709; CX-0710; CX-0711; CX-1280C.

Accordingly, NOCO has shown by a preponderance of the evidence that the GB products practice claim 19 of the '023 patent.

3. Claim 32

Claim 32 depends from claim 1, and requires in addition that "the DC-DC converter can be turned on and off by a microprocessor."

As held *supra*, the evidence fails to show the GBX45 product (and the GBX products it represents) practice claim 1. Therefore, the evidence does not show that the GBX products practice claim 32. *See Wahpeton*, 870 F.2d at 1552 n.9.

As to the GB products, as held *supra*, the evidence shows that claim 1, from which claim 32 depends, is practiced by GB50 (and the GB products it represents). Neither Respondents nor Staff dispute that that the additional limitations of claim 32 are practiced. *See* RIB at 108; RRB

DELTRAN EX1060
IPR2024-01219

at 61; SIB at 100-01; SRB at 65. In addition, the undisputed evidence demonstrates that in the NOCO DI Products, the DC-DC converter is turned on and off by a microprocessor. Tr. (Fayed)at 416:20-417:3; CX-1280C; CDX-006C.95.

Accordingly, NOCO has shown by a preponderance of the evidence that the GB products practice claim 32 of the '023 patent.

4. Claim 39

i. Claim Limitation [39pre]: "A jump starting device for boosting or charging a depleted or discharged battery having a positive polarity battery terminal and a negative polarity battery terminal, the jump starter device comprising:"

The parties agree that the preamble is limiting. *See* EDIS Doc. ID 807614 (Joint Claim Construction Statement). Neither Respondents nor Staff dispute that that this limitation is met. *See* RIB at 108; RRB at 61; SIB at 101-05; SRB at 65-66. In addition, the undisputed evidence demonstrates that the NOCO DI Products are jump starting devices for boosting or charging a depleted battery with a positive and negative polarity terminal. *See* Tr. (Fayed) at 379:7-11; CDX-0006C.37; Tr. (Fayed) at 407:6-22; CDX-0006C.76; *see also* CX-0711 (GB50 data sheet); CX-0710 (GBX45 data sheet).

Accordingly, NOCO has shown that the NOCO DI Products meet Limitation [39pre] of the '023 patent.

ii. Claim Limitation [39a]: "a power supply"

Neither Respondents nor Staff dispute that that this limitation is met. *See* RIB at 108; RRB at 61; SIB at 101-05; SRB at 65-66. In addition, the undisputed evidence demonstrates that the NOCO DI Products are jump starting devices configured to boost or charge a depleted battery with a positive and negative polarity terminal. *See* Tr. (Fayed) at 380:22-381:1; CDX-

DELTRAN EX1060
IPR2024-01219

0006C.43; Tr. (Fayed) at 407:6-22; CDX-0006C.76; *see also* CX-0711 (GB50 data sheet); CX-0710 (GBX45 data sheet).

Accordingly, NOCO has shown that the NOCO DI Products meet Limitation [39a] of the '023 patent.

iii. Claim Limitation [39b]: "a positive battery terminal connector for connecting the jump starter device to the positive battery terminal of the depleted or discharged battery;"

Neither Respondents nor Staff dispute that that this limitation is met. *See* RIB at 108; RRB at 61; SIB at 101-05; SRB at 65-66. In addition, the undisputed evidence demonstrates that the NOCO DI Products include a positive polarity battery terminal connector for connecting the jump starter to a positive battery terminal; specifically, each model includes a jumper cable with a red battery clamp (positive). *See* Tr. (Fayed) at 380:22-381:1; CDX-0006C.43; Tr. (Fayed) at 407:6-22; CDX-0006C.76; *see also* CX-0711 (GB50 data sheet); CX-0710 (GBX45 data sheet).

Accordingly, NOCO has shown that the NOCO DI Products meet Limitation [39b] of the '023 patent.

iv. Claim Limitation [39c]: "a negative battery terminal connector for connecting the jump starter device to the negative battery terminal of the depleted or discharged battery;"

Neither Respondents nor Staff dispute that that this limitation is met. *See* RIB at 108; RRB at 61; SIB at 101-05; SRB at 65-66. In addition, the undisputed evidence demonstrates that the NOCO DI Products include a negative polarity battery terminal connector for connecting the jump starter to a negative battery terminal; specifically, each model includes a jumper cable with a black battery clamp (negative). *See* Tr. (Fayed) at 381:21-25; CDX-0006C.46; Tr. (Fayed) at 407:6-22; CDX-0006C.76; *see also* CX-0711 (GB50 data sheet); CX-0710 (GBX45 data sheet).

DELTRAN EX1060
IPR2024-01219

Accordingly, NOCO has shown that the NOCO DI Products meet Limitation [39c] of the '023 patent.

v. Claim Limitation [39d]: "a power switch or circuit connected in circuit with the power supply and the positive and negative battery terminal connectors, the power switch configured to turn power on from the power supply to the depleted or discharged battery when the positive and negative battery terminal connectors are properly connected to the positive and negative battery connectors;"

Neither Respondents nor Staff dispute that that this limitation is met. *See* RIB at 108; RRB at 61; SIB at 101-05; SRB at 65-66. In addition, the undisputed evidence demonstrates that the NOCO DI Products include a power switch or circuit configured to turn on power from the power supply to the positive and negative battery terminal connectors. Specifically, Dr. Fayed testified that the GB50 includes relay switches connected in parallel, and by controlling the solenoids connected to the relay switches, the switch is turned on or off. *See* Tr. (Fayed) 384:21-385:4; CDX-0006C.52; Tr. (Fayed) at 407:6-22; CDX-0006C.76; *see also* CX-1280C.2 (GB50 schematic). Dr. Fayed testified that the GBX45 product operates similarly, using relay switches connected in parallel and turned on and off via solenoids. *See* Tr. (Fayed) at 385:5-9; CDX-0006C.53; Tr. (Fayed) at 407:6-22; CDX-0006C.76; *see also* CX-1286C.5 (GBX45 schematic).

Accordingly, NOCO has shown that the NOCO DI Products meet Limitation [39d] of the '023 patent.

DELTRAN EX1060
IPR2024-01219

vi. Claim Limitation [39e]: "a power switch control system or circuit connected to and controlling the power switch, the power switch control system or circuit configured to detect presence of the depleted or discharged battery when connected between the positive and negative battery terminal connectors and to detect polarity of the depleted or discharged battery when connected between the positive and negative battery terminal connectors;"

The parties dispute this limitation. NOCO asserts that the NOCO DI Products satisfy Limitation [39e] for the same reasons as Limitation [1e], and that they additionally meet the requirement that the "power switch control system or circuit" is "configured to detect presence of the depleted or discharged battery." NOCO contends that in the NOCO DI Products use the same circuit, [redacted] Tr. (Fayed) at 411:17-18.

Respondents dispute Limitation [39e] for the same reasons as Limitation [1e]. *See* RIB at 108 ("The DI Products do not practice at least limitations 39[e], [f], and [g] for the reasons explained above with respect to limitations 1[e], [f], and [g]."); RRB at 61.

Staff agrees that the evidence demonstrates that Limitation [39e] is practiced by the NOCO DI Products. *See* SIB at 103.

For the same reasons as discussed above with respect to Limitation [1e], the undersigned finds that NOCO has established, by a preponderance of the evidence, that the NOCO DI Products are "configured to" "detect polarity of the depleted or discharged battery." Moreover, Dr. Fayed's uncontradicted testimony establishes that [redacted] Tr. (Fayed) at 411:17-18.

Accordingly, NOCO has shown that the NOCO DI Products meet Limitation [39e] of the '023 patent.

vii. Claim Limitation [39f]: "a USB input circuit connected to the power supply, the USB input circuit configured for converting power from a USB power source to increase power voltage to the power supply; and"

The parties dispute this limitation. NOCO asserts that the NOCO DI Products satisfy Limitation [39f] for the same reasons as Limitation [1f]. CIB at 111.

Respondents dispute Limitation [39f] for the same reasons as Limitation [1f]. *See* RIB at 108 ("The DI Products do not practice at least limitations 39[e], [f], and [g] for the reasons explained above with respect to limitations 1[e], [f], and [g]."); RRB at 61.

Staff, like Respondents, disputes Limitation [39f] as to the GBX products for the same reasons as Limitation [1f]. SIB at 103-04; SRB at 65-66.

For the same reasons as discussed above with respect to Limitation [1f], the undersigned finds that the USB-C input circuit in the GBX45 (and the GBX products it represents) are not within the scope of the claims. The micro-USB input circuits in the GB50 (and the GB50 products it represents) are within the scope of the claims. Accordingly, NOCO has not shown that the GBX products meet Limitation [39f] of the '023 patent, but has shown, by a preponderance of the evidence, that the GB products meet Limitation [39f].

viii. Claim Limitation [39g]: "a USB input connector configured for connecting to the USB power source and providing power input from the USB power source through the USB input connector and the USB input circuit to the power supply."

The parties dispute this limitation. NOCO asserts that the NOCO DI Products satisfy Limitation [39g] for the same reasons as Limitation [1g]. CIB at 112.

DELTRAN EX1060
IPR2024-01219

Respondents dispute Limitation [39g] for the same reasons as Limitation [1g]. *See* RIB at 108 ("The DI Products do not practice at least limitations 39[e], [f], and [g] for the reasons explained above with respect to limitations 1[e], [f], and [g]."); RRB at 61.

Staff, like Respondents, disputes Limitation [39g] as to the GBX products for the same reasons as Limitation [1g]. SIB at 103-04; SRB at 65-66.

For the same reasons as discussed above with respect to Limitation [1g], the undersigned finds that the USB-C input connectors in the GBX45 (and the GBX products it represents) are not within the scope of the claims. The micro-USB input connectors in the GB50 (and the GB50 products it represents) are within the scope of the claims. Accordingly, NOCO has not shown that the GBX products meet Limitation [39g] of the '023 patent, but has shown, by a preponderance of the evidence, that the GB products meet Limitation [39g].

***

Accordingly, for the reasons discussed above, NOCO has shown by a preponderance of the evidence that the GB50 product (and the GB products for which it is representative) practice claim 39 of the '023 patent. The evidence fails to show by a preponderance that claim 39 is practiced by the GBX45 product (and the GBX products for which it is representative).

5. Claim 54

i. Claim Limitation [54pre]: "A jump starting apparatus configured for boosting or charging a depleted or discharged battery having a positive polarity battery terminal and a negative polarity battery terminal, the jump starting apparatus comprising:"

The parties agree that the preamble is limiting. *See* EDIS Doc. ID 807614 (Joint Claim Construction Statement). Neither Respondents nor Staff dispute that that this limitation is met. *See* RIB at 108-09; RRB at 61-62; SIB at 105-09; SRB at 65-66. In addition, the undisputed

DELTRAN EX1060
IPR2024-01219

evidence demonstrates that the NOCO DI Products are jump starting devices for boosting or charging a depleted battery with a positive and negative polarity terminal. *See* Tr. (Fayed) at 379:7-11; CDX-0006C.37; Tr. (Fayed) at 417:10-17; *see also* CX-0711 (GB50 data sheet); CX-0710 (GBX45 data sheet).

Accordingly, NOCO has shown that the NOCO DI Products meet Limitation [54pre] of the '023 patent.

ii. Claim Limitation [54a]: "a power supply;"

Neither Respondents nor Staff dispute that that this limitation is met. *See* RIB at 108-09; RRB at 61-62; SIB at 105-09; SRB at 65-66. In addition, the undisputed evidence demonstrates that the NOCO DI Products are jump starting devices configured to boost or charge a depleted battery with a positive and negative polarity terminal. *See* Tr. (Fayed) at 380:22-381:1; CDX-0006C.43; Tr. (Fayed) at 417:10-17; *see also* CX-0711 (GB50 data sheet); CX-0710 (GBX45 data sheet).

Accordingly, NOCO has shown that the NOCO DI Products meet Limitation [54a] of the '023 patent.

iii. Claim Limitation [54b]: "a positive polarity battery terminal connector configured for connecting the jump starting apparatus to the positive polarity battery terminal of the depleted or discharged battery;"

Neither Respondents nor Staff dispute that that this limitation is met. *See* RIB at 108-09; RRB at 61-62; SIB at 105-09; SRB at 65-66. In addition, the undisputed evidence demonstrates that the NOCO DI Products include a positive polarity battery terminal connector for connecting the jump starter to a positive battery terminal; specifically, each model includes a jumper cable with a red battery clamp (positive). *See* Tr. (Fayed) at 380:22-381:1; CDX-0006C.43; Tr. (Fayed) at 417:10-17; *see also* CX-0711 (GB50 data sheet); CX-0710 (GBX45 data sheet).

DELTRAN EX1060
IPR2024-01219

Accordingly, NOCO has shown that the NOCO DI Products meet Limitation [54b] of the '023 patent.

iv. Claim Limitation [54c]: "a negative polarity battery terminal connector configured for connecting the jump starting apparatus to the negative polarity battery terminal of the depleted or discharged battery;"

Neither Respondents nor Staff dispute that that this limitation is met. *See* RIB at 108-09; RRB at 61-62; SIB at 105-09; SRB at 65-66. In addition, the undisputed evidence demonstrates that the NOCO DI Products include a negative polarity battery terminal connector for connecting the jump starter to a negative battery terminal; specifically, each model includes a jumper cable with a black battery clamp (negative). *See* Tr. (Fayed) at 381:21-25; CDX-0006C.46; Tr. (Fayed) at 417:10-17; *see also* CX-0711 (GB50 data sheet); CX-0710 (GBX45 data sheet).

Accordingly, NOCO has shown that the NOCO DI Products meet Limitation [54c] of the '023 patent.

v. Claim Limitation [54d]: "a power switch or circuit configured to turn on power from the power supply to the positive and negative polarity battery terminal connectors;"

Neither Respondents nor Staff dispute that that this limitation is met. *See* 108-09; RRB at 61-62; SIB at 105-09; SRB at 65-66. In addition, the undisputed evidence demonstrates that the NOCO DI Products include a power switch or circuit configured to turn on power from the power supply to the positive and negative battery terminal connectors. Specifically, Dr. Fayed testified that the GB50 includes relay switches connected in parallel, and by controlling the solenoids connected to the relay switches, the switch is turned on or off. *See* Tr. (Fayed) 384:21-385:4; CDX-0006C.52; Tr. (Fayed) at 417:10-17; *see also* CX-1280C.2 (GB50 schematic). Dr. Fayed testified that the GBX45 product operates similarly, using relay switches connected in

DELTRAN EX1060
IPR2024-01219

parallel and turned on and off via solenoids. *See* Tr. (Fayed) at 385:5-9; CDX-0006C.53; Tr. (Fayed) at 417:10-17; *see also* CX-1286C.5 (GBX45 schematic).

Accordingly, NOCO has shown that the NOCO DI Products meet Limitation [54d] of the '023 patent.

vi. Claim Limitation [54e]: "a control system or circuit connected to and controlling the power switch, the control system or circuit configured to detect whether the positive and negative polarity battery terminal connectors have a correct polarity connection with the positive and negative polarity battery terminals of the depleted or discharged battery and prevent an incorrect polarity connection with the positive and negative polarity battery terminals of the depleted or discharged battery prior to turning on the power switch or circuit;"

The parties dispute this limitation. NOCO asserts that the NOCO DI Products satisfy Limitation [54e] for the same reasons as Limitation [1e], and that they additionally meet the requirement that the "power switch control system or circuit" is "configured to detect presence of the depleted or discharged battery." NOCO contends that in the NOCO DI Products use the same circuit, [redacted] Tr. (Fayed) at 411:17-18.

Respondents dispute Limitation [54e] for the same reasons as Limitation [1e]. *See* RIB at 108 ("The DI Products do not practice limitation 54[e] for at least the reasons set forth above with respect to limitation 1[e]; and limitations [54f] and [54g] are not met for at least the reasons set forth above with respect to limitations [1f] and [1g]."); RRB at 61.

Staff agrees that the evidence demonstrates that Limitation [54e] is practiced by the NOCO DI Products. *See* SIB at 107.

For the same reasons as discussed above with respect to Limitation [1e], the undersigned finds that NOCO has established, by a preponderance of the evidence, that the NOCO DI

DELTRAN EX1060
IPR2024-01219

Products are "configured to" "detect polarity of the depleted or discharged battery." Moreover, Dr. Fayed's uncontradicted testimony establishes that the circuit producing the [redacted] detects presence of a depleted or discharged battery. Tr. (Fayed) at 411:17-18.

Accordingly, NOCO has shown that the NOCO DI Products meet Limitation [54e] of the '023 patent.

vii. Claim Limitation [54f]: "a USB input connector"

The parties dispute this limitation. NOCO asserts that the NOCO DI Products satisfy Limitation [54f] for the same reasons as Limitation [1g]. CIB at 112.

Respondents dispute Limitation [54f] for the same reasons as Limitation [1g]. *See* RIB at 108 ("The DI Products do not practice limitation 54[e] for at least the reasons set forth above with respect to limitation 1[e]; and limitations [54f] and [54g] are not met for at least the reasons set forth above with respect to limitations [1f] and [1g]."); RRB at 61.

Staff, like Respondents, disputes Limitation [54f] as to the GBX products for the same reasons as Limitation [1g]. *See* SIB at 107.

For the same reasons as discussed above with respect to Limitation [1g], the undersigned finds that the USB-C input connectors in the GBX45 (and the GBX products it represents) are not within the scope of the claims. The micro-USB input connectors in the GB50 (and the GB50 products it represents) are within the scope of the claims. Accordingly, NOCO has not shown that the GBX products meet Limitation [54f] of the '023 patent, but has shown, by a preponderance of the evidence, that the GB products meet Limitation [54f].

DELTRAN EX1060
IPR2024-01219

viii. Claim Limitation [54g]: "a USB input circuit connecting the USB input connector to the power supply, the USB input circuit comprising a DC/DC converter for up-converting the voltage from the USB input connector to the power supply."

The parties dispute this limitation. NOCO asserts that the NOCO DI Products satisfy Limitation [54g] for the same reasons as Limitation [1f]. CIB at 111.

Respondents dispute Limitation [54g] for the same reasons as Limitation [1f]. *See* RIB at 108 ("The DI Products do not practice limitation 54[e] for at least the reasons set forth above with respect to limitation 1[e]; and limitations [54f] and [54g] are not met for at least the reasons set forth above with respect to limitations [1f] and [1g]."); RRB at 61.

Staff, like Respondents, disputes Limitation [54g] as to the GBX products for the same reasons as Limitation [1f]. *See* SIB at 107.

For the same reasons as discussed above with respect to Limitation [1f], the undersigned finds that the USB-C input circuit in the GBX45 (and the GBX products it represents) are not within the scope of the claims. The micro-USB input circuits in the GB50 (and the GB50 products it represents) are within the scope of the claims. Accordingly, NOCO has not shown that the GBX products meet Limitation [54g] of the '023 patent, but has shown, by a preponderance of the evidence, that the GB products meet Limitation [54g].

Accordingly, for the reasons discussed above, the evidence fails to show by a preponderance that claim 54 is practiced by the GBX45 product (and the GBX products for which it is representative). NOCO has shown by a preponderance of the evidence that the GB50 product (and the GB products for which it is representative) practice claim 54 of the '023 patent.

DELTRAN EX1060
IPR2024-01219

D. The ’243 Patent

NOCO contends that its GB20, GB40, GB50, GB70, GB150, GBX45, GBX55, GBX75, and GBX155 products practice claims 1, 2, 18, and 54 of the ’243 patent. CIB at 155; CX-0262C. NOCO uses the same representative product groupings as with the ’023 patent. CIB at 155. For the same reasons as discussed in connection with the ’023 patent, the evidence shows by a preponderance that the GB50 is representative of the “Genuis Boost” or “GB” products and that the GBX45 is representative of the “Genius BoostX” or “GBX” products.

For the reasons set forth below, the evidence shows by a preponderance that the technical prong of the domestic industry requirement is met as to claims 1, 2, 18, and 54 of the ’243 patent as to the GB products. The evidence does not show that the GBX products practice claims 1, 2, 18, or 54 of the ’243 patent.

1. Claim 1

a. Claim Limitation [1pre]: “A jump starting device for boosting or charging a depleted or discharged battery having a positive battery terminal and a negative battery terminal, the jump starting device comprising:”

The parties agree that the preamble is limiting. *See* EDIS Doc. ID 807614 (Joint Claim Construction Statement). Neither Respondents nor Staff dispute that that this limitation is met. *See* RIB at 150-51; RRB at 94-96; SIB at 120-27; SRB at 81-86. In addition, the undisputed evidence demonstrates that the NOCO DI Products are jump starting devices for boosting or charging a depleted battery with a positive and negative polarity terminal. *See* Tr. (Fayed) at 379:7-11; CDX-0006C.37; Tr. (Fayed) at 419:7-12; CDX-0006C.102; *see also* CX-0711 (GB50 data sheet); CX-0710 (GBX45 data sheet).

Accordingly, NOCO has shown that the NOCO DI Products meet Limitation [1pre] of the ’243 patent.

DELTRAN EX1060
IPR2024-01219

b. Claim Limitation [1a]: "a power supply"

Neither Respondents nor Staff dispute that that this limitation is met. *See* RIB at 150-51; RRB at 94-96; SIB at 120-27; SRB at 81-86. In addition, the undisputed evidence demonstrates that the NOCO DI Products include a power supply, specifically, an internal battery. *See* Tr. (Fayed) at 379:25-380:5; CDX-0006C.40; Tr. (Fayed) at 419:7-12; CDX-0006C.102; *see also* CX-0711 (GB50 data sheet); CX-0710 (GBX45 data sheet).

Accordingly, NOCO has shown that the NOCO DI Products meet Limitation [1a] of the '243 patent.

c. Claim Limitation [1b]: "a positive battery connector for electrically connecting the jump starting device to the positive battery terminal of the depleted or discharged battery;"

Neither Respondents nor Staff dispute that that this limitation is met. *See* RIB at 150-51; RRB at 94-96; SIB at 120-27; SRB at 81-86. In addition, the undisputed evidence demonstrates that the NOCO DI Products include a positive battery connector for connecting the jump starter to a positive battery terminal; specifically, each model includes a jumper cable with a red battery clamp (positive). *See* Tr. (Fayed) at 380:22-381:1; CDX-0006C.43; Tr. (Fayed) at 419:7-12; CDX-0006C.102; *see also* CX-0711 (GB50 data sheet); CX-0710 (GBX45 data sheet).

Accordingly, NOCO has shown that the NOCO DI Products meet Limitation [1b] of the '243 patent.

d. Claim Limitation [1c]: "a negative battery connector for electrically connecting the jump starting device to the negative battery terminal of the depleted or discharged battery;"

Neither Respondents nor Staff dispute that that this limitation is met. *See* 150-51; RRB at 94-96; SIB at 120-27; SRB at 81-86. In addition, the undisputed evidence demonstrates that the NOCO DI Products include a negative battery connector for connecting the jump starter to a

DELTRAN EX1060
IPR2024-01219

negative battery terminal; specifically, each model includes a jumper cable with a black battery clamp (negative). *See* Tr. (Fayed) at 381:21-25; CDX-0006C.46; Tr. (Fayed) at 419:7-12; CDX-0006C.102; *see also* CX-0711 (GB50 data sheet); CX-0710 (GBX45 data sheet).

Accordingly, NOCO has shown that the NOCO DI Products meet Limitation [1c] of the '243 patent.

e. Claim Limitation [1d]: "a power switch or switch circuit connected in circuit with the power supply and the positive and negative battery connectors, the power switch or switch circuit configured to switch power on from the power supply to boost or charge the depleted or discharged battery when connected between the positive and negative polarity battery connectors;"

The parties dispute this limitation. NOCO asserts that the NOCO DI Products satisfy Limitation [1d] of the '243 patent for the same reasons as Limitation [1d] of the '023 patent. CIB at 156.

Respondents dispute Limitation [1d] of the '243 patent based on the same proposed claim construction discussed in connection with infringement—namely, that the "when connected" language requires "connecting the power supply to the clamps when the clamps are connected to the depleted battery, regardless of polarity." RIB at 150.

Staff, however, contends that Limitation [1d] of the '243 patent is satisfied by the NOCO DI Products because "Dr. Fayed testified that [redacted] SIB at 122; SRB at 81-83.

Upon review of the submissions and evidence of record, the undersigned finds that NOCO has established, by a preponderance of the evidence, that the NOCO DI Products meet the claim requirement "a power switch or switch circuit connected in circuit with the power supply and the positive and negative battery connectors, the power switch or switch circuit

DELTRAN EX1060
IPR2024-01219

configured to switch power on from the power supply to boost or charge the depleted or discharged battery when connected between the positive and negative polarity battery connectors." For the same reasons as discussed in connection with infringement of Limitation [1d] of the '243 patent, the undersigned declines to adopt Respondents' proposed claim construction and application. Further, for the same reasons as discussed above with respect to Limitations [1e] and [39e] of the '023 patent, the undersigned finds that the NOCO DI Products include the claimed power switch configured to switch power on when connected between the positive and negative battery connectors.

Accordingly, NOCO has shown that the NOCO DI Products meet Limitation [1d] of the '243 patent.

f. Claim Limitation [1e]: "a USB input connector"

The parties dispute this limitation. NOCO asserts that the NOCO DI Products satisfy Limitation [1e] of the '243 patent for the same reasons as Limitation [1g] of the '023 patent. CIB at 156.

Respondents and Staff dispute Limitation [1e] of the '243 patent for the same reasons as Limitation [1g] of the '023 patent. *See* RIB at 150-51; RRB at 94-96; SIB at 120-27; SRB at 81-86.

For all the reasons discussed above with respect to Limitation [1g] of the '023 patent, the undersigned finds that the evidence of record establishes that NOCO has not established that the GBX45 and the products for which it is representative practice Limitation [1e]. As to the GB50 product, because micro-USB input connectors were disclosed in the USB 3.1 specification and are within the scope of the claims, NOCO has established that the GB50, and the products for which it is representative, practice Limitation [1e].

DELTRAN EX1060
IPR2024-01219

g. Claim Limitation [1f]: "a USB charge circuit electrically connecting the USB input connector to the power supply, the USB charge circuit comprising a DC-DC converter configured to upconvert voltage from the USB input connector to the power supply."

The parties dispute this limitation. NOCO asserts that the NOCO DI Products satisfy Limitation [1f] of the '243 patent for the same reasons as Limitation [1f] of the '023 patent. CIB at 156.

Respondents and Staff dispute Limitation [1f] of the '243 patent for the same reasons as Limitation [1f] of the '023 patent. *See* RIB at 150-51; RRB at 94-96; SIB at 120-27; SRB at 81-86.

For all the reasons discussed above with respect to Limitation [1f] of the '023 patent, the undersigned finds that the evidence of record establishes that NOCO has not established that the GBX45 and the products for which it is representative practice Limitation [1f]. As to the GB50 product, because micro-USB input connectors were disclosed in the USB 3.1 specification and are within the scope of the claims, NOCO has established by a preponderance of the evidence that the GB50, and the products for which it is representative, practice Limitation [1f].

***

Accordingly, for the reasons discussed above, the evidence fails to show by a preponderance that claim 1 is practiced by the GBX45 product (and the GBX products for which it is representative). NOCO has shown by a preponderance of the evidence that the GB50 product (and the GB products for which it is representative) practice claim 1 of the '243 patent.

2. Claim 2

Claim 2 depends from claim 1, and requires in addition "wherein the power switch or switch circuit is controlled to turn on power to the depleted or discharged battery only when the

DELTRAN EX1060
IPR2024-01219

jump starting device is connected with correct polarity to the depleted or discharged battery." As discussed above, the evidence shows by a preponderance that claim 1 is practiced by the GB50 product (and the GB products for which it is representative), but not practiced by the GBX45 product (and the GBX products for which it is representative).

NOCO contends that the additional limitation of claim 2 is satisfied for the same reasons as Limitation [1e] of the '023 patent. *See* CIB at 157.

Respondents argue that the NOCO DI Products do not meet the additional limitation of claim 2 of the '243 patent because the NOCO DI Products do not turn on power when connected with correct polarity "to [redacted] RIB at 151 (citing RX-1652C (Stanfield Dep. Tr.) at 39:12-25, 41:1-25; Tr. (Ricketts) at 1185:2-1186:2.

Staff asserts that the NOCO DI products meet this limitation, arguing that "evidence of additional device configurations are not precluded by the claims." SRB at 85. Staff asserts that the microcontroller that receives input signals indicating battery presence and polarity and controls the power switch accordingly satisfies the additional limitation of claim 2. *Id.* (citing Tr. (Fayed) at 527:21-528:16.

Upon review of the submissions and evidence of record, the undersigned finds that NOCO has established, by a preponderance of the evidence, that the NOCO DI Products meet the additional claim requirement "wherein the power switch or switch circuit is controlled to turn on power to the depleted or discharged battery only when the jump starting device is connected with correct polarity to the depleted or discharged battery." For the same reasons as discussed in connection with infringement of Limitation [1d] of the '243 patent, the undersigned declines to adopt Respondents' proposed claim construction and application. Further, for the same reasons

DELTRAN EX1060
IPR2024-01219

as discussed above with respect to Limitations [1e] and [39e] of the ’023 patent, the undersigned finds that the NOCO DI Products include a power switch configured to switch power on only when connected with correct polarity between the positive and negative battery connectors. The evidence demonstrates that a battery connection with correct polarity is necessary for power to ultimately be supplied to the clamps; this is sufficient to satisfy the claim language. *See, e.g.*, Tr. (Fayed) at 411:15-212:5 (describing the separate “presence detector” circuit in the NOCO DI Products); Tr. (Fayed) at 390:17-391:15 (describing the operation of the polarity detection circuit and signal); *see also* CDX-0006C.59-60; CX-1280C.2 (GB50 schematic); CX-1286C.1 (GBX45 schematic). That additional conditions may be required, [redacted] does not impact the infringement analysis.

Accordingly, NOCO has shown by a preponderance of the evidence that the GB50 product (and the products it represents) practice claim 2 of the ’243 patent. NOCO has failed to show that the GBX45 product (and the products it represents) practice claim 2 of the ’243 patent, as NOCO failed to establish by a preponderance of the evidence that the limitations of claim 1, from which claim 2 ultimately depends, are practiced by the GBX45 product (and the products it represents).

3. Claim 18

Claim 18 depends from claim 17, which depends from claim 15, which ultimately depends from claim 1 and requires in addition “further comprising a USB output connector for providing a power output from the power supply to a USB-chargeable device” (claim 15), “wherein the USB output connector is electrically connected to a USB output circuit, the USB output circuit connecting the power supply to the USB output connector,” (claim 17) and “further comprising a microcontroller with a control circuit, the control circuit for the

DELTRAN EX1060
IPR2024-01219

microcontroller allows the USB output circuit to be turned on and off by software control to prevent the power supply getting too low in capacity" (claim 18). As discussed above, the evidence shows by a preponderance that claim 1 is practiced by the GB50 product (and the GB products for which it is representative), but not practiced by the GBX45 product (and the GBX products for which it is representative).

NOCO contends that the NOCO DI Products meet this limitation because they include USB output circuits, and those circuits are controlled by a control signal from the microprocessor. *See* CIB at 157-58 (citing Tr. (Fayed) at 427:7-18; CDX-0006C.111-12; CX-1280C.4 (GB50 schematic); CX-1286C.1, 6 (GBX45 schematic).

Respondents do not dispute that the NOCO DI products include a USB output circuit within the scope of the claims.[94] Respondents, however, that "Dr. Fayed did not analyze whether the microcontroller turns the USB output circuit to be turned on and off [sic] by software control as required by the claim." RIB at 151.

Staff, like NOCO, asserts that the NOCO DI Products satisfy the additional limitations of claim 18. SRB at 86. Staff asserts that Respondents have pointed to no other method—besides the claimed "software control"—by which the MCU would provide the identified control signal to the USB output circuit. *Id.*

Upon review of the submissions and evidence of record, the undersigned finds that NOCO has established, by a preponderance of the evidence, that the NOCO DI Products meet the additional limitations of claim 18. In the GB50 products, Dr. Fayed identified a USB output circuit [redacted] Tr. (Fayed) at 427:7-13; CDX-

[94] No party has sought to construe "USB output connector" or "USB output circuit," or suggested that technical domestic industry depends on whether "USB output circuit" or "USB output connector" are construed as excluding the USB-C or USB PD 2.0 specifications.

DELTRAN EX1060
IPR2024-01219

0006C.111; CX-1280C.4 (GB50 schematic). Respondents' argument that functional testing or software analysis of the MCU is required to establish that this limitation is practiced, RRB at 96, is inconsistent with their own invalidity analysis; for example, neither Respondents not Dr. Ricketts conducted functional testing of the Xinfang reference, and the portions of Xinfang relied upon as teaching the additional limitations of claim 18 do not explicitly recite "software control" or include source code. Further, Respondents do not cite to persuasive evidence that the identified control signal operates in a manner other than by "software control." Accordingly, Respondents have not introduced persuasive evidence undermining Dr. Fayed's testimony—based on the schematics and identification of control signals—that the additional limitations of claim 18 are practiced by the NOCO DI Products.

Accordingly, NOCO has shown by a preponderance of the evidence that the GB50 product (and the products it represents) practice claim 18 of the '243 patent. NOCO has failed to show that the GBX45 product (and the products it represents) practice claim 18 of the '243 patent, as NOCO failed to establish by a preponderance of the evidence that the limitations of claim 1, from which claim 18 ultimately depends, are practiced by the GBX45 product (and the products it represents).

4. Claim 54

Claim 54 depends from claim 51, which ultimately depends from claim 1 and requires in addition "wherein the power supply is a rechargeable lithium battery pack" and "further comprising a rechargeable lithium battery pack voltage measurement circuit configured to monitor the rechargeable lithium battery pack to prevent voltage potential from rising too high during a charging operation and from dropping too low during a discharge operation." As discussed above, the evidence shows by a preponderance that claim 1 is practiced by the GB50

DELTRAN EX1060
IPR2024-01219

product (and the GB products for which it is representative), but not practiced by the GBX45 product (and the GBX products for which it is representative).

Neither Respondents nor Staff dispute that the additional limitations of claim 54 are practiced by the NOCO DI Products. *See* RIB at 151; RRB at 96; SIB at 126-27; SRB at 86-87. In addition, the undisputed evidence demonstrates that the NOCO DI Products include rechargeable lithium battery packs and a voltage measurement circuit. Specifically, Dr. Fayed testified that the GB50 and GBX45 each include integrated charge controllers, which Dr. Fayed explained "monitor the voltages of the battery," which the evidence demonstrates are lithium-ion batteries. *See* Tr. (Fayed) at 429:13-21; CDX-0006C.117-18; CX-1280C.4 (GB50 schematic); CX-1286C.1, 6 (GBX45 schematic); CX-0711 (GB50 data sheet); CX-0710 (GBX45 data sheet).

Accordingly, NOCO has shown by a preponderance of the evidence that the GB50 product (and the products it represents) practice claim 54 of the '243 patent. NOCO has failed to show that the GBX45 product (and the products it represents) practice claim 54 of the '243 patent, as NOCO failed to establish by a preponderance of the evidence that the limitations of claim 1, from which claim 54 ultimately depends, are practiced by the GBX45 product (and the products it represents).

* * *

Accordingly, the evidence shows by a preponderance that the technical prong of the domestic industry requirement is met by the NOCO DI Products as to claims 1, 3, 10, and 14 of the '992 patent and claims 1, 11, and 16 of the '808 patent. Further, the evidence shows by a preponderance that the technical prong of the domestic industry requirement is met by the GB products as to claims 1, 19, 32, 39 and 54 of the '023 patent and claims 1, 2, 18, and 54 of the '243 patent. The evidence does not establish by a preponderance that the technical prong of the

DELTRAN EX1060
IPR2024-01219

domestic industry requirement is met by the GBX products as to claims 1, 19, 32, 39, and 54 of the ’023 patent or as to claims 1, 2, 18, and 54 of the ’243 patent.

VIII. INVALIDITY AND UNENFORCEABILITY

A. The ’992 Patent

The Carku Respondents[95] contend that claims 1, 3, and 14 of the ’992 patent are invalid as obvious over U.S. Patent No. 7,148,580 (“Sodemann”) and claim 10 of the ’992 patent is invalid as obvious over the combination of Sodemann and U.S. Patent No. 9,184,435 (“Errato”).

1. Obviousness in View of Sodemann

Sodemann is titled “Method Of And System For Starting Engine-Driven Power Equipment,” and issued on December 12, 2006. RX-2434, cover. There is no dispute that Sodemann constitutes prior art to the ’992 patent. *See* SIB at 35; RIB at 40; CRB at 7-12. Dr. Ricketts testified that Sodemann is a “portable jump starter” with “an internal battery inside, and cables to start motors.” Tr. (Ricketts) at 856:1-3.

a. Claim 1

i. Claim Limitation [1pre]: “A jumper cable device for use with a handheld battery charger booster device for charging a battery, the jumper cable device comprising:”

The parties agree that the preamble is limiting. *See* Order No. 20 at 6. The parties dispute the disclosure of this limitation in Sodemann.[96]

The Carku Respondents contend that Sodemann discloses this limitation. In particular, the Carku Respondents contend that Sodemann discloses at least jumper cable devices 60*c* and

[95] ADC “takes no position on the infringement and validity of the ’808 and ’992 patents.” RIB at 20 n.2.

[96] NOCO disputes whether Sodemann discloses a “handheld battery charger booster device,” a limitation that appears in Limitations [1pre], [1a], and [1d]. NOCO’s primary arguments appear in its briefing under headings challenging the disclosure of Limitation [1a]. *See* CIB at 29; CRB at 8.

DELTRAN EX1060
IPR2024-01219

60*d*. RIB at 43. The Carku Respondents further contend that cables 60c and 60d are used with "portable power source or pack 10," which is handheld because it "includes an integrally molded handle 14 and is light enough to be manually handled by an operator." RX-2434 at 3:26-31, Fig. 1; Tr. (Ricketts) at 857:5-14; *id.* at 857:24-858:4; RIB at 43. Pack 10 is a "battery charger booster device for charging a battery," the Carku Respondents submit, because it includes "one or more electrochemical power supplies, such as a battery" and is part of a class of devices used to "jump" a battery that has lost charge. RIB at 43; RX-2434 at 857:5-14; Tr. (Ricketts) at 857:5-12.

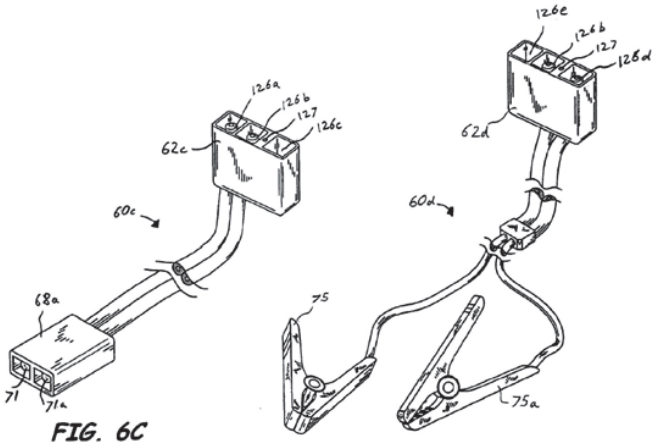


FIG. 6C

FIG. 6D

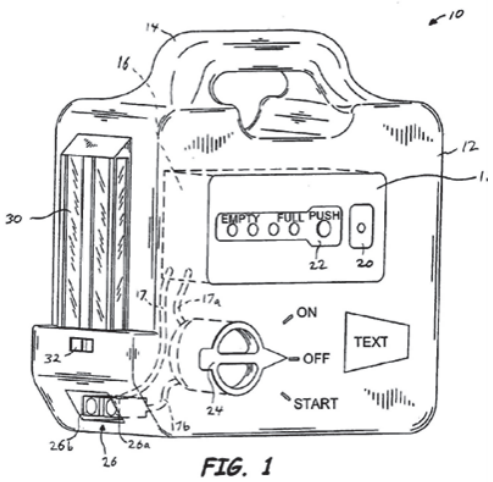


FIG. 1

NOCO does not dispute that Sodemann discloses a "jumper cable device" or a "battery charger booster device for charging a battery" used with such a device but does dispute whether the Sodemann battery charger booster device is "handheld." CIB at 29; CRB at 8. NOCO argues that Sodemann's device is "roughly briefcase-sized" or "suitcase-sized," and that the handle is intended only for "carrying or transporting the device, but not for keeping pack 10 in the user's hand during use." CIB at 29; CRB at 8.

The Carku Respondents respond that Sodemann's explicit disclosure that pack 10 is "includes an integrally molded handle and is light enough to be manually handled by an

DELTRAN EX1060
IPR2024-01219

operator" discloses the claimed "handheld battery charger booster device." RRB at 19-21. The Carku Respondents contend that NOCO introduced no evidence of "typical 'handheld' devices," and that Dr. Fayed, NOCO's expert, provided no testimony disputing the limitation. RRB at 19, 20. Further, the Carku Respondents contend that a meaning of "handheld" that requires the operator to hold the device during jump-starting use is "illogical" because "none of the jump starter devices at issue in this investigation . . . are continuously held in the hand" during use because the device is connected to the vehicle battery while the user turns the ignition to start the car. RRB at 20-21.

Staff agrees with the Carku Respondents that Sodemann discloses a "handheld" battery charging booster device. SIB at 36. Staff submits that the claims of the '992 patent do not impose a particular size requirement to be considered "handheld," and therefore, the disclosure that Sodemann's pack 10 is "portable" and includes "an integrally molded handle 14 and is light enough to be manually handled by an operator" discloses the preamble of claim 1. SRB at 16.

Upon review of the evidence of record, the undersigned finds that the preamble limitation is disclosed in Sodemann. Neither NOCO nor Staff dispute that Sodemann discloses a "jumper cable device," and the undisputed evidence demonstrates that Sodemann discloses at least cable structure 60*d*, which includes clips 75 and 75*a*, which are "similar to conventional 'alligator' clips employed on jumper cables." RX-2434 at 4:33-35, 4:57-61, Fig 6D; Tr. (Ricketts) at 857:5-12. Similarly, neither NOCO nor Staff dispute that Sodemann discloses a "battery charger booster device," and the undisputed evidence demonstrates that pack 10 is a "jump starter with a battery inside that can be used for charging or boosting a battery." *See* Tr. (Ricketts) at 857:10-12; RX-2434 at 3:26-31.

DELTRAN EX1060
IPR2024-01219

NOCO only disputes whether the alleged "battery charger booster device"—*i.e.*, pack 10—is "handheld." CRB at 8. The undersigned finds that the Carku Respondents have established, by clear and convincing evidence, that Sodemann discloses this limitation. Specifically, Sodemann states that pack 10 "includes an integrally molded handle and is light enough to be ***manually handled*** by an operator." RX-2434 at 3:26-31 (emphasis added). Dr. Ricketts testified that "this is clearly something that's meant to be picked up by the handle and carried around. A lot of jump starters have exactly this shape, with a handle on the top, that you pick up and carry out to the vehicle or whatever you need." Tr. (Ricketts) at 857:19-23. NOCO introduced no expert evidence that one of ordinary skill in the art would not consider the battery charger booster device of Sodemann to be "handheld," and NOCO's attorney argument is insufficient to controvert the express disclosure in Sodemann and the persuasive testimony of Dr. Ricketts as to this issue. *See, e.g.*, *Invitrogen Corp. v. Clontech Lab'ys, Inc.*, 429 F.3d 1052, 1068 (Fed. Cir. 2005) ("Unsubstantiated attorney argument regarding the meaning of technical evidence is no substitute for competent, substantiated expert testimony."); *Icon Health & Fitness, Inc. v. Strava, Inc.*, 849 F.3d 1034, 1043 (Fed. Cir. 2017) ("Attorney argument is not evidence."); *see also* RRB at 20-21.

Accordingly, the Carku Respondents have shown by clear and convincing evidence that Sodemann discloses Limitation [1pre] of the '992 patent.

DELTRAN EX1060
IPR2024-01219

ii. Claim Limitation [1a]: "a single plug having one end configured to fit into a single output port of the handheld battery charger booster device having an internal power supply, the single plug configured to provide both a positive polarity electrical connection and a negative polarity electrical connection configured to cooperate with the single output port; and"

The parties dispute that this limitation is disclosed in Sodemann. As with the preamble term, NOCO contends that Sodemann does not disclose or teach "the handheld battery charger booster device" because Sodemann's pack 10 is not "handheld." *See* CIB at 29; CRB at 8. For the same reasons as discussed with respect to Limitation [1pre], *supra*, NOCO's argument is not persuasive. The Carku Respondents have shown by clear and convincing evidence that Sodemann discloses a "handheld battery charger booster device." *See* RX-2434 at 3:26-31; Tr. (Ricketts) at 857:19-23.

Neither NOCO nor the Staff dispute that Sodemann discloses the additional elements of Limitation [1a]. *See* CIB at 29-33; CRB at 8-11; SIB at 35-41; SRB at 14-23. The undisputed evidence demonstrates that the Sodemann discloses a single plug having one end configured to fit into a single output port of the handheld battery charger booster device having an internal power supply, the single plug configured to provide both a positive polarity electrical connection and a negative polarity electrical connection configured to cooperate with the single output port of the handheld battery charger booster device. Sodemann discloses that cables 60c and 60d each have a single plug, 62*c* and 62*d*, which mates to terminals 120, 122, and 124 of connector 26 of pack 10. RX-2434 at 7:52-56 ("Alternatively, a user intending to use the pack 10 as an auxiliary power source connects the plug 62d of cable 60d to terminals 120, 122, and 124. By using cable 60*d*, only terminals 122 and 124 are electrically coupled to clips 75 and 75a."), Figs. 10, 10A; Tr. (Ricketts) at 858:5-14; RDX-0007C.153. Further, Sodemann discloses that the handheld

battery charger booster device—*i.e.*, pack 10—has an internal power supply, namely "one or more electrochemical power supplies," such as "a battery 16" within housing 12. RX-2434 at 3:29-31; Tr. (Ricketts) at 858:15-19. The single plug in Sodemann is "configured to provide both a positive and negative polarity electrical connection," as Sodemann discloses, for example, that the terminals 126*d* and 126*b* of plug 62*d* are "electrically connected to terminals 122 and 124" of connector 26*c*, and that terminal 122 is "connected to the negative or ground terminal" and terminal 124, via wiper 80, is "connected to the positive or hot terminal" of internal battery 16. RX-2434 at 7:10-62, Fig. 10A; Tr. (Ricketts) at 858:20-859:14.

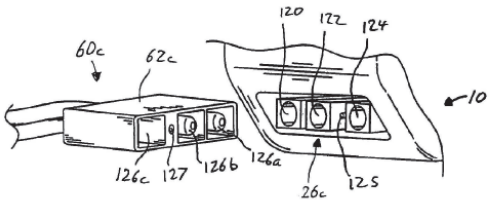


FIG. 10

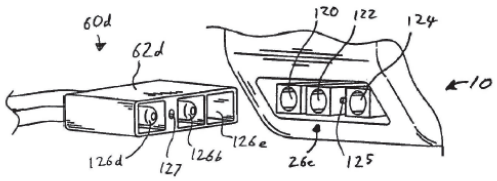


FIG. 10A

Accordingly, the Carku Respondents have shown by clear and convincing evidence that Sodemann teaches or suggests Limitation [1a] of the '992 patent.

iii. Claim Limitation [1b]: "a pair of cables having cable ends integrated with the plug, the pair of cables having opposite cable ends configured to separately connect to the terminals of the battery being charged,"[97]

The parties dispute the disclosure of this limitation in Sodemann. The Carku Respondents contend that Sodemann discloses this limitation. In particular, the Carku Respondents contend cables 60*c* and 60*d* are integrated with plugs 62*c* and 62*d*. RIB at 45; RX-2434 at 4:18-20 ("[T]he connector 26 includes terminals 26*a* and 26*b* (FIG. 1). The terminals are configured to

[97] The Carku Respondents divided this limitation into two subparts, Limitation [1b] and Limitation [1c]. *See, e.g.*, RIB at 45-48. For consistency with the infringement analysis and the limitations as written in the '992 patent, the undersigned uses the designation [1b] to refer to both subparts.

DELTRAN EX1060
IPR2024-01219

receive a cable having a corresponding plug configuration."); *id.* at 4:51-53 ("The plug 62*c* of cable 60*c* is a three slot plug configured for insertion into the pack 10 in a single orientation."); *id.* At 7:52-54 ("Alternatively, a user intending to use the pack 10 as an auxiliary power source connects the plug 62*d* of cable 60*d* to terminals 120, 122, and 124. By using cable 60*d*, only terminals 122 and 124 are electrically coupled to clips 75 and 75*a* (FIG. 6D)."); *id.* at Figs. 6C, 6D, 10, 10A. Relying on Dr. Ricketts, the Carku Respondents submit that one end of cable 60*d*, for example, is connected to conventional jumper cable "alligator clips" 75 and 75*a*, and one end is connected to the plug 62*d*. *See* RIB at 45 (citing Tr. (Ricketts) at 859:15-862:12); RIB at 47-48; *see also* RX-2434 at 4:33-39, 4:57-59.

NOCO contends that the cable 60*c* embodiment does not disclose the limitation because the "opposite cable ends" in the cable 60*c* embodiment are configured to connect to a connector on a piece of power equipment, rather than to "the terminals of the battery being charged." CIB at 30 (citing RX-2434[98] at 4:48-51, Fig. 6C); CRB at 9. As to the cable 60*d* embodiment, NOCO submits that the cable 60*d* is not integrated with the plug 62*d*, but rather an unnumbered "junction" (annotated in blue, at right) depicted in Figure 6D. *See* CIB at 30 (citing annotated version of RX-2434 at Fig. 6D). Dr. Fayed, NOCO's expert, testified that the addition of the junction is "significant" to the plug design because "it relaxes that design of the plug where you don't have to worry too much about these cables being,

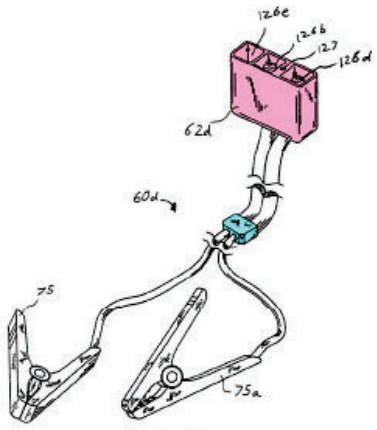


FIG. 6D

[98] NOCO and the Carku Respondents cite different exhibit numbers, CX-0781 and RX-2434, but both are copies of the Sodemann reference.

you know, very tight and integrated with the body of the plug because they don't have to handle the same mechanical stress." Tr. (Fayed) at 987:21-988:9; CIB at 31.

In response, the Carku Respondents explain that both experts agreed that the unnumbered junction or fob is not an electrical junction. *See* RRB at 22 (citing Tr. (Ricketts) 862:13-864:10; Tr. (Fayed) 986:16-987:5). Relying on Dr. Ricketts' testimony that the junction is merely "a mechanical piece to keep the glued-together cable parts from separating," Tr. (Ricketts) at 863:11-15, the Carku Respondents argue that there is no evidence that there are two separate pairs of cables on each side of the junction. RRB at 22-23. Further, the Carku Respondents submit that Sodemann expressly teaches that the in the cable 60*d* embodiment, "clips 75 and 75*a* are connected to terminals 126*b* and 126*d*" of plug 62*d*. RRB at 23 (citing RX-2434 at 4:57-58, 4:51-59, 7:23-25, Fig. 10A). Finally, the Carku Respondents assert that Dr. Fayed's testimony that the junction has an unspecified impact on the plug design has no impact on the invalidity of the asserted claims, where the claim does not recite any specific design or manufacturing specifications. Because claim 1 is a "comprising" claim, the Carku Respondents submit, the presence of the junction or any other unrecited feature does not impact the obviousness analysis. RRB at 23.

Staff agrees with the Carku Respondents that Sodemann discloses Limitation [1b]. *See* SIB at 39. Staff, like the Carku Respondents, submits that Dr. Fayed's testimony regarding manufacturing or design distinctions depending on the presence or absence of a mechanical junction is "irrelevant to the question of whether the claim limitation is met." *See* SRB at 18.

Upon review of the submissions and evidence of record, the undersigned finds that the Carku Respondents have established, by clear and convincing evidence, that Sodemann discloses the limitation "a pair of cables having cable ends integrated with the plug, the pair of cables

DELTRAN EX1060
IPR2024-01219

having opposite cable ends configured to separately connect to the terminals of the battery being charged." As Dr. Ricketts explained, the cable 60*d* embodiment of Sodemann discloses a pair of cables, which include at one end alligator clamps 75 and 75*a*, which are described as "conventional 'alligator' clips employed on jumper cables." RX-2434 at 4:33-35, 4:57-59; Tr. (Ricketts) at 860:3-11.[99] Sodemann also discloses that in use, the clips are "electrically connected" to the terminals of the plug 62*d*, identified as 126*b* and 126*d*, by cable 60*d*. *See* RX-2434 at 4:57-59 ("Alternatively, cable 60*d* of Fig. 6D illustrates clips 75 and 75*a* that are electrically connected to terminals 126*b* and 126*d*"); *see also* 7:52-56 ("Alternatively, a user intending to use the pack 10 as an auxiliary power source connects the ***plug 62d of cable 60d*** to terminals 120, 122, and 124. By using cable 60*d*, only terminals 122 and 124 are electrically coupled to clips 75 and 75*a* (FIG. 6D)."); Tr. (Ricketts) at 861:6-20. Although Sodemann does not discuss the "junction" seen in Figure 6D, Dr. Ricketts explained that the purpose was to prevent the glued-together wires at the plug 62*d* end of cable 60*d* from separating:

> The battery clamps have to be separate. So the two wires have to be separated. It's very common, if you have two wires that are together and then the ends are separated, that they can just pull apart the entire cable. So you often have a mechanical piece to keep the glued-together cable parts from separating. So it would just be something mechanically there to keep further separation of the wires.

Tr. (Ricketts) at 863:9-17. Dr. Fayed agreed with this characterization. *See* Tr. (Fayed) at 987:1-4 ("I believe I heard Dr. Ricketts testify earlier that, you know, you would need something mechanical to hold it in place so that you reduce the stress to the plug, which is absolutely true."). The evidence, including the testimony of both experts, establishes that the junction

[99] The evidence shows that part 60*d* of Sodemann comprises a "pair of cables" within the meaning of the '992 (and '808) patents. *Compare, e.g.*, RX-2434 at Fig. 6D (showing 60d) *with* '992 patent, Fig. 4 (parts 402a and 402b), 8:7 (referring to "pair of cables 402a and 402b"); Tr. (Ricketts) at 860:5-11; *see also* CRB at 10 (referencing "two pairs of cables" in Sodemann).

DELTRAN EX1060
IPR2024-01219

depicted in Figure 6D of Sodemann acts as a mechanical stabilizer for a single pair of cables, rather than a break or interruption in the explicitly described connection between the clamps 75 and 75*a* and the terminals of the plug 62*d* of cable 60*d.*

Claim 1 is a comprising claim, and the claims do not limit how the cables are integrated into the plug or cable ends, or prohibit a mechanical junction; without specific prohibition, additional elements do not impact the invalidity analysis. *Cf. SunTiger, Inc. v. Sci. Rsch. Funding Grp.*, 189 F.3d 1327, 1336 (Fed. Cir. 1999) (holding that an infringer may not "avoid infringement merely by adding additional elements to an infringing device") (quoting *Stiftung v. Renishaw PLC*, 945 F.2d 1173, 1178 (Fed. Cir. 1991). Nor has NOCO proposed a claim construction of "integrated" that would prohibit a mechanical stabilizer. NOCO and Dr. Fayed's discussion of the manufacturing or design differences between the embodiments in the '992 patent and Sodemann is a distinction without a difference; neither NOCO nor Dr. Fayed have identified what claim limitation is impacted or not met based on the difference in "mechanical stress" based on Sodemann's inclusion of the junction.

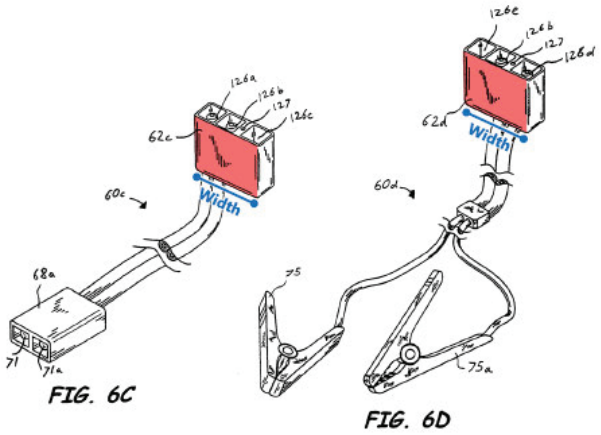
NOCO, then, has not introduced persuasive, relevant argument or evidence contradicting the teaching in Sodemann that the cables of 60*d* are "electrically connected" to clips 75 and 75*a* on one end and the terminals of plug 62*d* on the other, and Dr. Ricketts' testimony on the same. *See* RX-2434 at 4:57-59 ("Alternatively, cable 60d of Fig. 6D illustrates clips 75 and 75*a* that are electrically connected to terminals 126*b* and 126*d*"); Tr. (Ricketts) at 861:6-20.

Accordingly, the Carku Respondents have shown by clear and convincing evidence that Sodemann teaches or suggests Limitation [1b] of the '992 patent.

DELTRAN EX1060
IPR2024-01219

iv. Claim Limitation [1c]: "wherein a body of the single plug has a uniform width"[100]

Neither NOCO nor Staff dispute that that this limitation is disclosed in Sodemann. *See* CIB at 29-33; CRB at 8-11; SIB at 35-41; SRB at 14-23. In addition, the undisputed evidence demonstrates that Sodemann discloses a body of the single plug has a uniform width. Specifically, Sodemann discloses rectangular plugs 62c and 62d. RX-2434 at Figs. 6C, 6D, 10, 10A; Tr. (Ricketts) at 864:11-19 ("The plug is a rectangular plug. And disclosed in the drawing, it has a uniform width across it."); RDX-0007C.159. Dr. Ricketts testified that the plugs depicted in Sodemann have "straight sides that have a constant width across," which he identified in demonstratives with a red rectangular annotation and a blue annotation denoting the width. Tr. (Ricketts) at 865:1-3; RDX-0007C.159-160 (reproduced at right).



Accordingly, the Carku Respondents have shown by clear and convincing evidence that Sodemann teaches or suggests Limitation [1c] of the '992 patent.

[100] The Carku Respondents refer to Limitation [1c] as Limitation [1d]. *See* RIB at 48. For consistency with the infringement analysis, the undersigned uses the designation [1c] to refer to this limitation.

DELTRAN EX1060
IPR2024-01219

v. Claim Limitation [1d]: "wherein the single plug is configured so that the single plug will only fit into the single outlet port of the handheld battery charger booster device in a single orientation to ensure a proper orientation of positive polarity and negative polarity cable connections between the pair of cable and the single output port of the handheld battery charger booster device."[101]

The parties dispute that this limitation is disclosed in Sodemann. Specifically, NOCO contends that Sodemann does not disclose or teach "the handheld battery charger booster device" because Sodemann's pack 10 is not "handheld." *See* CIB at 31; CRB at 9. For the same reasons as discussed with respect to Limitation [1pre], *supra*, NOCO's argument is not persuasive. The Carku Respondents have shown by clear and convincing evidence that Sodemann discloses a "handheld battery charger booster device." *See* RX-2434 at 3:26-31; Tr. (Ricketts) at 857:19-23.

As to the remainder of Limitation [1d], the Carku Respondents contend that Sodemann discloses a single plug configured so that it will only fit into the output port of the handheld battery charger booster device in a single orientation to ensure proper positive and negative polarity connections. *See* RIB at 49-50. Specifically, the Carku Respondents point to the description of the plugs 62*c* and 62*d* as having "keyed configurations" which "ensures insertion is in a single orientation and the alternate wire schemes connect the cable with an appropriate portion of an operating circuit." *See* RIB at 49 (citing RX-2434 at 4:59-64). The "keyed configuration" is accomplished via a pin 125 in connector 26 that fits into a recess 127 of the plugs 62*c* or 62*d*. RX-2434 at 7:16-17, Figs. 10, 10A. The position of the pin as asymmetric between the three terminals of the connector (*i.e.*, two terminals on one side of the pin, two terminals on the other side of the pin) "prevent[s] a corresponding plug from being inserted in

[101] The Carku Respondents refer to Limitation [1d] as Limitation [1e]. *See* RIB at 49. For consistency with the infringement analysis, the undersigned uses the designation [1d] to refer to this limitation.

DELTRAN EX1060
IPR2024-01219

more than one orientation." RX-2434 at 7:12-16. The Carku Respondents further rely on testimony from Dr. Ricketts explaining Sodemann's disclosures as to Limitation [1d]. *See* Tr. (Ricketts) at 865:7-867:7.

NOCO disputes that Sodemann discloses the claimed "single plug," arguing that the pin 125 preventing incorrect insertion is part of the connector rather than the plug, and therefore, it is the connector—*i.e.*, the output port—rather than the plug that is configured to prevent incorrect insertion. *See* CIB at 32; CRB at 10. Dr. Fayed did not, however, provide any testimony to this effect. NOCO also argues, as it did with respect to Limitation [1b], that the "junction" is not the claimed "single plug." CIB at 32; CRB at 10. NOCO also argues that the alternative modes of operation in Sodemann—using either cable 60*c* to operate in a primary power mode or cable 60*d* to operate as a source of auxiliary power—is "a fundamentally different configuration" and thus the plug does not fit in "a single orientation." CIB at 32-33; CRB at 10.

In response, the Carku Respondents label as "non-sensical" NOCO's argument about the pin located on the connector. RRB at 24. The Carku Respondents explain that the pin in the connector alone does not prevent incorrect insertion of the plug; rather, it is the asymmetric configuration of the terminals (on both the plug and the connector) and the recess 127 for pin 125 on the plug that—acting in concert—ensure the "keyed" configuration. RRB at 24-25. The Carku Respondents also contend that NOCO's arguments are inconsistent with the written description of the '992 patent and its infringement analysis. RRB at 25. As to NOCO's second argument, the Carku Respondents contend that they are relying primarily on the cable 60*d* embodiment, which is the jump starting embodiment. In that mode, the Carku Respondents explain, Sodemann's pack 10 (1) uses a single pair of cables, 60*d*, with (2) a single plug, 62*d*, that (3) has a "keyed configuration." RRB at 26-27. The additional cable and mode of operation,

DELTRAN EX1060
IPR2024-01219

the Carku respondents contend, are "additional features" that are "simply irrelevant" to claim 1. *See* RRB 26-27.

Staff agrees with the Carku Respondents that Sodemann teaches or discloses Limitation [1d] in its description of the "keyed configuration" of plug 62*d*. SIB at 40-41. Staff submits that the claims "do not disclose or require any specific design configuration for ensuring that the single plug will only fit into the output port in a single orientation" and that a "keyed configuration" "will always depend on a combination of how both the plug and the port (or the lock and key) are configured." SRB at 20 (citing Tr. (Ricketts) at 865:7-867:7). Staff submits that Dr. Ricketts provided detailed testimony as to how the keyed configuration ensures proper polarity connections. SRB at 21 (citing Tr. (Ricketts) at 858:20-859:14.

Upon review of the submissions and evidence of record, the undersigned finds that the Carku Respondents have established, by clear and convincing evidence, that Sodemann discloses the limitation "wherein the single plug is configured so that the single plug will only fit into the single outlet port of the handheld battery charger booster device in a single orientation to ensure a proper orientation of positive polarity and negative polarity cable connections between the pair of cable and the single output port of the handheld battery charger booster device." Sodemann teaches that plug 62*d* has a "keyed configuration" which "ensures insertion is in a single orientation and the alternate wire schemes connect the cable with an appropriate portion of an operating circuit." RX-2434 at 4:59-64; Tr. (Ricketts) 865:7-867:7. The "keyed configuration" is accomplished via a pin 125 in connector 26 that fits into a recess 127 of the plugs 62*c* or 62*d*. RX-2434 at 7:16-17, Figs. 10, 10A. The position of the pin as asymmetric between the three terminals of the connector (i.e., two terminals on one side of the pin, two terminals on the other side of the pin) "prevent[s] a corresponding plug from being inserted in more than one

DELTRAN EX1060
IPR2024-01219

orientation." RX-2434 at 7:12-16; Tr. (Ricketts) at 866:14-15 ("The way 62 is laid out, you have two connectors close together, and one far away. It's not symmetric."). Terminals 126*d* and 126*b* of plug 62*d* are "electrically connected to terminals 122 and 124" of connector 26*c*, with terminal 122 "connected to the negative or ground terminal" and terminal 124, via wiper 80, "connected to the positive or hot terminal" of internal battery 16. RX-2434 at 7:10-62, Fig. 10A; Tr. (Ricketts) at 858:20-859:14.

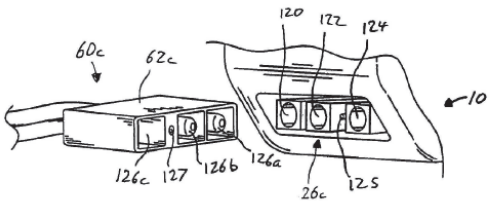


FIG. 10

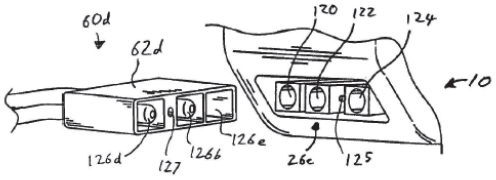


FIG. 10A

NOCO's arguments are unpersuasive. First, as discussed with respect to Limitation [1b], *supra*, the undersigned finds NOCO's argument that the "junction" in the cable 60*d* embodiment is a break or interruption in the claimed pair of cables unsupported by the evidence.

Second, NOCO's argument that it is Sodemann's connector 26, rather than the plug 62*d* that is configured to ensure insertion in a single orientation is also unpersuasive. As Staff and the Carku Respondents point out, in Sodemann, the Carku Accused Products, and the Domestic Industry products, it is the corresponding features of the plug and port that ensure insertion in a single orientation. *See* SRB at 20; RRB at 25; CDX-0006C.137, 138; Tr. (Ricketts) at 867:1-7 ("So when you have a lock and you put a key in, you are familiar, you can only stick it in one way. You can't stick it in upside down."). Moreover, even disregarding the features of Sodemann's connector 26, plug 62*d* includes features that ensure insertion in a single orientation, including recess 127 and the asymmetric placement of the terminals.

Finally, and also unpersuasive, is NOCO's argument that Sodemann "accommodates two different modes of operation and makes two different types of connections," which "underscores

DELTRAN EX1060
IPR2024-01219

that Sodemann's plug is not configured 'to ensure a proper orientation of positive polarity and negative polarity cable connections between the pair of cables and the single output port of the handheld battery charger booster device.'" CRB at 10-11. As Dr. Ricketts explained, Sodemann's connector 26—*i.e.*, the output port—includes one negative or ground terminal and two positive or hot terminals. Plug 62*d* has two active terminals; one configured to mate with the negative or ground terminal and one configured to mate with one of the positive terminals, which is connected to the internal battery via wiper 80 and switch 76. Tr. (Ricketts) at 858:20-859:14 ("So the output of the cable in Sodemann, 26c, there's three conductors. You only need two, the positive and the negative. So this switch just connects the battery to one of two possible connections. So if we just imagine, it connects it to the on position. So 76 is connected to 80. Then 124 is connected to the positive or negative terminal of the battery. Then 122 is connected to the other polarity."); RX-2434 at 7:10-62, Figs. 10A, 11. Only one pair of cables, e.g., 60*d*, may be plugged in during use. *See* RX-2434 at 7:52-56 ("Alternatively, a user intending to use the pack 10 as an auxiliary power source connects the plug 62*d* of cable 60*d* to terminals 120, 122, and 124. By using cable 60*d*, only terminals 122 and 124 are electrically coupled to clips 75 and 75*a* (FIG. 6D)."); Tr. (Ricketts) at 861:6-20. NOCO does not provide explanation or evidence as to why the existence of an alternative pair of cables for use in a separate operating mode impacts whether the plug 62*d* upon which the Carku Respondents rely is "configured to ensure a proper orientation of positive polarity and negative polarity cable connections between the pair of cables and the single output port of the handheld battery charger booster device." *See* CIB 32-33; CRB at 10-11.[102]

[102] *Cf. Core Wireless Licensing S.A.R.L. v. Apple Inc.*, 899 F.3d 1356, 1363 (Fed. Cir. 2018) ("Infringement is not avoided merely because a non-infringing mode of operation is possible.") (internal quotation omitted)

Accordingly, the Carku Respondents have shown by clear and convincing evidence that Sodemann teaches or suggests Limitation [1d] of the ’992 patent.

***

Accordingly, for the reasons discussed above, the clear and convincing evidence of record demonstrates that Sodemann teaches or suggests all the limitations of claim 1 of the ’992 patent. Further, the evidence of record fails to show secondary considerations of non-obviousness.[103] The evidence clearly and convincingly shows that claim 1 of the ‘992 is invalid as obvious.[104]

b. Claim 3

Neither NOCO nor Staff dispute that that the additional limitation of claim 3, “wherein the plug does not have any exposed prongs” is disclosed in Sodemann. *See* CIB at 33; CRB at 11; SIB at 41; SRB at 21. In addition, the undisputed evidence demonstrates that Sodemann discloses “wherein the plug does not have any exposed prongs.” Specifically, Sodemann discloses plug 62*d*, and the prongs are depicted as “inside of the plastic housing.” RX-2434 at Figs. 6C, 6D, 10, 10A; Tr. (Ricketts) at 867:8-21; RDX-0007C.163-64.

Accordingly, the Carku Respondents have shown by clear and convincing evidence that Sodemann teaches or suggests the limitations of claim 1, as discussed *supra*, and Sodemann teaches or suggests the additional limitation of claim 3 of the ’992 patent. Further, the evidence

[103] No party introduced evidence as to secondary considerations of non-obviousness. *See* SRB at 23.

[104] NOCO notes that the ’992 patent lists Sodemann on its face. *See* CIB at 28-29. As set forth by the Federal Circuit, the “clear and convincing burden applies to all issued patents” regardless of whether a reference was before the PTO; the “the fact that references were previously before the PTO goes to the weight the court or jury might assign to the proffered evidence.” *Sciele Pharma Inc. v. Lupin Ltd*., 684 F.3d 1253, 1259-1261 (Fed. Cir. 2012). In view of the clear disclosures of Sodemann and the evidence of record, the clear and convincing burden has been met.

DELTRAN EX1060
IPR2024-01219

of record fails to show secondary considerations of non-obviousness. The evidence clearly and convincingly shows that claim 3 of the '992 patent is invalid as obvious.

c. Claim 14

i. Claim Limitation [14pre]: "A jumper cable device for use with a handheld battery charger booster device for charging a battery, the jumper cable device comprising:"

The parties dispute this limitation, which is identical to Limitation [1pre], and for which Dr. Ricketts relied on the same analysis. *See* RIB at 50; Tr. (Ricketts) at 868:3-12. For the same reasons discussed above in the context of limitation [1pre], the undersigned finds that the Carku Respondents have established by clear and convincing evidence that Sodemann teaches or suggests Limitation [14pre].

ii. Claim Limitation [14a]: "a single plug having one end configured to fit into a single output port of a handheld battery charger booster device having an internal power supply, the plug providing both positive polarity and negative polarity connections with the handheld battery charger booster device, the plug being configured so that the plug will only fit into the output port in a specific orientation, the plug not having any exposed prongs;"

The parties dispute this limitation, which incorporates the requirements of Limitation [1a] and the additional limitation of claim 3, and for which Dr. Ricketts relied on the same analysis. *See* RIB at 50; Tr. (Ricketts) at 868:3-12. For the same reasons discussed above in the context of the Limitation [1a] and claim 3, the undersigned finds that the Carku Respondents have established by clear and convincing evidence that Sodemann teaches or suggests Limitation [14a].

DELTRAN EX1060
IPR2024-01219

iii. Claim Limitation [14b]: "a pair of cables having cable ends integrated with the plug; and"

The parties dispute this limitation, which incorporates the requirements of Limitation [1b], and for which Dr. Ricketts relied on the same analysis. *See* RIB at 50; Tr. (Ricketts) at 868:3-12. For the same reasons discussed above in the context of limitation [1b], the undersigned finds that the Carku Respondents have established by clear and convincing evidence that Sodemann teaches or suggests Limitation [14b].

iv. Claim Limitation [14c]: "a pair of battery terminal clamps respectively connected to opposite cable ends of the pair of cables;"

Neither NOCO nor Staff dispute that that this limitation is disclosed in Sodemann. *See* CIB at 35; CRB at 12; SIB at 42-47; SRB at 14-23. In addition, the undisputed evidence demonstrates that Sodemann discloses a pair of battery terminal clamps respectively connected to opposite cable ends of the pair of cables. Specifically, Sodemann discloses Sodemann discloses cable 60*d*, which includes clips 75 and 75*a*, which are "similar to conventional 'alligator' clips employed on jumper cables." RX-2434 at 4:33-35, 4:57-61, Fig. 6D; Tr. (Ricketts) at 857:5-12; *id.* at 868:13-24. Accordingly, the Carku Respondents have shown by clear and convincing evidence that Sodemann teaches or suggests Limitation [14c].

v. Claim Limitation [14d]: "wherein a body of the single plug has a uniform width, and"

The parties do not dispute this limitation, which incorporates the requirements of Limitation [1c], and for which Dr. Ricketts relied on the same analysis. *See* RIB at 51; Tr. (Ricketts) at 868:3-12. For the same reasons discussed above in the context of limitation [1c], the undersigned finds that the Carku Respondents have established by clear and convincing evidence that Sodemann teaches or suggests Limitation [14d].

DELTRAN EX1060
IPR2024-01219

vi. Claim Limitation [14e]: "wherein the single plug is configured so that the single plug will only fit into the single outlet port of the handheld battery charger booster device in a single orientation to ensure a proper orientation of positive polarity and negative polarity cable connections between the pair of cable and the single output port of the handheld battery charger booster device."

The parties dispute this limitation, which incorporates the requirements of Limitation [1d], and for which Dr. Ricketts relied on the same analysis. *See* RIB at 51; Tr. (Ricketts) at 868:3-12. For the same reasons discussed above in the context of the limitation [1d], the undersigned finds that the Carku Respondents have established by clear and convincing evidence that Sodemann teaches or suggests Limitation [14e].

* * *

For the reasons discussed above, the Carku Respondents have shown by clear and convincing evidence that Sodemann teaches or suggests each and every limitation of claims 1, 3 and 14. In view of the lack of evidence showing secondary considerations of non-obviousness, the evidence clearly and convincingly shows that claims 1, 3 and 14 of the '992 patent are invalid as obvious.

2. Obviousness in view of Sodemann and Errato

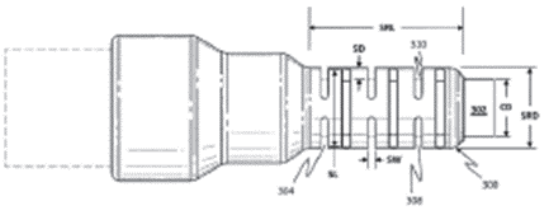
In addition to Sodemann, the Carku Respondents rely on U.S. Patent No. 9,184,435 ("Errato") to assert that asserted claim 10 is obvious. RIB at 42; RX-2435. Errato is titled "Over-Mold Strain Relief For An Electrical Power Connector," and issued on November 10, 2015 from an application filed on August 21, 2012. RX-2435, cover. There is no dispute that Errato constitutes prior art to the '992 patent. *See* SIB at 35; RIB at 42; CRB at 7-12.

a. Claim 10

DELTRAN EX1060
IPR2024-01219

Claims 10 of the ’992 patent depends from claim 1, and requires the jumper cable of claim 1 to “further compris[e] a downwardly tapering connection located between the single plug and the cables.” ’992 patent, cl. 10. The parties dispute whether the combination of Sodemann in view of Errato discloses this additional limitation.

Relying on the testimony of Dr. Ricketts, the Carku Respondents contend that Errato teaches a downwardly tapering portion for strain relief, and that one of skill in the art would be motivated to modify Sodemann’s jumper cable to add a downwardly tapering connection, as taught by Errato. RIB at 51; Tr. (Ricketts) at 869:16-22 (“Just to orient in Figure 11, there’s a dashed line on the left, which is -- my understanding, is part of the plug, and then there’s the entire downwardly tapering section. There’s a larger rectangle that tapers down once, tapers down a second time, and then I think tapers a third time at the very end.”); RDX-007C.185; RX-2435 at Fig. 11A.

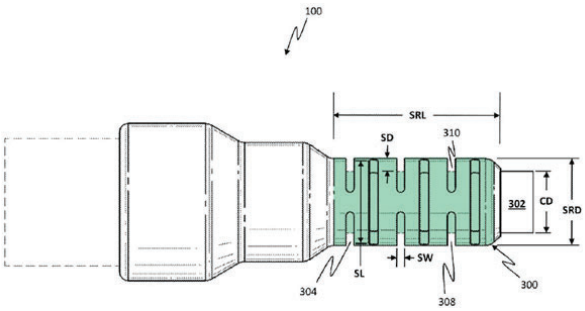


RX-2435 at Fig. 11A. The Carku Respondents contend that including strain relief portions, as taught in Errato, were well-known in the art, referenced in industrial specifications, and known to have benefits such as “ergonomic design,” securing electrical wire connections, providing insulation, and preventing premature damage and wear to the cable. RIB at 52 (citing RX-2435 at 1:13-17, 6:41-47, 6:56-61). The Carku Respondents also cite to testimony from ’992 patent inventor Rick Stanfield (also the chief technical officer of NOCO), who testified that downwardly tapering connections had “been around a long time” and were known in the art. *See*

DELTRAN EX1060
IPR2024-01219

RIB at 53 (citing RX-1652C (Stanfield Dep. Tr.) at 170:7-171:35); Tr. (Stanfield) at 1336:2-5. Errato also, the Carku Respondents contend, teaches specific techniques for fabricating and structuring a strain relief portion, thus "providing a POSA with a reasonable expectation of success." RIB at 53.

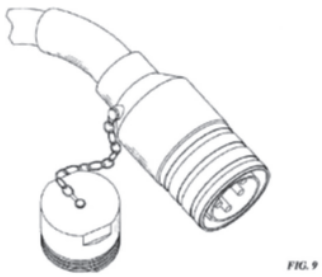
NOCO disputes that Sodemann in view of Errato renders claim 10 obvious. *See* CIB at 33. NOCO's expert, Dr. Fayed, provided no testimony contesting obviousness based on this limitation. NOCO contends, however, that Dr. Ricketts "never identified 'a downwardly tapering connection,'" because the strain relief portion (which NOCO contends is shown by the green portion in NOCO's annotation of Errato Figure 11) is a cylinder with a constant diameter:



CIB at 34; CRB at 11.[105] NOCO further argues that the skilled artisan would not have found it obvious to modify Sodemann in view of Errato because the plug in Errato is round, while Sodemann discloses "rectangular top surfaces." CIB at 34; CRB at 11. NOCO also submits that Errato is not analogous art because "Errato is in the field of heavy duty power connectors" and Sodemann, which addresses "engine driven power equipment" is "not compatible with Errato," which addresses military specifications for 2 inch thick cables. CIB at 34; CRB at 11-12. Finally, NOCO argues that Mr. Stanfield's deposition testimony is irrelevant because "the cited testimony does not relate to the alleged Sodemann-Errato combination." CRB at 12.

[105] NOCO and the Carku Respondents cite different exhibit numbers, CX-0780 and RX-2435, in their briefing, but both are copies of the Errato reference.

In response, the Carku Respondents argue that although NOCO's arguments are "highly fact-intensive and presented from the perspective of one of skill in the art," NOCO did not introduce testimony from its expert, Dr. Fayed, on those issues. RRB at 27. The Carku Respondents also state that Dr. Ricketts identified the entirety of the structure of Figure 11A to the right of the dashed line as the "downwardly tapering connection"—including what he described as three tapers—not just the cylindrical portion (annotated by NOCO in green, as shown above). RRB at 28 (citing Tr. (Ricketts) at 869:9-879:24). The Carku Respondent also point to Figure 9 of Errato, which they describe as depicting "an indisputably tapered strain relief portion":



RX-2435 at Fig. 9; RRB at 28-29. As to NOCO's argument that Errato is not analogous art, the Carku Respondents contend that NOCO relies solely on unsupported attorney argument, which is "directly refuted" by Dr. Ricketts' testimony that both Sodemann and Errato address heavy-duty cables, and "for which strain relief was a known problem." RRB at 29 (citing Tr. (Ricketts) at 870:10-16).

Staff, like the Cark Respondents, contends that Sodemann in view of Errato teaches or suggests the additional limitation of claim 10, which Staff contends is "a well-known and straightforward modification that would achieve the benefit of strain relief." SRB at 23; SIB at 41. Staff contends that Errato is directed to a "common" and "known" problem with cables. SRB

DELTRAN EX1060
IPR2024-01219

at 21-22 (citing Tr. (Ricketts) at 869:23-870:24). Staff contends that Errato is not limited to military or industrial applications, but teaches that "the present invention can be used with other types of cabling." *See* SRB at 22 (quoting RX-2435 at 6:19-21). Staff also cites Mr. Stanfield's testimony that the "downwardly tapering cable connection" was known in the art.

As discussed above, *supra*, the Carku Respondents have shown by clear and convincing evidence that Sodemann discloses the limitations of claim 1. Upon review of the evidence of record, the undersigned finds that Sodemann in view of Errato provides reason to modify Sodemann to include the additional limitation of claim 10. As Dr. Ricketts explained, Figure 11A of Errato discloses three separate tapers from the plug potion (indicated in dashed lines), plus the cylindrical portion. Tr. (Ricketts) at 869:14-22. Dr. Ricketts further testified that the skilled artisan would have reason to combine the teachings of Errato to modify Sodemann because strain between a "rigid connector" and a "wire" is "a common problem with cables" and "it would make sense to put strain relief in so the cables aren't damaged if you pulled them side to side." Tr. (Ricketts) at 870:1-9; *id.* at 870:13-16 ("Sodemann with Errato, they're – like I said – it's –they're both related to cables, heavy-duty cables, and strain is a known problem that it would address."). Errato, moreover, teaches additional benefits, including "provid[ing] a mechanical bond between the cable and the connector," RX-2435 at 6:41-43, "secur[ing] wire terminations," *id.* at 6:44, "insulat[ing] the conductors and terminals," *id.* at 6:45-46, "provide environmental sealing," *id.* at 6:47, "prevent[ing] premature wear and damage to the cable jacket," *id.* at 6:56-61, and "provid[ing] an ergonomic design which achieves a firm gripping surface for safe handling of the connectors," *id.* at 6:64-65; *see also* RIB at 52. Regarding the success of this combination, Dr. Ricketts testified that applying the tapering feature of Errato to Sodemann "would perform the same function in Sodemann that it does in Errato" and would

improve it in the same way through providing strain relief. *Id.* at 870:17-24. He further testified that adding such a structure "would be a common thing to add to a cable assembly." *Id.* at 870:8-9.

NOCO's arguments, which are unsupported by any expert testimony, are unpersuasive. Because Dr. Ricketts did not rely solely on the same-width diameter cylindrical portion addressed by NOCO, NOCO's argument that Errato does not disclose a "tapering" connection is unsupported. *Compare* CRB at 11 *with* Tr. (Ricketts) at 869:14-22 ("Just to orient in Figure 11, there's a dashed line on the left, which is – my understanding, is part of the plug, and ***then there's the entire downwardly tapering section***. There's a larger rectangle that tapers down once, tapers down a second time, and then I think tapers a third time at the very end.") (emphasis added). NOCO's expert provided no testimony showing that the downwardly tapering section of Errato testified to by Dr. Ricketts, and which he identified as part of an overall structure that provides for strain relief at the cable, should be discounted. *See* Tr. (Ricketts) at 869:9-870:23; RDX-0007C.185; RX-2435 at Fig. 11A, 7:5-20.[106]

Further, NOCO's arguments that Errato is not analogous art, and thus the skilled artisan would not have reason to apply Errato's teachings to Sodemann are unsupported by the evidence of record as a whole. NOCO has introduced no evidence to support its contentions that "a POSA would have understood that Errato is not analogous art to Sodemann," or that "a POSA would not have found it obvious to modify Sodemann's rectangular cables with the cylindrical stress relief portion of Errato." *See* CIB at 34 (citing no evidence); CRB at 11 (citing no evidence). Errato expressly teaches that the invention is "not limited to Class L connectors" (i.e., those

[106] Indeed, as noted above, Dr. Fayed provided no testimony whatsoever about the combination of Sodemann and Errato. Moreover, claim 10 of the '992 patent does not require the entire "downwardly tapering connection" to provide strain relief (and does not even mention strain relief).

DELTRAN EX1060
IPR2024-01219

"designed to Military Specification MIL-DTL-22992"), RX-2435 at 1:23-26, 6:19-22, and that it "may be used with other types of cabling." *Id.* at 6:19-22; *see also* SRB at 22. Dr. Ricketts also testified that Errato and Sodemann are both directed to "cables, heavy-duty cables" with similar strain issues. Tr. (Ricketts) at 870:13-24.[107] NOCO's attorney argument is insufficient to controvert the disclosure in Errato and Dr. Rickett's expert testimony supporting a reason to combine Sodemann and Errato with a reasonable expectation of success. Moreover, as noted above, Mr. Stanfield (one of the inventors on the '992 patent and NOCO's chief technical officer) acknowledged that tapered ends for connectors have "been around a long time" and that tapered ends for cables for electronic devices were known prior to 2014. RX-1652C at 169:25-171:5.

Accordingly, the Carku Respondents have shown by clear and convincing evidence that Sodemann discloses the limitations of claim 1, as discussed *supra*, and Sodemann in combination with Errato teaches or suggests the additional limitation of claim 10 of the '992 patent with a reasonable expectation of success. Further, the evidence of record fails to show secondary considerations of non-obviousness. The evidence thus clearly and convincingly shows that claim 10 of the '992 patent is invalid as obvious.

[107] A reference qualifies as analogous art if "the art is from the same field of endeavor, regardless of the problem addressed" or, if not, if the "reference still is reasonably pertinent to the particular problem with which the inventor is involved." *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004). The issue of "analogous art" concerns a comparison of the prior art reference to the challenged patent. *See Sanofi-Aventis Deutschland GmbH v. Mylan Pharms. Inc*., 66 F.4th 1373, 1377 (Fed. Cir. 2023). NOCO has not argued that either Sodemann or Errato fails to constitute analogous art in relation to the '992 or '808 patents. Moreover, "[t]he test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference . . . but rather whether a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention." *Allied Erecting & Dismantling Co., Inc. v. Genesis Attachments*, *LLC*, 825 F.3d 1373, 1381 (Fed. Cir. 2016) (internal citations and quotations omitted).

DELTRAN EX1060
IPR2024-01219

B. The ’808 Patent

The Carku Respondents contend that claims 1 and 16 of the ’808 patent are invalid as obvious over Sodemann and that claim 11 is obvious over Sodemann in view of Errato. With respect to the claims at issue in the ’808 patent, the parties rely on substantially the same analyses as for obviousness of the ’992 patent. As set forth below, the evidence shows clearly and convincingly that claims 1, 11, and 16 of the ’808 patent are invalid as obvious.

1. Obviousness in view of Sodemann

a. Claim 1

i. Claim Limitation [1pre]: “A jumper cable device for use with a jump starter having an internal power supply and an output port for connecting with the jumper cable device, the jumper cable device comprising:”

The parties rely on the same arguments for this claim limitation as for the preamble and element [1a] of claim 1 of the ’992 patent. *See* RIB at 59; CIB at 47. For the reasons discussed above with respect to those limitations of the ’992 patent, the evidence shows clearly and convincingly that this limitation is disclosed in Sodemann.

ii. Claim Limitation [1a]: “a single plug having one end configured to fit into the output port of the jump starter, the single plug configured to provide both a positive polarity electrical connection and a negative polarity electrical connection with the output port of the jump starter; and”

The parties rely on the same arguments for this claim limitation as for element [1a] of the ’992 patent. *See* RIB at 59; CIB at 47. For the reasons discussed above with respect to that limitation of the ’992 patent, the evidence shows clearly and convincingly that this limitation is disclosed in Sodemann.

DELTRAN EX1060
IPR2024-01219

iii. Claim Limitation [1b]: "a pair of battery cables having cable ends integrated with the plug, the pair of battery cables having opposite cable ends configured to separately connect to the terminals of the battery being charged;"

The parties rely on the same arguments for this claim limitation as for element [1b] of the '992 patent. *See* RIB at 60; CIB at 47. For the reasons discussed above with respect to that limitation of the '992 patent, the evidence shows clearly and convincingly that this limitation is disclosed in Sodemann.

iv. Claim Limitation [1c]: "wherein a body of the single plug has a uniform or substantially uniform width along a length of the body, and"

The parties rely on substantially the same arguments for this claim limitation as for element [1c] of the '992 patent. *See* RIB at 60; CIB at 47. The evidence shows clearly and convincingly that Sodemann discloses the body of the single plug with a uniform width, and thus also meets the requirements for a "uniform or substantially uniform" width along a length of the body.

v. Claim Limitation [1d]: "wherein the single plug is configured so that the single plug will only fit into the output port of the jump starter in a single orientation to ensure a proper orientation of positive polarity electrical connection and the negative polarity electrical connections between the plug and the output port of the lump [sic] starter."

The parties rely on the same arguments for this claim limitation as for limitation [1d] of the '992 patent. *See* RIB at 60; CIB at 47. For the reasons discussed above with respect to that limitation of the '992 patent, the evidence shows clearly and convincingly that this limitation is disclosed in Sodemann.

b. Claim 16

i. Claim Limitation [16pre]: "A battery jumper cable

DELTRAN EX1060
IPR2024-01219

device for use with a jump starter having a power supply or battery and an output port for connecting to the jumper cable device, the jumper cable device comprising:"

The parties rely on the same arguments for this claim limitation as for the preamble and Limitation [1a] of claim 1 of the '992 patent. *See* RIB at 60; CIB at 48. For the reasons discussed above with respect to those limitations of the '992 patent, the evidence shows clearly and convincingly that this limitation is disclosed in Sodemann.

ii. Claim Limitation [16a]: "a single rectangular-shaped plug having a uniform or substantially uniform width along a length of the plug, the connection end of the plug is configured to fit into the output port of the jump starter, the output port of the jump starter providing both a positive polarity electrical connection and a negative polarity electrical connection between the output port of the jump starter and the plug of the jumper cable device; and"

The parties rely on substantially the same arguments for this claim limitation as for the preamble and Limitation [1c] of claim 1 of the '992 patent. *See* RIB at 60; CIB at 48. For the reasons discussed above with respect to that limitation of the '992 patent, as well as Limitation [1a] of the '992 patent, the evidence shows clearly and convincingly that this limitation is disclosed in Sodemann. As discussed above, the evidence shows clearly and convincingly that Sodemann discloses the body of the single plug with a uniform width, and the evidence further shows clearly and convincingly that the plug has a "substantially uniform" width and a rectangular shape. *See* Tr. (Ricketts) at 873:10-875:8; RDX-0007C.249-250; RIB at 60.[108]

iii. Claim Limitation [16b]: "a positive battery cable and a negative battery cable electrically connecting the plug to

[108] While Limitation [16a] refers to the width along the length of the "plug" (and not of the "plug body" as in Limitation [1c]), there is no evidence of any difference between the "plug" and "plug body" in Sodemann. *See generally* Order No. 20 at 34-35 (discussing potential distinction between "plug" and "plug body" in context of the '808 patent).

DELTRAN EX1060
IPR2024-01219

a positive battery connector and negative battery connector for connecting the positive battery cable and negative battery cable to the battery being charged,"

The parties rely on the same arguments for this claim limitation as for the preamble and Limitation [1b] of claim 1 of the '992 patent. *See* RIB at 60-61; CIB at 48. For the reasons discussed above with respect to that limitation of the '992 patent, the evidence shows clearly and convincingly that this limitation is disclosed in Sodemann.

iv. Claim Limitation [16c]: "wherein the plug is structured so that the plug will only fit into the output port of the jump starter in a single orientation to ensure a proper orientation of the positive polarity electrical connection and negative polarity electrical connection between the outlet output port of the jump starter and the plug of the jumper cable device."

The parties rely on the same arguments for this claim limitation as for the preamble and Limitation [1d] of claim 1 of the '992 patent. *See* RIB at 61; CIB at 48. For the reasons discussed above with respect to that limitation of the '992 patent, the evidence shows clearly and convincingly that this limitation is disclosed in Sodemann.

***

As discussed above, the evidence shows clearly and convincingly that each limitation of claims 1 and 16 of the '808 patent are disclosed by Sodemann. Further, there is no evidence of secondary considerations that weighs against a finding of obviousness. The evidence of record shows that claims 1 and 16 of the '808 patent are invalid as obvious.

2. Obviousness in view of Sodemann and Errato

a. Claim 11

Claim 11 of the '808 patent depends from claim 1, and additionally requires that the jumper cable comprise "a downwardly tapering connection located between the single plug and the pair of battery cables." '808 patent, cl. 11. The parties rely on the same analysis regarding

DELTRAN EX1060
IPR2024-01219

this claim as they do for claim 10 of the '992 patent. *See* RIB at 61; CIB at 47-48. For the reasons discussed above regarding claim 10 of the '992 patent, the evidence clearly and convincingly shows that claim 11 of the '808 patent is invalid as obvious.

C. The '023 Patent

Respondents contend that (1) claims 1, 19, 32, 39, and 54 of the '023 patent are invalid as obvious over U.S. Patent App. Pub. No. 2013/0154543 ("Richardson") in view of U.S. Pat. App. Pub. No. 2013/0285596 ("Zhou");[109] (2) that claim 19 of the '023 patent is invalid as obvious over Richardson in view of Zhou and Chinese Pat. Pub. No. 202696190 ("Zhang"); (3) claims 1, 32, 39, and 54 of the '023 patent are invalid as obvious over Carku's E-Power 21 device and Carku's E-Power 10 device; and (4) claim 19 is invalid as obvious over E-Power 21 in view of E-Power 10 and Zhang.

1. Obviousness in view of Richardson and Zhou

Richardson is titled "Method And Apparatus For Providing Supplemental Power To An Engine," and published on June 20, 2013. RX-2445, cover. There is no dispute that Richardson constitutes prior art to the '023 patent under 35 U.S.C. §§ 102(a)(1) and/or (2). *See* SIB at 112; RIB at 109; CRB at 64-69. Richardson is directed to "a portable power source for a motor vehicle and, more particularly, to a method and apparatus to provide supplemental power to start internal combustion and turbine engines." RX-2445 at [0002].

[109] At the hearing, Respondents presented evidence as to an additional combination, Richardson, LT1618, and Zhou. *See* Tr. (Ricketts) at 838:24-841:10; CDX-0007C.87. In Respondents' initial post-hearing brief, LT1618 is referenced within the section of the brief addressing the combination of Richardson and Zhou as an example of a commercially-available, off-the-shelf DC-DC converter for a USB input circuit. RIB at 113-114. Respondents' contentions are addressed below as part of the Richardson and Zhou section. To the extent Respondents contend that a combination of Richardson and LT1618 alone renders the claims obvious, *see* SIB at 114; RRB at 73 ("Accordingly, the Court should find that the Richardson publication, combined with Zhou, Zhang, ***and/or*** the LT1618 publications as described in the initial post hearing brief renders obvious the asserted claims '023 Patent."), that contention is waived because Respondents did not address it in their initial post-hearing brief.

DELTRAN EX1060
IPR2024-01219

Zhou is entitled "Boosting Input Power" and published on October 31, 2013. RX-2479, cover. Respondents assert—without dispute from Staff or NOCO—that Zhou constitutes prior art under at least 35 U.S.C. §§ 102(a)(1) and (2). *See* RIB at 109; CRB at 64-69; SIB at 114-115.

Respondents contend that Richardson in view of Zhou render claims 1, 19, 39, and 54 obvious. RIB at 109.

a. Claim 1

The parties do not dispute that Richardson discloses each limitation of claim 1 with the exception of USB-related Limitations [1f] and [1g]. *See* SRB at 71 ("Richardson does not disclose the "USB input circuit" and "USB input connector" limitations in each of the asserted claims of the '023 Patent."); CRB at 64 ("Respondents contend that Richardson, combined with Zhou (U.S. Pat. Appl. Pub. No. 20130285596) renders the asserted '023 patent claims obvious by teaching or suggesting the subject matter of limitations 1[f], 39[f], and 54[f] and limitations 1[g], 39[g], and 54[g]."); RIB at 109 ("The USB charging art cited in the hearing addresses what was not identified by the examiner [in the Richardson reference considered during prosecution]."). However, the parties dispute whether one of skill in the art would combine Richardson and Zhou to obtain the claimed invention with a reasonable expectation of success. For the reasons discussed below, on the current record, the evidence does not show clearly and convincingly that one of skill in the art would have reason to combine Richardson and Zhou to obtain the claimed combination of claim 1.

DELTRAN EX1060
IPR2024-01219

i. Claim Limitation [1pre]: "A jump starting apparatus configured for boosting or charging a depleted or discharged battery having a positive polarity battery terminal and a negative polarity battery terminal, the jump starting apparatus comprising:"

Neither NOCO nor Staff dispute that that this limitation is disclosed in Richardson. *See* CIB at 123-126; CRB at 64-68; SIB at 35-41; SRB at 14-23. In addition, the undisputed evidence demonstrates that Richardson discloses a jump starting apparatus for boosting or charging a battery. *See* RX-2445 at [0007] ("The system includes one or more internal batteries and capacitors to provide the power to the battery of the vehicle to be jump started."), Fig. 1; Tr. (Ricketts) at 823:15-19; RDX-0007C.64.

Accordingly, the Respondents have shown by clear and convincing evidence that Richardson discloses Limitation [1pre] of the '023 patent.

ii. Claim Limitation [1a]: "a power supply"

Neither NOCO nor Staff dispute that that this limitation is disclosed in Richardson. *See* CIB at 123-126; CRB at 64-68; SIB at 35-41; SRB at 14-23. In addition, the undisputed evidence demonstrates that Richardson discloses a power supply. *See* RX-2445 at [0007] ("The system includes one or more internal batteries and capacitors to provide the power to the battery of the vehicle to be jump started."), Fig. 1; Tr. (Ricketts) at 823:20-23 ("It discloses jump start battery or batteries 22, which is a power supply."), 823:20-824:14 ("[Q]: What does Richardson indicate about what the voltage of that one battery would be? [A]: It says, a few lines down, 'For example, the batteries are . . .' In this example, it's talking about the case of two batteries, or 12-volt batteries, so that would be one 12-volt battery."); RDX-0007C.65.

Accordingly, the Respondents have shown by clear and convincing evidence that Richardson discloses Limitation [1a] of the '023 patent.

DELTRAN EX1060
IPR2024-01219

iii. Claim Limitation [1b]: "a positive polarity battery terminal connector configured for connecting the jump starting apparatus to the positive polarity battery terminal of the depleted or discharged battery;"

Neither NOCO nor Staff dispute that that this limitation is disclosed in Richardson. *See* CIB at 123-126; CRB at 64-68; SIB at 35-41; SRB at 14-23. In addition, the undisputed evidence demonstrates that Richardson discloses a positive polarity battery terminal connector, specifically, Richardson discloses jumper cables with a red battery clamp (positive). *See* RX-2445 at Fig. 2C ("RED CLAMP 60."); Tr. (Ricketts) at 824:15-21 ("1[b] and 1[c] require a positive and a negative battery terminal connector. Those are shown in Richardson as Item 60. It's a red clamp and a black clamp."); RDX-0007C.66.

Accordingly, the Respondents have shown by clear and convincing evidence that Richardson discloses Limitation [1b] of the '023 patent.

iv. Claim Limitation [1c]: "a negative polarity battery terminal connector configured for connecting the jump starting apparatus to the negative polarity battery terminal of the depleted or discharged battery;"

Neither NOCO nor Staff dispute that that this limitation is disclosed in Richardson. *See* CIB at 123-126; CRB at 64-68; SIB at 35-41; SRB at 14-23. In addition, the undisputed evidence demonstrates that Richardson discloses a negative polarity battery terminal connector, specifically, Richardson discloses jumper cables with a black battery clamp (negative). *See* RX-2445 at Fig. 2C ("BLACK CLAMP 60."); Tr. (Ricketts) at 824:15-21 ("1[b] and 1[c] require a positive and a negative battery terminal connector. Those are shown in Richardson as Item 60. It's a red clamp and a black clamp."); RDX-0007C.66.

Accordingly, the Respondents have shown by clear and convincing evidence that Richardson discloses Limitation [1c] of the '023 patent.

v. Claim Limitation [1d]: "a power switch or circuit configured to turn on power from the power supply to the positive and negative polarity battery terminal connectors;"

Neither NOCO nor Staff dispute that that this limitation is disclosed in Richardson. *See* CIB at 123-126; CRB at 64-68; SIB at 35-41; SRB at 14-23. In addition, the undisputed evidence demonstrates that Richardson discloses a power switch or circuit configured to turn on power from the power supply to the positive and negative battery terminal connectors. Specifically, Richardson discloses a relay switch 34. *See* RX-2445 at Fig. 1, [0021] ("When the jump starter operation has been successfully initiated, the contact relay 34 is closed and the jump starter capacitors 21 and batteries 22 are connected to the starter system or batteries of the vehicle to be started 28."); Tr. (Ricketts) at 826:3-7 ("Richardson contains a relay, which is a switch, Item 34 in the patent."); RDX-0007C.66.[110]

Accordingly, the Respondents have shown by clear and convincing evidence that Richardson discloses Limitation [1d] of the '023 patent.

vi. Claim Limitation [1e]: "a control system or circuit connected to and controlling the power switch, the control system or circuit configured to detect whether the positive and negative polarity battery terminal connectors have a correct polarity connection with the positive and negative polarity battery terminals of the depleted or discharged battery prior to turning on the power switch or circuit;"

Neither NOCO nor Staff dispute that that this limitation is disclosed in Richardson. *See* CIB at 123-126; CRB at 64-68; SIB at 35-41; SRB at 14-23. In addition, the undisputed evidence

[110] Respondents note that "if" Limitation [1d] "is interpreted to mean the power switch is 'between' the power supply and the positive polarity terminal connector and 'between' the power supply and the negative polarity terminal connector," the Limitation would still be obvious. *See* RIB at 111. This argument is insufficiently developed, and the undersigned is not aware of a request to construe this limitation by NOCO or Staff.

demonstrates that Richardson discloses a control system or circuit connected to and controlling the power switch, the circuit or system configured to detect a correct polarity connection prior to turning on the power switch or circuit. Specifically, Richardson discloses a microcontroller 12 connected with sensors, which include reverse voltage sensor 14 and vehicle voltage sensor 30. RX-2445 at [0014], [0020], [0016]. The polarity sensor in Richardson provides a voltage of 2V when reverse polarity is detected and a voltage of under 2V when proper polarity is detected. *See* RX-2445 at Fig. 1, 2C, 2B, 2D, [0007] ("The present invention monitors the voltage of the battery of the vehicle to be jump started and the current delivered by the jump starter batteries and capacitors to determine if a proper connection has been established and to provide fault monitoring. For safety purposes, only if the proper polarity is detected can the system operate."); Tr. (Ricketts) at 826:9–827:9; RDX-0007C.68-71.

Accordingly, the Respondents have shown by clear and convincing evidence that Richardson discloses Limitation [1e] of the '023 patent.

vii. Claim Limitation [1f]: "a USB input circuit connected to the power supply, the USB input circuit comprising a DC/DC converter, the USB input circuit configured for converting power from a USB power source to increase power voltage to the power supply; and"

The parties agree that Richardson does not teach the claimed "USB input circuit," and the parties do not dispute that Zhou teaches a USB charging circuit. *See* SRB at 71-72; CRB at 64, 67; RIB at 109; CRB at 67. The undisputed evidence also demonstrates that Zhou includes a USB input circuit including a DC-DC converter configured to convert power from a USB power source and increase the voltage. Specifically, Dr. Ricketts testified that Zhou discloses a battery charger that boosts a 5V USB input charge to a higher voltage. Tr. (Ricketts) at 830:1-15; RX-2479 at [0011] ("USB connections may operate on about five volts (5V), and the voltage

required to charge the battery 110 can be, for example, from about 10V to about 24V. The charge management component 106 can increase (e.g., step-up) the voltage received from a battery charger via the USB 104 (e.g., about 5V) to the voltage required to charge the battery 110 (e.g., about 10V to 24V).").

However, the parties dispute whether one of skill in the art would have reason to combine the jump starter of Richardson with the USB charging circuit of Zhou to obtain Limitation [1f].

As to Richardson, the parties and experts agree that Richardson discloses re-charging the internal batteries with jumper cables connected to a vehicle, Tr. (Ricketts) at 827:19-21 ("you could use a vehicle to also recharge the battery"), 906:25-907:7; Tr. (Fayed) at 970:12-971:15 ("definitely the way they charge is through the same jumper cables that are used to jump the vehicle"). Respondents, relying on Dr. Ricketts, further assert that Richardson discloses a "secondary method" of charging via a referenced (but not depicted or described) "battery charger." RIB at 115 (citing RX-2445 at [0028]); *see also* Tr. (Ricketts) 827:10–829:22. Respondents contend that one of skill in the art would be motivated to modify Richardson to add the USB charging capability taught by Zhou as the method of "secondary charging" because such a combination would "increase versatility and convenience," the modification would have been obvious to try, Richardson could be powered by a variety of sources, and the modification would require no more than routine experimentation. RIB at 115.

NOCO, in opposition, argues that a skilled artisan would not have combined the USB input charging circuit of Zhou—which NOCO contends is disclosed as useful for "charging small computing devices like smartphones that have low-voltage batteries"—with the heavy duty jump-starter disclosed in Richardson, which could be used to charge very large 48V vehicle batteries. CIB at 125. NOCO also asserts that the USB charging disclosed by Zhou is

DELTRAN EX1060
IPR2024-01219

significantly slower than the 1 to 5 minute jumper cable recharge disclosed in Richardson. CIB at 125-26. NOCO contends that the alleged modification would be "slower, less convenient, more costly, more complex, and less effective." CIB at 125-26; CRB at 67. NOCO also argues that the circuit schematics in Richardson depict a single charge path for the internal battery through the jumper cables. CRB at 66. The Richardson commercial embodiment, NOCO argues, was the size of a suitcase, with two 16V batteries, and thus "differs dramatically in design, configuration, purpose, and performance relative to the jump starter recited in the asserted '023 patent."

Staff argues that the evidence presented by Respondents fails to establish by clear and convincing evidence that one of skill in the art would have been motivated to add the USB charging feature disclosed by Zhou to Richardson. SIB at 114. Staff contends that prior to the advent of USB-C charging, one of skill in the art would not have been motivated to include USB charging for a large battery because of the length of time it would have taken to recharge Richardson via USB. SIB at 114.

Upon review of the submissions and evidence of record, the undersigned finds that Respondents have not established, by clear and convincing evidence, that one of skill in the art would have reason to add the USB charging circuit of Zhou to Richardson's jump starter to obtain Limitation [1f] with a reasonable expectation of success.[111]

As an initial matter, Dr. Ricketts testified that because Richardson references a battery charger[112] for Richardson's jump starter battery, and Zhou discloses a USB battery charger, one

[111] References to "Richardson" should be understood as references to RX-2445, not the alleged commercial embodiment of Richardson or any related Richardson publication.

[112] The undersigned agrees with Dr. Ricketts that Richardson discloses charging the internal batteries via a "battery charger (not shown)" that is different than the "vehicle charging system." RX-2445 at [0055], [0028]. However, there is no persuasive evidence regarding its relationship to the circuitry shown in Figure 1 of Richardson.

of skill in the art would combine the USB charging capabilities of Zhou with the battery of Richardson. Tr. (Ricketts) at 830:1-15 ("Zhou is a battery charger . . . Richardson has a battery. The battery needs to be charged."); *id.* at 827:15-828:6. In explanation, he further testified that Zhou's disclosure of charging a lithium-ion battery by USB applied to Richardson's automotive context because "a lithium-ion battery is a lithium-ion battery." *See* Tr. (Ricketts) at 830:19-21; *see also* Tr. (Ricketts) at 831:1-8 ("The only thing that's relevant is the technology. Is it lithium-ion, so that tells me the voltage that I need to charge to. So anything that is a charger for lithium-ion battery would be appropriate for a lithium-ion battery."); *see also* Tr. (Ricketts) at 732:16-20 ("So I think the teaching [in Zhou] is you want to charge a lithium-ion battery. Zhou is giving you a disclosure on how to do that. It's applicable to anything that has a lithium-ion battery within the voltage and capability ranges of the invention."). However, while Dr. Ricketts relies on Zhou's use for lithium-ion batteries, he does not persuasively testify that one of ordinary skill in the art would understand Richardson to disclose a lithium-ion battery for use in its jump starter. *See* CIB at 163 (Richardson batteries not "rechargeable lithium battery packs"); CRB at 90-91.[113]

The undersigned further credits Dr. Fayed's testimony that Richardson does not disclose power conversion circuitry—*i.e.*, there is no buck or boost conversion of voltage from the power input to the internal batteries—while USB charging would have required power conversion

[113] Richardson refers to "a battery" without reference to the chemistry (*see* RX-2445 at [0016]). While Respondents argue that a lithium battery pack is "one of the limited battery options of Richardson," Respondents do not cite persuasive evidence supporting this statement. *See* RIB at 155-156. In addition, in the context of claim 51/54 of the '243 patent (which specifically requires a lithium-ion battery), Dr. Ricketts relied on a combination of Richardson with other references, not on Richardson alone. *See* Tr. (Ricketts) at 854:15-855:9. Ms. Hacker-Davidson testified that, in the context of jump starters, lithium-based batteries require some different technical considerations. *See* Tr. (Hacker-Davidson) at 190:18-191:2. *See also* RIB at 111 ("Richardson discloses a jump starter embodiment with a single 12 volt battery."); Joint Technology Stipulation, EDIS Doc. ID 806183, at 3 ("Individual lithium-ion battery cells have a nominal voltage of 3.7 volts.").

DELTRAN EX1060
IPR2024-01219

circuitry. *See* Tr. (Fayed) at 971:16-972:1; CDX-12C.019; Tr. (Fayed) at 979:23-980:5; Tr. (Ricketts) at 830:1-15, 905:5-906:6. As Dr. Fayed explained, Richardson does not disclose DC-DC conversion circuitry, as required by the "DC-DC converter" and "increase[ing] power voltage" elements of Limitation [1f], in the "vehicle charging system" path. *See id.* ("Richardson will charge its battery through the clamps, from the vehicle that is providing power. So there is really no DC-to-DC conversion circuitry at all in that path. It's just straight from the vehicle into the Richardson device. So that's very different. There is no DC-to-DC conversion involved here."). Nor does the evidence show power conversion—*e.g.*, "increase[ing] power voltage"—suggested in Richardson's disclosure of a "battery charger (not shown)." RX-2445 at [0028]. Respondents have not introduced sufficiently persuasive evidence that one of skill in the art would have reason to add Zhou's additional charging path at a different input voltage that required power conversion to Richardson. This is particularly true in light of evidence in the record that the power conversion required in USB charging results in a current drop that slows charging in comparison to, for example, a barrel charger[114] and which would charge much slower than Richardson's disclosed 1 to 5 minute recharge via the vehicle recharging path of Richardson. *See* Tr. (Fayed) at 974:10-975:10.[115]

[114] *See* RX-2363.4 (Stanfield IPR Decl.) (use of DC-DC converter to step up voltage "results in a corresponding current drop such that charging the jump starter with the USB input would be 4 to 8 times slower than using a barrel connector"). The undersigned notes that Dr. Ricketts does not clearly or convincingly discuss utilizing both a barrel charger and a USB charger as the "battery charger (not shown)" of Richardson. RX-2445 at [0028]; *see, e.g.*, Tr. (Ricketts) 832:18-24, 839:18-23. This, among other things, differentiates the proposed Richardson combination from the proposed modification to the E-Power 21 device in view of E-Power 10, discussed *infra*, where USB charging is in addition to a barrel charger, and where Respondents introduced clear and convincing evidence of a reason to combine, how the modified circuitry would operate, and the likelihood of success of making such a modification.

[115] Respondents' argument that Richardson discloses a "12 volt battery" (*see* RRB at 75) does not take into account the power conversion issues. Respondents' further argument that there is no "minimum speed" for the charging circuit (*see id.*) does not show clearly and convincingly that one of ordinary skill in the art would have reason to modify Richardson to include such charging.

In addition, Dr. Fayed testified that Zhou is targeted at "low-power" applications that differ from the "massive" battery in Richardson. *See* Tr. (Fayed) at 975:12-976:13. Dr. Fayed's opinion appears consistent with the record evidence, as Zhou discloses the use of its USB charging technology for lithium ion batteries which Zhou states "have become standard in portable computing devices" and "mobile devices that can operate for extended periods of time from a battery source," identifying as examples "portable computing devices, such as laptops, tablets, and smart phones," and "computing devices . . . [that] can include but is not limited to a smart phone, a cell phone, a personal digital assistant (PDA), a tablet, a laptop, a desktop, a portable music player, a video game system, an electronic reader (e-reader), a global positioning system (GPS), a set-top box and/or a television." *See* RX-2749 at [0001], [0002], [0009]. Similarly, the LT1618, which Respondents contend is a commercially available DC-DC converter that could be used in a USB charging application, was used for similar mobile device "battery charging" for cell-phone back-up battery charging. *See* Tr. (Legates) at 676:8-11; RX-4081.1 (LT1618 data sheet). The evidence as a whole does not clearly and convincingly establish a reason to combine Zhou with the jump starter of Richardson.

Accordingly, the evidence as a whole does not clearly and convincingly establish a reason to combine Zhou with the jump starter of Richardson with a reasonable expectation of success to obtain Limitation [1f].[116]

[116] The undersigned also finds the fact that the Examiner, during prosecution, found that one of skill in the art would be motivated to combine Richardson and a different USB charging reference, Lenks, unpersuasive. *See* RRB at 73, 76. That finding involved a different USB charging reference, a different record, and a different burden of proof. *See Therasense, Inc. v. Becton, Dickinson & Co.*, 649 F.3d 1276, 1292 (Fed. Cir. 2011) ("[A] finding of invalidity in a district court requires clear and convincing evidence, a higher evidentiary burden than that used in prosecution at the PTO.").

viii. Claim Limitation [1g]: "a USB input connector connected to the USB input circuit, the USB input connector configured for connecting to the USB power source and providing power input from the USB power source through the USB input connector and the USB input circuit to the power supply."

The parties agree that Richardson does not teach the claimed "USB input connector," and the parties do not dispute that Zhou teaches a USB input connector. *See* SRB at 71-72; CRB at 64, 67; RIB at 109; CRB at 67. Specifically, Dr. Ricketts testified that Zhou discloses USB charging technology, and Zhou discloses a "USB port 104". Tr. (Ricketts) at 731:19-25; RX-2479 at Fig. 1, [0009] ("The device 102 includes a universal serial bus (USB) 104."). Accordingly, Respondents have shown by clear and convincing evidence that Zhou discloses Limitation [1g] of the '023 patent. For the reasons discussed above regarding Limitation [1f], however, the evidence does not clearly and convincingly show a reason to combine Zhou and Richardson with a reasonable expectation of success to obtain the USB-charging required by Limitation [1g].

***

Accordingly, Respondents have not shown by clear and convincing evidence that claim 1 of the '023 patent is obvious based on the combination of Richardson and Zhou.

b. Claim 19

Claim 19 depends from claim 18, which in turn depends from claim 1, and requires in addition "further comprising a manual override switch configured to activate a manual override mode to enable a user to connect jump start power to the depleted or discharged vehicle battery when a vehicle battery isolation sensor is unable to detect presence of the vehicle battery" and "wherein the control system or circuit is configured to detect actuation of the manual override switch for at least a predetermined period of time before activation of the manual override

DELTRAN EX1060
IPR2024-01219

mode." The parties dispute the disclosure of this limitation in the combination of Richardson and Zhou.

Respondents contend that the additional limitations are disclosed in Richardson's "manual mode" of operation, which as a result of two pushes of the "manual" button, enters into "manual mode," which allows "jump starter 10" to be "used when the battery voltage of the vehicle is below 10 volts, or if the vehicle's battery is not connected." RX-2445 at [0049], [0047]; Tr. (Ricketts) at 831:9-832:17. If the vehicle's battery is present but is "extremely low or completely dead"—less than 10 volts—the jump starter's batteries will charge the vehicle's battery before jump starting operations begin. RX-2445 at [0049].

NOCO, relying on Dr. Fayed, contends that Richardson's manual mode does not disclose the additional claim limitations of claim 19 because Richardson does not connect jump start power in manual mode, but rather recharges the vehicle battery. CRB at 68 (citing Tr. (Fayed) at 977:14-978:14). Further, NOCO argues that the two-push requirement for activating manual mode is not a "predetermined period of time." CRB at 68 (citing Tr. (Fayed) at 978:15-979:6).

Staff does not separately address claim 19. *See* SIB at 114-15; SRB at 71-72.

Upon review of the submissions and evidence of record, the undersigned finds that Respondents have established, by clear and convincing evidence, that Richardson discloses the additional limitations of claim 19. Richardson discloses that upon activation of manual mode, the "jump starter's batteries will start to charge the batteries" if the vehicle battery is "extremely low or completely dead." RX-2445 at [0049]. If the vehicle's battery holds the charge, "the starting cycle in manual mode is the same as described above." *Id.* at [0050]. The '023 patent does not distinguish between "jump start power" and battery recharging, and the description of manual override mode in the '023 patent describes only that the "the internal lithium-ion battery power is

DELTRAN EX1060
IPR2024-01219

switched to the vehicle battery connect port." '023 patent, 5:1-10. Manual mode in Richardson operates in the same way, by closing the "contactor" or "contact relay," and allowing power to flow to the battery terminal connectors. RX-2445 at [0049].

Moreover, Dr. Ricketts testified that the two-push requirement, combined with the Interrupt Service Routine (ISR) in Richardson discloses "detecting actuation" of the manual mode switch for a predetermined period of time, because the manual mode button must be pressed once and detected by the ISR, depressed and detected as unpressed by the ISR, and then pressed again and detected by the ISR. Tr. (Ricketts) at 832:3-17; RX-2445 at Fig. 9. Dr. Ricketts explained that the ISR routine runs every 25 milliseconds, which is a predetermined period of time. *Id.* The claim language requires the system to detect actuation for "at least a predetermined period of time" prior to activating manual mode—Dr. Ricketts's testimony establishes that manual mode is not activated unless "at least" three ISR cycles (detecting the press, detecting no press, detecting the press) of 25 milliseconds each are run. The claim language does not prescribe a particular duration for the "predetermined period of time." Neither NOCO nor Dr. Fayed persuasively addressed Dr. Rickett's testimony regarding the ISR routine combined with Richardson's manual mode. *See* Tr. (Fayed) at 978:15-979:6; CRB at 68-69.

Accordingly, Respondents have shown by clear and convincing evidence that Richardson in view of Zhou teaches or suggests the additional limitations of claim 19 of the '023 patent. However, because Respondents failed to show by clear and convincing evidence that claim 1 of the '023 patent is obvious over the combination of Richardson and Zhou, Respondents have also failed to show that dependent claim 19 of the '023 patent is obvious over the combination of Richardson and Zhou.

c. Claim 32

DELTRAN EX1060
IPR2024-01219

Claim 32 depends from claim 1, and requires in addition that "the DC-DC converter can be turned on and off by a microprocessor."

The parties dispute the disclosure of this limitation in the combination of Richardson and Zhou. Respondents contend that the DC-DC converter in Zhou is controlled by a microcontroller based on Zhou's disclosure of the step "set boost enabled signal active," which Dr. Ricketts testified that the skilled artisan would understand is implemented by a microcontroller. RIB at 119-20; Tr. (Ricketts) at 833:10-834:13; RX-2579 at Fig. 5. Respondents contend that Richardson teaches using a microcontroller to control the charging of its internal batteries, and that the skilled artisan would be motivated to modify Richardson to include the functionality of turning on and off the DC-DC converter with a microcontroller as taught in Zhou. RIB at 120; RRB at 79-80. NOCO contends that there is no DC-DC converter disclosed in Richardson, and no power conversion circuitry, and thus there is no motivation to modify Richardson's microcontroller to control the operation of DC-DC converter or power conversion circuit. CRB at 69 (citing Tr. (Fayed) at 979:19-980:10). Staff contends that Richardson does not disclose the additional limitation of claim 32 but does not otherwise address this limitation. *See* SIB at 114-15; SRB at 71-72.

As discussed above, Respondents have not shown sufficient evidence of a reason to combine Richardson and Zhou to obtain the USB-charging limitations of claim 1 (which include the requirement for a DC-DC converter). Accordingly, Respondents have also failed to show that dependent claim 32 of the '023 patent is obvious over the combination of Richardson and Zhou.

d. Claim 39

DELTRAN EX1060
IPR2024-01219

i. Claim Limitation [39pre]: "A jump starting device for boosting or charging a depleted or discharged battery having a positive polarity battery terminal and a negative polarity battery terminal, the jump starter device comprising:"

The parties rely on the same arguments for this claim limitation as for Limitation [1pre]. *See* RIB at 116, CIB at 126. For the reasons discussed above with respect to Limitation [1pre], the evidence shows clearly and convincingly that this limitation is disclosed in Richardson.

ii. Claim Limitation [39a]: "a power supply"

The parties rely on the same arguments for this claim limitation as for Limitation [1a]. *See* RIB at 116-17, CIB at 123-26. For the reasons discussed above with respect to Limitation [1a], the evidence shows clearly and convincingly that this limitation is disclosed in Richardson.

iii. Claim Limitation [39b]: "a positive battery terminal connector for connecting the jump starter device to the positive battery terminal of the depleted or discharged battery;"

The parties rely on the same arguments for this claim limitation as for Limitation [1b]. *See* RIB at 116-17, CIB at 123-26. For the reasons discussed above with respect to Limitation [1b], the evidence shows clearly and convincingly that this limitation is disclosed in Richardson.

iv. Claim Limitation [39c]: "a negative battery terminal connector for connecting the jump starter device to the negative battery terminal of the depleted or discharged battery;"

The parties rely on the same arguments for this claim limitation as for Limitation [1c]. *See* RIB at 116-17, CIB at 123-26. For the reasons discussed above with respect to Limitation [1c], the evidence shows clearly and convincingly that this limitation is disclosed in Richardson.

DELTRAN EX1060
IPR2024-01219

v. Claim Limitation [39d]: "a power switch or circuit connected in circuit with the power supply and the positive and negative battery terminal connectors, the power switch configured to turn power on from the power supply to the depleted or discharged battery when the positive and negative battery terminal connectors are properly connected to the positive and negative battery connectors;"

The parties rely on the same arguments for this claim limitation as for Limitations [1d] and [1e]. *See* RIB at 116-17, CIB at 123-26. For the reasons discussed above with respect to Limitations [1d] and [1e], the evidence shows clearly and convincingly that this limitation is disclosed in Richardson.

vi. Claim Limitation [39e]: "a power switch control system or circuit connected to and controlling the power switch, the power switch control system or circuit configured to detect presence of the depleted or discharged battery when connected between the positive and negative battery terminal connectors and to detect polarity of the depleted or discharged battery when connected between the positive and negative battery terminal connectors;"

Respondents rely on substantially the same arguments for the "detect polarity" portions of this Limitation as for Limitation [1e]. *See* RIB at 116-17. Neither NOCO nor Staff separately dispute Limitation [39e]. *See* SIB at 114-15; CIB at 123-26. For the reasons discussed above with respect to Limitation [1e], the evidence shows clearly and convincingly that Richardson discloses a power switch control system or circuit configured to "detect polarity of the depleted or discharged battery when connected between the positive and negative battery terminal connectors."

In addition, Limitation [39e] requires that the "power switch control system or circuit" is "configured to detect presence of the depleted or discharged battery when connected between the positive and negative battery terminal connectors." Neither NOCO nor Staff dispute that that this

DELTRAN EX1060
IPR2024-01219

limitation is disclosed in Richardson. *See* CIB at 123-126; CRB at 64-68; SIB at 114-15; SRB at 14-23. In addition, the undisputed evidence demonstrates that Richardson discloses a power switch control system or circuit configured to "detect presence of the depleted or discharged battery when connected between the positive and negative battery terminal connectors." Specifically, Richardson discloses a microcontroller 12 connected with sensors 14, which includes vehicle voltage sensor 30. RX-2445 at [0014], [0020], [0016]. The vehicle voltage sensor 30, as Dr. Ricketts explained, detects the presence of a battery. Tr. (Ricketts) at 835:12-836:-13.

Accordingly, Respondents have shown by clear and convincing evidence that Richardson teaches or suggests Limitation [39e] of the '023 patent.

vii. Claim Limitation [39f]: "a USB input circuit connected to the power supply, the USB input circuit configured for converting power from a USB power source to increase power voltage to the power supply; and"

The parties rely on the same arguments for this claim limitation as for Limitation [1f]. *See* RIB at 116, CIB at 123-26. For the reasons discussed above with respect to Limitation [1f], the evidence shows clearly and convincingly that this limitation is disclosed in Zhou but have not shown clearly and convincingly that one of skill in the art would combine Zhou and Richardson, with a reasonable expectation of success, to obtain this claim limitation.

viii. Claim Limitation [39g]: "a USB input connector configured for connecting to the USB power source and providing power input from the USB power source through the USB input connector and the USB input circuit to the power supply."

The parties rely on the same arguments for this claim limitation as for Limitation [1g]. *See* RIB at 116, CIB at 126. For the reasons discussed above with respect to Limitation [1g], the evidence shows clearly and convincingly that this limitation is disclosed in Zhou but have not

DELTRAN EX1060
IPR2024-01219

shown clearly and convincingly that one of skill in the art would combine Zhou and Richardson, with a reasonable expectation of success, to obtain this claim limitation.

***

Accordingly, Respondents have not shown by clear and convincing evidence that claim 39 of the '023 patent is obvious over the combination of Richardson and Zhou.

e. Claim 54

i. Claim Limitation [54pre]: "A jump starting apparatus configured for boosting or charging a depleted or discharged battery having a positive polarity battery terminal and a negative polarity battery terminal, the jump starting apparatus comprising:"

The parties rely on the same arguments for this claim limitation as for Limitation [1pre]. *See* RIB at 118, CIB at 126. For the reasons discussed above with respect to Limitation [1pre], the evidence shows clearly and convincingly that this limitation is disclosed in Richardson.

ii. Claim Limitation [54a]: "a power supply;"

The parties rely on the same arguments for this claim limitation as for Limitation [1a]. *See* RIB at 118, CIB at 126. For the reasons discussed above with respect to Limitation [1a], the evidence shows clearly and convincingly that this limitation is disclosed in Richardson.

iii. Claim Limitation [54b]: "a positive polarity battery terminal connector configured for connecting the jump starting apparatus to the positive polarity battery terminal of the depleted or discharged battery;"

The parties rely on the same arguments for this claim limitation as for Limitation [1b]. *See* RIB at 118, CIB at 126. For the reasons discussed above with respect to Limitation [1b], the evidence shows clearly and convincingly that this limitation is disclosed in Richardson.

DELTRAN EX1060
IPR2024-01219

iv. Claim Limitation [54c]: "a negative polarity battery terminal connector configured for connecting the jump starting apparatus to the negative polarity battery terminal of the depleted or discharged battery;"

The parties rely on the same arguments for this claim limitation as for Limitation [1c]. *See* RIB at 118, CIB at 126. For the reasons discussed above with respect to Limitation [1c], the evidence shows clearly and convincingly that this limitation is disclosed in Richardson.

v. Claim Limitation [54d]: "a power switch or circuit configured to turn on power from the power supply to the positive and negative polarity battery terminal connectors;"

The parties rely on the same arguments for this claim limitation as for Limitation [1d]. *See* RIB at 118, CIB at 126. For the reasons discussed above with respect to Limitation [1d], the evidence shows clearly and convincingly that this limitation is disclosed in Richardson.

vi. Claim Limitation [54e]: "a control system or circuit connected to and controlling the power switch, the control system or circuit configured to detect whether the positive and negative polarity battery terminal connectors have a correct polarity connection with the positive and negative polarity battery terminals of the depleted or discharged battery and prevent an incorrect polarity connection with the positive and negative polarity battery terminals of the depleted or discharged battery prior to turning on the power switch or circuit;"

The parties rely on the same arguments for this claim limitation as for Limitation [1e]. *See* RIB at 118, CIB at 126. For the reasons discussed above with respect to Limitation [1e], the evidence shows clearly and convincingly that this limitation is disclosed in Richardson.

vii. Claim Limitation [54f]: "a USB input connector"

The parties rely on the same arguments for this claim limitation as for Limitation [1g]. *See* RIB at 118, CIB at 126. For the reasons discussed above with respect to Limitation [1g], the evidence shows clearly and convincingly that this limitation is disclosed in Zhou but have not

shown clearly and convincingly that one of skill in the art would combine Zhou and Richardson, with a reasonable expectation of success, to obtain this claim limitation.

viii. Claim Limitation [54g]: "a USB input circuit connecting the USB input connector to the power supply, the USB input circuit comprising a DC/DC converter for up-converting the voltage from the USB input connector to the power supply."

The parties rely on the same arguments for this claim limitation as for Limitation [1f]. *See* RIB at 118, CIB at 126. For the reasons discussed above with respect to Limitation [1f], the evidence shows clearly and convincingly that this limitation is disclosed in Zhou but have not shown clearly and convincingly that one of skill in the art would combine Zhou and Richardson, with a reasonable expectation of success, to obtain this claim limitation.

***

Accordingly, Respondents have failed to establish that Richardson in view of Zhou renders claims 1, 19, 32, 39, and 54 obvious.[117]

2. Obviousness in view of Richardson, Zhou, and Zhang

Respondents contend that Richardson in view of Zhou, and further in view of Zhang renders claim 19 obvious. RIB at 118.

Chinese Patent CN202696190 to Zhang ("Zhang") is entitled An Intelligent Emergency Starting Power Supply With Voice Prompt Function and was published on January 23, 2013. RX-90, cover. The parties do not dispute that Zhang constitutes prior art to the '023 patent under 35 U.S.C. §§ 102(a)(1). *See* SIB at 112; RIB at 109; CRB at 62-63, 68-69. Zhang is directed to "an emergency starting power supply, in particular to an intelligent emergency starting power supply with voice prompt function." RX-90 at [0001].

[117] NOCO did not introduce evidence or argument of secondary indicia of non-obviousness.

Claim 19 depends from claim 18, which in turn depends from claim 1, and requires in addition "further comprising a manual override switch configured to activate a manual override mode to enable a user to connect jump start power to the depleted or discharged vehicle battery when a vehicle battery isolation sensor is unable to detect presence of the vehicle battery" and "wherein the control system or circuit is configured to detect actuation of the manual override switch for at least a predetermined period of time before activation of the manual override mode." As discussed *supra*, the undersigned finds that the additional limitations of claim 19 are disclosed in Richardson.

As an alternative, Respondents contend that Zhang discloses the additional limitations of claim 19, including a 10 second button press to activate a manual override mode, which Zhang refers to as "forced startup." RIB at 118 (citing RX-0090 at [0030]); Tr. (Ricketts) at 821:1-10. Respondents argue that Richardson, Zhou and Zhang may be combined because "Zhang is a jump starter, Richardson is a jump starter" and combining Zhang's button press with Richardson would be "a simple code change in Richardson to hold the button for a longer period of time." Tr. (Ricketts) at 838:14-23.

NOCO contends that Zhang and Richardson are incompatible because in manual mode, Richardson recharges the battery before applying jump start power, while Zhang applies jump start power right away. CRB at 69 (citing Tr. (Fayed) at 979:17-18).[118]

[118] The Staff groups Zhang with Zhou and LT1618 in alleging that they "all disclose USB charging for applications other than jump starters." SIB at 114, SRB at 72. However, Zhang is not relied upon as disclosing USB charging. *See* RIB at 118. Staff also states that "Zhang does not concern a jump starter device," SRB at 72 n.10. However, both experts testified that Zhang was a jump starter, or at least, applies "jump start power." *See* Tr. (Ricketts) at 775:14-18; Tr. (Fayed) at 979:9-16 ("Zhang just applies the jump starter power right away.")

DELTRAN EX1060
IPR2024-01219

Upon review of the submissions and evidence of record, the undersigned finds that Respondents have established, by clear and convincing evidence, that the combination of Richardson and Zhang discloses the additional limitation of claim 32. Dr. Ricketts persuasively testified that it would be a simple coding change to modify Richardson such that an extended button press, such as the 10 seconds disclosed in Zhang, rather than a double press, as disclosed in Richardson, is required to enter manual mode. Tr. (Ricketts) at 838:14-23; RX-0090 at [0030] ("The emergency starting power supply will not be automatically pulled in until it is pressed down for 10 s, to ensure that the user has enough time to confirm the safety of the connection."). The alleged incompatibility of Richardson's manual mode and Zhang's "forced startup mode" in terms of the application of power does not impact the proposed combination.

Accordingly, Respondents have shown by clear and convincing evidence that Richardson in view of Zhang teaches or suggests the additional limitations of claim 19 of the '023 patent. However, because Respondents have not shown sufficient evidence of reason to combine Richardson and Zhou, with a reasonable expectation of success, to obtain the USB-charging limitations, Respondents have failed to show that claim 19 of the '023 patent is obvious over the combination of Richardson, Zhou, and Zhang.

3. Obviousness in view of E-Power 21 and E-Power 10

E-Power 21 and E-Power 10 are alleged prior art lithium-ion jump starters manufactured and sold by Carku. *See* Tr. (Ricketts) at 754:8-13. Respondents rely on several exhibits as evidence of how the E-Power 21 device operates, including a physical product (RPX-0008)[119], a product catalog (RX-2486), a battery pack schematic (RX-4101C), a "smart cable" schematic

[119] Pursuant to Ground Rule 11.8.1, the Carku Respondents opted to submit photographs of their physical exhibits. Citations are to the photographs of each physical exhibit.

DELTRAN EX1060
IPR2024-01219

(RX-2534C), and source code for the "smart cable" (RPX-0326C). *See* RIB at 120; RDX-0007C.6. Respondents also rely on several exhibits as evidence of how the E-Power 10 device operates, including physical products (RPX-0005, RPX-0006, and RPX-0007), schematics of E-Power 10 (RX-2527C and RX-2530C) and a product catalog (RX-2486).

Respondents contend that E-Power 21 in view of E-Power 10 render claims 1, 19, 32, 39, and 54 obvious. RIB at 109. The parties dispute whether the E-Power 21 and E-Power 10 devices with the alleged features are prior art and whether it one of skill in the art would have found a sufficient reason to combine the references as proposed.

a. Prior Art Status of E-Power 21

Respondents allege that the E-Power 21 device with the CC-200 jumper cable was on sale "at least as early as January 2014." RIB at 121. As support, Respondents rely on testimony from Carku's CEO, Mr. Zhifeng Zhang, and R&D Manager Mr. Ming Cheng, testifying as to dates of sale, emails to suppliers regarding production of E-Power 21 battery pack and CC-200 jumper cable, sales records, manufacturing records, and dated schematics for the E-Power 21 battery pack and the CC-200 jumper cable. Mr. Zhang testified that the CC-200 jumper cable, also referred to as a "smart cable" or "intelligent cable," was "sold as a standard part together with E-Power 21 starting from January 2014." Tr. (Zhang) at 645:22-24; RDX-0003C.9. A schematic for the CC-200 jumper cable (RX-2534C) is dated to January 14, 2014. RX-2534C.20; Tr. (Zhang) at 648:9-18 ("[Q]: When did the CC200 printed circuit board as shown in the schematic in slide 9 go into production? [A]: It was after January 14, 2014. It should be February of 2014."). Mr. Zhang testified, based on Carku's manufacturing logs, that the E-Power 21 physical exhibit (RPX-0008) was manufactured between July 1 and 2, 2014, Tr. (Zhang) at 650:19-651:1, and was representative of E-Power 21 devices manufactured prior to July 3, 2014.

DELTRAN EX1060
IPR2024-01219

Id. at 651:8-15. Mr. Zhang further testified that Carku invoiced Paris Corporation on June 2, 2014 for 200 units of the E-Power 21 device, a deposit was paid on June 5, 2014, and the E-Power 21 units were shipped to Paris Corporation on July 9, 2014. *See* Tr. (Zhang) at 679:24-680:24; RDX-0003C.16-18; RX-2523C.1 (Paris Corporation Invoice); RX-2560C[120] at line 1858 (showing shipment of 200 "New 21 Version" devices to Paris Corporation on July 9, 2014).

NOCO does not dispute that some version of the E-Power 21 device was sold prior to the July 3, 2014 effective filing date of the '023 patent,[121] but NOCO contends that there is "no evidence" that the E-Power 21 device was offered for sale, sold, or used with the CC-200 smart cable as depicted in the schematic at RX-2534C.[122] CIB at 115. NOCO contends that there are "significant gaps and inconsistencies" in the evidence offered to show the features of the E-Power 21 device. *Id.* Specifically, NOCO argues that the product catalog depicting the smart cable depicts a cable without an LED, while the schematic describes a red LED. *Id.* (citing Tr. (Ricketts) at 932:5-21, 934:10-12); CRB at 57.

Staff asserts that "there is evidence that the E-Power 21 was designed and sold with an 'Intelligent Jumper Cable' accessory," but "the specific features of any 'Intelligent Jumper Cable' that on sale or publicly used with the E-Power 21 before the critical date are not known to any reasonable certainty." SIB at 110. Staff contends that the schematics should be accorded minimal weight because they cannot be reliably dated, the "Intelligent Jumper Cable" has gone

[120] References to RX-2560C, which is a native excel are to the English translation of that document.

[121] Indeed, as NOCO points out, the product catalog for the E-Power 21 was considered by the Examiner during prosecution of the '023 patent. *See* CIB at 115; '023 patent, References Cited. The E-Power 21 reference in this investigation, however, is, as discussed *infra* not limited to the product catalog before the Examiner.

[122] NOCO references a single page schematic, RX-2542C, while Respondents reference the schematic as an attachment to an email at RX-2534C. The parties do not appear to dispute that the schematic is the same in both exhibits.

DELTRAN EX1060
IPR2024-01219

through several iterations, and because the schematics are and would not have been available to the public. SIB at 111-12; SRB at 61.

In response, Respondents contend that extensive evidence demonstrates that there was a single CC-200 smart cable sold with the E-Power 21 device, despite the inconsistency in the product catalog picture. RRB at 63. Respondents assert that the schematic (RX-2534C) is consistent with the smart cable in the E-Power 21 physical exhibit (RPX-0008), which is additionally consistent with photographs of the smart cable that Carku sent to NOCO in February of 2014 (RX-1749C.5). Further, Respondents argue that the schematic and the source code for CC-200 reference the same version number, 140105A. *Compare* RPX-0326C (source code) *with* RX-2534C (schematic). Respondents contend that the inconsistency in the product catalog (RX-2486) "is just a clerical error of not replacing an old, pre-production version of the cable with the final version sold to customers." RRB at 64.

Upon review of the submissions and evidence of record, the undersigned finds that Respondents have established, by clear and convincing evidence, that E-Power 21, with the CC-200 smart cable, are prior art under 35 U.S.C. § 102(a)(1), as they were on sale prior to the July 3, 2014 effective filing date of the '023 patent.

Respondents introduced persuasive evidence and testimony showing that the E-Power 21 device was sold with the CC-200 smart cable prior to July 3, 2014. *See* Tr. (Zhang) at 679:24-680:24; RDX-0003C.16-18; RX-2523C.1 (Paris Corporation Invoice dated June 2, 2014); RX-2560C at ln. 1858 (showing shipment to Paris Corporation on July 9, 2014). Testimony from Mr. Zhang demonstrates that the E-Power 21 physical exhibit, RPX-0008, which was introduced

DELTRAN EX1060
IPR2024-01219

without objection, was manufactured prior to July 3, 2014, includes the CC-200 smart cable,[123] and was representative of all E-Power 21 devices sold prior to July 3, 2014. Tr. (Zhang) at 650:19-651:1, 651:8-15; RX-2523C.1 (Paris Corporation Invoice dated June 2, 2014); RX-2560C at line 1858 (showing shipment to Paris Corporation on July 9, 2014); RX-2521C.48 (Carku manufacturing log showing serial number N1552226 on RPX-0008 device corresponds to serial numbers manufactured on July 1, 2024).[124] Mr. Zhang's testimony is consistent with other evidence in the record, including because the CC-200 smart cable in RPX-0008 (which includes an LED) appears to match photos of the smart cable (also including an LED) in photos sent to NOCO and Mr. Nook in February of 2014 (RPX-1749C.1, 5).[125]

[123] RPX-0008 includes the E-Power 21 battery pack, the CC-200 cable, as well as additional accessory cables in a black folio. *See* RPX-0008.11. The additional accessory cables and the black folio correspond to the accessory cables and black folio identified in the product catalog, RX-2486.10, including 8 different laptop connectors and corresponding cable, a car charger, 3 mobile device connectors (in white), and a barrel "home" charger. *Compare* RPX-0008.11, 25 *with* RX-2486.11. This is further corroboration that RPX-0008 represents E-Power 21 products sold prior to July 3, 2014.

[124] Mr. Zhang also testified that there was only a single printed circuit board used in the CC-200 smart cable sold or offered for sale with the E-Power 21 device prior to July 3, 2014. Tr. (Zhang) at 647:21-24.

[125] The photos of the "smart cable" were sent to NOCO by Carku in connection with NOCO's communication with Carku to purchase lithium-ion jump starter products, which began in December of 2013. *See* RX-2450C.3 ("Hi Carku, My sourcing team provided me with your website. We are looking for a lithium-ion jump starter. Your multi-function jump-starter is similar to what we are looking for. We would like to get a quotation and samples as soon as possible."); Tr. (Nook) at 128:15-19. Between December 21, 2013 and February 2014, NOCO and Carku exchanged emails, including photographs, catalogs, manufacturing quotations, and proposed product specifications and had an in-person meeting at Carku's facility on January 16, 2014. *See* RX-4146; RX-1749C; RX-1768C; RX-1742C; Tr. (Nook) at 125:21-147:13; Tr. (Zhang) at 686:12-688:7. The parties may also have exchanged samples. *See* RX-4146.2 ("Our engineers have completed testing on the jump starter samples you provided.").

DELTRAN EX1060
IPR2024-01219

RPX-0008 Jumper Cable	RX-1749C.1, .5 "Smart Cable" (photo sent to NOCO in February 2014)
	

The evidence also shows a CC-200 circuit schematic (RX-2534C)[126] dated January 2014. Tr. (Zhang) at 647:16-20 ("This is the schematic of CC200 that is kept on Carku's server, and the model number shown here is CC200-140105A. The date is January 14, 2014."). The schematic is consistent with the RPX-0008 jumper cable and, as NOCO acknowledges, shows that an LED is included. Tr. (Ricketts) at 932:5-21 (testifying that the CC-200 schematic at RX-2534C includes a symbol for an LED). The evidence further shows that CC-200 source code (RPX-326C[127]) carries the same version number, 14.01.05A, as the schematic. *See* Tr. (Cheng) at

[126] Staff contends that the schematics "cannot be reliably dated," because Mr. Cheng, a Carku witness who discussed the schematics, did not begin working at Carku until 2019. SIB at 111-12. Mr. Zhang, however, who was at Carku in 2013 and 2014, testified as to the dates of the relevant schematics and their storage on Carku's servers. *See, e.g.*, Tr. (Zhang) at 683:7-12 ("A. This was the schematic of E-Power 10F that existed in Carku's server. The model number shown here is CZ-10F-1309148. The date shown is September 14, 2013."), 683:21-684:1 ("This is the schematic that existed in Carku's server. That's the schematic of E-Power 10. The model number is CZ-10-1311208. The date is November 26, 2013."), 651:17-22 ("This was the schematic that was kept on Carku's server for E-Power 21. The model number here is CZ-21-13.11148. The date is November 29, 2013."), 647:16-20 ("This is the schematic of CC200 that is kept on Carku's server, and the model number shown here is CC200-140105A. The date is January 14, 2014."). Further, many of the schematics were produced as attachments to dated emails to Carku's suppliers. *See, e.g.*, RX-2534C.11 (email dated January 15, 2014 with attachment of CC-200 schematic dated January 14, 2014); RX-4101C.35, 67 (email dated May 23, 2014 with attachment of E-Power 21 schematic dated November 29, 2013); RX-2527C.18, 34 (email dated September 14, 2013 with attachment of E-Power 10Z schematic dated September 14, 2013); RX-2530C.15, 27 (email dated November 26, 2013 with attachment of E-Power 10 schematic dated November 26, 2013). The intrinsic dates of the schematics are corroborated by Mr. Zhang and the emails to which they were attached.

[127] The source code was admitted as a physical exhibit, but is maintained by counsel pursuant to instruction by the undersigned. Tr. (ALJ Bhattacharyya) at 1276:6-10.

DELTRAN EX1060
IPR2024-01219

708:20-24 ("[Q]: I'd like to pull up a document on the overhead camera. That is marked RPX-326C. Mr. Cheng, what is this document? [A]: This is the source code of the MCU of CC-200. The version number is 14.01.05A."). Accordingly, there is highly persuasive testimony and documentary evidence showing that RPX-0008, the CC-200 schematic (RX-2534C), and the source code (RPX-326C) represent the E-Power 21 devices as sold prior to July 3, 2014.

NOCO's primary argument in opposition is that a photo in the Carku catalog for the "Intelligent Jumper Cable" referenced as an included accessory with the E-Power 21 does not include an LED indicator on the jumper cable as referenced in the schematic (and as evident in RPX-008). *See* RX-2486.10-11. However, the photo relied upon by NOCO is itself inconsistent with the text description accompanying it. In particular, the product catalog text references a "TEST" button that appears in RPX-0008 and photographs of the smart cable sent to NOCO—but does not appear in the product catalog photo (which has a "SWITCH" button).[128] *Compare* RPX-0008 (including "TEST" button) *and* RX-1749C.5 (email and photos sent to NOCO in February 2014) (including "TEST" button) *with* RX-2486.11 (product catalog) (photograph

[128] Staff posits concern with reliance on the schematics, including because the schematics themselves were not public. *See* SIB at 112. It is proper to consider the non-public schematics and source code as evidence of the features and operations of the E-Power 21 device sold. *See, e.g.*, *Helsinn Healthcare S.A. v. Teva Pharm*., 586 U.S. 123, 125 (2019) (for purposes of pre-AIA and post-AIA "on sale" prior art, the sale need not "make the details of the invention available to the public"); *CliniComp Int'l, Inc. v. Athenahealth, Inc.*, No. A-18-CV-00425-LY, 2020 WL 7011768, at *2 (W.D. Tex. Oct. 28, 2020) (permitting patent challenger to present invalidity grounds related to prior art system based on "non-public information"); *IPA Techs. Inc. v. Microsoft Corp.*, No. CV 18-1-RGA, 2024 WL 1797394, at *5 (D. Del. Apr. 25, 2024), *reconsideration denied*, No. CV 18-1-RGA, 2024 WL 1962070 (D. Del. May 2, 2024) ("Defendant's invalidity theories are that the CNET OAA System is prior art due to public use under pre-AIA 35 U.S.C. § 102(b) and the RETSINA system is prior art as a prior invention under § 102(g). Defendant is not arguing that the evidence of the system art was publicly used or constituted a prior invention. The fact that printed publications are used as evidence does not change what Defendant's invalidity theories are based on—the underlying system itself.").

DELTRAN EX1060
IPR2024-01219

depicts "SWITCH" button, but text references "TEST" button). Particularly given the documentary evidence of record, as well as Mr. Zhang's testimony, the catalog photo does not significantly weigh against Respondents' position.

Accordingly, in view of the record as a whole, the evidence—including Mr. Zhang's testimony, the dated schematics, sales records, physical exhibit, communications with suppliers, communications with NOCO, source code, and product catalog description—shows clearly and convincingly that E-Power 21 was on sale with the CC-200 smart cable prior to July 3, 2014.

b. Prior Art Status of E-Power 10

Respondents contend that the E-Power 10 device was on sale "at least as early as 2013." RIB at 121-22. As support, Respondents rely on testimony from Carku's CEO, Mr. Zhifeng Zhang, and R&D Manager Mr. Ming Cheng, testifying as to dates of sale, emails to suppliers regarding production of E-Power 10 printed circuit board, sales records, manufacturing records, and schematics for E-Power 10 battery packs. Mr. Zhang testified that two versions of the E-Power 10, the E-Power CZ-10F and E-Power CZ-10Z were sold between 2013 and July 3, 2014, with different lithium-ion battery chemistries and different capacities. *See* Tr. (Zhang) at 683:5-20; RX-2560C at lns. 1137, 1138 (detailing shipment of "10-version Carku (6000MAH)" and "10-F version Carku (4000MAH)"). A schematic for the CZ-10F (RX-2527C.1, 17)[129] battery pack is dated to September 14, 2013, and a schematic for the CZ-10 is dated to November 26, 2013 (RX-2530C.1, 13). Tr. (Zhang) at 683:7-12, 683:21-684:1. Mr. Zhang further testified that

[129] The parties also reference a single page E-Power CZ 10F schematic, RX-2481C, as well as the schematic as an attachment to an email at RX-2527C. Similarly, the parties also reference a single-page E-Power 10 CZ10 schematic, RX-2492C, as well as the schematic as an attachment to an email at RX-2530C. The parties do not appear to dispute that the schematics are the same in both exhibits.

DELTRAN EX1060
IPR2024-01219

Carku invoiced Paris Corporation on June 2, 2014 for 1000 units of the E-Power 10 device,[130] a deposit was paid on June 5, 2014, and the E-Power 10 units were shipped to Paris Corporation on July 9, 2014. *See* Tr. (Zhang) at 685:16-23; RDX-0003C.30-31; RX-2523C.1 (Paris Corporation Invoice); RX-2560C at ln. 1859 (detailing shipment of 1000 E-Power 10 units to Paris Corporation). Further, Mr. Zhang testified, based on sales and shipping records, that Carku sold 1 E-Power 10 CZ-10 and 1 E-Power 10 CZ-10F product to an unidentified customer that were shipped on April 30, 2014. *See* Tr. (Zhang) at 685:3-14 ("At Row 1137 and 1138, these rows show that on April 30 of 2014, we shipped one unit of E-Power 10 and one unit of E-Power 10F to our customer."); RX-2516C at lns. 18, 19 (identifying sale of "10 Version Carku (6000MAH Orange)" on March 30, 2014, with a quantity of "1" and sale of "10-F Version Carku (4000MAH) CARKU Blue) on March 30, 2014, with a quantity of "1"); RX-2560C at lns. 1137-38 (detailing shipment of 1 "10 version Carku (6000MAH) Orange" and 1 "10-F version Carku (4000MAH) Carku Blue" on April 30, 2014).

Additionally, Mr. Zhang testified, based on Carku's manufacturing logs and the serial numbers on the physical exhibits, that the three E-Power 10 physical exhibits (RPX-0005, RPX-0006, and RPX-0007) were manufactured on June 8, 2014 (RPX-0005) and July 2, 2014 (RPX-0006 and RPX-0007). Tr. (Zhang) at 681:22-682:24; RX-2521C.42, 103 (Carku manufacturing log (page 42) and English translation (page 103) showing serial number N1437711 on RPX-0005 device corresponds to serial numbers manufactured on June 8, 2024); RX-2521C.48, 109 (Carku manufacturing log (page 48) and English translation (page 109) showing that serial number 1407C00110 on RPX-0006 corresponds to serial numbers manufactured on July 2, 2014); RX-

[130] The invoice notes this was for the 6000 mAH lithium jump starter, which is the "CZ-10" E-Power 10 device. *See, e.g.*, RX-2560C at lns. 1137, 1138 (detailing shipment of "10-version Carku (6000MAH)" and "10-F version Carku (4000MAH)"); RX-2523C.1 (Paris Corporation invoice).

DELTRAN EX1060
IPR2024-01219

2521C.48, 109 (Carku manufacturing log (page 48) and English translation (page 109) showing that serial number 1407C00354 on RPX-0007 corresponds to serial numbers manufactured on July 2, 2014). Based on the manufacturing logs and serial numbers, Mr. Zhang was able to determine that the RPX-0006 and RPX-0007 were some of the 1000 E-Power 10 units sold to Paris Corporation in June of 2014 and shipped on July 9, 2014. Tr. (Zhang) at 682:9-24.NOCO does not dispute that some version of the E-Power 10 device was sold prior to the July 3, 2014 effective filing date of the '023 patent,[131] but NOCO contends that there is "no coherent or consistent proof that shows the features of any version of the alleged E-Power 10 device as it was offered for sale, sold, or used." CIB at 116. NOCO contends that the schematics and advertised battery capacities differ, CIB at 117-18, and that the schematics do not include ports or connectors for jumper cables. CIB at 118. Further, relying on Dr. Fayed's testimony, NOCO contends that the schematics for the CZ-10F and CZ-10 devices "differ widely in design" even though they are for products in the same line. CIB at 119 (citing Tr. (Fayed) at 958:22-960:12).

Staff asserts that the E-Power 10 device qualifies as prior art because they were sold prior to the July 3, 2014 effective filing date.[132] SIB at 111.

In response, Respondents contend that the alleged inconsistency between battery capacity of the CZ-10 in the schematic and in the product catalog is minimal and, according to Dr.

[131] Indeed, as NOCO points out, the product catalog for the E-Power 10 was considered by the Examiner during prosecution of the '023 patent. *See* CIB at 116; '023 patent, References Cited (JX-0005.7). The E-Power 10 reference in this investigation, however, is, as discussed *infra* not limited to the product catalog before the Examiner.

[132] As with the E-Power 21 devices, Staff also contends that the schematics should be accorded minimal weight because they cannot be reliably dated and posits concern as to reliance on the non-public schematics. SIB at 111-12; SRB at 61. As discussed above, *supra* Part VII.C.3.b, the undersigned finds that the dates of the E-Power 10 schematics have been reasonably established based on Mr. Zhang's testimony and the production as attachments to contemporaneous emails and that it is proper to rely on the non-public schematics as evidence of the feature and operation of the E-Power 10 devices.

DELTRAN EX1060
IPR2024-01219

Ricketts, attributable to marketing. RRB at 64-65 (citing Tr. (Ricketts) at 817:13-19). Respondents also contend that the differences between the CZ-10F and CZ-10 products are irrelevant because both versions were sold prior to the July 3, 2014 effective filing date of the '023 patent. RRB at 65. Finally, and again relying on Dr. Ricketts, Respondents contend that the absence of a port or a connector to jumper cables on the schematic is not unusual because the schematics are for printed circuit boards ("PCBs"), and external jumper cable connectors are not typically shown on PCB schematics. RRB at 65 (Tr. (Ricketts) at 921:15-922:7). Further, Respondents contend that the physical exhibits of E-Power 10 show jumper cable ports. *See* RPX-0007; RDX-0205.

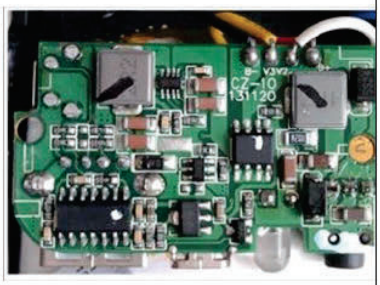
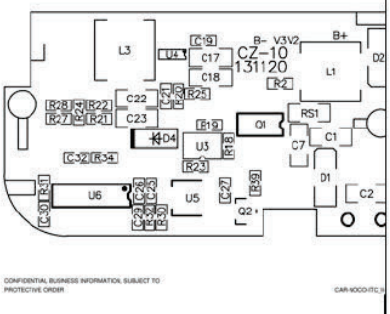
Upon review of the submissions and evidence of record, the undersigned finds that Respondents have established, by clear and convincing evidence, that E-Power 10 is prior art under 35 U.S.C. § 102(a)(1), as it was on sale prior to the July 3, 2014 effective filing date of the '023 patent.

Respondents introduced persuasive evidence and testimony showing that the E-Power 10 devices, including the three physical exhibits, were made and sold prior to July 3, 2014. *See* Tr. (Zhang) at 685:3-14 ("At Row 1137 and 1138, these rows show that on April 30 of 2014, we shipped one unit of E-Power 10 and one unit of E-Power 10F to our customer."); RX-2516C at lns. 18, 19 (identifying sale of "10 Version Carku (6000MAH Orange)" on March 30, 2014, with a quantity of "1" and sale of "10-F Version Carku (4000MAH) CARKU Blue) on March 30, 2014, with a quantity of "1"); RX-2560C at lns. 1137-38 (detailing shipment of 1 "10 version Carku (6000MAH) Orange" and 1 "10-F version Carku (4000MAH) Carku Blue" on April 30, 2014); Tr. (Zhang) at 685:16-23; RDX-0003C.30-31; RX-2523C.1 (Paris Corporation Invoice); RX-2560C at ln. 1859 (detailing shipment of 1000 E-Power 10 units to Paris Corporation).

DELTRAN EX1060
IPR2024-01219

Testimony from Mr. Zhang demonstrates that two of the E-Power 10 physical exhibits, RPX-0006 and RPX-0007, which were introduced without objection, were manufactured and sold to Paris Corporation prior to July 3, 2014. Tr. (Zhang) at 681:22-682:24. ("[Q]: I'm showing you a device identified as RPX-6 on your monitor. As well, it's next to you, Mr. Zhang. What is this device? [A]: This was the E-Power 10 product that Carku made for Paris Corporation in 2014."); RX-2523C.1 (Paris Corporation Invoice); RX-2521C.48, 109 (Carku manufacturing log (page 48) and English translation (page 109) showing that serial number 1407C00110 on RPX-0006 corresponds to serial numbers manufactured on July 2, 2014); RX-2521C.48, 109 (Carku manufacturing log (page 48) and English translation (page 109) showing that serial number 1407C00354 on RPX-0007 corresponds to serial numbers manufactured on July 2, 2014).

Mr. Zhang's testimony is consistent with other evidence in the record, including because the circuit board in RPX-0007 (*see* RPX-0007.16, 17) references the same model number, CZ-10-13.11.20, as the circuit board layouts (RX-2530C.8-9) and the schematic (RX-2530C.13) for the E-Power 10 CZ-10 devices.

RPX-0007 Circuit Board (RPX-0007.16, 17)	**E-Power 10 CZ-10 Circuit Board Layouts Sent to Carku from Supplier on November 26, 2013 (RX-2530C.15, 22, 23)**	**E-Power 10 CZ-10 Schematic Sent to Carku from Supplier on November 26, 2013 (2530C.27)**
		

Further, the sales records identify that the E-Power 10 devices sold to Paris Corporation have a 6000 mAH battery capacity, and stickers on both RPX-0006 and RPX-0007 identify the battery capacity as 6000 mAH. *See* RPX-0006.0015 (sticker on device reads "Battery Capacity: 6000 mAH); RPX-0007.15 (same); RX-2523C.1 (Paris Corporation Invoice identifying sale of "E-Power 10 6000mAH lithium jump starter"); RX-2560C at ln. 1859 (detailing shipment of "New edition 10 version (6000MAH) light black full" to Paris Corporation). This is further corroboration that E-Power 10 devices were made and sold with the identified features and operations prior to July 3, 2014.

NOCO's primary argument in opposition is that the schematics for the E-Power 10 products do not match the 6000 mAH battery capacity advertised in Carku's product catalog.[133] As shown above, however, the same model number is referenced in the November 26, 2013 schematic of the E-Power 10 CZ-10 (RX-2530C.13), the circuit board of the physical exhibit (RPX-0007), and the circuit board layouts of the E-Power CZ-10 (RX-2530C.22, 23). Carku's sales and shipment records for the RPX-0007 device, along with Mr. Zhang's testimony and stickers on the physical exhibits themselves, show that E-Power 10 CZ-10 devices with the same

[133] NOCO argues that the battery capacity shown in the November 26, 2013 schematic of E-Power 10 CZ-10 is [redacted]. NOCO asserts that as a matter of "electrical principle" [redacted] Dr. Ricketts, however, explained that Carku and other battery manufacturers advertise battery capacity as a sum of the capacity of individual cells. Tr. (Ricketts) at 817:11-21. The record evidence as a whole is consistent with Dr. Rickett's explanation. For example, [redacted] indicating that the capacity of the cells are added, which Dr. Fayed appeared to acknowledge. Tr. (Fayed) at 956:16-22 [redacted]. Further, the '023 specification describes a lithium polymer battery pack with "three 3.7V, 2666 mAH" described as providing "8000 Ah." *See* '023 patent, 4:9-14. The evidence does not show that this issue persuasively controverts the evidence of record discussed above.

model number as the allegedly contradictory schematic (RX-2530C.13) were identified as having a 6000 mAH capacity. *See* RPX-0007.15 (sticker on device reads "Battery Capacity: 6000 mAH); *see also* RPX-0006.0015 (same); RX-2523C.1 (Paris Corporation Invoice identifying sale of "E-Power 10 6000mAH lithium jump starter," which Mr. Zhang testified included RPX-0007); RX-2560C at ln. 1859 (detailing shipment of "New edition 10 version (6000MAH) light black full" to Paris Corporation, which Mr. Zhang testified included RPX-0007); Tr. (Zhang) at 681:22-682:24 (testifying based on manufacturing logs and serial numbers that RPX-0007 and RPX-0006 were devices sold to Paris Corporation in June 2014, and manufactured and shipped in July 2014). Accordingly, the evidence persuasively demonstrates that the same E-Power 10 CZ-10 device depicted in schematics as containing a 5400 mAH battery capacity was sold and advertised as a 6000 mAH battery capacity. The same is true for the E-Power 10 CZ-10F product; persuasive evidence demonstrates that the same E-Power 10 CZ-10 device depicted in the September 14, 2013 schematic (RX-2527C.1, 17) as containing a 3600 mAH battery pack was sold and advertised as containing a 4000 mAH battery capacity. *See, e.g.*, RX-2516C at lns. 18, 19 (identifying sale of "10-F Version Carku (4000MAH) CARKU Blue) on March 30, 2014, with a quantity of "1"); RX-2560C at lns. 1137-38 (detailing shipment of 1 "10-F version Carku (4000MAH) Carku Blue" on April 30, 2014). The documentary evidence of record, in view of the testimony of Mr. Zhang and Dr. Ricketts, does not support NOCO's contentions that the schematics are inconsistent with the E-Power 10 products sold or offered for sale prior to July 3, 2014.[134]

[134] NOCO also argues that the schematics for the E-Power 10 CZ-10 and E-Power 10 CZ-10F products are different in terms of power conversion. *See* CIB at 119. As these were different products, and there is evidence that both products were sold prior to July 3, 2014, the differences in product design do not impact the devices' prior art status. *See* Tr. (Zhang) at 685:3-14 ("At Row 1137 and 1138, these rows

DELTRAN EX1060
IPR2024-01219

Finally, as to NOCO's arguments regarding the schematics' lack of connectors for jumper cables, the undersigned does not find that argument persuasive. Dr. Ricketts explained that schematics for PCBs do not typically depict external connectors, such as the jumper cable ports. Tr. (Ricketts) at 921:15-922:7. The remaining corroborating evidence—the physical exhibits, product catalog, and video presentation given by Mr. Zhang in October of 2013 (RX-0071)—all clearly depict a port for a jumper cable.[135]

In view of the record as a whole, the evidence—including Mr. Zhang's testimony, the dated schematics, sales records, physical exhibits, communications with suppliers, and the product catalog—establishes by clear and convincing evidence that E-Power 10 was on sale prior to July 3, 2014.

c. Claim 1

The parties do not dispute that E-Power 21 discloses Limitations [1a]-[1d].[136] CIB at 120-21; CRB at 61-62; SIB at 112-13; SRB at 69-71. Likewise, the parties do not dispute that E-Power 10 discloses USB charging as claimed in Limitations [1f] and [1g]. *See* SRB at 67 ("It included a 5V/2A micro USB charging input."); RRB at 69 ("NOCO does not dispute that EPower-21 and EPower-10 collectively disclose all the limitations of independent claims 1, 19,

show that on April 30 of 2014, we shipped one unit of E-Power 10 and one unit of E-Power 10F to our customer."); RX-2516C at lns. 18, 19 (identifying sale of "10 Version Carku (6000MAH Orange)" on March 30, 2014, with a quantity of "1" and sale of "10-F Version Carku (4000MAH) CARKU Blue) on March 30, 2014, with a quantity of "1").

[135] NOCO also argues that there is no evidence that the E-Power 10 device was ever sold or offered for sale with the CC-200 "smart" jumper cable. CRB at 60. The undersigned understands that the CC-200 "smart" cable is part of the E-Power 21 device with which the E-Power 10 is combined. The undersigned addresses the reason to combine the two references below.

[136] Staff—but not NOCO—disputes the disclosure of Limitation [1e] in E-Power 21. *See* SRB at 69 ("As a threshold matter, the claims should be interpreted the same way for invalidity as for infringement, and there is no evidence that the prior art Carku products satisfy the "control system or circuit" limitations in claims 1 and 54 or the "power switch control system or circuit" limitation in claim 39, as those limitations are construed by the Staff.").

DELTRAN EX1060
IPR2024-01219

and 54."); CRB at 61-62 (disputing only that "the proposed combination of the alleged EPower-21 device and the alleged EPower-10 would not have been obvious"). However, the parties dispute whether one of skill in the art would combine E-Power 21 and E-Power 10 to obtain the claimed invention with a reasonable expectation of success and the parties dispute whether E-Power 21 and E-Power 10 were on sale with the identified features prior to the July 3, 2014 effective filing date of the '023 patent. For the reasons discussed above and below, Respondents have established, by clear and convincing evidence, that one of skill in the art would have reason to combine E-Power 21 and E-Power 10 with a reasonable expectation of success to obtain the claimed invention, and that the E-Power 21 and E-Power 10 devices with the identified features were on sale prior to the July 3, 2014 effective filing date of the '023 patent.

i. Claim Limitation [1pre]: "A jump starting apparatus configured for boosting or charging a depleted or discharged battery having a positive polarity battery terminal and a negative polarity battery terminal, the jump starting apparatus comprising:"

Neither NOCO nor Staff dispute that that this limitation is disclosed in E-Power 21 or E-Power 10. *See* CIB at 120-21; CRB at 61-62; SIB at 112-13; SRB at 69-71. In addition, the undisputed evidence demonstrates that E-Power 21 and E-Power 10 are jump starting apparatuses for boosting or charging a battery. *See* RX-2486.10 ("Powerful capability for jump Start 12V vehicle"); RX-2486.5 ("Powerful capability for jump Start 12V vehicle"); RPX-0008; Tr. (Ricketts) at 754:16-23; RDX-0007C.25.

Accordingly, the Respondents have shown by clear and convincing evidence that E-Power 21 discloses Limitation [1pre] of the '023 patent.

DELTRAN EX1060
IPR2024-01219

ii. Claim Limitation [1a]: "a power supply"

Neither NOCO nor Staff dispute that that this limitation is disclosed in E-Power 21 or E-Power 10. *See* CIB at 120-21; CRB at 61-62; SIB at 112-13; SRB at 69-71. In addition, the undisputed evidence demonstrates that E-Power 21 and E-Power 10 include a power supply, specifically, an internal lithium-ion battery. *See* RDX-0007C.26-28; Tr. (Ricketts) 756:5-757:1; Tr. (Ricketts) 730:6-7 ("Well, the E-Power 21 and E-Power 10, both have lithium-based batteries.").

Accordingly, the Respondents have shown by clear and convincing evidence that E-Power 21 discloses Limitation [1a] of the '023 patent.

iii. Claim Limitation [1b]: "a positive polarity battery terminal connector configured for connecting the jump starting apparatus to the positive polarity battery terminal of the depleted or discharged battery;"

Neither NOCO nor Staff dispute that that this limitation is disclosed in E-Power 21. *See* CIB at 120-21; CRB at 61-62; SIB at 112-13; SRB at 69-71. In addition, the undisputed evidence demonstrates that E-Power 21 discloses a positive polarity battery terminal connector, specifically, E-Power 21 discloses the smart jumper cables with a red battery clamp (positive). *See* RPX-0008.11; Tr. (Ricketts) at 757:2-23 ("So the E-Power 21 uses the intelligent jumper cable, which is the one on the right. It has a positive polarity battery terminal, which is the red one. It has a negative-polarity terminal, black. Both are configured to connect the jump-starting apparatus to the respective positive and negative terminals of a depleted or discharged battery."); RDX-0007C.29; RX-2486.11.

Accordingly, the Respondents have shown by clear and convincing evidence that E-Power 21 discloses Limitation [1b] of the '023 patent.

DELTRAN EX1060
IPR2024-01219

iv. Claim Limitation [1c]: "a negative polarity battery terminal connector configured for connecting the jump starting apparatus to the negative polarity battery terminal of the depleted or discharged battery;"

Neither NOCO nor Staff dispute that that this limitation is disclosed in E-Power 21. *See* CIB at 120-21; CRB at 61-62; SIB at 112-13; SRB at 69-71. In addition, the undisputed evidence demonstrates that E-Power 21 discloses a positive polarity battery terminal connector, specifically, E-Power 21 discloses the smart jumper cables with a red battery clamp (positive). *See* RPX-0008.11; Tr. (Ricketts) at 757:2-23 ("So the E-Power 21 uses the intelligent jumper cable, which is the one on the right. It has a positive polarity battery terminal, which is the red one. It has a negative-polarity terminal, black. Both are configured to connect the jump-starting apparatus to the respective positive and negative terminals of a depleted or discharged battery."); RDX-0007C.29; RX-2486.11.

Accordingly, the Respondents have shown by clear and convincing evidence that E-Power 21 discloses Limitation [1c] of the '023 patent.

v. Claim Limitation [1d]: "a power switch or circuit configured to turn on power from the power supply to the positive and negative polarity battery terminal connectors;"

Neither NOCO nor Staff dispute that that this limitation is disclosed in E-Power 21. *See* CIB at 120-21; CRB at 61-62; SIB at 112-13; SRB at 69-71. In addition, the undisputed evidence demonstrates that E-Power 21 discloses a power switch or circuit configured to turn on power from the power supply to the positive and negative battery terminal connectors. Specifically, E-Power 21 discloses a relay switch 34. *See* RX-2534C.10 (CC-200 schematic); Tr. (Ricketts) at 757:24-758:16 ("So on the upper right is a relay. So that's a power switch that's configured to turn on the power from the power supply to the positive and negative terminals, it's configured

DELTRAN EX1060
IPR2024-01219

to do that because the positive line will be connected when it's closed. It's controlled by several transistors that are then connected to the microprocessor. I think it's U2 which is the control system or circuit, that will be operating the switch."); RDX-0007C.30.

Accordingly, the Respondents have shown by clear and convincing evidence that E-Power 21 discloses Limitation [1d] of the '023 patent.

vi. Claim Limitation [1e]: "a control system or circuit connected to and controlling the power switch, the control system or circuit configured to detect whether the positive and negative polarity battery terminal connectors have a correct polarity connection with the positive and negative polarity battery terminals of the depleted or discharged battery prior to turning on the power switch or circuit;"

Staff, but not NOCO, disputes that that this limitation is disclosed in E-Power 21. *See* CIB at 120-21; CRB at 61-62; SIB at 112-13; SRB at 69-71. Staff's argument is that "there is no evidence that the prior art Carku products satisfy the 'control system or circuit' limitations in claims 1 and 54 or the 'power switch control system or circuit' limitation in claim 39, as those limitations are construed by the Staff." SIB at 69. The undersigned interprets this as an argument that there is no evidence that E-Power 21 includes both a reverse polarity detection circuit and a battery presence detection circuit. *See* SIB at 80-81; SRB at 48-49. For the same reasons as discussed with respect to infringement, *supra*, the undersigned does not agree that a separate battery presence sensor and reverse polarity detection circuit are required to satisfy Limitation [1e].

In addition, the undisputed evidence demonstrates that E-Power 21 discloses a control system or circuit connected to and controlling the power switch, the circuit or system configured to detect a correct polarity connection prior to turning on the power switch or circuit. Specifically, E-Power 21 discloses a reverse polarity detection circuit comprised of elements

DELTRAN EX1060
IPR2024-01219

which produce signals "OUT+" and "LOW_SCAN" which are inputs to the microprocessor U2. *See* Tr. (Ricketts) at 760:10-761:8; RDX-0007C.33. Pins EN_1 and EN_2, in turn, connect the microprocessor to pins Q1 and Q2, which turn on the power switch. Tr. (Ricketts) at 761:9-12; RX-2534C.10 (CC-200 schematic); RDX-0007C.33. Dr. Ricketts also testified that the functions are discernible in the source code for the CC-200 cable sold with the E-Power 21 device, and that E-Power 21 "does detect a correct polarity prior to closing the switch." Tr. (Ricketts) at 761:13-762:18.

Accordingly, the Respondents have shown by clear and convincing evidence that E-Power 21 discloses Limitation [1e] of the '023 patent.

vii. Claim Limitation [1f]: "a USB input circuit connected to the power supply, the USB input circuit comprising a DC/DC converter, the USB input circuit configured for converting power from a USB power source to increase power voltage to the power supply; and"

The parties agree that E-Power 21 does not teach the claimed "USB input circuit," and the parties do not dispute that E-Power 10 teaches a USB charging circuit. *See* CIB at 120-21; CRB at 61-62; SIB at 112-13; SRB at 69-71. The undisputed evidence also demonstrates that E-Power 10 includes a USB input circuit including a DC-DC converter configured to convert power from a USB power source and increase the voltage to the power supply. Specifically, Dr. Ricketts testified that the E-Power 10 CZ-10F schematic discloses a micro-USB input with an element U1, which is a DC-to-DC converter that boosts the voltage from 5V to 14V. Tr. (Ricketts) at 764:2-18; RX-2527C.17 (E-Power 10 CZ-10F schematic); RDX-0007C.36. Dr. Ricketts testified that the E-Power 10 CZ-10 schematic discloses a micro-USB input which goes through a "boost converter" U3, and converts the 5V input to 14V, and then "puts it into the

DELTRAN EX1060
IPR2024-01219

same circuit that the barrel connector goes to." Tr. (Ricketts) at 766:13-767:12; RX-2530C.13 (E-Power 10 CZ-10 schematic); RDX-0007C.13.

However, the parties dispute whether one of skill in the art would have reason to combine the E-Power 21 jump starter with the micro-USB charging circuit disclosed in E-Power 10 to obtain Limitation [1f].

Respondents contend that one of skill in the art would have modified E-Power 21 to add the micro-USB charging feature of E-Power 10. Respondents contend that E-Power 21 and E-Power 10 include "identical" barrel charging paths, and thus one of skill would have been motivated to add the USB charging input to allow multiple charging inputs, thus "catering to a broader range of use scenarios." RIB at 125 (citing Tr. (Ricketts) at 767:25-768:7, 818:19-25). Respondents contend that the proposed modification—adding an additional input—would not remove the faster charging path via barrel input, but would add "versatility and convenience" and serve as "a useful optional or secondary charging method." RIB at 126. Because the barrel charging paths between the E-Power 10 and E-Power 21 are identical, Respondents argue, the proposed modification is "straightforward." RIB at 126 (citing Tr. (Ricketts) at 818:10-18, 754:20-755:4).

NOCO, in opposition, argues that the combination of the E-Power 21 and E-Power 10 relies on impermissible hindsight. Relying on Dr. Fayed, NOCO asserts that there would be no reason to replace or supplement the faster barrel charging input of the E-Power 21device with the E-Power 10's "slower, lower-charging" micro-USB charging input. CRB at 61-62. NOCO contends that adding an additional charging input would be "a significant increase in complexity and cost." Tr. (Fayed) at 965:3-24.

DELTRAN EX1060
IPR2024-01219

Staff argues that the skilled artisan would not have sought to modify E-Power 21 because "E-Power 10 is a substantially different product with a much lower weight and battery capacity than the E-Power 21." SIB at 113. Staff contends that the fact that Carku itself did not incorporate USB charging in additional products "is strong evidence that it was not obvious to do so at the time of the invention." SIB at 113.

In response, Respondents contend that NOCO and Staff do not address the proposed combination, which does not replace the barrel charger of E-Power 21, but adds as an additional charging input, the micro-USB charging of E-Power 10. RRB at 69. Respondents contend that Dr. Fayed conceded that USB would have been useful as "an optional/secondary method of charging," which is the point of the proposed combination. RRB at 69 (citing Tr. (Fayed) at 991:11-19). Respondents assert that as a matter of law, the proposed combination need not be ideal or best, but only "suitable." RRB at 70 (citing *Intel Corp. v. Qualcomm Inc.*, 21 F.4th 784, 799–800 (Fed. Cir. 2021)). That micro-USB charging was "suitable," Respondents contend, is shown by the sales of E-Power 10 prior to July 3, 2014. RRB at 70. Further, Respondents argue that NOCO's own attempt to purchase jump starters with micro-USB charging in January 2014 evidences that the proposed combination was "suitable" and that Carku's readiness to manufacture such jump starters was evidence that one of skill could have achieved the proposed combination. RRB at 70-71 (citing RX-1744C).

Upon review of the submissions and evidence of record, the undersigned finds that Respondents have established, by clear and convincing evidence, that one of skill in the art would have reason to add the USB charging circuit of E-Power 10 to E-Power 21 to obtain Limitation [1f] with a reasonable expectation of success.

DELTRAN EX1060
IPR2024-01219

Respondents' proposed modification supplements the barrel charging path of E-Power 21—which uncontradicted testimony establishes is the same as the barrel charging path of E-Power 10, Tr. (Cheng) 714:13-16; Tr. (Ricketts) 818:10-18, 754:20-755:4—with the micro-USB charging of E-Power 10. Tr. (Ricketts) 818:19-25 ("On the E-Power 21 [in the proposed combination], you would have a 14-volt barrel connector and you'd have a micro-USB input charger part."). Dr. Fayed, NOCO's expert, opined in connection with this investigation that USB charging could be useful as an "optional/secondary method of charging" which is what is proposed by the combination and which was already present in E-Power 10. Tr. (Fayed) at 991:11-19; Tr. (Ricketts) at 768:2-5; *id.* at 763:1-24 ("The E-Power 10, in addition to the same charger input that the E-Power 21 has, it has an additional micro-USB.").[137] The similarities in the E-Power 10 and E-Power 21 devices in terms of charging paths and lithium-ion battery chemistries further support the contention that one of skill in the art would have reason to modify the E-Power 21 device as proposed, and that one of skill in the art would have been successful in the modification. Tr. (Cheng) 714:13-16; Tr. (Ricketts) 730:6-7 ("Well, the E-Power 21 and E-Power 10, both have lithium-based batteries."). Moreover, the fact that in January of 2014, Carku was apparently capable of manufacturing such a combination for NOCO indicates that the skilled artisan would have been successful and not required undue experimentation. *See* Tr. (Nook) at 141:3-7; RX-4146.3 ("We can make the product based on your requirements."); Tr. (Nook) at 139:15-140:12; RX-4146.4 (seeking product with "Ports (Input): Micro USB, 2A and 12V, 2A"); RRB at 70-71.

[137] Dr. Fayed's testimony that it would not have been obvious to add a USB input connector or input circuit at the time because a barrel charger was superior does not persuasively address the proposed combination. *See* Tr. (Fayed) at 965:3-24, 968:7-11. The proposed combination would add USB charging to a barrel charger (as in E-Power 10), not replace a barrel charger. *See* RRB at 69.

DELTRAN EX1060
IPR2024-01219

Staff argues that the fact that E-Power 21 did not include a USB charging feature even though both E-Power 21 and E-Power 10 are both Carku products, is "strong evidence that it was not obvious to do so at the time of the invention." SIB at 113. To the extent Staff is arguing that E-Power 21 teaches away from including supplemental USB charging, this is not persuasive. *Cf. Galderma Labs., L.P. v. Tolmar, Inc*., 737 F.3d 731, 738-39 (Fed. Cir. 2013) ("A reference does not teach away . . . if it. . . does not criticize, discredit, or otherwise discourage investigation into the invention claimed.") (internal quotations omitted); *see also* RRB at 70-71. Staff's additional argument that the relative battery sizes in E-Power 21 and E-Power 10 are significant is unsupported by expert testimony and unpersuasive, particularly given Dr. Fayed's testimony that secondary charging by USB could be used over longer time periods (*e.g*., overnight). *See* SIB at 113; SRB at 67; Tr. (Fayed) at 991:10-19.

Accordingly, the undersigned finds that Respondents have shown, by clear and convincing evidence, that one of ordinary skill in the art would have reason to combine E-Power 21 and E-Power 10 in the manner proposed by Respondents, and that Respondents have shown by clear and convincing evidence that E-Power 21 in view of E-Power 10 teaches or suggests Limitation [1f] of the '023 patent with a reasonable expectation of success.

viii. Claim Limitation [1g]: "a USB input connector connected to the USB input circuit, the USB input connector configured for connecting to the USB power source and providing power input from the USB power source through the USB input connector and the USB input circuit to the power supply."

The parties agree that E-Power 21 does not teach the claimed "USB input connector," and the parties do not dispute that E-Power 10 teaches a USB input connector. *See* CIB at 120-21; CRB at 61-62; SIB at 112-13; SRB at 69-71. The undisputed evidence also demonstrates that E-Power 10 includes a USB input connector as claimed. Specifically, Dr. Ricketts testified that

DELTRAN EX1060
IPR2024-01219

E-Power 10 discloses USB charging technology, and the E-Power 10 includes a micro-USB port. Tr. (Ricketts) at 766:13-767:12, 764:2-18; RDX-0007C.40; RX-2486.5 ("Input: 14V1A; MicroUSB5V/2A").

For the reasons discussed above regarding Limitation [1f], the evidence clearly and convincingly shows a reason to combine E-Power 21 and E-Power 10 with a reasonable expectation of success to obtain the USB-charging required by Limitation [1g].

***

Accordingly, and in view of the lack of contentions regarding secondary considerations of non-obviousness, Respondents have shown by clear and convincing evidence that claim 1 of the '023 patent is obvious over the combination of E-Power 21 and E-Power 10.

d. Claim 32

Claim 32 depends from claim 1, and requires in addition that "the DC-DC converter can be turned on and off by a microprocessor."

Other than arguments regarding the prior art status and a reason to combine E-Power 21 with the USB charging circuit of E-Power 10, the parties do not dispute the disclosure of this limitation in the combination of E-Power 21 and E-Power 10. *See* CIB at 122-23; CRB 63-64; SIB at 112-23; SRB at 69-71. The undisputed evidence also demonstrates that E-Power 10 meets the additional limitation of claim 32. Specifically, Dr. Ricketts testified that the DC-to-DC converter in the E-Power 10 CZ-10F USB charging circuit is turned on and off by pin CHA_EN, which is connected to the microprocessor. RX-2527C.17; RDX-0007C.44; Tr. (Ricketts) 768:20-769:11. Dr. Ricketts explained that incorporating the ability for the DC-DC converter to be turned on and off by the microprocessor offers enhanced power conservation benefits, which provides a reason to combine E-Power 21 and the USB charging circuit—including

DELTRAN EX1060
IPR2024-01219

microprocessor control of the DC-DC circuit—of E-Power 10. Tr. (Ricketts) at 769:12-770:2. Neither NOCO nor the Staff presented countervailing arguments.

For the reasons discussed above regarding Limitation [1g], the evidence clearly and convincingly shows a reason to combine E-Power 21 and E-Power 10 with a reasonable expectation of success to obtain the USB-charging required by Limitation [1g] and [1f]. Additionally, the evidence clearly and convincingly shows that the additional limitation of claim 32 is disclosed by E-Power 10 and that one of ordinary skill in the art would have reason to incorporate these feature in the proposed combination with a reasonable expectation of success. Accordingly, and in view of the lack of secondary considerations of obviousness weighing in favor of NOCO, Respondents have shown by clear and convincing evidence claim 32 of the '023 patent is obvious over the combination of E-Power 21 and E-Power 10.

e. Claim 39

i. Claim Limitation [39pre]: "A jump starting device for boosting or charging a depleted or discharged battery having a positive polarity battery terminal and a negative polarity battery terminal, the jump starter device comprising:"

The parties rely on the same arguments for this claim limitation as for Limitation [1pre]. *See* RIB at 123-25, CIB at 120. For the reasons discussed above with respect to Limitation [1pre], the evidence shows clearly and convincingly that this limitation is disclosed in E-Power 21.

ii. Claim Limitation [39a]: "a power supply"

The parties rely on the same arguments for this claim limitation as for Limitation [1a]. *See* 123-25, CIB at 120. For the reasons discussed above with respect to Limitation [1a], the evidence shows clearly and convincingly that this limitation is disclosed in E-Power 21.

DELTRAN EX1060
IPR2024-01219

iii. Claim Limitation [39b]: "a positive battery terminal connector for connecting the jump starter device to the positive battery terminal of the depleted or discharged battery;"

The parties rely on the same arguments for this claim limitation as for Limitation [1b]. *See* 123-25, CIB at 120. For the reasons discussed above with respect to Limitation [1b], the evidence shows clearly and convincingly that this limitation is disclosed in E-Power 21.

iv. Claim Limitation [39c]: "a negative battery terminal connector for connecting the jump starter device to the negative battery terminal of the depleted or discharged battery;"

The parties rely on the same arguments for this claim limitation as for Limitation [1c]. *See* 123-25, CIB at 120. For the reasons discussed above with respect to Limitation [1c], the evidence shows clearly and convincingly that this limitation is disclosed in E-Power 21.

v. Claim Limitation [39d]: "a power switch or circuit connected in circuit with the power supply and the positive and negative battery terminal connectors, the power switch configured to turn power on from the power supply to the depleted or discharged battery when the positive and negative battery terminal connectors are properly connected to the positive and negative battery connectors;"

The parties rely on the same arguments for this claim limitation as for Limitations [1d] and [1e]. *See* 123-25, CIB at 120. For the reasons discussed above with respect to Limitations [1d] and [1e], the evidence shows clearly and convincingly that this limitation is disclosed in E-Power 10.

vi. Claim Limitation [39e]: "a power switch control system or circuit connected to and controlling the power switch, the power switch control system or circuit configured to detect presence of the depleted or discharged battery when connected between the positive and negative battery terminal connectors and to detect polarity of the depleted or discharged battery when connected between the positive and negative battery terminal connectors;"

The parties rely on substantially the same arguments for the "detect polarity" portions of this Limitation as for Limitation [1e]. *See* 123-25, CIB at 120. For the reasons discussed above with respect to Limitation [1e], the evidence shows clearly and convincingly that E-Power 21 discloses a power switch control system or circuit configured to "detect polarity of the depleted or discharged battery when connected between the positive and negative battery terminal connectors."

In addition, Limitation [39e] requires that the "power switch control system or circuit" is "configured to detect presence of the depleted or discharged battery when connected between the positive and negative battery terminal connectors." Neither NOCO nor Staff persuasively dispute that that this limitation is disclosed in E-Power 21 (for reasons other than those discussed for Limitation [1e]). *See* CIB at 120-21; CRB at 61-62; SIB at 112-13; SRB at 69-71. In addition, the undisputed evidence demonstrates that E-Power 21 discloses a power switch control system or circuit configured to "detect presence of the depleted or discharged battery when connected between the positive and negative battery terminal connectors." Specifically, the resistor divider R2 and R3 in the CC-200 jumper cables sold with E-Power 21 "measures the output voltage on to [sic] VOUT scan, and that's used by the microprocessor also to understand that there's a battery attached." Tr. (Ricketts) at 772:15-773:5; RDX-0007C.52; RX-2534C.10 (CC-200 schematic).

DELTRAN EX1060
IPR2024-01219

Accordingly, Respondents have shown by clear and convincing evidence that E-Power 21 discloses Limitation [39e] of the ’023 patent.

vii. Claim Limitation [39f]: “a USB input circuit connected to the power supply, the USB input circuit configured for converting power from a USB power source to increase power voltage to the power supply; and”

The parties rely on the same arguments for this claim limitation as for Limitation [1f]. *See* 123-25, CIB at 120. For the reasons discussed above with respect to Limitation [1f], the evidence shows clearly and convincingly that this limitation is disclosed in the combination of E-Power 21 in view of E-Power 10, and that one of skill in the art would have reason to combine E-Power 21 and E-Power 10, with a reasonable expectation of success, to obtain this claim limitation.

viii. Claim Limitation [39g]: “a USB input connector configured for connecting to the USB power source and providing power input from the USB power source through the USB input connector and the USB input circuit to the power supply.”

The parties rely on the same arguments for this claim limitation as for Limitation [1g]. *See* 123-25, CIB at 120. For the reasons discussed above with respect to Limitation [1g], the evidence shows clearly and convincingly that this limitation is disclosed in the combination of E-Power 21 in view of E-Power 10, and that one of skill in the art would have reason to combine E-Power 21 and E-Power 10, with a reasonable expectation of success, to obtain this claim limitation.

***

Accordingly, and in view of the lack of secondary considerations of non-obviousness weighing in favor of NOCO, Respondents have shown by clear and convincing evidence that claim 32 of the ’023 patent is obvious over the combination of E-Power 21 and E-Power 10.

DELTRAN EX1060
IPR2024-01219

f. Claim 54

i. Claim Limitation [54pre]: "A jump starting apparatus configured for boosting or charging a depleted or discharged battery having a positive polarity battery terminal and a negative polarity battery terminal, the jump starting apparatus comprising:"

The parties rely on the same arguments for this claim limitation as for Limitation [1pre]. *See* 123-25, CIB at 120. For the reasons discussed above with respect to Limitation [1pre], the evidence shows clearly and convincingly that this limitation is disclosed in E-Power 21.

ii. Claim Limitation [54a]: "a power supply;"

The parties rely on the same arguments for this claim limitation as for Limitation [1a]. *See* 123-25, CIB at 120. For the reasons discussed above with respect to Limitation [1a], the evidence shows clearly and convincingly that this limitation is disclosed in E-Power 21.

iii. Claim Limitation [54b]: "a positive polarity battery terminal connector configured for connecting the jump starting apparatus to the positive polarity battery terminal of the depleted or discharged battery;"

The parties rely on the same arguments for this claim limitation as for Limitation [1b]. *See* 123-25, CIB at 120. For the reasons discussed above with respect to Limitation [1b], the evidence shows clearly and convincingly that this limitation is disclosed in E-Power 21.

iv. Claim Limitation [54c]: "a negative polarity battery terminal connector configured for connecting the jump starting apparatus to the negative polarity battery terminal of the depleted or discharged battery;"

The parties rely on the same arguments for this claim limitation as for Limitation [1c]. *See* 123-25, CIB at 120. For the reasons discussed above with respect to Limitation [1c], the evidence shows clearly and convincingly that this limitation is disclosed in E-Power 21.

v. Claim Limitation [54d]: "a power switch or circuit configured to turn on power from the power supply to the positive and negative polarity battery terminal connectors;"

The parties rely on the same arguments for this claim limitation as for Limitation [1d]. *See* 123-25, CIB at 120. For the reasons discussed above with respect to Limitation [1d], the evidence shows clearly and convincingly that this limitation is disclosed in E-Power 21.

vi. Claim Limitation [54e]: "a control system or circuit connected to and controlling the power switch, the control system or circuit configured to detect whether the positive and negative polarity battery terminal connectors have a correct polarity connection with the positive and negative polarity battery terminals of the depleted or discharged battery and prevent an incorrect polarity connection with the positive and negative polarity battery terminals of the depleted or discharged battery prior to turning on the power switch or circuit;"

The parties rely on the same arguments for this claim limitation as for Limitation [1e]. *See* 123-25, CIB at 120. For the reasons discussed above with respect to Limitation [1e], the evidence shows clearly and convincingly that this limitation is disclosed in E-Power 21.

vii. Claim Limitation [54f]: "a USB input connector"

The parties rely on the same arguments for this claim limitation as for Limitation [1g]. *See* 123-25, CIB at 120. For the reasons discussed above with respect to Limitation [1g], is disclosed in the combination of E-Power 21 in view of E-Power 10, and that one of skill in the art would have reason to combine E-Power 21 and E-Power 10, with a reasonable expectation of success, to obtain this claim limitation.

DELTRAN EX1060
IPR2024-01219

viii. Claim Limitation [54g]: "a USB input circuit connecting the USB input connector to the power supply, the USB input circuit comprising a DC/DC converter for up-converting the voltage from the USB input connector to the power supply."

The parties rely on the same arguments for this claim limitation as for Limitation [1f]. *See* RIB at 118, CIB at 126. For the reasons discussed above with respect to Limitation [1f], the evidence shows clearly and convincingly that this limitation is disclosed in E-Power 21 in view of E-Power 10, and that one of skill in the art would have reason to combine E-Power 21 and E-Power 10, with a reasonable expectation of success, to obtain this claim limitation.

***

Accordingly, and in view of the lack of evidence showing secondary considerations of non-obviousness, Respondents have shown by clear and convincing evidence that claims 1, 32, 39, and 54 of the '023 patent are obvious over the combination of E-Power 21 and E-Power 10.

4. Obviousness in view of E-Power 21, E-Power 10, and Zhang

Respondents contend that E-Power 21 in view of E-Power 10, and further in view of Zhang renders claim 19 obvious. RIB at 128-29.

Claim 19 depends from claim 18, which in turn depends from claim 1, and requires in addition "further comprising a manual override switch configured to activate a manual override mode to enable a user to connect jump start power to the depleted or discharged vehicle battery when a vehicle battery isolation sensor is unable to detect presence of the vehicle battery" and "wherein the control system or circuit is configured to detect actuation of the manual override switch for at least a predetermined period of time before activation of the manual override mode."

Respondents contend that E-Power 21 includes a starting override feature that "indicates the presence of a manual override mode." RIB at 129. Dr. Ricketts testified that pressing the

"TEST" button on E-Power 21's CC-200 smart cable "will close a switch even if there's no battery detected." Tr. (Ricketts) at 820:16-23; RDX-202. Respondents contend that Zhang discloses the additional limitations of claim 19, including a 10 second button press to activate a manual override mode, which Zhang refers to as "forced startup." RIB at 118 (citing RX-0090 at [0030]); Tr. (Ricketts) at 821:1-10. Respondents argue that E-Power 21, E-Power 10, and Zhang may be combined because "E-Power 21 already has a button for manual mode" and because manual mode removes some of the safety features, you want to make sure that it isn't pressed inadvertently. Tr. (Ricketts) at 821:11-822:3.

In addition to its arguments regarding the prior art status of E-Power 21 and E-Power 10, NOCO argues that Dr. Ricketts "did not even bother to address why a POSA would have been inspired to move Zhang's internal forced startup button onto the external CC-200 cable." CIB at 122.

Staff does not separately address claim 19 with respect to the combination of E-Power 21, E-Power 10 and Zhang. *See* SRB at 69-71; SIB at 112-13.

Upon review of the submissions and evidence of record, the undersigned finds that Respondents have established, by clear and convincing evidence, that the combination of E-Power 21, E-Power 10, and Zhang discloses the additional limitation of claim 19. Dr. Ricketts' undisputed testimony establishes that E-Power 21 "TEST" button initiates a manual override mode, as required by claim 19. Tr. (Ricketts) at 820:16-23; RDX-202. Additionally, the undisputed evidence demonstrates that Zhang teaches a button press for a "predetermined period of time" before activating its manual mode. RX-0090 at [0030]. Dr. Ricketts did address a reason to combine E-Power 21 and Zhang—safety and to avoid inadvertent activation of manual mode—and NOCO's arguments misunderstand the proposed combination, which is to require a

DELTRAN EX1060
IPR2024-01219

longer press of the "TEST" button on the CC-200 smart cable sold with E-Power 21, not to "move Zhang's internal forced startup button onto the external CC-200 cable." *Compare* CIB at 122 *with* Tr. (Ricketts) at 821:11-822:3.

For the reasons discussed above regarding Limitation [1g], the evidence clearly and convincingly shows a reason to combine E-Power 21 and E-Power 10 with a reasonable expectation of success to obtain the USB-charging required by Limitations [1g] and [1f]. Additionally, the evidence shows by clear and convincing evidence that the additional limitation of claim 19 is disclosed by E-Power 21 and Zhang. Accordingly, and in view of the lack of evidence showing secondary considerations of non-obviousness, Respondents have shown by clear and convincing evidence claim 19 of the '023 patent is obvious over the combination of E-Power 21 in view of E-Power 10 and Zhang.

5. Invalidity Under 35 U.S.C. § 112

a. NOCO's "Sensor-Less Claims"[138]

Respondents argue that the asserted claims of the '023 and '243 patents are invalid under the written description requirement of 35 U.S.C. § 112, to the extent the claims are interpreted to cover "sensor-less" jump starters, or to cover jump starters that do not include both a battery presence sensor and a reverse polarity sensor. RIB at 130. Respondents point to expert testimony that the embodiments described in the shared specification of the '023 and '243 patent only disclose the use of both a battery presence sensor and a reverse polarity sensor. *See* RIB at 130 (citing Tr. (Ricketts) at 746:3-749:9; Tr. (Fayed) at 981:21-982:3. Respondents contend that NOCO emphasized the importance of the redundancy of the two-sensor design during an IPR of

[138] Respondents' and Staff's arguments regarding both the '023 and '243 patents are considered together here.

DELTRAN EX1060
IPR2024-01219

a related patent and at the hearing. RIB at 131-32. Respondents contend that the claim 1 of the '243 patent, in particular, has "no safety limitations whatsoever" and is at odds with the patentee's description of the invention. RIB at 133. Respondents argue that invalidation of claims that omit "key features" has been upheld by the Federal Circuit. (RIB at 133-24 (citing *LizardTech, Inc. v. Earth Res. Mapping, Inc.*, 424 F.3d 1336, 1344 (Fed. Cir. 2005); *Rivera v. Int'l Trade Comm'n*, 857 F.3d 1315, 1321 (Fed. Cir. 2017); and *ICU Med., Inc. v. Alaris Med. Sys., Inc.*, 558 F.3d 1368, 1378 (Fed. Cir. 2009)). Because the two-sensor design is "critical," Respondents contend that the asserted claims—which do not require two sensors—are invalid for non-compliance with the written description requirement.

Staff contends that, to the extent the asserted claims of the '023 patent and '243 patents are construed not to require detection of battery presence, they are invalid under § 112. SIB at 115 (as long as the claims are construed such that there is a "control system or circuit controlling the power switch that detects battery presence . . . the scope of the claims is reasonably commensurate with the device that is disclosed in the specification for the '023 patent"); *id.* at 129-30 (if asserted claims of the '243 patent are construed to "require a power switch that is configured to be responsive to the presence or connection of a battery . . . the scope of the claims . . . is reasonably commensurate with the device that is disclosed in the specification for the '243 patent and the scope of the invention which the inventors were in possession of at the time of their invention").

NOCO, in opposition, contends that the specification discloses the car battery reverse sensor (*e.g.*, battery presence sensor) and the reverse polarity sensor as independent sensors comprised of separate circuits, connected to different pins. *See* CRB at 70. NOCO argues that the sensors are not disclosed as "connected" in operation, and there is no evidence that the invention

DELTRAN EX1060
IPR2024-01219

would be undermined by the use of just a polarity detection feature, which distinguishes Respondents' cited precedent. CRB at 71, 99.

Upon review of the submissions and evidence of record, the undersigned finds that neither Respondents nor Staff have presented clear and convincing evidence that the asserted claims of the '023 or the '243 patent are invalid for non-compliance with the written description requirement of § 112.

First, Respondents have not clearly and convincingly shown that the presence of a battery sensor and a separate reverse polarity sensor are required. *See* RIB at 131 (arguing that "the patent specification is limited to two-sensor jump starters"). The specification describes the alleged car battery presence sensor and reverse polarity sensors in the context of an "example embodiment." *See* '023 patent, 3:59-61 ("Figs. 2A-2C are schematic circuit diagrams of an example embodiment"). The testimony from Dr. Ricketts and Dr. Fayed relied upon by Respondents primarily describes such embodiments without stating (and certainly not clearly and convincingly establishing) that two sensors are critical to operation of the invention. *See* Tr. (Ricketts) at 746:3-749:4; Tr. (Fayed) at 981:21-982:13, 997:1-12; RIB at 130; *cf. Phillips*, 415 F.3d at 1323 ("although the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments"). Beyond this description, Dr. Ricketts' testimony regarding lack of written description is conclusory. *See* Tr. (Ricketts) at 749:5-9 ("[Q]: Is there a sufficient written description, based on your analysis of these patents, to indicate that the inventors were in possession of a safety circuity solution with zero or one sensors? [A]: No. Not in the specification, no.").

DELTRAN EX1060
IPR2024-01219

Moreover, there is evidence in the record suggesting that two separate sensors are not required. For example, the specification describes a manual override mode, which contemplates operation in the absence of a battery presence signal:

> This button [for manual mode] allows the user to jump-start vehicles that have either a missing battery, or the battery voltage is so low that automatic detection by the MCU is not possible.

'023 patent, 5:3-6. Further, Dr. Fayed testified that the battery presence detector is "an additional feature to the jump start [sic]." Tr. (Fayed) at 982:25-983:1. Dr. Fayed also testified that the circuits for the two sensors as described in the patent embodiments are essentially mirror images, in that the circuitry is "essentially identical," with the exception of the diode direction, and "behave the same way," suggesting that both are not necessary. Tr. (Fayed) at 982:4-9. Respondents similarly indicate that the two sensors are "redundant." *See* RIB at 131-32.

While Respondents further contend that redundancy is core to the '023 patent, the evidence cited for this does not meet the clear and convincing standard. *See* RIB at 131-132. Respondents do not cite persuasive evidence from the specification for this argument, but rely primarily on statements in an IPR filing relating to the related '015 patent, as well as statements regarding NOCO's commercial products made in counsel's opening argument and Mr. Nook's hearing testimony. Respondents' arguments regarding NOCO's representations before the PTAB in connection with a related patent that explicitly claimed a two-sensor design do not establish, by clear and convincing evidence, that the asserted claims are unsupported by sufficient written description. RIB at 131-32. The cited representations were directed to describing the operation of the claim at issue there, which tracked the two-sensor design disclosed in the preferred

DELTRAN EX1060
IPR2024-01219

embodiment.[139] The citations to counsel's opening argument and Mr. Nook's testimony are likewise unpersuasive.

Second, Respondents' argument that certain claims of the '243 patent (independent claim 1 and dependent claims 18 and 54) lack written description because they do not specifically recite battery presence detection or reverse polarity detection also does not meet the clear and convincing standard. These claims all require, *inter alia*, a "power switch or switch circuit configured to switch power on from the power supply to boost or charge the depleted or discharged battery when connected between the positive and negative battery connectors." '243 patent, cl. 1. Respondents do not appear to argue that the inventors lacked possession of this limitation, but rather than the limitation sweeps too broadly because it could potentially include products that provide power without either battery presence or reverse polarity detection. *See* RIB at 130, 133-34.[140] As discussed above, Dr. Ricketts' testimony on this issue was conclusory.

[139] Relevant here, the claim language at issue in the '015 patent required: a microcontroller configured to receive input signals from said vehicle isolation sensor and said reverse polarity sensor, and to provide an output signal to said power switch, such that said power switch is turned on to cause said internal power supply to be connected to said output port in response to signals from said sensors indicating the presence of a vehicle battery at said output port and proper polarity connection of positive and negative terminals of said vehicle battery at said output port or improper polarity connection of positive and negative terminals of said vehicle battery with said positive and negative polarity outputs, and is not turned on when signals from said sensors indicate either the absence of a vehicle battery at said output port or improper polarity connection of said positive and negative terminals of said vehicle battery with said positive and negative polarity outputs." RX-1949.17.

[140] Respondents elsewhere argue that the "when connected" language of the '243 patent means the claim is limited to devices that operate "without delay or awaiting further conditions." *See* RIB at 146. For the reasons discussed above in relation to infringement of the '243 patent (Limitation [1d]), this claim construction is rejected. Respondents' suggestion that the claim may require "sensor-less" devices (*see* RRB at 80) appears premised on this incorrect construction.

DELTRAN EX1060
IPR2024-01219

On the current record, Respondents have not shown by clear and convincing evidence that this is the type of overly generic claim found unsupported in the Federal Circuit caselaw cited.[141, 142]

b. USB-Related Issues

Respondents argue that "[t]o the extent it is determined that USB-C bidirectional charging circuits or connectors are within the scope of the claims . . . the claims are invalid under both the written description and enablement requirements." RIB at 136. Respondents argue that the specification does not provide any indication of "USB-C or bidirectional USB charging circuits or connectors" and that "the inventors could not have been in possession of a USB-C charging circuit or connector because that technology was not publicly available in the form of finalized standards for bidirectional data transfer." *Id.* at 137. Respondents similarly argue that a POSA "could not, as a matter of law, have been enabled by the specification to make a USB input charging circuit or input connector that was compliant with a specification that was not yet available to the public." *Id*. at 139. Respondents further argue that "a POSA could not have made

[141] Staff's argument similarly does not meet the clear and convincing standard. Staff appears concerned with the possibility of a control system that "never detects battery presence." SIB at 115. However, the evidence does not clearly and convincingly show that a battery presence detector is an essential element of the invention. For example, the specification indicates that the manual override button "allows the user to jump-start vehicles [where] . . . the battery voltage is so low that automatic detection by the MCU is not possible." '023 patent, 5:3-5.

[142] Respondents also argue that the '023 and '243 patents fail to comply with the "regards the invention" requirement of 35 U.S.C. § 112 based on the same arguments presented for written description. *See* RIB at 135. For the reasons as discussed above, Respondents have failed to present clear and convincing evidence that the invention is limited to a redundant, two-sensor design. Further, Respondents have not introduced evidence that the patentees believed that they regarded their invention as limited to the redundant, two-sensor design described in the preferred embodiment of the specification, or that there is a departure here from the plain and ordinary meaning of the claim. *See Ancora Techs., Inc. v. Apple, Inc.*, 744 F.3d 732, 739 (Fed. Cir. 2014) (distinguishing *Allen Engineering* (cited by Respondents, RIB at 135, because there, "the patentee agreed that the claim language did not match what he regarded as his invention, as the intrinsic record unambiguously showed" and the court "denied the patentee's request to reject the claim language's clear, ordinary meaning").

DELTRAN EX1060
IPR2024-01219

or used a bidirectional USB charging circuit or input connector as of . . . July 3, 2014" because "no . . . standard USB specifications were bidirectional." *Id.* at 140.

Staff agrees with Respondents that the claims are invalid to the extent they cover "after - arising jump starters that use USB Type C charging technology." SIB at 115. Staff argues that [t]he "evidence shows that the USB Type C standards were not released and enabled as of the effective patent filing date for the '023 and '243 Patents." *Id.* at 116.

NOCO argues that "existing and publicly-known draft USB standards in July 2014, including the July 2012 USB PD Specification and the draft USB-C standard, featured bidirectional power transfer." CIB at 130. NOCO further argues that the claimed "USB input circuit" only requires a circuit with two "basic features" of being "connected to the power supply" and "configured for converting power from a USB power source and providing it to the power supply." *Id.* at 129-30. NOCO argues that the prosecution history supports a view that a "USB input circuit" and a "USB charge circuit" can be bidirectional. Finally, NOCO argues that "USB-C was known at the time of the invention . . . and it was just one way of implementing a bidirectional 'USB input circuit' or 'USB charge circuit.'" *Id.* at 132.

For the reasons discussed *supra*, the undersigned has construed the "USB input circuit," "USB charge circuit," and "USB connector" terms in view of the USB standards known and enabled at the time of the invention, which did not include the USB-C and USB PD 2.0 specifications. Thus, the claims have not been shown to be invalid based on lack of written description or lack of enablement.

DELTRAN EX1060
IPR2024-01219

To the extent the claims were construed to cover USB-C technology, however, then these claims would be invalid based on lack of written description and/or lack of enablement.[143] With respect to written description, "the test for sufficiency is whether the disclosure of the application relied upon reasonably conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date." *Ariad Pharms., Inc. v. Eli Lilly* & Co., 598 F.3d 1336, 1351 (Fed. Cir. 2010) (*en banc*). Here, the evidence clearly and convincingly shows that the USB-C and USB PD 2.0 specifications were not known to one of ordinary skill in the art at the time of the invention in a way that would allow one to possess or implement a product practicing the standard. *See* Part V.D.1 *supra* (regarding claim construction); *Markman* Tr. (NOCO counsel) at 135:20-136:11 (in July 2014, "the USB Type-C connector had not been formalized" and "there was nothing for the inventors to disclose"); CRB at 74 (indicating that August 2014 USB-C standard is after-arising technology); RRB at 85; SRB at 74. Further, the evidence shows that the inventors did not in fact possess the USB-C specification or the technical details of that specification as of the filing date, and the record also shows that the patent specification fails to disclose any technical details relating to the USB-C or PD 2.0 standard. *See* RX-1652C.38 (Stanfield Dep.) at 146:6-147:4; Tr. (Stanfield) at 1346:11-19. Accordingly, to the extent the claims were construed to encompass the USB-C or PD 2.0 specifications, the claims would be invalid for lack of written description. *Cf. Chiron Corp. v. Genentech, Inc.*, 363 F.3d 1247, 1255 (Fed. Cir. 2004) (finding claims invalid based on lack of written description where claims were construed to cover technology that "did not even exist at the time of the 1984 filing"); *ICU Med., Inc. v. Alaris Med. Sys., Inc.*, 558 F.3d 1368, 1376-77

[143] All asserted claims of the '023 and '243 patents include either the "USB charge circuit" or "USB input circuit" terms.

DELTRAN EX1060
IPR2024-01219

(Fed. Cir. 2009) ("the purpose of the written description requirement is to ensure that the scope of the right to exclude, as set forth in the claims, does not overreach the scope of the inventor's contribution to the field of art as described in the patent specification"); *In re Entresto*, 2023 WL 44505464, at *21-22 (D. Del. July 7,. 2023); SRB at 76.

Similarly, while the future existence of USB-C was known, the evidence shows that the content of the specifications was not disclosed in any manner that would enable one of skill in the art to implement the standard. Accordingly, the claims may be invalid for lack of enablement to the extent they were to be construed to cover USB-C technology and to the extent USB-C were found to be "nascent" technology. *See Chiron*, 363 F.3d at 1255-56 (where claims are construed to encompass "nascent" technology, the patent application must include a "specific and useful teaching" to be enabling); *Plant Genetic Systems, N.V. v. DeKalb Genetics Corp*., 315 F.3d 1335, 1340 (Fed. Cir. 2003) ("We do not read *Hogan*[144] as allowing an inventor to claim what was specifically desired but difficult to obtain at the time the application was filed, unless the patent discloses how to make and use it.").[145]

[144] *Hogan* held that the enablement inquiry should not take into account a "later existing state of the art." *Application of Hogan*, 559 F.2d 595, 606-07 (C.C.P.A. 1977). *Plant Genetic Systems* distinguished *Hogan*, which involved a compound "not known or in existence when the application was filed" from a situation where the cells at issue already "existed" but were "difficult to produce." *Plant Genetic Systems*, 315 F.3d at 1340. In *Chiron*, the Federal Circuit explained that *Plant Genetic Systems*, unlike *Hogan*, involved "nascent" technology. 363 F.3d at 1257.

[145] NOCO's arguments regarding section 112 in part address claim construction which, as discussed in the *Markman* Order and above, are not persuasive. In addition, NOCO focuses largely on whether bidirectionality generally was described or enabled at the time of the invention, but not whether USB-C technology, including USB-C bidirectional charging, was described or enabled. As held in the *Markman* Order, the "USB" terms should be understood in view of the USB standards existing at the time, and the evidence presented at the hearing, including by NOCO's witnesses, shows that the USB-C specification was not known and enabled at the time.

DELTRAN EX1060
IPR2024-01219

6. Unenforceability

The Carku Respondents argue that NOCO's claims are "unenforceable based on the equitable doctrines of equitable estoppel, waiver, and/or acquiescence." RIB at 140. The Carku Respondents contend that NOCO accused the same representative products of infringing its patents in the 1256 investigation, and "both were found not to infringe similar claims of a parent patent to the '023 and '243 patents," which NOCO did not appeal *Id.* at 141. This, they argue, "sent an unmistakable signal" that NOCO "no longer intended to enforce this patent family against [the Carku Respondents] and would not launch further infringement suits against the same products." *Id.* The Carku Respondents argue prejudice by the fact of litigation and the "unscrupulous way in which NOCO has litigated." *Id.* at 142. The Carku Respondents further argue that NOCO has waived its arguments contesting unenforceability for failure to include them in their initial post-hearing brief. RRB at 89 (citing Ground Rule 13.1).

NOCO argues that the Carku Respondents waived their unenforceability defenses based on failure to present argument or evidence at the hearing. CIB at 142. NOCO further states, in reply, that there was no prior assertion or adjudication of the '023 or '243 patents, which did not issue until after the Initial Determination issued in the 1256 Investigation. CRB at 81. NOCO also argues that the Carku Respondents misstate the findings in the 1256 Investigation. *Id.* Staff contends that Respondents have not shown that any of the asserted patents are unenforceable because "[t]he '023 Patent and '243 Patents are new patents that could not have been asserted in the earlier investigation." SRB at 92; SIB at 2.

Based on the evidence and arguments of record, the undersigned finds that the asserted claims have not been shown to be unenforceable. Regardless of any waiver issues, Respondents have not shown that any actions taken by NOCO with respect to different patents in the same

DELTRAN EX1060
IPR2024-01219

family are, under the circumstances here, sufficient to support a finding of unenforceability with respect to the patents at issue.

D. The ’243 Patent

Respondents contend that (1) claims 1 and 2 of the ’243 patent are invalid as obvious over Richardson in view of Zhou and U.S. Patent App. Pub. No. 2005/0110467 (“Thomason”); (2) that claims 18 and 54 of the ’243 patent are invalid as obvious over Richardson in view of Zhou, Thomason and U.S. Patent No. 9,506,446 (“Xinfang”); (3) claims 1, 2, 18 and 54 of the ’243 patent are invalid as obvious over Richardson in view of “Current-Limited DC/DC Converter Simplifies USB Power Supplies,” by Bryan Legates (“LT1618”), Thomason, and Xinfang; and (4) claims 1, 2, 18, and 54 of the ’243 patent are invalid as obvious over E-Power 21 in view of E-Power 10 and Thomason.

1. Obviousness in view of Richardson, Zhou or LT1618, and Thomason

The Richardson and Zhou references are the same as discussed in connection with invalidity of the ’023 patent. Thomason, U.S. Patent App. Pub. No. 2005/0110467, is titled “Automotive Jump Starter With Polarity Detection and Current Routing Circuitry,” and published on May 26, 2005. RX-2451, cover. There is no dispute that Thomason constitutes prior art to the ’243 patent under 35 U.S.C. §§ 102(a)(1) and/or (2). *See* RIB at 109; SIB at 127-; 29; CRB at 94-99.

Respondents assert that the combination of Richardson, Zhou, and Thomason teaches or suggests all the limitations of claims 1 and 2 of the ’243 patent.

Alternatively, Respondents assert that LT1618 may be substituted for Zhou as disclosing limitations [1e] and [1f], such that the combination of Richardson, LT1618, and Thomason teaches or suggests all the limitations of claims 1 and 2 of the ’243 patents. *See* RIB at 157.

DELTRAN EX1060
IPR2024-01219

LT1618 is an article written by Bryan Legates titled "Current-Limited DC/DC Converter Simplifies USB Power Supplies,"[146] which was published in February 2001. RX-1429. There is no dispute that the article qualifies as prior art under at least 35 U.S.C. § 102(a)(1). *See* RIB at 109; SIB at 127-29; CRB at 94-99. Claim 1

The parties do not dispute the disclosure of Limitations [1pre]-[1c] in Richardson, and do not dispute that Zhou or LT1618 teaches USB charging as claimed in Limitations [1e] and [1f]. Thomason is only necessary if Respondents' proposed construction of the "when connected" language of Limitation [1e] is adopted (requiring the circuit to switch power on regardless of polarity); otherwise, Respondents contend that Richardson and Zhou or LT1618 teach or suggest the limitations of claim 1 of the '243 patent for the same reason as claim 1 of the '023 patent. *See* RIB at 152; RIB at 157.

The disputes are limited to (1) whether in Limitation [1d], the "when connected" language requires a jump starter that turns power on the clamps regardless of the polarity of the connection; and (2) whether one of skill in the art would have reason to combine Richardson, Zhou or LT1618, and/or Thomason. As discussed below, the evidence does not clearly and convincingly show that the asserted claims of the '243 patent are invalid based on obviousness based on these combinations.

[146] There was also evidence presented about the LT1618 prior art product, including testimony from Mr. Legates and a data sheet (RX-4081) but Respondents' post-hearing brief defines its LT1618 contentions as limited to the article. *See* RIB at 109-110 ("The February 2001 article titled 'Current-Limited DC/DC Converter Simplifies USB Power Supplies' by Bryan Legates that was published in Linear Technologies Magazine (RX-1429 / RX-2482, 'the Legates Article') that describes the LT1618 boost converter (collectively the 'LT prior art') qualifies as prior art under at least 35 U.S.C. § 102(a)(1)."). Respondents' post-hearing brief does not reference the LT1618 data sheet or allege that the prior art product itself is prior art, for example, because it was used or sold prior to July 3, 2014. To the extent Respondents contend that the prior art identified as "LT1618" is something other than the Legates article at RX-1429 (with duplicate at RX-2482) renders the claims obvious, that contention is waived because Respondents did not address it in their initial post-hearing brief.

DELTRAN EX1060
IPR2024-01219

i. Claim Limitation [1pre]: "A jump starting device for boosting or charging a depleted or discharged battery having a positive battery terminal and a negative battery terminal, the jump starting device comprising:"

The parties rely on the same arguments for this claim limitation as for Limitation [1pre] of claim 1 of the '023 patent. *See* RIB at 151-53; CIB at 162. For the reasons discussed above with respect to those limitations of the '023 patent, the evidence shows clearly and convincingly that this limitation is disclosed in Richardson.

ii. Claim Limitation [1a]: "a power supply"

The parties rely on the same arguments for this claim limitation as for Limitation [1a] of claim 1 of the '023 patent. *See* RIB at 151-53; CIB at 162. For the reasons discussed above with respect to those limitations of the '023 patent, the evidence shows clearly and convincingly that this limitation is disclosed in Richardson.

iii. Claim Limitation [1b]: "a positive battery connector for electrically connecting the jump starting device to the positive battery terminal of the depleted or discharged battery;"

The parties rely on the same arguments for this claim limitation as for Limitation [1b] of claim 1 of the '023 patent. *See* RIB at 151-53; CIB at 162. For the reasons discussed above with respect to those limitations of the '023 patent, the evidence shows clearly and convincingly that this limitation is disclosed in Richardson.

iv. Claim Limitation [1c]: "a negative battery connector for electrically connecting the jump starting device to the negative battery terminal of the depleted or discharged battery;"

The parties rely on the same arguments for this claim limitation as for Limitation [1c] of claim 1 of the '023 patent. *See* RIB at 151-53; CIB at 162. For the reasons discussed above with

DELTRAN EX1060
IPR2024-01219

respect to those limitations of the ’023 patent, the evidence shows clearly and convincingly that this limitation is disclosed in Richardson.

v. Claim Limitation [1d]: “a power switch or switch circuit connected in circuit with the power supply and the positive and negative battery connectors, the power switch or switch circuit configured to switch power on from the power supply to boost or charge the depleted or discharged battery when connected between the positive and negative polarity battery connectors;”

The parties dispute this limitation, although the dispute is limited to whether the “when connected” language requires a jump starter that supplies power to the clamps regardless of the polarity of the connection. As discussed above in connection with alleged infringement of the ’243 patent, *supra* Part VI.D.1.a.v, the undersigned does not adopt Respondents’ proposed claim construction of the “when connected” language in Limitation [1d].

Because the undersigned rejects Respondents’ proposed claim construction, the undersigned understands that the Thomason reference is not necessary to the alleged obviousness grounds. *See* RIB at 151-52 (citing the discussion of Limitation [1e] of the ’023 patent and asserting that “[u]nder NOCO’s apparent construction, which does not require turning on a switch ‘when connected’ irrespective of polarity, Richardson discloses or renders obvious the power switch or switch circuit configured to switch power on from the power supply to boost or charge the depleted or discharged battery when connected between the positive and negative battery connectors.”). Because Thomason is not necessary to the combination, NOCO’s additional arguments regarding the motivation to combine Richardson and Zhou or LT1618 with Thomason, CIB at 162; CRB at 96-97, do not impact Respondents’ obviousness theory.

The parties otherwise rely on the same arguments for this claim limitation as for the Limitation [1e] of claim 1 of the ’023 patent. *See* RIB at 151-53; CIB at 162. For the reasons

DELTRAN EX1060
IPR2024-01219

discussed above with respect to those limitations of the '023 patent, the evidence shows clearly and convincingly that this limitation is disclosed in Richardson.

vi. Claim Limitation [1e]: "a USB input connector"

The parties dispute this limitation, although the dispute is limited to whether one of skill in the art would have reason to combine Richardson and Zhou to obtain Limitation [1e].[147] As discussed above in connection with invalidity of the '023 patent, *supra* Part VIII.C.1.a.vii, the undersigned finds that Respondents have not established by clear and convincing evidence that one of skill in the art would have reason to combine Richardson and Zhou, and accordingly, Respondents have failed to establish, by clear and convincing evidence, that Limitation [1e] is taught or suggested by the combination of Richardson and Zhou.

As to the combination of Richardson and LT1618, the parties do not dispute that LT1618 teaches a USB input connector. *See* SRB at 89; CRB at 77-78; RIB at 157. The undisputed evidence also demonstrates that LT1618 includes a USB input connector. Specifically, LT1618 describes a "USB port," and Mr. Legates testified that Figure 1 of LT1618 disclosed a USB-A input. Tr. (Legates) at 663:5-11. The parties dispute, however, whether one of skill in the art would have reason to combine Richardson and LT1618 to obtain Limitation [1e].[148]

Respondents contend that one of skill in the art "would have been motivated to combine the USB charging circuits provided by the LT1618 and LT3477[149] with the Richardson device in

---

[147] As already discussed, because Thomason is not necessary to the combination, NOCO's additional arguments regarding the motivation to combine Richardson and Zhou with Thomason, CIB at 162; CRB at 96-97, do not impact Respondents' obviousness theory.

[148] Because Thomason is not necessary to the combination, NOCO's additional arguments regarding the motivation to combine Richardson and Zhou with Thomason, CIB at 162; CRB at 96-97, do not impact Respondents' obviousness theory.

[149] Dr. Ricketts did not testify about the LT3477, and Respondents have not argued that the LT3477 is prior art, identified a reason to combine the LT3477 with any other asserted prior art, or identified with

DELTRAN EX1060
IPR2024-01219

view of the well-known and established customer and industry desire, described by Mr. Legates, to explore USB charging options wherever possible and based on the Linear Technologies Prior Art's express disclosure that the LT1618 can be used to power 12-volt batteries through USB." RIB at 157.

NOCO does not separately address the combination of Richardson, LT1618 and Thomason in the context of the '243 patent, but does dispute whether one of skill in the art would have reason to combine Richardson and LT1618 in the context of the '023 patent. *See* CRB at 96-99, 66-68. NOCO argues that, like Zhou, LT1618 is a "single-cell battery charger" for "low-power types of applications." CRB at 67. NOCO points out that LT1618 discloses its use as designed for "driving white LEDs, not a heavy-duty device like the Richardson jump starter that demands significantly higher charging voltage and current." CRB at 67-68 (citing RX-1429.2 ("Driving white LEDs is one application for which the device is ideally suited.")). NOCO contends that the much slower USB charging disclosed in LT1618 would not have been "practical" to include on Richardson. CRB at 68.

Staff argues that the evidence presented by Respondents fails to establish by clear and convincing evidence that one of skill in the art would have been motivated to add the USB charging feature disclosed by LT1618 to Richardson. SIB at 114, 128-129. Staff asserts that prior to the advent of USB-C charging, one of skill in the art would not have been motivated to include USB charging for a large battery because of the length of time it would have taken to

---

specificity what constitutes the LT3477 prior art. LT3477 is only referenced in the sentence excerpted above, and within the section of the brief addressing the combination of Richardson and Zhou as an example of a commercially-available, off-the-shelf DC-DC converter for a USB input circuit. RIB at 113-114. To the extent Respondents contend that a combination of Richardson, LT1618, and LT3477 renders the claims obvious, that contention is waived because Respondents did not address it in their initial post-hearing brief.

DELTRAN EX1060
IPR2024-01219

recharge Richardson via USB. SIB at 129. Further, Staff contends that LT1618 discloses USB charging for applications other than jump starters. SIB at 129.

Upon review of the submissions and evidence of record, the undersigned finds that Respondents have not established, by clear and convincing evidence, that one of skill in the art would have reason to add the USB input connector and/or charging circuit of LT1618 to Richardson's jump starter to obtain Limitation [1e].

As an initial matter, Dr. Ricketts testified that because Richardson referenced a battery charger for Richardson's jump starter battery, and LT1618 discloses a USB battery charger, one of skill in the art would use the USB charging capabilities of LT1618 as the "battery charger (not shown)" to charge the battery of Richardson. Tr. (Ricketts) at 839:15-23; RIB at 157. In explanation, he testified that LT1618 discloses converting a 5 volt input up to a 12-volt output, "which is one of the embodiments of Richardson." *See* Tr. (Ricketts) at 830:19-21. Dr. Ricketts' testimony, however, does not address why one of skill in the art would have opted to use the USB battery charging disclosed in LT1618 as the "battery charger (not shown)" in Richardson. The record evidence establishes that at the time of invention, USB battery charging[150] was four to eight times slower than barrel chargers, and substantially slower than the 1 to 5 minute recharge provided by Richardson's vehicle system recharge path. *See* Tr. (Fayed) at 965:19-22 ("At that time, the prevailing mentality was: If you have that barrel charger, that's really the best

[150] The evidence also suggests that the USB charging circuit in LT1618 would have provided even slower charging than a USB charging circuit as of July 3, 2014. Dr. Ricketts testified, and Respondents repeat, that the USB charging circuit disclosed in LT1618 would be compliant with USB 1.0/2.0/3.0 and the USB Battery Charging specifications. *See* RIB at 157. The evidence of record, however, establishes that the USB Battery Charging specification was not available until April of 2007, and USB 3.0 was not released until November of 2008. *See* Compl. *Markman* Br. Ex. 13 (Fayed Decl.) at ¶¶ 152, 153. LT1618 was published in February of 2001, so, at most, LT1618 is compliant with USB 1.0 and 2.0 specifications. *Id.* In connection with *Markman*, Dr. Fayed explained that a charging circuit compliant with USB 2.0 could provide, at most, 2.5W (500 mA at 5V), while a USB charging circuit in 2014 compliant with USB 3.1 or USB PD 1.0 could support 15 W (3 A at 5 V) or 100 W (5A at 20 V). *Id.* at ¶ 153.

DELTRAN EX1060
IPR2024-01219

charging that you could hope for, as far as the speed of charging your device."); RX-2363.3 (Stanfield IPR Decl.) ("The use of a DC-DC converter required to step up the 5V USB input voltage to the 12.4V lithium battery results in a corresponding current drop such that charging the jump starter with the USB input would be 4 to 8 times slower than using a barrel connector"); Tr. (Stanfield) at 1352:11-15 ("I had developed the prototype with a barrel connector, which was very simple and had the advantage of fast charging the battery. And I was concerned that it would take too much time for customers to recharge the unit after they had used it.") LT1618 itself discloses that it can provide a charging current of only about 35 mA at 12V, while Dr. Fayed testified that Richardson is designed to support "substantial current for charging the system." RX-1429 (disclosing that with an input current limit of 100mA at 5V, "about 35 mA can be provided to the 12V output"); Tr. (Fayed) at 971:8-11.

Moreover, as discussed above with respect to the combination of Zhou and Richardson in connection with invalidity of the '023 patent, the undersigned credits Dr. Fayed's testimony that one of skill would not have reason to add USB charging, as disclosed in LT1618, to Richardson because Richardson does not disclose any power conversion circuitry—*i.e.*, there is no buck or boost conversion of voltage from the power input to the internal batteries. USB charging requires power conversion circuitry. *See* Tr. (Fayed) at 971:16-972:1; RX-1429.2 ("In addition to providing an accurate input current limit, the LT1618 can also be used to provide an accurately regulated output current for current-source applications."). As Dr. Fayed explained, Richardson does not disclose DC-DC conversion circuitry, as required by the "DC-DC converter" and "increase[ing] power voltage" elements of Limitation [1f], in the "vehicle charging system" path. *See* Tr. (Ricketts) at 979:19-980:5. ("Richardson will charge its battery through the clamps, from the vehicle that is providing power. So there is really no DC-to-DC conversion circuitry at all in

DELTRAN EX1060
IPR2024-01219

that path. It's just straight from the vehicle into the Richardson device. So that's very different. There is no DC-to-DC conversion involved here."). Nor does the evidence show any power conversion—*e.g.*, "increase[ing] power voltage" —suggested in Richardson's disclosure of a "battery charger (not shown)." RX-2445 at [0028]. Respondents have not introduced sufficiently persuasive evidence that one of skill in the art would have reason to add to Richardson, with a reasonable expectation of success, a charging path at a different input voltage that required power management and power conversion to charge the internal batteries rather than, for example, utilizing a barrel charger that would not require power conversion,[151] nor sufficiently explained how such circuitry would be implemented in Richardson. Dr. Fayed also testified that the vehicle charging system for the jump starter disclosed by Richardson (taking one to five minutes) is far more practical than the USB charging approach proposed by Respondents. *See* Tr. (Fayed) at 975:3-8, 976:7-13.[152]

Accordingly, the evidence as a whole does not clearly and convincingly establish a reason to combine LT1618 with the jump starter of Richardson with a reasonable expectation of success to obtain Limitation [1e].

[151] In the Richardson/Zhou and Richardson/LT1618 combinations (unlike the E-Power 21 and E-Power 10 combination), Dr. Ricketts does not clearly or convincingly discuss utilizing both a barrel charger and a USB charger. *See, e.g.*, Tr. (Ricketts) at 832:18-24, 839:18-23.

[152] *See generally* Part VIII.C.1 *supra* regarding the combination of Richardson and Zhou.

DELTRAN EX1060
IPR2024-01219

vii. Claim Limitation [1f]: "a USB charge circuit electrically connecting the USB input connector to the power supply, the USB charge circuit comprising a DC-DC converter configured to upconvert voltage from the USB input connector to the power supply."

The parties dispute this limitation, although the dispute is limited to whether one of skill in the art would have reason to combine Richardson and Zhou to obtain Limitation [1f]. As discussed above in connection with invalidity of the '023 patent, *supra* Part VIII.C.1.a.vii, the undersigned finds that Respondents have not established by clear and convincing evidence that one of skill in the art would have reason to combine Richardson and Zhou, and accordingly, Respondents have failed to establish, by clear and convincing evidence, that Limitation [1e] is taught or suggested by the combination of Richardson and Zhou.

As to the combination of Richardson and LT1618, the parties do not dispute that LT1618 teaches a USB charge circuit with the claimed elements. *See* SRB at 89; CRB at 77-78; RIB at 157. The undisputed evidence also demonstrates that LT1618 includes a USB charge circuit comprising a DC-DC converter configured to upconvert voltage from the USB input connector to the power supply. Tr. (Ricketts) at 839:15-840:2 ("This is a battery charger that upconverts 5 volts USB to a 12-volt output."); RX-1429 at Fig. 1, .2 ("Figure 1 shows a 5V to 12V boost converter ideal for USB applications."). Accordingly, Respondents have shown by clear and convincing evidence that LT1618 teaches or suggests Limitation [1f] of the '243 patent.

For the reasons discussed above regarding Limitation [1e], however, the evidence does not clearly and convincingly show a reason to combine LT1618 and Richardson with a reasonable expectation of success to obtain the USB-charging required by Limitation [1e].

***

DELTRAN EX1060
IPR2024-01219

Accordingly, Respondents have failed to show by clear and convincing evidence that claim 1 of the '243 patent is obvious based on the combination of Richardson and Zhou or LT1618.

b. Claim 2

Claim 2 depends from claim 1, and requires in addition "wherein the power switch or switch circuit is controlled to turn on power to the depleted or discharged battery only when the jump starting device is connected with correct polarity to the depleted or discharged battery."

Respondents argue that Richardson teaches or suggests the additional limitation of claim 2 of the '243 patent. Specifically, Respondents point to the disclosure of reverse voltage sensor 24, which Respondents contend monitors polarity, and the disclosure that if the jumper cables are connected with reverse polarity, the microcontroller operates to "ignore any further jump starter action (and the contact relay or power switch 34 may not be turn on, or switched off, to provide an open circuit that prevents delivery of power from the jump starter to the vehicle) until the reverse polarity condition is corrected." RIB at 153-54 (citing RX-2445, cl.1, [0027], Fig. 3; Tr. (Ricketts) at 843:13-844:2).

NOCO argues that Respondents and Dr. Ricketts "did not address why a combination of Richardson in view of Zhou and Thomason and Xinfang would render obvious claim 2," and that Respondents' contentions are based on "unsupported attorney argument." CRB at 97.

Staff does not separately address the obviousness of claim 2 over the combination of Richardson, Zhou or LT1618, and Thomason. SIB at 128-29; SRB at 89-90.

As discussed above, Respondents have not shown sufficient evidence of a reason to combine Richardson and Zhou or LT1618 to obtain the USB-charging limitations of claim 1.

DELTRAN EX1060
IPR2024-01219

Accordingly, Respondents have also failed to show that dependent claim 2 of the '243 patent is obvious over the combination of Richardson and Zhou or LT1618.

2. Obviousness in view of Richardson, Zhou or LT1618, Thomason and Xinfang

In addition to Richardson, Zhou or LT1618, and Thomason, Respondent rely on Xinfang to assert that claims 18 and 54 are obvious. Xinfang, U.S. Patent No. 9,506,446, is titled "Mobile Power Bank," was filed on October 31, 2013 and issued on November 29, 2016. There is no dispute that Xinfang constitutes prior art to the '243 patent under 35 U.S.C. §§ 102(a)(1) and (2). *See* RIB at 109; SIB at 127-28; CRB at 96-99.

a. Claim 18

Claim 18 depends from claim 17, which depends from claim 15, which ultimately depends from claim 1 and requires in addition "further comprising a USB output connector for providing a power output from the power supply to a USB-chargeable device" (claim 15), "wherein the USB output connector is electrically connected to a USB output circuit, the USB output circuit connecting the power supply to the USB output connector," (claim 17) and "further comprising a microcontroller with a control circuit, the control circuit for the microcontroller allows the USB output circuit to be turned on and off by software control to prevent the power supply getting too low in capacity" (claim 18).

As discussed above, Respondents have not shown sufficient evidence of a reason to combine Richardson and Zhou or LT1618 to obtain the USB-charging limitations of claim 1. Accordingly, Respondents have also failed to show that dependent claim 18 of the '243 patent is obvious over the combination of Richardson, Zhou or LT1618, and Xinfang.[153]

[153] In addition, Respondents have not established, by clear and convincing evidence, that the combination of Richardson, Zhou, and Xinfang teaches or suggests the additional limitations of claim 18. *See* CIB at

DELTRAN EX1060
IPR2024-01219

b. Claim 54

Claim 54 depends from claim 51, which ultimately depends from claim 1 and requires in addition "wherein the power supply is a rechargeable lithium battery pack" and "further comprising a rechargeable lithium battery pack voltage measurement circuit configured to monitor the rechargeable lithium battery pack to prevent voltage potential from rising too high during a charging operation and from dropping too low during a discharge operation."

As discussed above, Respondents have not shown sufficient evidence of a reason to combine Richardson and Zhou or LT1618 to obtain the USB-charging limitations of claim 1. Accordingly, Respondents have also failed to show that dependent claim 54 of the '243 patent is obvious over the combination of Richardson, Zhou or LT1618, and Xinfang.[154]

3. Obviousness in view of E-Power 21, E-Power 10, and Thomason

The E-Power 21 and E-Power 10 references are the same as discussed in connection with invalidity of the '023 patent.

Respondents assert that the combination of E-Power 21, E-Power 10, and Thomason teaches or suggests all the limitations of claims 1, 2, 18, and 54 of the '243 patent.

a. Claim 1

162-63 (disputing this limitation). Dr. Ricketts' entire testimony on a reason to combine Xinfang with Richardson, Zhou (and Thomason) was that "Xinfang is also a jump starter." Tr. (Ricketts) at 852:11-15 ("[Q]: I wanted to talk with you about the – why can Xinfang be put in this combination too? . . . [A]: Xinfang is also a jump starter."). Although Respondents argue that the skilled artisan would have been motivated to combine Xinfang and Richardson and would have had a reasonable expectation of success in doing so, RIB at 154-55, those arguments are unsupported by persuasive evidence or expert testimony.

[154] In addition, Respondents have not established, by clear and convincing evidence, that the combination of Richardson, Zhou or LT1618, and Xinfang teaches or suggests the additional limitations of claim 54. See CIB at 163 (disputing this limitation). Dr. Ricketts' entire testimony on a reason to combine Xinfang with Richardson, Zhou or LT1618 was that "Xinfang is also a jump starter." Tr. (Ricketts) at 852:11-15 ("[Q]: I wanted to talk with you about the – why can Xinfang be put in this combination too? . . . [A]: Xinfang is also a jump starter."). Although Respondents argue that the skilled artisan would have been motivated to combine Xinfang and Richardson and would have had a reasonable expectation of success in doing so, RIB at 154-55, those arguments are unsupported by persuasive evidence or expert testimony.

DELTRAN EX1060
IPR2024-01219

The parties do not dispute the disclosure of Limitations [1pre]-[1c] in E-Power 21, and do not dispute that E-Power 10 teaches USB charging as claimed in Limitations [1e] and [1f]. Thomason is only necessary if Respondents' proposed construction of the "when connected" language of Limitation [1d] is adopted (requiring the circuit to switch power on regardless of polarity); otherwise, Respondents contend that E-Power 21 and E-Power 10 teach or suggest the limitations of claim 1 of the '243 patent for the same reason as claim 1 of the '023 patent. *See* RIB at 157-58.

The disputes are limited to (1) whether the E-Power 21 and E-Power 10 references are prior art, and whether the features and operation have been established by clear and convincing evidence; (2) whether in Limitation [1d], the "when connected" language requires a jump starter that turns power on the clamps regardless of the polarity of the connection; and (3) whether one of skill in the art would have reason to combine E-Power 21, E-Power 10, and/or Thomason.

As discussed above in connection with the '023 patent, *supra* Part VIII.C.3.a-b, Respondents have established by clear and convincing evidence that E-Power 21 and E-Power 10 devices are prior art, and that the devices have the features and operations evidenced in the physical devices and schematics relied upon by Respondents. The remaining disputed issues are addressed below.

i. Claim Limitation [1pre]: "A jump starting device for boosting or charging a depleted or discharged battery having a positive battery terminal and a negative battery terminal, the jump starting device comprising:"

The parties rely on the same arguments for this claim limitation as for Limitation [1pre] of claim 1 of the '023 patent. *See* RIB at 157-60; CIB at 160. For the reasons discussed above with respect to those limitations of the '023 patent, the evidence shows clearly and convincingly that this limitation is disclosed in E-Power 21.

DELTRAN EX1060
IPR2024-01219

ii. Claim Limitation [1a]: "a power supply"

The parties rely on the same arguments for this claim limitation as for Limitation [1a] of claim 1 of the '023 patent. *See* RIB at 157-60; CIB at 160. For the reasons discussed above with respect to those limitations of the '023 patent, the evidence shows clearly and convincingly that this limitation is disclosed in E-Power 21.

iii. Claim Limitation [1b]: "a positive battery connector for electrically connecting the jump starting device to the positive battery terminal of the depleted or discharged battery;"

The parties rely on the same arguments for this claim limitation as for Limitation [1b] of claim 1 of the '023 patent. *See* RIB at 157-60; CIB at 160. For the reasons discussed above with respect to those limitations of the '023 patent, the evidence shows clearly and convincingly that this limitation is disclosed in E-Power 21.

iv. Claim Limitation [1c]: "a negative battery connector for electrically connecting the jump starting device to the negative battery terminal of the depleted or discharged battery;"

The parties rely on the same arguments for this claim limitation as for Limitation [1c] of claim 1 of the '023 patent. *See* RIB at 157-60; CIB at 160. For the reasons discussed above with respect to those limitations of the '023 patent, the evidence shows clearly and convincingly that this limitation is disclosed in E-Power 21.

v. Claim Limitation [1d]: "a power switch or switch circuit connected in circuit with the power supply and the positive and negative battery connectors, the power switch or switch circuit configured to switch power on from the power supply to boost or charge the depleted or discharged battery when connected between the positive and negative polarity battery connectors;"

The parties dispute this limitation, although the dispute is limited to whether the "when connected" language requires a jump starter that supplies power to the clamps regardless of the

DELTRAN EX1060
IPR2024-01219

polarity of the connection. As discussed above in connection with alleged infringement of the ’243 patent, *supra* Part VI.D.1.a.v, the undersigned does not adopt Respondents’ proposed claim construction of the “when connected” language in Limitation [1d].

Because the undersigned rejects Respondents’ proposed claim construction, the Thomason reference is not necessary to the alleged obviousness grounds. *See* RIB at 157-58 (“To the extent that Claim 1[e] requires that the power switch be configured to switch power on from the power supply when connected between the positive and negative battery connectors, regardless the polarity of the connection, Thomason discloses . . . .”). Because Thomason is not necessary to the combination, NOCO’s additional arguments regarding the motivation to combine E-Power 21 and E-Power 10 with Thomason, CIB at 160; CRB at 94-95, do not impact Respondents’ obviousness theory.

The parties otherwise rely on the same arguments for this claim limitation as for the Limitation [1e] of claim 1 of the ’023 patent. *See* CRB at 94. For the reasons discussed above with respect to those limitations of the ’023 patent, the evidence shows clearly and convincingly that this limitation is disclosed in E-Power 21.

vi. Claim Limitation [1e]: “a USB input connector”

The parties dispute this limitation, although the dispute is limited to whether one of skill in the art would have reason to combine E-Power 21 and E-Power 10 to obtain Limitation [1e].[155] As discussed above in connection with invalidity of the ’023 patent, *supra* Part VIII.C.3.c.vii, the undersigned finds that Respondents have established by clear and convincing evidence that one of skill in the art would have reason to combine E-Power 21 and E-Power 10

[155] Because Thomason is not necessary to the combination, NOCO’s additional arguments regarding the motivation to combine Richardson and Zhou with Thomason, CIB at 162; CRB at 96-97, do not impact Respondents’ obviousness theory.

with a reasonable expectation of success, and accordingly, Respondents have established, by clear and convincing evidence, that Limitation [1e] is taught or suggested by the combination of E-Power 21 and E-Power 10.

vii. Claim Limitation [1f]: "a USB charge circuit electrically connecting the USB input connector to the power supply, the USB charge circuit comprising a DC-DC converter configured to upconvert voltage from the USB input connector to the power supply."

The parties dispute this limitation, although the dispute is limited to whether one of skill in the art would be motivated to combine Richardson and Zhou to obtain Limitation [1f]. As discussed above in connection with invalidity of the '023 patent, *supra* Part VIII.C.3.c.vii, the undersigned finds that Respondents have established by clear and convincing evidence that one of skill in the art would have reason to combine E-Power 21 and E-Power 10 with a reasonable expectation of success, and accordingly, Respondents have established, by clear and convincing evidence, that Limitation [1e] is taught or suggested by the combination of E-Power 21 and E-Power 10.

***

Accordingly, and in view of the lack of evidence or argument as to secondary considerations of non-obviousness, Respondents have shown by clear and convincing evidence that claim 1 of the '243 patent is obvious over the combination of E-Power 21 and E-Power 10.

b. Claim 2

The parties rely on the same arguments for this claim limitation as for Limitation [1e] of claim 1 of the '023 patent. *See* RIB at 158-59; CIB at 160-61; CRB at 95. For the reasons discussed above with respect to Limitation [1e] of the '023 patent, the evidence shows clearly and convincingly that this limitation is disclosed in E-Power 21. Accordingly, and in view of the

DELTRAN EX1060
IPR2024-01219

lack of evidence or argument as to secondary considerations of non-obviousness, the evidence clearly and convincingly shows that this claim is invalid.

c. Claim 18

Claim 18 depends from claim 17, which depends from claim 15, which ultimately depends from claim 1 and requires in addition "further comprising a USB output connector for providing a power output from the power supply to a USB-chargeable device" (claim 15), "wherein the USB output connector is electrically connected to a USB output circuit, the USB output circuit connecting the power supply to the USB output connector," (claim 17) and "further comprising a microcontroller with a control circuit, the control circuit for the microcontroller allows the USB output circuit to be turned on and off by software control to prevent the power supply getting too low in capacity" (claim 18).

Other than arguments regarding the prior art status and a reason to combine E-Power 21 with the USB charging circuit of E-Power 10, the parties do not dispute the disclosure of this limitation in the combination of E-Power 21 and E-Power 10. *See* CIB at 161; CRB 95-96; SIB at 127-28; SRB at 87-89.[156] The undisputed evidence also demonstrates that E-Power 10 includes a USB output that is controlled by the microcontroller. *See* Tr. (Ricketts) at 845:23-847:22; RX-2486.5 (identifying a 5V/2A output in E-Power 10, which Dr. Ricketts explained is a USB output, and depicting a USB output port); RX-2481C (CZ-10F schematic); RX-2492C (CZ-10 schematic). Specifically, microcontroller U6 in E-Power 10 controls the USB output circuit by turning on and off the DC-DC converter U4 via the "enable" pin. *See* Tr. (Ricketts) at

[156] Staff references a combination of E-Power 21, E-Power-10 and Xinfang, SRB at 87, but Respondents identify only E-Power 10 and E-Power 21 as disclosing the additional limitations of claims 2, 18, and 54. *See* RIB at 159-60; CIB at 161 n.15 (noting that Dr. Ricketts did not address the combination of E-Power 21, E-Power 10, Thomason, and Xinfang).

DELTRAN EX1060
IPR2024-01219

847:11-22; RX-2481C (CZ-10F schematic); RX-2492C (CZ-10 schematic). Further, Dr. Ricketts explained that incorporating the ability for a DC-DC converter to be turned on and off by the microprocessor offers enhanced power conservation benefits, which provides a reason to combine E-Power 21 and the USB output circuit—including microprocessor control of the DC-DC circuit—of E-Power 10. Tr. (Ricketts) at 769:12-770:2 (discussing DC-DC power conservation on context of claim 32 of the '023 patent).

For the reasons discussed above regarding Limitation [1e], the evidence clearly and convincingly shows a reason to combine E-Power 21 and E-Power 10 with a reasonable expectation of success to obtain the USB-charging required by Limitation [1e] and [1f]. Additionally, the evidence shows by clear and convincing evidence that the additional limitations of claim 18 is disclosed by E-Power 10 and that one of ordinary skill in the art would have reason to incorporate these feature in the proposed combination with a reasonable expectation of success. Accordingly, and in view of the lack of secondary considerations of obviousness weighing in favor of NOCO, Respondents have shown by clear and convincing evidence claim 18 of the '243 patent is obvious over the combination of E-Power 21 and E-Power 10.

d. Claim 54

Claim 54 depends from claim 51, which ultimately depends from claim 1 and requires in addition "wherein the power supply is a rechargeable lithium battery pack" and "further comprising a rechargeable lithium battery pack voltage measurement circuit configured to monitor the rechargeable lithium battery pack to prevent voltage potential from rising too high during a charging operation and from dropping too low during a discharge operation."

The parties dispute this limitation. Respondents contend that E-Power 10 and E-Power 21 each include the same integrated charge controller chip, the S8254. RIB at 159 (citing Tr.

DELTRAN EX1060
IPR2024-01219

(Cheng) at 709:3-15, 711:1-23), and that Dr. Ricketts testified that the S8254 integrated controller chip in E-Power 10 provides the claimed battery and overcharge and over-discharge protection. Tr. (Ricketts) at 851:3-7.[157] Further, Respondents contend that Dr. Fayed agreed that the inclusion of an S8254 chip—which Respondents contend both the E-Power 10 and E-Power 21 device include—is sufficient to practice claim 54. Tr. (Fayed) at 449:6-19, 450:17-23 ("[Q]: So the -- a jump starter such as the NOCO GB50 that has an S8254 is a device that is configured to monitor the rechargeable lithium-ion battery pack to prevent voltage potential from rising too high during a charging operation and dropping too low during a discharge; right? [A]: Correct.").

NOCO argues that Dr. Ricketts "failed to describe any reasoning as to why a POSA would have added this to the E-Power 21 device." CRB at 96.

Staff does not separately address claim 54. SIB at 127-28; SRB at 87-88.

For the reasons discussed above regarding Limitation [1e], the evidence clearly and convincingly shows a reason to combine E-Power 21 and E-Power 10 with a reasonable expectation of success to obtain the USB-charging required by Limitation [1e] and [1f]. Additionally, the evidence shows by clear and convincing evidence that the additional limitations of claim 54 is disclosed by E-Power 21 and E-Power 10. Specifically, E-Power 21 and E-Power 10 both include lithium-ion batteries and both include the same [redacted] controller chip (which is also present in the GB50 NOCO DI Product), and which Dr. Fayed opined is sufficient to

[157] Dr. Ricketts' testimony regarding the E-Power 21's inclusion of the S8254 chip was stricken upon motion because it was not timely disclosed. *See* Order No. 42 at 2-3 (striking lines 755:1-2, 763:11, and 848:14-849:7). Mr. Cheng's testimony, cited by Respondents, was not objected to or subject to a motion to strike. *See* Tr. (Cheng) at 711:17-23 ("[Q]: So there is a block here labeled S3 -- sorry, U3. And then underneath it, S-8254. What is this block, Mr. Cheng? [A]: This is the same as what I talked about earlier regarding E-Power 10. This is an integrated protection IC. It is to protect the lithium-ion batteries from being over-discharged and overcharged."). Mr. Cheng was not qualified as an expert, but was permitted, consistent with his job responsibilities, to testify as to factual information about Carku's products.

DELTRAN EX1060
IPR2024-01219

practice the additional limitations of claim 54. Tr. (Fayed) at 449:6-19, 450:17-23; Tr. (Ricketts) at 730:6-7 ("Well, the E-Power 21 and E-Power 10, both have lithium-based batteries."); Tr. (Cheng) at 709:3-15, 711:1-23; RX-2527C; RX-2530C. Because the IC chip in both the E-Power 21 and E-Power 10 is the S8254, the evidence taken as a whole demonstrates that the additional limitations of claim 54 are disclosed in E-Power 21.

Accordingly, and in view of the lack of secondary considerations of obviousness weighing in favor of NOCO, Respondents have shown by clear and convincing evidence claim 54 of the '243 patent is obvious over the combination of E-Power 21 and E-Power 10.

4. Invalidity Under 35 U.S.C. § 112

The parties' section 112 arguments regarding the '243 patent are the same as those for the '023 patent and/or have been discussed above. *See* RIB at 160; CRB at 99; SRB at 90-91. For the reasons provided, *supra*, the evidence fails to show that the asserted claims of the '243 patent are invalid under 35 U.S.C. § 112.

5. Unenforceability

The parties' unenforceability arguments made regarding the '243 patent are the same as those for the '023 patent. *See* RIB at 160; CRB at 99; SRB at 91-92. For the reasons provided, *supra*, the evidence fails to show that the asserted claims of the '243 patent are unenforceable.

IX. DOMESTIC INDUSTRY – ECONOMIC PRONG

To meet the economic prong of the domestic industry requirement under each of the patents at issue, NOCO relies on certain alleged domestic investments, including investments in its engineering, research, development, and design ("ERDD") activities during the period

DELTRAN EX1060
IPR2024-01219

January 2021 through April 2023. *See* CIB at 164, 172.[158] The evidence shows that NOCO has four facilities in the United States; these are the NOCO headquarters in Glenwillow, Ohio and facilities in Cleveland, Ohio; Peoria, Arizona; and Chandler, Arizona. CIB at 165; Tr. (Jarosz) at 591:24-592:2. The evidence also shows that [redacted] DI products are designed and engineered in the United States. Tr. (Jarosz) at 605:8-9; CIB at 167; RX-4091C (Lam Dep. Tr.) at 58:2-6. [redacted] CIB at 167.

The NOCO DI products are identified in CX-0262C. *See* CIB at 12; CX-0262C. For the '992 and '808 patents, the asserted DI products are the GB20, GB40, GB50, and GBX45 (the "Group I DI Products." *See* CIB at 166. For the '023 and '243 patents, the relevant products are the GB20, GB40, GB50, GB70, GB150, GBX45, GBX55, GBX75, and GBX155 (the "Group 3 DI Products"). *See id.* The "GBX" products are those that include USB-C functionality. *See id.* at 172 n.19.[159]

For the reasons set forth below, the evidence shows by a preponderance that the economic prong of the domestic industry requirement has been satisfied based on NOCO's labor investments.

A. Domestic Investments and Allocation Methodology

[158] NOCO asserts the existence of a domestic industry under 19 U.S.C. § 1337(a)(2)(A) and (B) and does not provide specific arguments under 19 U.S.C. § 1337(a)(2)(C). *See* CIB at 172-183. Research and development expenses do not need to be considered under sub-prong (C). *See Certain Solid State Storage Drives, Stacked Electronics Components, and Products Containing Sam*e, Inv. No. 337-TA-1097, Comm'n Op., 2018 WL 4300500, at *9 (June 29, 2018).

[159] The Group 3 asserted DI products thus include all the Group I asserted DI products, and both groups include the GBX45 USB-C product.

DELTRAN EX1060
IPR2024-01219

1. Plant and Equipment

NOCO has provided calculations showing both ERDD-specific plant and equipment investments in the DI products as well as U.S. investments encompassing "all domestic activities" for the DI products. *See* CIB at 172.

With respect to calculating ERDD-based investments, Mr. Jarosz included only investments made [redacted] which he testified is "almost entirely devoted to ERDD." Tr. (Jarosz) at 601:6-10; CIB at 173. The evidence indicates that [redacted] Tr. (Jarosz) at 600:20-25.

With respect to calculating plant and equipment for "all domestic activities," NOCO relies in addition on domestic activities relating to "quality control, compliance, and warranty service." CIB at 170; Tr. (Weiner) at 259:15-260:5, 262:25-264:9; Tr. (Jarosz) at 602:3-24. NOCO also relies on sales, marketing, and distribution activities; and administrative activities. *Id.* at 171; Tr. (Weiner) at 259:15-260:5. This second approach to the calculations includes investments made for all of NOCO's four domestic facilities.

Mr. Jarosz provided testimony providing the following totals for plant and equipment investments, for the period of January 2021 through April 2023, based on: (1) [redacted] and (2) all facilities (corresponding to all U.S. activities). *See* Tr. (Jarosz) at 605:15-609:6. As shown in the table below, he calculated a total of approximately [redacted] in plant and equipment investments for [redacted], and a total of approximately [redacted] for all facilities combined:

DELTRAN EX1060
IPR2024-01219



Tr. (Jarosz) at 608:4-20; CDX-0005C.037.

Mr. Jarosz then applied a sales-based allocation to allocate the facilities and equipment expenditures to both the Group 1 and Group 3 DI products. Based on comparing NOCO's sales of the DI product to total worldwide sales during the 2021-2023 period, he allocated [redacted] of investments to the Group 1 DI products, and [redacted] to the Group 3 DI products. Tr. (Jarosz) at 609:7- 611:21. This resulted in the following allocated investments in facilities and equipment for the 2021-April 2023 period:



Tr. (Jarosz) at 615:4-19; CDX-0005C.041.[160]

[160] In addition, Mr. Jarosz provided data from which the GB products and GBX products in Group 3 can be separately allocated. This further breakdown is needed to assess the DI products that have been found to satisfy the technical prong of the domestic industry requirement, since the USB-C products (i.e., the GBX products) have not been found to satisfy the technical prong. *See* Part VII.C.-D *supra*; CIB at 172

The parties do not dispute the calculations regarding total investments but do dispute whether a sales-based allocation is appropriate. NOCO argues that it does not allocate resources to particular products in the normal course of business and that a sales-based allocation is reasonable under the circumstances. *See* CIB at 178-79. NOCO also states that the products at issue are a significant percentage of NOCO's total sales. *See id.* at 179 (citing Tr. (Weiner) at 251:19-24). NOCO argues that Respondents' expert did not provide any alternative allocation and stated that he did not know that there's a better allocation method. *See* CRB at 110 (citing Tr. (La Motta) at 1269:12-15). Staff agrees that a sales-based allocation is reasonable. *See* SIB at 134-35.

Respondents argue that a sales-based allocation is "demonstrably defective" because it assumes that that the expenditures at issue are directed at sold products, whereas there is evidence that NOCO has expended research and development resources on non-commercialized products. *See* RIB at 167 (citing LaMotta testimony). Respondents also argue that a sales-based allocation is unreliable because it is based on worldwide sales of products rather than on U.S. sales (RIB at 167 n.15) and that there is no evidence "to demonstrate that product improvements implemented 'in the last few years' were more resource-intensive for higher-seller products than for products with lower sales revenue." *Id.* at 168.

Upon consideration of the parties' arguments and evidence of record, the undersigned finds that a sales-based allocation is reasonable under the circumstances. As discussed below (under "Significance"), there is persuasive evidence of ongoing engineering activities relating to

n.19. With respect to Group 3, total worldwide Group 3 sales were [redacted], of which [redacted] were GB sales and [redacted] were GBX sales. *See* Tr. (Jarosz) at 595:21-596:13; CDX-0005C.017; CX-0213C. Accordingly, [redacted] of all Group 3 DI product sales were GB products. Applying this [redacted] further allocation results in [redacted] ERDD investments for the Group 3 DI products excluding GBX, and [redacted] total investments for the Group 3 DI products excluding GBX. Adjusting the figures to exclude the GBX products does not alter the substantiality analysis in a material way.

DELTRAN EX1060
IPR2024-01219

the DI products. Regarding the argument that a sales-based allocation may fail to account for investments in non-commercialized products, this is not a sufficient reason for declining to use a sales-based allocation particularly where, as here, no other allocation has been presented. *Cf. Certain Movable Barrier Operator Systems and Components Thereof* ("*Movable Barrier*"), Inv. No. 337-TA-1118, Comm'n Op., EDIS Doc. ID 730303, at 28 (Jan. 12, 2021) (sales-based allocations need not provide a "precise accounting" so long as they are reasonable under the circumstances); *Certain Cellular Base Station Communications Equipment, Components Thereof, and Products Containing Same*, Inv. No. 337-TA-1302, Initial Determination, EDIS Doc. ID 783920 (Nov. 2, 2022) (granting summary determination that economic prong was satisfied based on sales-based allocation of research and development investments), *not reviewed by* Comm'n Notice, EDIS Doc. ID 785567 (Dec. 2, 2022); *Certain Playards and Strollers*, Inv. No. 337-TA-1288, Initial Determination, EDIS Doc. ID 794159, at 123 (Mar. 31, 2023) (rejecting argument that sales-based allocation was unreliable for R&D investments because "[s]uch an argument would apply in virtually every investigation . . . [i]t is understood that any allocation method will not perfectly capture actual investments"); *Certain Portable Battery Jump Starters & Components Thereof*, Inv. No. 337-TA-1360, Initial Determination, EDIS Doc. ID 822921, at 141-44 (May 17, 2024) (in another investigation involving NOCO, finding a sales-based allocation reasonable under the circumstances and noting that arguments regarding not yet commercialized products "is possible in virtually every investigation") ("*Portable Battery Jump Starters*"); *Certain Collapsible Sockets for Mobile Elec. Devices and Components Thereof*, Inv. No. 337-TA-1056, Comm'n Op., 2018 WL 7680630, at *9 (July 9, 2018) ("A sales-based

DELTRAN EX1060
IPR2024-01219

allocation may be applied to determine, under each subsection, the investments relating to the articles protected by the patent.") (internal quotation omitted).[161]

Respondents' objection based on the use of worldwide sales is also unpersuasive given the evidence that NOCO's ERDD activities in the United States support products sold globally. *See* CRB at 112 (arguing that NOCO's ERDD activities support global sales and citing record evidence); *Portable Battery Jump Starters* at 144-146 (finding that comparison of worldwide sales of DI products to worldwide sales is an appropriate sales-based allocation method where "the evidence shows that the activities in the U.S. benefit the global marketplace"); *Certain Robotic Vacuum Cleaning Devices and Components Thereof*, Inv. No. 337-TA-1057, Initial Determination, EDIS Doc. ID 637877, at 29 (Feb. 13, 2018) (where "U.S.-based employees are engaged in engineering, research, and development for products sold both inside and outside the

[161] Respondents cite several investigations where they contend sales-based allocations were not found to be reliable. *See* RIB at 168 and n.16. In the decisions cited (all of which ultimately found that the economic prong was satisfied), there was specific, persuasive evidence in the record supporting a different allocation method and/or controverting the reasonableness of a sales-based allocation. In the 1241 investigation, for example, the undersigned noted that sales-based allocations "are a generally accepted methodology" but that evidence provided by the complainant's employees supported a different allocation methodology which substantially diverged from the sales-based allocation method. *See Certain Electrical Connectors and Cages*, Inv. No. 337-TA-1241, Initial Determination, 2022 WL 1124999, at *203 (finding economic prong requirement satisfied under different methodology). No similar circumstances are present here. *See also Certain Silicon-on-Insulator Wafers*, Inv. No. 337-TA-1025, Initial Determination, 2017 WL 10903045, at *30, 32, 33 (Feb. 8, 2017) (RIB at 168) (finding sales-based allocation method unreliable where *inter alia* "it is a finding of this decision that SunEdison's sales figures are generally unreliable" but concluding that complainant had "contingently" satisfied the economic prong requirement based on alternative allocation method in the record); *Certain Indus. Automation Sys. and Components Thereof*, Inv. No. 337-TA-1074, Initial Determination, 2018 WL 3599546, at *8-9 (July 12, 2018) (RIB at 168) (finding that it was "unclear" whether sales-based allocation method for a particular product was reliable under the circumstances given service and repair records but granting summary determination that the economic prong was satisfied based on other products at issue).

DELTRAN EX1060
IPR2024-01219

U.S.; i.e., worldwide . . . the allocation should come from Domestic Industry Product sales figures as a percentage of worldwide sales figures—not U.S. sales figures.").[162]

Accordingly, the undersigned finds that Mr. Jarosz's calculations regarding investments in plant and equipment attributable to the DI products, including his sales-based allocation, are reasonable and sufficiently supported by the evidence of record.

2. Labor or Capital

With respect to labor and capital, Mr. Jarosz similarly provides an analysis of ERDD-specific labor and capital investments, as well as an analysis of all U.S. labor and capital investments. The evidence shows that NOCO's employee headcount rose from [redacted] to [redacted] over the December 2021 to April 2023 time period. Of these employees, between [redacted] and [redacted] were employed [redacted] conducting research and development activities. *See* Tr. (Jarosz) at 616:13-24; CDX-0005C.043. Employee compensation for all employees over this time period totaled around [redacted], with employee compensation for research and development constituting [redacted]. *See* Tr. (Jarosz) at 617:6-19; CDX-0005C.044; CX-0219C. When contractor and royalty payments [redacted] were added, the total ERDD-related labor investments during the 2021 to April 2023 time period were approximately [redacted], while total U.S. labor investments was approximately [redacted]. *See* Tr. (Jarosz) at 617:20-619:10; CDX-0005C.045-47.

Mr. Jarosz then allocated these figures using the sales-based allocation discussed *supra*. The allocations below show his summaries of allocated labor investments based on U.S. employees only, excluding royalties and contractors (top table below); and U.S. employees plus royalties and contractors (bottom figure below).

[162] The Commission affirmed the ID's finding that the economic prong of the domestic industry requirement had been satisfied, with certain modifications, and did not discuss this allocation issue. *See* Comm'n Op., EDIS Doc. ID 651806, at 1, 14 (Aug. 1, 2018).

DELTRAN EX1060
IPR2024-01219

Allocated labor investments excluding royalties and contractors:



Allocated labor investments including royalties and contractors:



Tr. (Jarosz) at 619:13-621:10; CDX-0005C.048, .050.[163]

Respondents argue that these figures are improper because a sales-based allocation is not reliable. For the reasons discussed above, the undersigned finds that a sales-based allocation is reasonable and sufficiently supported by the evidence of record.

Respondents and Staff also argue that royalty payments should not be included in the calculations. *See* RIB at 164-65; SIB at 135 n.5. The undersigned agrees that the evidence is insufficient to show that the royalty payments should be included as an appropriate estimate of labor investments. *Cf. Certain Portable Battery Jump Starters and Components Thereof*, Inv. No. 337-TA-1256, Initial Determination, 2022 WL 1658137, at *259 (April 29, 2022) (in

[163] As with the plant and equipment investments discussed *supra*, the allocated investments for Group 3 DI products can be further allocated to exclude the GBX product by applying a further allocation. *See* n.163 *supra*. This results in investments of approximately for Group 3 non-GBX ERDD investments (excluding royalties and contractors); approximately for Group 3 non-GBX total investments (excluding royalties and contractors); approximately for Group 3 non-GBX ERDD investments (including royalties and contractors); and approximately for Group 3 non-GBX total investments (including royalties and contractors). Adjusting the figures to exclude the GBX product from Group 3 does not materially affect the analysis.

previous investigation involving NOCO, declining to include royalties to Mr. Underhill and Mr. Stanfield); *Portable Battery Jump Starters* at 140 (in different investigation involving NOCO, declining to include royalty payments as part of qualifying labor investments). However, regardless of whether royalties are included, the evidence shows that NOCO's investments in labor are significant. *See* discussion *infra*.

B. Significance

The parties dispute whether NOCO's investments in the DI products are significant. NOCO contends that the investments identified about are "significant" within the meaning of the statute. NOCO contends that "ERDD activities and its investments . . . are qualitatively significant because, with them, none of the DI products would even exist and certainly would not maintain their place in the market" (CIB at 184); that NOCO's ERDD headcount is quantitively and qualitatively significant because [redacted] and thus "[redacted] of NOCO's ERDD efforts worldwide . . . occurs in the U.S." (*id*.); that "approximately [redacted] of NOCO's U.S. employees are engaged in DI-related ERDD activities, which is quantitatively significant" (*id*.); that quantitative significance is shown because "for the Group 1 DI Products, the allocated ERDD investments of [redacted] represent approximately [redacted] of the U.S. total investments; for the Group 3 DI Products, [redacted] represents approximately [redacted]" (*id.* at 184-85). NOCO further contends that its investments in non-ERDD activities are also qualitatively and quantitatively significant because "to the extent that activities occur both in the U.S. and overseas, activities outside the U.S. are conducted under the direction and supervision of NOCO's U.S. ERDD team" (*id.* at 185); that many of NOCO's non-ERDD activities "occur solely in the U.S., including quality control, compliance, warranty service, sales, marketing, distribution, and administration" and that "[redacted] of all NOCO

DELTRAN EX1060
IPR2024-01219

employees are located in the U.S." (*id.*); that NOCO's claimed investments are quantitatively significant in context of the company's overall investments in facilities, equipment, and labor" (*id.* at 186); and that a comparison of NOCO's allocated U.S. investments to its allocated worldwide investments shows that "over [redacted] of NOCO's investments were made in the U.S." (*id.*).

Staff contends that, based on Mr. Jarosz's analysis, NOCO's investments in labor and capital are significant because "NOCO is a domestic company with the vast majority of its employees located in the United States, including [redacted] of NOCO's engineering, research, design, and development employees" (SIB at 136); that [redacted] (*id.*); that the domestic industry products are "highly significant to NOCO's business" as they comprise a large portion of product sales" (*id.*); and "the domestic industry products would not exist but for NOCO's investments in labor and capital" (*id.*). On the other hand, Staff contends that NOCO has not shown significant investments in plant and equipment because "[redacted] and [redacted] in domestic plant and equipment investments [redacted] is not a significant expenditure in a quantitative sense" and are not "qualitatively significant in a context where [redacted] (*id.* at 138) (emphasis in original).

Respondents argue that "[a]ny accepted level of investments" is "quantitatively and qualitatively insignificant." RIB at 169. In support, Respondents argue that "Mr. Jarosz performed no value-added analysis to assess significance of domestic activities in light of NOCO's considerable foreign expenditures" (RIB at 170); that NOCO expended [redacted]

DELTRAN EX1060
IPR2024-01219

[redacted] on foreign manufacture of the DI Products during the review period (*id.*); and that "[t]he significant nature of NOCO's non-U.S. operations is inconsistent with satisfaction of the economic prong" (*id.*). Respondents argue that NOCO spends [redacted] outside the United States on the DI Products than it does in the United States, and this weighs strongly against the existence of a domestic industry. *Id.* Respondents further argue that NOCO's asserted U.S. labor investments (minus royalty payments) are [redacted] NOCO's overseas labor-related expenditures. *Id*. at 171 (citing LaMotta testimony). Respondents further argue that the 1256 investigation (in which the Final ID found the existence of a domestic industry based on the same DI Products, but a different review period), does not indicate that a domestic industry should automatically be found here. *Id.* at 171-72.

Upon review of the evidence of record, the undersigned finds that NOCO has shown by a preponderance of the evidence that it has made significant investments in labor or capital relating to research, development, and engineering of the DI Products (including both Group 1 products and Group 3 DI Products (adjusted to exclude the GBX products)).

First, the evidence shows that NOCO's labor investments in research, development, and engineering are qualitatively significant. Andrea Hacker Davidson, the director of Boost development,[164] credibly testified that approximately [redacted] NOCO employees working at [redacted] are all involved to some extent in research and development of the NOCO DI products; that a team of [redacted] electrical engineers, mechanical engineers, and technicians at [redacted] (including herself) spend [redacted] on the Boost and Boost X products, and that these employees engages in [redacted] efforts that are important to the

[164] NOCO refers to the GB and GBX products as "Boost" and "Boost X products." *See* Tr. (opening statement) at 16:8-14; Tr. (Nook) at 92:12-23 (Boost product came out in early August 2014).

products' functionality. *See* Tr. (Hacker Davidson) at 180:18-181:1, 184:10-186:13. She specifically testified, for example, regarding substantial engineering efforts required to [redacted] in the Boost products in the 2021 and later timeframe (relating both to the GB and GBX products) as well as developments relating to [redacted] *See* Tr. (Hacker Davidson) at 189:7-190:17; *id.* at 190:18-191:9. In addition, it is undisputed that [redacted] and that NOCO is a U.S.-based company whose business was developed in the United States. *See* SIB at 132-33; Tr. (Weiner) at 273:22-274:25 (testifying that personnel outside the U.S. [redacted]). The qualitative significance of NOCO's U.S.-based labor activities is further supported by evidence of other domestic labor investments relating to the DI products including investments in quality control and warranty service, sales and marketing, and administrative functions.[166]

[165] [redacted] Tr. (Horenstein) at 1120:12-20.

[166] The Commission has indicated that activities including sales and marketing can potentially be considered in conjunction with other investments in qualifying activities. *See Certain Artificial Eyelash Extension Systems, Products, and Components Thereof*, Inv. No. 337-TA-1226, Comm'n Op., 2022 WL 15498309, at *19, *23 (declining to "decide what level of investment in other qualifying activities is required before considering sales and marketing"); *Certain Percussive Massage Devices*, Inv. No. 337-TA-1206, Comm'n Op., 2022 WL 59156, at *6 (Jan. 4, 2022) (finding investments in *inter alia* warranty services supported quantitative significance).

DELTRAN EX1060
IPR2024-01219

In this context, the evidence further shows that NOCO's labor investments are quantitatively significant. The evidence shows that [redacted], and that [redacted] ERDD employees are located in the United States. *See* Tr. (Jarosz) at 622:3-23[167]; *cf. Certain Gas Spring Nailer Prods. and Components Thereof,* Comm'n Op., 2020 WL 2093834, at *41 (April 28, 2020) (finding quantitative significance where "all, i.e., 100 percent, of Kyocera's R&D and engineering expenditures relating to complainant's Fusion Nailers occurs in the United States"), *vacated and remanded on other grounds*, 22 F.4th 1369 (Fed. Cir. 2022); *Certain Shingled Solar Modules, Components Thereof, and Methods for Manufacturing the Same*, Inv. No. 337-TA-1223, Initial Determination, 2021 WL 5448436, at *41 (Oct. 22, 2021) (finding quantitative significance where 100% of research and development activities were based in the United States), *not reviewed in relevant part*, Commission Notice, EDIS Doc. ID 762554 (Feb. 4, 2022); *Certain Automated Teller Machines, ATM Modules, Components Thereof and Products Containing Same,* Inv. No. 337-TA-972, Final Initial Determination, EDIS Doc. ID 602395, at 197, (Feb. 1, 2017) (finding significance where development of product "was almost entirely domestic"), *not reviewed in relevant part by* Comm'n Notice, EDIS Doc. ID 602178 at 3, (Jan. 30, 2017); *Certain Light-Based Physiological Measurement Devices and Components Thereof*, Inv. No. 337-TA-1276, Comm'n Op., 2023 WL 8109999, at *42 (Nov. 14, 2023). The evidence further shows that [redacted] of NOCO's employees are located in the United States. Tr. (Jarosz) at 624:1-6;

[167] Mr. LaMotta's argument that the deposition testimony of Mr. Lam shows [redacted] is not persuasive. *See* Tr. (LaMotta) at 1254:16-23; RDX-0009C.35. The deposition testimony cited indicates [redacted], but does not persuasively show that [redacted] Indeed, Mr. Lam testified that [redacted] RX-4091C at 58:2-20. He also testified that [redacted] *Id.* at 53:12-17; *see generally* CIB at 194.

DELTRAN EX1060
IPR2024-01219

see Portable Battery Jump Starters at 148 (finding that NOCO's investments significant based, *inter alia*, on the percentage of NOCO employees located in the United States and fact that [redacted]).

In opposition, Respondents focus on the sufficiency of NOCO's evidence but provide no persuasive affirmative evidence controverting the significance of NOCO's labor investments. Respondents argue that NOCO failed to provide adequate evidence showing research and development efforts on the DI products during the asserted review period; however, NOCO's arguments are supported by the credible testimony of Ms. Hacker Davidson.[168] Respondents also argue that "critical activities in the DI products have occurred outside the United States" (RIB at 170) and that NOCO's claimed U.S. labor investments (minus royalty payments) are [redacted] "NOCO's overseas labor-related expenditures." CIB at 171 (citing Tr. (LaMotta) at 1253:2-15). The Commission has held that it is not necessary to compare domestic and foreign expenditures to show the existence of a domestic industry. *See Certain Wearable Electronic Devices with ECG Functionality and Components Thereof*, Inv. No. 337-TA-1266, Comm'n Op., 2023 WL 372372, at *13 (Jan. 20, 2023) (Commission "does not require a domestic-to-foreign comparison, nor does it express a general preference for such a comparison to establish significance"). Moreover, Mr. LaMotta did not compare U.S. labor expenditures and foreign labor expenditures, but rather U.S. ERDD-specific labor expenditures (*i.e.*, a figure that omits U.S. non-ERDD labor expenditures such as warranty service investments) and foreign "labor and production costs" (*i.e.*, a figure including more than foreign labor expenditures). *See* Tr.

[168] Respondents argue that the NOCO failed to support its position by [redacted] documents. Respondents never moved to compel these documents and Ms. Hacker-Davidson's testimony, as discussed above, was sufficiently credible, including in light of her deposition testimony (RX-4090C) and in combination with the other evidence of record, to sustain NOCO's burden of proof.

DELTRAN EX1060
IPR2024-01219

(LaMotta) at 1253:8-15.[169] As discussed above, the evidence shows that all of NOCO's ERDD labor expenditures occurred in the United States and the undersigned finds that NOCO's evidence is sufficient to carry its burden of proof. *Cf. Certain Ground Fault Circuit Interrupters*, Inv. No 337-TA-739, Comm'n Op., 2012 WL 2394435, at *51 (finding economic prong satisfied where there was evidence of "at least seven engineers in the United States who spend almost all of their time on Leviton CFCIs" and where "virtually all research and development of the Leviton GFCIs occurs in the United States").[170]

Accordingly, the undersigned finds that NOCO has satisfied the economic prong of the domestic industry requirement with respect to the '992 and '808 patents at least because the evidence shows, by a preponderance, that NOCO's ERDD domestic investments in labor related to the Group 1 DI products are qualitatively and quantitatively significant. The evidence also shows that NOCO has satisfied the economic prong for the '023 and '243 patents at least because the evidence shows, by a preponderance, that NOCO's ERDD investments related to the Group 3 products (excluding the GBX products) are qualitatively and quantitatively significant. *See* n.160 *supra*.[171]

---

[169] In addition, the document cited in support of this analysis by Mr. LaMotta (RX-2973C) in his demonstratives was not admitted into evidence. *See* RDX-0009C.33-34. It is unclear whether this figure included contractor profits.

[170] In addition, Mr. Jarosz testified that [redacted] *See* Tr. (Jarosz) at 620:20-621:11, 624:13-625:17; CDX-0005C.049, 50, 55; CX-0225C.

[171] Because the evidence shows that NOCO's labor investments are qualitatively and quantitatively significant, and because significance is a contextual analysis, it is unnecessary to assess whether NOCO's investments in plant and equipment alone (and completely ignoring the labor investments), would be considered "significant." Moreover, the Commission has indicated that rent and equipment may under some circumstances be considered capital investments. *See Certain Self-Anchoring Beverage Containers*, Inv. No. 337-TA-1092, Comm'n Op., 2019 WL 9442688, at *7-8 (July 24, 2019) (affirming assessment of significant investments in labor and capital that included facility rent and equipment). If investments in plant and equipment were considered alone in isolation, however, the undersigned agrees with Staff that the evidence may be insufficient to meet NOCO's burden of proof. *See* SIB at 137-38.

X. CONCLUSIONS OF LAW

Based on the foregoing, and the record, it is the undersigned's final initial determination that there has not been a violation of section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337, in the importation into the United States, the sale for importation, and/or the sale within the United States after importation of certain portable battery jump starters and components thereof by reason of infringement of claims 1, 3, 10, and 14 of U.S. Patent No. 9,770,992; claims 1, 11, and 16 of U.S. Patent No. 10,328,808; claims 1, 19, 32, 39, and 54 of U.S. Patent No. 11,447,023; or claims 1, 2, 18, and 54 of U.S. Patent No. 11,584,243.

This determination is based on the following conclusions of law:

1. The Accused Products have been imported into the United States, sold for importation, and/or sold within the United States after importation.

2. The Commission has *in rem* jurisdiction over the Accused Products.

3. The asserted claims of the '992 patent and '808 patent are not infringed by the Carku Accused Products.

4. The technical prong of the domestic industry requirement has been met for the '992 and '808 patents.

5. The asserted claims of the '992 and '808 patents are invalid as obvious.

6. The economic prong of the domestic industry requirement has been met for the '992 and '808 patents.

7. The asserted claims of the '023 and '243 patents are infringed by certain of the ADC Accused Products and are not infringed by the Carku Accused Products.

8. The technical prong of the domestic industry requirement has been met for the '023 and '243 patents.

9. The asserted claims of the '023 and '243 patents are invalid as obvious.

10. The economic prong of the domestic industry requirement has been met for the '023 and '243 patents.

DELTRAN EX1060
IPR2024-01219

The undersigned hereby certifies the record in this investigation to the Commission with the undersigned's final initial determination. Pursuant to Commission Rule 210.38, the record further comprises the complaint and exhibits thereto, and the exhibits attached to the parties' summary determination motions and the responses thereto. 19 C.F.R. § 210.38(a).

Pursuant to Commission Rule 210.42(h)(2), this initial determination shall become the determination of the Commission 60 days after the service thereof, unless a party files a petition for review pursuant to Commission Rule 210.43(a), the Commission orders its own review pursuant to Commission Rule 210.44. 19 C.F.R. § 210.42(h)(2).

This initial determination is being issued with a designation pursuant to Commission Rule 210.5 and the protective order in this investigation. Within 10 days of the date of this document, the parties shall submit a joint statement as to whether or not they seek to have any portion of this document deleted from the public version. If the parties do seek to have portions of this document deleted from the public version, they must submit a single proposed public version of this final initial determination with any proposed redactions consistent with the manner specified by Ground Rule 1.9.[172] The submission shall be made by email to Bhattacharyya337@usitc.gov and need not be filed with the Commission Secretary.

SO ORDERED.



Monica Bhattacharyya
Administrative Law Judge

[172] Redactions should be limited to avoid obscuring the reasoning underlying the decision. Parties who submit excessive redactions may be required to provide an additional written statement, supported by declarations from individuals with personal knowledge, explaining why each proposed redaction meets the definition for business information in 19 C.F.R. § 201.6(a).

DELTRAN EX1060
IPR2024-01219

PUBLIC VERSION

APPENDIX A

DELTRAN EX1060
IPR2024-01219

Appendix 1

The Carku Respondents
Accused Products and Relevant Technical Documents

Product Name	Internal Product Name	[redacted]	Main Schematic	Cable Schematics	User Manual	Packaging	Clamps	[redacted]	Accused Product for '992/'808 Patents	Accused Product for '452/'213 Patents	Accused Product for '023/'243 Patents
Fanttik T8 MAX	[redacted]		CAR-NOCO-ITC_II-009692	N/A	CAR-NOCO-ITC_II-009690	CAR-NOCO-ITC_II-009688	CAR-NOCO-ITC_II-012288		X		X (Group A)
Fanttik T8 Apex			CAR-NOCO-ITC_II-009459	N/A	CAR-NOCO-ITC_II-009422	CAR-NOCO-ITC_II-009421	CAR-NOCO-ITC_II-012242		X		X (Group A) (Fanttik T8 MAX)
Fanttik T8 1300 AMP			CAR-NOCO-ITC_II-009980	N/A	CAR-NOCO-ITC_II-009946	CAR-NOCO-ITC_II-009945	CAR-NOCO-ITC_II-012306		X		X (Group A) (Fanttik T8 MAX)
Hulkman Alpha 65			CAR-NOCO-ITC_II-009765	N/A	CAR-NOCO-ITC_II-009727	CAR-NOCO-ITC_II-009726	CAR-NOCO-ITC_II-012289		X		X (Group A) (Fanttik T8 MAX)
Hulkman Alpha 85			CAR-NOCO-ITC_II-008912	N/A	CAR-NOCO-ITC_II-008850 CAR-NOCO-ITC_II-008914	CAR-NOCO-ITC_II-008847 CAR-NOCO-ITC_II-008849	CAR-NOCO-ITC_II-012221		X		X (Group A) (Fanttik T8 MAX)
Hulkman Alpha 85S			CAR-NOCO-ITC_II-008961	N/A	CAR-NOCO-ITC_II-008850 CAR-NOCO-ITC_II-008914	CAR-NOCO-ITC_II-008913	CAR-NOCO-ITC_II-012222		X		X (Group A) (Fanttik T8 MAX)
Hulkman Alpha 100			CAR-NOCO-ITC_II-008983	N/A	CAR-NOCO-ITC_II-008963	CAR-NOCO-ITC_II-008962	CAR-NOCO-ITC_II-012237		X		X (Group A) (Fanttik T8 MAX)
Spanarci Zeta 2000			CAR-NOCO-ITC_II-009998	N/A	CAR-NOCO-ITC_II-009984	CAR-NOCO-ITC_II-009983	CAR-NOCO-ITC_II-010034		X		X (Group A) (Fanttik T8 MAX)
Gooloo GT3000			CAR-NOCO-ITC_II-009237	N/A	CAR-NOCO-ITC_II-009128	CAR-NOCO-ITC_II-009127	CAR-NOCO-ITC_II-009272				X (Group A) (Fanttik T8 MAX)
Gooloo GT4000S			CAR-NOCO-ITC_II-009384	N/A	CAR-NOCO-ITC_II-009275	CAR-NOCO-ITC_II-009274	CAR-NOCO-ITC_II-009419				X (Group A) (Fanttik T8 MAX)
Gooloo GT4000			CAR-NOCO-ITC_II-009124	N/A	CAR-NOCO-ITC_II-009088	CAR-NOCO-ITC_II-009087	CAR-NOCO-ITC_II-009125				X (Group A) (Fanttik T8 MAX)
YES-PER ARMOR			CAR-NOCO-ITC_II-009843 CAR-NOCO-ITC_II-009848	N/A	CAR-NOCO-ITC_II-009808 CAR-NOCO-ITC_II-009847	CAR-NOCO-ITC_II-009807	CAR-NOCO-ITC_II-009845 CAR-NOCO-ITC_II-009883 CAR-NOCO-ITC_II-009886 CAR-NOCO-ITC_II-012298 CAR-NOCO-ITC_II-012299 CAR-NOCO-ITC_II-012300 CAR-NOCO-ITC_II-012301 CAR-NOCO-ITC_II-012302 CAR-NOCO-ITC_II-012303 CAR-NOCO-ITC_II-012304				X (Group A) (Fanttik T8 MAX)
YES-PER ARMOR PRO			CAR-NOCO-ITC_II-012295	N/A	CAR-NOCO-ITC_II-009769	CAR-NOCO-ITC_II-009767	CAR-NOCO-ITC_II-009804 CAR-NOCO-ITC_II-009806 CAR-NOCO-ITC_II-012290 CAR-NOCO-ITC_II-012292 CAR-NOCO-ITC_II-012293				X (Group A) (Fanttik T8 MAX)
YES-PER ARMOR PRO 2			CAR-NOCO-ITC_II-012295	N/A	CAR-NOCO-ITC_II-009769	CAR-NOCO-ITC_II-009767	CAR-NOCO-ITC_II-009804 CAR-NOCO-ITC_II-009806 CAR-NOCO-ITC_II-012290 CAR-NOCO-ITC_II-012292 CAR-NOCO-ITC_II-012293				X (Group A) (Fanttik T8 MAX)
Topdon JS-3000			CAR-NOCO-ITC_II-009686	N/A	CAR-NOCO-ITC_II-009548	CAR-NOCO-ITC_II-012274	CAR-NOCO-ITC_II-012273				X (Group A) (Fanttik T8 MAX)
Solvtin Traveler 240			CAR-NOCO-ITC_II-012305	N/A	CAR-NOCO-ITC_II-009888	CAR-NOCO-ITC_II-009887	CAR-NOCO-ITC_II-009942				X (Group A) (Fanttik T8 MAX)
Gooloo GT4000S Bundle			CAR-NOCO-ITC_II-009124	N/A	CAR-NOCO-ITC_II-009275	CAR-NOCO-ITC_II-009274	CAR-NOCO-ITC_II-009419				X (Group A) (Fanttik T8 MAX)
Antigravity XP-20			CAR-NOCO-ITC_II-009237	N/A	CAR-NOCO-ITC_II-015668						X (Group A) (Fanttik T8 MAX)
Antigravity XP-20-HD			CAR-NOCO-ITC_II-009237	N/A	CAR-NOCO-ITC_II-015668						X (Group A) (Fanttik T8 MAX)
Andeman Battery Jump Starter 2000A Peak 20000mAh, Jump Starter Battery Pack PD65W(Epower 199)			CAR-NOCO-ITC_II-016473	N/A	CAR-NOCO-ITC_II-016472						X (Group A) (Fanttik T8 MAX)
ASPERX 3500A Battery Jump Starter with PD 30W Fast Charging			CAR-NOCO-ITC_II-016486		CAR-NOCO-ITC_II-016485						X (Group A) (Fanttik T8 MAX)
Gooloo GTX280			CAR-NOCO-ITC_II-018357	N/A	CAR-NOCO-ITC_II-018294	CAR-NOCO-ITC_II-018293	CAR-NOCO-ITC_II-019636				X (Group A) (Fanttik T8 MAX)
Yesper Boost 4120A			CAR-NOCO-ITC_II-018458	N/A	CAR-NOCO-ITC_II-018456	CAR-NOCO-ITC_II-018455	CAR-NOCO-ITC_II-019644				X (Group A) (Fanttik T8 MAX)
Solvtin S6 Pro			CAR-NOCO-ITC_II-012196	CAR-NOCO-ITC_II-012195	CAR-NOCO-ITC_II-008676	CAR-NOCO-ITC_II-008674 CAR-NOCO-ITC_II-008675	CAR-NOCO-ITC_II-008673				X (Group A)
Solvtin S6 Pro Max			CAR-NOCO-ITC_II-012201	CAR-NOCO-ITC_II-012200	CAR-NOCO-ITC_II-008626	CAR-NOCO-ITC_II-008674 CAR-NOCO-ITC_II-008675	CAR-NOCO-ITC_II-008623				X (Group A) (Solvtin S6 Pro)
Autogen MJS70W			CAR-NOCO-ITC_II-012987	CAR-NOCO-ITC_II-011328	CAR-NOCO-ITC_II-012943		CAR-NOCO-ITC_II-012989				X (Group A) (Solvtin S6 Pro)
Autogen MJS60W			CAR-NOCO-ITC_II-012810	CAR-NOCO-ITC_II-011328	CAR-NOCO-ITC_II-012766		CAR-NOCO-ITC_II-012812				X (Group A) (Solvtin S6 Pro)

Product Name	Internal Product Name	Main Schematic	Cable Schematics	User Manual	Packaging	Clamps	Accused Product for '992/'808 Patents	Accused Product for '452/'213 Patents	Accused Product for '023/'243 Patents
SUNPOW SP-JS02		CAR-NOCO-ITC_II-013286	CAR-NOCO-ITC_II-011328	CAR-NOCO-ITC_II-013285		CAR-NOCO-ITC_II-013390		X	X (Group A) (Solvtin S6 Pro)
VTOMANV700		CAR-NOCO-ITC_II-014944	CAR-NOCO-ITC_II-011329	CAR-NOCO-ITC_II-014932		CAR-NOCO-ITC_II-014947			X (Group A) (Solvtin S6 Pro)
VTOMANV150		CAR-NOCO-ITC_II-014944	CAR-NOCO-ITC_II-011328	CAR-NOCO-ITC_II-014455		CAR-NOCO-ITC_II-014470			X (Group A) (Solvtin S6 Pro)
VTOMANV32		CAR-NOCO-ITC_II-014944	CAR-NOCO-ITC_II-011328	CAR-NOCO-ITC_II-013978		CAR-NOCO-ITC_II-013993			X (Group A) (Solvtin S6 Pro)
ASPERX AX2500 Car Jump Starter		CAR-NOCO-ITC_II-016494	CAR-NOCO-ITC_II-011328	CAR-NOCO-ITC_II-016489				X (SUNPOW SP-JS02)	X (Group A) (Solvtin S6 Pro)
VTOMAN V10 Jump Starter, 2500A		CAR-NOCO-ITC_II-017923	CAR-NOCO-ITC_II-012200	CAR-NOCO-ITC_II-017919	CAR-NOCO-ITC_II-017918	CAR-NOCO-ITC_II-019638			X (Group A) (Solvtin S6 Pro)
ASPERX AX4500 Jump Starter		CAR-NOCO-ITC_II-016499	CAR-NOCO-ITC_II-011328	CAR-NOCO-ITC_II-016495					X (Group A) (Solvtin S6 Pro)
RUGGED GEEKRG1000		CAR-NOCO-ITC_II-017862	CAR-NOCO-ITC_II-011329						X (Group A) (Solvtin S6 Pro)
RUGGED GEEKRG1000 PLUS		CAR-NOCO-ITC_II-017862	CAR-NOCO-ITC_II-011329	CAR-NOCO-ITC_II-018123		CAR-NOCO-ITC_II-019725			X (Group A) (Solvtin S6 Pro)
Antigravity XP-10		CAR-NOCO-ITC_II-015670	CAR-NOCO-ITC_II-011328	CAR-NOCO-ITC_II-015666					X (Group A) (Solvtin S6 Pro)
Andeman 2000A Peak Jump Starter(Epower 155B)		CAR-NOCO-ITC_II-016470 CAR-NOCO-ITC_II-016471	CAR-NOCO-ITC_II-011328	CAR-NOCO-ITC_II-016466					X (Group A) (Solvtin S6 Pro)
AstroAI AHET118GY		CAR-NOCO-ITC_II-011330 CAR-NOCO-ITC_II-011331 CAR-NOCO-ITC_II-012627 CAR-NOCO-ITC_II-012633 CAR-NOCO-ITC_II-012634	N/A	CAR-NOCO-ITC_II-012467 CAR-NOCO-ITC_II-012468					X (Group B)
AstroAI AHET118TGY		CAR-NOCO-ITC_II-012627 CAR-NOCO-ITC_II-012633 CAR-NOCO-ITC_II-012634	N/A	CAR-NOCO-ITC_II-012606		CAR-NOCO-ITC_II-012635			X (Group B) (AstroAI AHET118GY)
ASPERX Portable Car Jump Starter		CAR-NOCO-ITC_II-016502 CAR-NOCO-ITC_II-016508 CAR-NOCO-ITC_II-016511	N/A						X (Group B) (AstroAI AHET118GY)
Allstart BOOST MAX JUMP STARTER AND CHARGER (No. 560)		CAR-NOCO-ITC_II-016454	N/A	CAR-NOCO-ITC_II-016452					X (Group B) (AstroAI AHET118GY)
Allstart BOOST ULTRA JUMP STARTER AND CHARGER (No. 590)		CAR-NOCO-ITC_II-016457	N/A	CAR-NOCO-ITC_II-016455					X (Group B) (AstroAI AHET118GY)
Weego 120		CAR-NOCO-ITC_II-016626	N/A	CAR-NOCO-ITC_II-016623					X (Group B) (AstroAI AHET118GY)
Jump-N-Carry JNC325		CAR-NOCO-ITC_II-016549	N/A	CAR-NOCO-ITC_II-016512					X (Group B) (AstroAI AHET118GY)
Jump-N-Carry JNC345		CAR-NOCO-ITC_II-016550	N/A						X (Group B) (AstroAI AHET118GY)
RUGGED GEEK RG4500HD		CAR-NOCO-ITC_II-017860	N/A	CAR-NOCO-ITC_II-018069		CAR-NOCO-ITC_II-019707			X (Group B) (AstroAI AHET118GY)
Gooloo GE4500		CAR-NOCO-ITC_II-017916 CAR-NOCO-ITC_II-017917	N/A	CAR-NOCO-ITC_II-017900	CAR-NOCO-ITC_II-017899	CAR-NOCO-ITC_II-019635			X (Group B) (AstroAI AHET118GY)
VTOMAN V4000 Jump Starter		CAR-NOCO-ITC_II-018067	N/A	CAR-NOCO-ITC_II-018065	CAR-NOCO-ITC_II-018064	CAR-NOCO-ITC_II-019640			X (Group B) (AstroAI AHET118GY)
Matco Tools Lithium Powered Jump Starter, PartNo. MEGAJUMP2A		CAR-NOCO-ITC_II-018061	N/A	CAR-NOCO-ITC_II-018028	CAR-NOCO-ITC_II-018027	CAR-NOCO-ITC_II-019637			X (Group B) (AstroAI AHET118GY)
Yesper 12V/24V 6000A		CAR-NOCO-ITC_II-017875 CAR-NOCO-ITC_II-017878	N/A	CAR-NOCO-ITC_II-017874	CAR-NOCO-ITC_II-017873	CAR-NOCO-ITC_II-019646		X (SUNPOW SP-JS02)	X (Group B) (AstroAI AHET118GY)
Gooloo GP4000		CAR-NOCO-ITC_II-012159	CAR-NOCO-ITC_II-012158	CAR-NOCO-ITC_II-008252	CAR-NOCO-ITC_II-008250 CAR-NOCO-ITC_II-008251	CAR-NOCO-ITC_II-008249			X (Group B)
Gooloo GP2000		CAR-NOCO-ITC_II-012155	CAR-NOCO-ITC_II-012154	CAR-NOCO-ITC_II-008215	CAR-NOCO-ITC_II-008212 CAR-NOCO-ITC_II-008213	CAR-NOCO-ITC_II-008214			X (Group B) (Gooloo GP4000)
Gooloo GP Warrior		CAR-NOCO-ITC_II-012186 CAR-NOCO-ITC_II-012187	CAR-NOCO-ITC_II-012184	CAR-NOCO-ITC_II-008530	CAR-NOCO-ITC_II-008529	CAR-NOCO-ITC_II-008528			X (Group B) (Gooloo GP4000)
Gooloo GT1500		CAR-NOCO-ITC_II-012212	CAR-NOCO-ITC_II-012210	CAR-NOCO-ITC_II-008747	CAR-NOCO-ITC_II-008746	CAR-NOCO-ITC_II-008743			X (Group B) (Gooloo GP4000)
Tacklife KP120		CAR-NOCO-ITC_II-012167	CAR-NOCO-ITC_II-012164 CAR-NOCO-ITC_II-012165	CAR-NOCO-ITC_II-008390	CAR-NOCO-ITC_II-008389	CAR-NOCO-ITC_II-012162 CAR-NOCO-ITC_II-012163			X (Group B) (Gooloo GP4000)
Tacklife KP200		CAR-NOCO-ITC_II-012167	CAR-NOCO-ITC_II-012170 CAR-NOCO-ITC_II-012171	CAR-NOCO-ITC_II-008423	CAR-NOCO-ITC_II-008422	CAR-NOCO-ITC_II-012168 CAR-NOCO-ITC_II-012169			X (Group B) (Gooloo GP4000)
YES-PER SPEED 2160 (YJS20)		CAR-NOCO-ITC_II-012216	CAR-NOCO-ITC_II-012214	CAR-NOCO-ITC_II-008781	CAR-NOCO-ITC_II-008780	CAR-NOCO-ITC_II-008779 CAR-NOCO-ITC_II-012213			X (Group B) (Gooloo GP4000)

Product Name	Internal Product Name	[redacted]	Main Schematic	Cable Schematics	User Manual	Packaging	Clamps	[redacted]	Accused Product for '992/'808 Patents	Accused Product for '452/'213 Patents	Accused Product for '023/'243 Patents
YES-PER SPEED 1550			CAR-NOCO-ITC_II-012194	CAR-NOCO-ITC_II-012192	CAR-NOCO-ITC_II-008591	CAR-NOCO-ITC_II-008590	CAR-NOCO-ITC_II-012191				X (Group B) (Gooloo GP4000)
YES-PER SPEED 4120 (YJS40)			CAR-NOCO-ITC_II-012220	CAR-NOCO-ITC_II-012218	CAR-NOCO-ITC_II-008815	CAR-NOCO-ITC_II-008814	CAR-NOCO-ITC_II-008813 CAR-NOCO-ITC_II-012217				X (Group B) (Gooloo GP4000)
Audew Epower 146B			CAR-NOCO-ITC_II-012176	CAR-NOCO-ITC_II-012174	CAR-NOCO-ITC_II-008458	CAR-NOCO-ITC_II-008456	CAR-NOCO-ITC_II-008491				X (Group B) (Gooloo GP4000)
Audew Epower 155			CAR-NOCO-ITC_II-012180 CAR-NOCO-ITC_II-012182 CAR-NOCO-ITC_II-012183	CAR-NOCO-ITC_II-012177	CAR-NOCO-ITC_II-008496	CAR-NOCO-ITC_II-008494	CAR-NOCO-ITC_II-008493				X (Group B) (Gooloo GP4000)
Audew Epower 172			CAR-NOCO-ITC_II-012190	CAR-NOCO-ITC_II-012188	CAR-NOCO-ITC_II-008558	CAR-NOCO-ITC_II-008556	CAR-NOCO-ITC_II-008555				X (Group B) (Gooloo GP4000)
Audew Epower 188			CAR-NOCO-ITC_II-012240 CAR-NOCO-ITC_II-012241	CAR-NOCO-ITC_II-012238	CAR-NOCO-ITC_II-009026	CAR-NOCO-ITC_II-009024					X (Group B) (Gooloo GP4000)
Topdon JS-1200			CAR-NOCO-ITC_II-012248	CAR-NOCO-ITC_II-012245 CAR-NOCO-ITC_II-012246	CAR-NOCO-ITC_II-009462	CAR-NOCO-ITC_II-009460 CAR-NOCO-ITC_II-009461	CAR-NOCO-ITC_II-012243 CAR-NOCO-ITC_II-012244				X (Group B) (Gooloo GP4000)
Topdon JS-2000			CAR-NOCO-ITC_II-012256	CAR-NOCO-ITC_II-012253 CAR-NOCO-ITC_II-012254	CAR-NOCO-ITC_II-009508	CAR-NOCO-ITC_II-009505 CAR-NOCO-ITC_II-012257	CAR-NOCO-ITC_II-012251 CAR-NOCO-ITC_II-012252				X (Group B) (Gooloo GP4000)
Solvtin S6 1200A			CAR-NOCO-ITC_II-012208	CAR-NOCO-ITC_II-012206	CAR-NOCO-ITC_II-008707	CAR-NOCO-ITC_II-008705 CAR-NOCO-ITC_II-008706	CAR-NOCO-ITC_II-008704				X (Group B) (Gooloo GP4000)
Autogen MJS111B			CAR-NOCO-ITC_II-013515	CAR-NOCO-ITC_II-011328	CAR-NOCO-ITC_II-013459		CAR-NOCO-ITC_II-013516				X (Group B) (Gooloo GP4000)
Autogen MJS111			CAR-NOCO-ITC_II-012448	CAR-NOCO-ITC_II-011328	CAR-NOCO-ITC_II-000489 CAR-NOCO-ITC_II-000490		CAR-NOCO-ITC_II-012449				X (Group B) (Gooloo GP4000)
Autogen MJS103B			CAR-NOCO-ITC_II-012348	CAR-NOCO-ITC_II-011328	CAR-NOCO-ITC_II-012347		CAR-NOCO-ITC_II-012349				X (Group B) (Gooloo GP4000)
Gooloo GE1200/GT1500 Bundle			CAR-NOCO-ITC_II-011428 CAR-NOCO-ITC_II-012212	CAR-NOCO-ITC_II-011426 CAR-NOCO-ITC_II-012210	CAR-NOCO-ITC_II-008092 CAR-NOCO-ITC_II-008747	CAR-NOCO-ITC_II-008091 CAR-NOCO-ITC_II-008746					X (Group B) (Gooloo GP4000)
Gooloo GE1200/GT1500 Bundle			CAR-NOCO-ITC_II-011428 CAR-NOCO-ITC_II-012212	CAR-NOCO-ITC_II-011426 CAR-NOCO-ITC_II-012210	CAR-NOCO-ITC_II-008092 CAR-NOCO-ITC_II-008747	CAR-NOCO-ITC_II-008091 CAR-NOCO-ITC_II-008746					X (Group B) (Gooloo GP4000)
Gooloo GT1500 Bundle			CAR-NOCO-ITC_II-012212	CAR-NOCO-ITC_II-012210	CAR-NOCO-ITC_II-008747	CAR-NOCO-ITC_II-008746	CAR-NOCO-ITC_II-008743				X (Group B) (Gooloo GP4000)
Gooloo GE1200/GT1500 Bundle			CAR-NOCO-ITC_II-011428 CAR-NOCO-ITC_II-012212	CAR-NOCO-ITC_II-011426 CAR-NOCO-ITC_II-012210	CAR-NOCO-ITC_II-008092 CAR-NOCO-ITC_II-008747	CAR-NOCO-ITC_II-008091 CAR-NOCO-ITC_II-008746					X (Group B) (Gooloo GP4000)
Gooloo GE1200/GT1500 Bundle			CAR-NOCO-ITC_II-011428 CAR-NOCO-ITC_II-012212	CAR-NOCO-ITC_II-011426 CAR-NOCO-ITC_II-012210	CAR-NOCO-ITC_II-008092 CAR-NOCO-ITC_II-008747	CAR-NOCO-ITC_II-008091 CAR-NOCO-ITC_II-008746					X (Group B) (Gooloo GP4000)
GP2000 + S6 Bundle			CAR-NOCO-ITC_II-012155	CAR-NOCO-ITC_II-011328	CAR-NOCO-ITC_II-008215						X (Group B) (Gooloo GP4000)
SUNPOW SP-JS01			CAR-NOCO-ITC_II-013379	CAR-NOCO-ITC_II-011328	CAR-NOCO-ITC_II-013378						X (Group B) (Gooloo GP4000)
Yesper Direct YJS15			CAR-NOCO-ITC_II-012194	CAR-NOCO-ITC_II-012192	CAR-NOCO-ITC_II-008591	CAR-NOCO-ITC_II-008590					X (Group B) (Gooloo GP4000)
VTOMANVXI			CAR-NOCO-ITC_II-013214 CAR-NOCO-ITC_II-013215	CAR-NOCO-ITC_II-011328	CAR-NOCO-ITC_II-013194		CAR-NOCO-ITC_II-013216				X (Group B) (Gooloo GP4000)
Autogen 1500A 16800mAh Car Jump Starter Pack Booster Power Bank, MJS- Pill			CAR-NOCO-ITC_II-012448	CAR-NOCO-ITC_II-011328	CAR-NOCO-ITC_II-000489 CAR-NOCO-ITC_II-000490		CAR-NOCO-ITC_II-012449				X (Group B) (Gooloo GP4000)
Andeman Epower-172 Car Jump Starter, 1500A Battery Up to 8.0L			CAR-NOCO-ITC_II-017957	CAR-NOCO-ITC_II-012200	CAR-NOCO-ITC_II-017939	CAR-NOCO-ITC_II-019649	CAR-NOCO-ITC_II-019629				X (Group B) (Gooloo GP4000)
VTOMAN V12 Jump Starter, 3500A Car Jump Starter Box Battery Pack			CAR-NOCO-ITC_II-017962 CAR-NOCO-ITC_II-017963 CAR-NOCO-ITC_II-017964	CAR-NOCO-ITC_II-012200	CAR-NOCO-ITC_II-017959	CAR-NOCO-ITC_II-017958	CAR-NOCO-ITC_II-019639				X (Group B) (Gooloo GP4000)
Mateo Tools VERSAPRO3			CAR-NOCO-ITC_II-016609	CAR-NOCO-ITC_II-011328	CAR-NOCO-ITC_II-016591						X (Group B) (Gooloo GP4000)
GREPRO 1500A Portable Jump Starter			CAR-NOCO-ITC_II-016565	CAR-NOCO-ITC_II-000502	CAR-NOCO-ITC_II-016552						X (Group B) (Gooloo GP4000)
VTOMAN X7 Jump Starter With Air Compressor			CAR-NOCO-ITC_II-018386	CAR-NOCO-ITC_II-012200	CAR-NOCO-ITC_II-018361 CAR-NOCO-ITC_II-018381	CAR-NOCO-ITC_II-018359 CAR-NOCO-ITC_II-018360	CAR-NOCO-ITC_II-019643				X (Group B) (Gooloo GP4000)
VTOMAN X5 Jump Starter with Air Compressor, 3500A			CAR-NOCO-ITC_II-018386	CAR-NOCO-ITC_II-012200	CAR-NOCO-ITC_II-018361 CAR-NOCO-ITC_II-018381	CAR-NOCO-ITC_II-018359 CAR-NOCO-ITC_II-018360	CAR-NOCO-ITC_II-019642				X (Group B) (Gooloo GP4000)
Allstart MICRO-BOOST JUMP STARTER AND CHARGER (No. 540)			CAR-NOCO-ITC_II-016465	CAR-NOCO-ITC_II-011328	CAR-NOCO-ITC_II-016460						X (Group B) (Gooloo GP4000)
Yesper FAST II 216A			CAR-NOCO-ITC_II-018410	CAR-NOCO-ITC_II-012200	CAR-NOCO-ITC_II-018407	CAR-NOCO-ITC_II-018406	CAR-NOCO-ITC_II-019647				X (Group B) (Gooloo GP4000)

PUBLIC VERSION

Product Name	Internal Product Name	Main Schematic	Cable Schematics	User Manual	Packaging	Clamps	[redacted]	Accused Product for '992/'808 Patents	Accused Product for '452/'213 Patents	Accused Product for '023/'243 Patents
VTOMAN V6 Jump Starter	[redacted]	CAR-NOCO-ITC_II-018439	CAR-NOCO-ITC_II-012200	CAR-NOCO-ITC_II-018424	CAR-NOCO-ITC_II-018423	CAR-NOCO-ITC_II-019641	[redacted]			X (Group B) (Gooloo GP4000)
RUGGED GEEK RG3000HD	[redacted]	CAR-NOCO-ITC_II-012167	CAR-NOCO-ITC_II-011329				[redacted]			X (Group B) (Gooloo GP4000)
Autogen 4500A 12V 32000mAh Lithium Car Jump Starter, MJS-PII IB	[redacted]	CAR-NOCO-ITC_II-018541	CAR-NOCO-ITC_II-012200	CAR-NOCO-ITC_II-018494 CAR-NOCO-ITC_II-018538			[redacted]			X (Group B) (Gooloo GP4000)
Autogen 6000A 12V Socket Portable Battery Jumper Starter, MJS6000	[redacted]	CAR-NOCO-ITC_II-018541	CAR-NOCO-ITC_II-012200	CAR-NOCO-ITC_II-018494 CAR-NOCO-ITC_II-018538		CAR-NOCO-ITC_II-019634	[redacted]			X (Group B) (Gooloo GP4000)
Autogen 4000A 27000mAh 12V For 10.0 Liter Gas And Diesel Jump Starter, MJS111-4K	[redacted]	CAR-NOCO-ITC_II-018541	CAR-NOCO-ITC_II-012200	CAR-NOCO-ITC_II-018494 CAR-NOCO-ITC_II-018538		CAR-NOCO-ITC_II-019632	[redacted]			X (Group B) (Gooloo GP4000)
AstroAI S8 Jump Starter 1500A	[redacted]	CAR-NOCO-ITC_II-018579	CAR-NOCO-ITC_II-012200	CAR-NOCO-ITC_II-018556	CAR-NOCO-ITC_II-018554	CAR-NOCO-ITC_II-019630	[redacted]			X (Group B) (Gooloo GP4000)
AstroAI S8 Jump Starter Battery Pack, 1500A 12V Portable Jump Box (Yellow)	[redacted]	CAR-NOCO-ITC_II-018579	CAR-NOCO-ITC_II-012200	CAR-NOCO-ITC_II-018556	CAR-NOCO-ITC_II-018554	CAR-NOCO-ITC_II-019630	[redacted]			X (Group B) (Gooloo GP4000)
ASPERX 1500A Peak Battery Jump Starter	[redacted]	CAR-NOCO-ITC_II-016479	CAR-NOCO-ITC_II-011328	CAR-NOCO-ITC_II-016480 CAR-NOCO-ITC_II-016481			[redacted]			X (Group B) (Gooloo GP4000)
Mateo Tools MINIJUMP3	[redacted]	CAR-NOCO-ITC_II-016589	CAR-NOCO-ITC_II-011328	CAR-NOCO-ITC_II-016585			[redacted]			X (Group B) (Gooloo GP4000)
Allstart BOOST JUMP STARTER AND CHARGER (No. 550)	[redacted]	CAR-NOCO-ITC_II-016589	CAR-NOCO-ITC_II-011328	CAR-NOCO-ITC_II-016446			[redacted]			X (Group B) (Gooloo GP4000)
Weego 70	[redacted]	CAR-NOCO-ITC_II-016620	CAR-NOCO-ITC_II-011328	CAR-NOCO-ITC_II-016614			[redacted]			X (Group B) (Gooloo GP4000)
Yesper MINI 1200A	[redacted]	CAR-NOCO-ITC_II-018590	CAR-NOCO-ITC_II-012200	CAR-NOCO-ITC_II-018589		CAR-NOCO-ITC_II-019645	[redacted]			X (Group B) (Gooloo GP4000)
GREPRO 2000A Portable Jump Starter	[redacted]	CAR-NOCO-ITC_II-016582	CAR-NOCO-ITC_II-011328	CAR-NOCO-ITC_II-016557			[redacted]			X (Group B) (Gooloo GP4000)
Weego 44s	[redacted]	CAR-NOCO-ITC_II-016613	CAR-NOCO-ITC_II-011328	CAR-NOCO-ITC_II-016610			[redacted]			X (Group B) (Gooloo GP4000)

PUBLIC VERSION

APPENDIX B

DELTRAN EX1060
IPR2024-01219

Appendix 4

PUBLIC VERSION

The Winplus Respondents
Accused Products and Relevant Technical Documents

Product Name	Internal Product Name	[redacted]	Main Schematic	User Manual	Data Sheet	[redacted]	AccusedProduct for '452/'213 Patents	Accused Product for '023/'243 Patents
AC530017 (TYPE S 12V 9.0L ProJump™ Battery Jump Starter with JumpGuide™ and 18,000 mAh Power Bank)	[redacted]		WINPLUS00002718 WINPLUS00002720 WINPLUS00002722	NOCO-ITC1359-00166436	WINPLUS00002764		X	X (Group A)
AC530020 (TYPE S 12V 9.0L ProJump™ Battery Jump Starter with JumpGuide™ and 26,000 mAh Power Bank)			WINPLUS00002723	NOCO-ITC1359-00166420	WINPLUS00002765		X (AC530017)	X (Group A) (AC530017)
AC532780 (TYPE S 12V 8.0L ProJump™ Battery Jump Starter with JumpGuide™ and 15,000 mAh Power Bank)			WINPLUS00002718 WINPLUS00002723 WINPLUS00002734 WINPLUS00002739	NOCO-ITC1359-00166404	WINPLUS00002770		X (AC530017)	X (Group A) (AC530017)
AC532791 (Yada Power Bank Pro)			WINPLUS00002738 WINPLUS00002739 WINPLUS00002741 WINPLUS00002742	NOCO-ITC1359-00166568				X (Group A) (AC530017)
AC532632 (TYPE S 12V 6.0L Battery Jump Starter with JumpGuide™ and 8,000 mAh Power Bank)			WINPLUS00002730 WINPLUS00002731 WINPLUS00002732	NOCO-ITC1359-00166388	WINPLUS00002768			X (Group A) (AC530017)
AC532671 (TYPE S 12V 6.0L Battery Jump Starter with Built-in USB-C Cable & LCD Display and 8,000mAh Qi Power Bank)			WINPLUS00002733	NOCO-ITC1359-00166372				X (Group A) (AC530017)
AC533654 Mike Power 8000mAh Wireless Jump Starter with Built-in Cable - with USB-C Cable (Identical to AC532671)	AC533654		WINPLUS00002733	NOCO-ITC1359-00166372				X (Group A) (AC530017)
AC532777 (TYPE S 12V 6.0L Battery Jump Starter with Built-in MFi Certified Lightning Cable & LCD Display and 8,000mAh Qi Power Bank)	[redacted]		WINPLUS00002733	NOCO-ITC1359-00166356	WINPLUS00002769			X (Group A) (AC530017)
AC533655 Mike Power 8000mAh Wireless Jump Starter with Built-in Cable – with Lightning Cable (Identical to AC532777)	AC533655		WINPLUS00002733	NOCO-ITC1359-00166356	WINPLUS00002769			X (Group A) (AC530017)
AC532781 (TYPE S 12V 6.0L Battery Jump Starter with JumpGuide™ and 10,000 mAh Power Bank)	[redacted]		WINPLUS00002736 WINPLUS00002738 WINPLUS00002742	NOCO-ITC1359-00166340	WINPLUS00002771			X (Group A) (AC530017)
AC532806 (TYPE S JUMP STARTER & POWER BANK)			WINPLUS00002743	NOCO-ITC1359-00166552	WINPLUS00002773			X (Group A) (AC530017)
AC533420 (Michelin Jump Starter & Power Bank)			WINPLUS00065310	NOCO-ITC1359-00175024	WINPLUS00065120		X (AC530017)	X (Group A) (AC530017)
AC533419 Type S Jump Starter & Work Lantern	AC533419		WINPLUS00065856	NOCO-ITC1359-00175040				X (Group A) (AC530017)
AC56388 (TYPE S 12V 6.0L Battery Jump Starter Power Bank with Dual USB Charging and 8,000 mAh Power Bank)	[redacted]		WINPLUS00002744 WINPLUS00002745 WINPLUS00002746	NOCO-ITC1359-00166452	WINPLUS00002774 WINPLUS00002775			X (Group B) (AC56789)
AC56789 (TYPE S 12V 7.0L Battery Jump Starter with USB C Charging and 10,000 mAh Power Bank)			WINPLUS00002747 WINPLUS00002748	NOCO-ITC1359-00166468	WINPLUS00002776 WINPLUS00002777			X (Group B)
AC530013 (TYPE S 12V 6.0L Battery Jump Starter with Qi Wireless Charging, JumpGuide™ and 8,000 mAh Power Bank)			WINPLUS00002710 WINPLUS00002713 WINPLUS00002716 WINPLUS00002717	NOCO-ITC1359-00166484	WINPLUS00002762 WINPLUS00002763			X (Group B) (AC56789)
AC530171 (Jump Starter 8000mAh with LCD)			WINPLUS00002725 WINPLUS00002728 WINPLUS00002729	NOCO-ITC1359-00166500	WINPLUS00000580			X (Group B) (AC56789)

DELTRAN EX1060
IPR2024-01219