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July 2, 2025

**VIA EDIS**

The Honorable Lisa R. Barton
Secretary to the Commission
U.S. International Trade Commission
500 E Street, SW, Room 112-A
Washington, DC 20436

Re: *In the Matter of Certain Mobile Cellular Communications Devices*, Inv. No. 337-TA-___

Dear Secretary Barton:

Enclosed for filing, please find documents in support of a request by Pantech Corporation ("Complainant") that the U.S. International Trade Commission institute an investigation pursuant to Section 337 of the Tariff Act of 1930, as amended, concerning certain wireless communication equipment. We have included a separate letter requesting confidential treatment of the Complaint and certain exhibits included with this filing. We have enclosed a public version of the Complaint.

In accordance with the Commission's filing requirements, 90 Fed. Reg. 225 (Jan. 3, 2025) and, Complainant's submission via EDIS includes the following documents:

1. One (1) electronic copy of Complainant's Verified Complaint, pursuant to Commission Rule 210.8(a)(1)(i);

2. One (1) electronic copy of Complainant's letter and certification requesting confidential treatment of the Complaint and several confidential exhibits, pursuant to Commission Rules 210.5(d) and 201.6(b);

3. One (1) electronic copy of a statement on the Public Interest, pursuant to Commission Rules 210.8(b);

4. One (1) electronic copy of all exhibits to the Complaint, pursuant to Commission Rule 210.8(a)(1)(i), Commission Rule 210.12(a)(9), and Commission Rule 210.12(c), including:

Mayer Brown is a global services provider comprising an association of legal practices that are separate entities including Mayer Brown LLP (Illinois, USA), Mayer Brown International LLP (England & Wales), Mayer Brown Hong Kong LLP (a Hong Kong limited liability partnership which operates in temporary association with Hong Kong partnership Johnson Stokes & Master) and Tauil & Chequer Advogados (a Brazilian law partnership).

a. One (1) electronic copy of certified versions of each of U.S. Patent Nos. 9,548,839; 11,659,503; 11,051,344; and 12,267,876 (collectively, the "Asserted Patents");

b. One (1) electronic copy of certified versions of each recorded assignment for U.S. Patent Nos. 9,548,839; 11,659,503; 11,051,344; and 12,267,876;[1]

c. One (1) electronic copy of certified versions of the U.S. Patent and Trademark Office prosecution history for each Asserted Patent; and

d. One (1) copy of the prosecution histories of any priority applications for each Asserted Patent.

Complainant confirms that it will serve upon the Secretary by close of business the next business day following official receipt of the complaint, for each proposed respondent, one (1) true paper copy of the nonconfidential version of the complaint, one (1) true paper copy of the confidential version of the complaint, if any, and one (1) true paper copy of any supplements or amendments under § 210.14(a), along with one (1) true copy of the nonconfidential exhibits and one (1) true copy of the confidential exhibits in electronic form, along with one (1) true paper copy of the nonconfidential version of the complaint for the government of the foreign country in which each proposed respondent is located as indicated in the complaint.

Complainant confirms that it will serve copies of the non-confidential versions of the Complaint and all associated exhibits and appendices upon the institution of this investigation on the proposed Respondents consistent with 19 C.F.R. part 201 (including 19 C.F.R.§ 201.16).

Thank you for your attention to this matter. Please contact me with any questions regarding this submission.

Respectfully Submitted,

James A. Fussell, III

*Counsel for Pantech Corporation*

[1] Complainant is still waiting to receive certified versions of the assignments from the files of U.S. Patent Nos. 11,659,503 and 12,267,876 from the U.S. Patent and Trademark Office, so is attaching versions that are not certified. Complainant will submit certified versions as soon as Complainant receives them.

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July 2, 2025

**VIA EDIS**

The Honorable Lisa R. Barton
Secretary to the Commission
U.S. International Trade Commission
500 E Street, SW, Room 112-A
Washington, DC 20436

Re: *In the Matter of Certain Mobile Cellular Communications Devices*, Inv. No. 337-TA-___

Dear Secretary Barton:

I am counsel for Complainant Pantech Corporation ("Pantech" or "Complainant"). In accordance with the requirements of 19 C.F.R. §§ 201.6(b), 201.8(g), and 210.5 concerning confidential business information, Pantech respectfully requests confidential treatment of the business information contained in Complainant's Confidential Complaint and Confidential Exhibits 24, 27, 83, and 146 filed concurrently herewith.

The information contained in the Complaint and exhibits for which Pantech seeks confidential treatment consists of proprietary commercial, including Pantech's business operations, including confidential licensing information: Confidential Exhibits 24 (list of Pantech licensees of Asserted Patents); 27 (declaration of Pantech corporate representative including Respondent information subject to non-disclosure agreement); and 39 and 146 (confidential licenses between Pantech and third parties).

I certify that the proprietary information described herein qualifies as confidential information pursuant to 19 C.F.R. § 201.6 at least because:

1. substantially identical information is not available to the public;

2. the unauthorized disclosure of such information could cause substantial competitive harm to Complainant, Respondents, and third parties; and

3. the disclosure could impair the Commission's ability to obtain information necessary to perform its statutory function.

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A non-confidential version of the Complaint is provided, and a non-confidential version of Exhibit 27 is provided in the public exhibits being filed concurrently. Exhibits 24, 39, and 146 require redaction in their entirety.

Please contact me with any questions regarding this request for confidential treatment.

Respectfully Submitted,

James A. Fussell, III

*Counsel for Pantech Corporation*

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July 2, 2025

**VIA EDIS**

The Honorable Lisa R. Barton
Secretary to the Commission
U.S. International Trade Commission
500 E Street, SW, Room 112-A
Washington, DC 20436

Re: *In the Matter of Certain Mobile Cellular Communications Devices*, Inv. No. 337-TA-___, Submission of ITC Complaint and Assignment Documents

To Whom It May Concern:

Enclosed with the complaint filed pursuant to Section 337 of the Tariff Act of 1930, along with supporting documents, we have included certain assignment documents. We note that the attached assignment documents at Exhibits 6 and 8 contain a footer indicating that they include confidential business information. However, we wish to clarify that these assignment documents have been recorded at the United States Patent and Trademark Office and are publicly available.

Please do not hesitate to contact us if you have any questions regarding this submission.

Respectfully Submitted,

James A. Fussell, III

*Counsel for Pantech Corporation*

Mayer Brown is a global services provider comprising an association of legal practices that are separate entities including Mayer Brown LLP (Illinois, USA), Mayer Brown International LLP (England & Wales), Mayer Brown Hong Kong LLP (a Hong Kong limited liability partnership which operates in temporary association with Hong Kong partnership Johnson Stokes & Master) and Tauil & Chequer Advogados (a Brazilian law partnership).

**UNITED STATES INTERNATIONAL TRADE COMMISSION**
**WASHINGTON, D.C.**

| | |
|---|---|
| **In the Matter of:**<br><br>**CERTAIN MOBILE CELLULAR COMMUNICATIONS DEVICES** | Investigation No. 337-TA-___ |

**COMPLAINANT PANTECH CORPORATION'S STATEMENT**
**REGARDING THE PUBLIC INTEREST UNDER 19 C.F.R. § 210.8(b)**

Complainant Pantech Corporation ("Pantech") hereby submits this Statement Regarding the Public Interest pursuant to Commission Rule 210.8(b) regarding the remedial orders requested in Pantech's Complaint against proposed respondents OnePlus Technology (Shenzhen) Co., Ltd., OnePlus USA Corp., Lenovo Group Ltd., Lenovo (United States) Inc., Motorola Mobility LLC, TCL Industries Holdings Co., Ltd., TCL Electronics Holdings Ltd., TCL Communication Ltd., TCL Communication Technology Holdings Ltd., TCL Mobile International Ltd., Huizhou TCL Mobile Communication Co., Ltd., TCL Mobile Communication (HK) Company Ltd., Tinno USA, Inc., Shenzhen Tinno Mobile Technology Corp., HMD Global, HMD Global OY, HMD America, Inc. (together, "Respondents").

Pantech seeks a permanent limited exclusion order to preclude Respondents from importing into the United States certain mobile cellular communications devices that infringe one or more claims of United States Patent Nos. 9,548,839 (the "'839 Patent"); 11,659,503 (the "'503 Patent"); 11,051,344 (the "'344 Patent"); and 12,267,876 (the "'876 Patent") (collectively, the "Asserted Patents").

Pantech also seeks a permanent cease and desist order prohibiting Respondents, their subsidiaries, related companies, and agents from engaging in the importation, sale for importation, marketing and/or advertising, distribution, offering for sale, sale, use after importation, sale after



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importation, or other transfer within the United States of certain mobile cellular communications devices that infringe one or more claims of the Asserted Patents.

## I. INTRODUCTION

The requested relief serves the public interest by enforcing U.S. intellectual property rights. The Commission has recognized that remedial orders should only be withheld in rare circumstances where public interest concerns outweigh the enforcement of IP rights. Such circumstances are not present here, as the products at issue are standard consumer electronics.

Numerous alternative products are available from Pantech's licensees and other suppliers, ensuring no shortage of competitive devices for U.S. consumers.

## II. USE OF THE ACCUSED PRODUCTS IN THE UNITED STATES

The Accused Products are smartphones, tablets, and laptop computers, that are manufactured abroad and imported and sold in the United States by or on behalf of Respondents under the OnePlus, Lenovo, Motorola, TCL, WIKO, HMD, and Nokia brand names, as well as certain United States cellular network providers' brand names.

## III. THE ACCUSED PRODUCTS DO NOT PRESENT ANY PUBLIC HEALTH, SAFETY, OR WELFARE CONCERNS RELATING TO THE REQUESTED REMEDIAL ORDERS

Consumer electronic devices such as the Accused Products do not implicate public health, safety, or welfare concerns. The Commission has repeatedly held this to be true. *See, e.g.*, *Certain Mobile Devices, Associated Software, & Components Thereof*, Inv. No. 337-TA-744, Comm'n Op., 2012 WL 3715788, at *18 (June 5, 2012) (holding that the exclusion of infringing mobile devices "will not have a significant adverse impact on the public health, safety, or welfare").

Public health, safety, or welfare concerns generally arise only in investigations involving pharmaceuticals, medical equipment, green technology products, or other products that have the potential to affect people's health, safety, and welfare. The Accused Products do not fall within

any of these categories. To the contrary, they are used primarily for personal communications, internet browsing, and entertainment.

Further, like and competing products that perform similar functions as Respondents' mobile devices are readily available to consumers in the United States. Thus, the requested relief would not implicate any public health, safety, or welfare concern. *See, e.g.*, *Minnesota Min. & Mfg. Co. v. Carapace Inc*., No. CIV. 4-93-392, 1993 WL 528166, at *6 (D. Minn. Oct. 29, 1993).

## IV. NUMEROUS LIKE OR DIRECTLY COMPETITIVE ARTICLES ARE AVAILABLE TO SATISFY DEMAND FOR THE EXCLUDED PRODUCTS

No public interest concerns exist where the market contains an adequate supply of competitive or substitute products for those subject to a remedial order. *See, e.g.*, *Certain Lens Fitted Film Packages*, Inv. No. 337-TA-406, Comm'n Op. at 18 (June 28, 1999).

Here, the accused mobile devices represent only a portion of Respondents' products, and Respondents represent only a portion of a competitive market for the manufacture and sale of mobile electronic devices. Respondents collectively hold less than 15% of the U.S. smartphone market, while Apple, Samsung, and Google account for over 85%. For tablets, Apple, Samsung, and Amazon account for over 87% of sales. Thus, third parties can readily replace any excluded products, and the remedial orders would not impact U.S. production, as the accused products are manufactured abroad.

Further, remedial orders would not have an adverse impact on competitive production in the United States, because the Accused Products are made overseas as explained in Pantech's Complaint. Pantech's licensees and other third parties have the capacity to replace Respondents' volume of infringing products without delay. Non-accused products will remain available from Respondents and others, ensuring sufficient supply for consumers.

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OnePlus Ex. 1025 Page 8 of 158

## V. REMEDIAL ORDERS WOULD NOT NEGATIVELY IMPACT U.S. CONSUMERS

Exclusion of the accused products will not materially impact U.S. consumers, who will continue to have numerous options from Pantech's licensees and other suppliers. Any reduction in consumer choice is not a sufficient basis to deny a remedy. *Certain Digital Televisions*, Comm'n Op. at 16.

## VI. CONCLUSION

Issuing the requested remedies supports the strong public interest in protecting patent rights, which is not outweighed by any hypothetical adverse impact, given the availability of competitive products.

An important public interest served by ITC jurisdiction is the deterrence of "holdout" behavior by potential infringers. Holdout occurs when parties using patented technology delay or refuse to take a license, relying on the slow and costly nature of district court litigation, where damages are difficult to calculate. The United States Department of Justice ("DOJ"), in its recent Statement of Interest submitted in *Radian Memory Systems LLC. V. Samsung Electronics Co., Ltd.*, No. 2:24-cv-1073 (E.D. Tex.), Dkt. 52, provided substantial support for this position.

The DOJ explains that the difficulty and expense of calculating patent damages can itself cause irreparable harm. As the DOJ notes, "calculating patent damages can be very difficult and expensive," and the hypothetical negotiation methodology used to determine reasonable royalties is often "'a difficult judicial chore, seeming often to involve more the talents of a conjurer than those of a judge,' or, more succinctly, as a 'fantasy.'" *Id*. at 16 (citing *Fromson v. W. Litho Plate & Supply Co.*, 853 F.2d 1568, 1574 (Fed. Cir. 1988)). This complexity is compounded "when the damages must be apportioned—for example, where a patent … is part of an industry standard (i.e., a standard essential patent (SEP))," as are the patents here. *Id*.



OnePlus Ex. 1025 Page 9 of 158

The DOJ further highlights that these challenges create incentives for potential licensees to engage in holdout, as practicing parties are incentivized "not to pay now when the worse-case scenario … is having to pay later. [ ] Then, once the litigation begins, the chances any company will take a license are significantly reduced until a court renders a final verdict, thereby reducing incentives to settle and increasing the number and durations of cases, while also inflicting additional cost on the patent owner simply to get to that result." *Id.* at 14 (citing Kristen Jakobsen Osenga, "Efficient" Infringement and Other Lies, 52 SETON HALL L. REV. 1085, 1087, 1090-91 (2022)). This problem is particularly acute for patents subject FRAND obligations, where damages are effectively capped, further encouraging holdout behavior.

The ITC's ability to issue exclusion orders—barring the importation of infringing products—provides a swift and effective remedy that fundamentally alters the incentives for potential infringers. The threat of losing access to the U.S. market compels parties to negotiate licenses in good faith and on reasonable terms, thereby reducing the incentive for holdout. As the DOJ's Statement makes clear, effective enforcement mechanisms are necessary to prevent holdout, protect the integrity of the patent system, and promote innovation. *Id.* at 14-16.

The ITC is uniquely positioned to address this public interest concern because its exclusive focus on injunctive relief—rather than monetary damages—eliminates the tension that often arises in district court. *See id.* at 12-13. Thus, the remedies sought in Pantech's Complaint, filed concurrently herewith, will not adversely affect the public interest, and will in fact further the public interest in protecting patent rights, deterring holdout behavior, and fostering innovation, as recognized and supported by the United States Department of Justice's recent Statement of Interest.



OnePlus Ex. 1025 Page 10 of 158

Dated: July 2, 2025

Respectfully submitted,

*/s/ James A. Fussell, III*___

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*Counsel for Complainant Pantech Corp.*

**PUBLIC VERSION**

**UNITED STATES INTERNATIONAL TRADE COMMISSION**
**WASHINGTON, D.C.**

| | |
|---|---|
| **In the Matter of:**<br><br>**CERTAIN MOBILE CELLULAR COMMUNICATIONS DEVICES** | Investigation No. 337-TA-___ |

# COMPLAINT OF PANTECH CORPORATION UNDER SECTION 337 OF THE TARIFF ACT OF 1930, AS AMENDED

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**PUBLIC VERSION**

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## EXHIBITS

| Exhibit No. | Description |
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| 1 | Certified Copy of U.S. Patent No. 9,548,839 |
| 2 | Certified Copy of U.S. Patent No. 11,659,503 |
| 3 | Certified Copy of U.S. Patent No. 11,051,344 |
| 4 | Certified Copy of U.S. Patent No. 12,267,876 |
| 5 | Certified Copy of USPTO Assignment Records for the ’839 Patent |
| 6 | Copy of USPTO Assignment Records for the ’503 Patent |
| 7 | Certified Copy of USPTO Assignment Records for the ’344 Patent |
| 8 | Copy of USPTO Assignment Records for the ’876 Patent |
| 9 | Pantech website, “‘IP Umbrella’ Services,” https://www.pantech.com/page/IP?ckattempt=1 |
| 10 | OnePlus US website, https://www.oneplus.com/us/store |
| 11 | Lenovo Group Ltd. 2024/25 Interim Report |
| 12 | Lenovo US website, https://www.lenovo.com/us/en/tablets/ |
| 13 | Motorola US website, https://www.motorola.com/us/smartphones |
| 14 | TCL Electronics US website, http://electronics.tcl.com |
| 15 | TCL Electronics 2023 Annual Report |
| 16 | TCL Electronics FCC Report |
| 17 | TCL Electronics US website, smartphone page, https://www.tcl.com/us/en/products/mobile/Smartphones |
| 18 | Tinno US website, https://www.tinno.us |
| 19 | Boost Mobile website, Celero 5G, https://www.boostmobile.com/shop/celero5g-001426.html |
| 20 | Cricket Wireless website, Debut Flex, https://www.cricketwireless.com/shop/smartphones/cricket-debut-flex-graphite-gray |

| Exhibit No. | Description |
|---|---|
| 21 | AT&T website, AT&T Motivate Max specifications, https://www.att.com/device-support/article/wireless/KM1510558/ATT/ATTU668AA/ |
| 22 | Walmart website, AT&T Calypso, https://www.walmart.com/ip/AT-T-Calypso-16GB-Chameleon-Blue-Prepaid-Smartphone/763076279 |
| 23 | HMD US website, https://www.hmd.com/en_us/smartphones |
| 24 | **CONFIDENTIAL** List of Pantech Licensees to Asserted Patents |
| 25 | ETSI IPR Policy, https://www.etsi.org/images/files/IPR/etsi-ipr-policy.pdf |
| 26 | D&B Financial Analytics Report for LG Electronics Vehicle Components U.S.A., LLC |
| 27 | **CONFIDENTIAL** Declaration of Dr. Yang-Won Jung |
| 28 | Pantech's Complaint from *Pantech Corp. v. OnePlus Technology (Shenzhen) Co., Ltd.*, No. 5:22-cv-00069 (E.D. Tex.) |
| 29 | Jury verdict form from first trial in *Pantech Corp. v. OnePlus Technology (Shenzhen) Co., Ltd.*, No. 5:22-cv-00069 (E.D. Tex.) |
| 30 | Jury verdict from from second trial in *Pantech Corp. v. OnePlus Technology (Shenzhen) Co., Ltd.*, No. 5:22-cv-00069 (E.D. Tex.) |
| 31 | Judgment against OnePlus from *Pantech Corp. v. OnePlus Technology (Shenzhen) Co., Ltd.*, No. 5:22-cv-00069 (E.D. Tex.) |
| 32 | Pantech's Complaint from *Pantech Corp. v. OnePlus Technology (Shenzhen) Co., Ltd.*, No. 5:24-cv-00038 (E.D. Tex.) |
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| 35 | OnePlus Accused Product Infringement Claim Chart for '839 Patent |
| 36 | OnePlus Accused Product Infringement Claim Chart for '503 Patent (LTE-A) |
| 37 | OnePlus Accused Product Infringement Claim Chart for '503 Patent (5G) |
| 38 | OnePlus Accused Product Infringement Claim Chart for '344 Patent |

| Exhibit No. | Description |
|---|---|
| 39 | OnePlus Accused Product Infringement claim chart for ’876 Patent |
| 40 | Chart identifying Lenovo Accused Products, and their standards compliance, functionalities, and components |
| 41 | Photographs of sample Lenovo motorola razr ultra 2025 smartphone |
| 42 | Lenovo Accused Product Infringement Claim Chart for ’839 Patent |
| 43 | Lenovo Accused Product Infringement Claim Chart for ’503 Patent (LTE-A) |
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| 50 | TCL Accused Product Infringement Claim Chart for ’503 Patent (LTE-A) |
| 51 | TCL Accused Product Infringement Claim Chart for ’503 Patent (5G) |
| 52 | TCL Accused Product Infringement Claim Chart for ’344 Patent |
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| 54 | Chart identifying Tinno Accused Products, and their standards compliance, functionalities, and components |
| 55 | Photographs of sample Tinno cricket Debut S3 smartphone |
| 56 | Tinno Accused Product Infringement Claim Chart for ’839 Patent |
| 57 | Tinno Accused Product Infringement Claim Chart for ’503 Patent (LTE-A) |
| 58 | Tinno Accused Product Infringement Claim Chart for ’503 Patent (5G) |
| 59 | Tinno Accused Product Infringement Claim Chart for ’344 Patent |
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|---|---|
| 61 | Chart identifying HMD Accused Products, and their standards compliance, functionalities, and components |
| 62 | Photographs of sample HMD Skyline smartphone |
| 63 | HMD Accused Product Infringement Claim Chart for ’839 Patent |
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| 66 | HMD Accused Product Infringement Claim Chart for ’344 Patent |
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| 68 | OnePlus US website, https://www.oneplus.com/us/store/phone |
| 69 | Packaging label for OnePlus 13 |
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| 71 | Motorola US website, https://www.motorola.com/us/en/smartphones/ |
| 72 | Product packaging labels for motorola razr ultra |
| 73 | Proof of order for motorola razr ultra |
| 74 | TCL US website, https://www.tcl.com/us/en/products/mobile |
| 75 | Product packaging labels for TCL 50 XL NXTPAPER 5G |
| 76 | Proof of order for TCL 50 XL NXTPAPER 5G |
| 77 | Walmart US website, Cricket Debut S3, https://www.walmart.com/ip/Cricket-Wireless-Debut-S3-64GB-Anchor-Gray-Prepaid-Smartphone/6516517798 |
| 78 | Product packaging label for Cricket Debut S3 |
| 79 | Proof of order for Cricket Debut S3 |
| 80 | ImportGenius data for Tinno import of WIKO VOIX smartphones |
| 81 | Product packaging label for HMD Skyline |
| 82 | Proof of order for HMD Skyline |

| Exhibit No. | Description |
|---|---|
| 83 | **CONFIDENTIAL** Pantech's license agreement with LG Electronics, Inc. |
| 84 | Chart identifying LGE DI Products, and their standards compliance, functionalities, and components |
| 85 | Pictures of sample LGE TCU model no. TTA20ANEBN |
| 86 | AT&T website showing LGE DI Product certifications, https://iotdevices.att.com/certified-device-list.aspx |
| 87 | LGE DI Product Claim Chart for '839 Patent |
| 88 | LGE DI Product Claim Chart for '503 Patent based on compliance with LTE-A |
| 89 | LGE DI Product Claim Chart for '503 Patent based on compliance with 5G |
| 90 | LGE DI Product Claim for '344 Patent |
| 91 | LGE DI Product Claim Chart for '876 Patent |
| 92 | LG Electronic Vehicle Solution (VS) Company, "Where to Find Us," https://www.lg.com/global/mobility/about-our-company/where-to-find-us |
| 93 | "LG Vehicle Solutions Joins LG NOVA Innovation Program to Explore Collaborations with Startups in Mobility," https://www.lgnova.com/news/lg-vehicle-solutions-joins-lg-nova-innovation-program-to-explore-collaborations-with-startups-in-mobility#:~:text=About%20LG%20Vehicle%20Components%20USA,.com/global/mobility |
| 94 | OneStop Report for LG Electronics Vehicle Components U.S.A., LLC |
| 95 | "LG Recognized as 2024 Supplier of the Year by General Motors," https://www.lg.com/global/mobility/media-center/press-release/lg-recognized-as-2024-supplier-of-the-year-by-general-motors |
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| Exhibit No. | Description |
|---|---|
| 97 | "Global TCU Sales Up 8% YoY in 2024; LG Continues to Lead," https://www.counterpointresearch.com/insight/global-tcu-sales-up-8-yoy-in-2024-lg-continues-to-lead/ |
| 98 | "LG Electronics Ranked 1st in Global TCU Market," https://www.businesskorea.co.kr/news/articleView.html?idxno=90763 |
| 99 | "Global Telematics Control Unit Shipments Grew 13% YoY in 2021," https://www.counterpointresearch.com/insig<br>ht/global-tcu-shipments-2021 |
| 100 | 3GPP TS 36.101 v8.5.0 |
| 101 | 3GPP TS 36.211 v11.1.0 |
| 102 | 3GPP TS 36.211 v8.9.0 |
| 103 | 3GPP TS 36.213. v11.1.0 |
| 104 | 3GPP TS 36.213 v8.5.0 |
| 105 | 3GPP TS 36.213 v8.8.0 |
| 106 | 3GPP TS 36.300 v11.6.0 |
| 107 | 3GPP TS 36.300 v8.5.0 |
| 108 | 3GPP TS 36.321 v11.1.0 |
| 109 | 3GPP TS 36.321 v8.5.0 |
| 110 | 3GPP TS 36.331 v11.2.0 |
| 111 | 3GPP TS 36.331 v8.5.0 |
| 112 | 3GPP TS 36.331 v8.7.0 |
| 113 | 3GPP TS 36.521-1 v14.5.0 |
| 114 | 3GPP TS 36.211 v16.0.0 |
| 115 | 3GPP TS 36.213 v16.0.0 |
| 116 | 3GPP TS 36.300 v16.0.0 |

| Exhibit No. | Description |
|---|---|
| 117 | 3GPP TS 36.321 v16.0.0 |
| 118 | 3GPP TS 36.331 v16.0.0 |
| 119 | 3GPP TS 37.340 v16.2.0 |
| 120 | 3GPP TS 38.211 v16.0.0 |
| 121 | 3GPP TS 38.211 v16.2.0 |
| 122 | 3GPP TS 38.213 v16.0.0 |
| 123 | 3GPP TS 38.213 v16.2.0 |
| 124 | 3GPP TS 38.300 v16.0.0 |
| 125 | 3GPP TS 38.300 v16.5.0 |
| 126 | 3GPP TS 38.321 v16.0.0 |
| 127 | 3GPP TS 38.321 v16.1.0 |
| 128 | 3GPP TS 38.321 v16.4.0 |
| 129 | 3GPP TS 38.331 v16.0.0 |
| 130 | 3GPP TS 38.331 v16.5.0 |
| 131 | 3GPP TS 38.331 v16.4.1 |
| 132 | BLU Reply Brief regarding motion to dismiss |
| 133 | Excerpt from BLU website |
| 134 | Excerpt from BLU LinkedIn page |
| 135 | BLU Product Landscape |
| 136 | Excerpt from BLU LinkedIn page |
| 137 | BLU Facebook page |
| 138 | BLU YouTube page |
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| Exhibit No. | Description |
|---|---|
| 140 | Chart identifying BLU DI Products, and their standards compliance, functionalities, and components |
| 141 | BLU DI Product Claim Chart for ’839 Patent |
| 142 | BLU DI Product Claim Chart for ’503 Patent based on compliance with LTE-A |
| 143 | BLU DI Product Claim Chart for ’503 Patent based on compliance with 5G |
| 144 | BLU DI Product Claim for ’344 Patent |
| 145 | BLU DI Product Claim Chart for ’876 Patent |
| 146 | **CONFIDENTIAL** Pantech’s license agreement with BLU Products, Inc. |
| 147 | 2ABZ2-AA534 User Guide |
| 148 | BOLD K50 User Manual |
| 149 | BOLD N3 User Manual |
| 150 | Celero3 5G+ Antenna Report |
| 151 | Cricket Magic 2 5G-AT&T Propel 2 5G Antenna Data Sheet |
| 152 | FCC Part 15 Test Report No. 24T04Z100644-010 |
| 153 | FCC RF Test Report No. 2ABZ2-OP239895 |
| 154 | FCC RF Test Report No. FG2D0913-05A |
| 155 | FCC RF Test Report No. FR4N2802A |
| 156 | FCC RF Test Report No. FR340401D for Model No. XT2323-1 |
| 157 | FCC RF Test Report No. FR422203A |
| 158 | FCC RF Test Report No. FR483010D |
| 159 | FCC RF Test Report No. FR4826168A |
| 160 | FCC SAR Test Report No. FA3O1303 |
| 161 | FCC SAR Test Report No. FA4O3003 |
| 162 | FCC SAR Test Report No. FA391515 |

| Exhibit No. | Description |
|---|---|
| 163 | FCC SAR Test Report No. FA411619 |
| 164 | FCC Test Report No. FC3D0836 |
| 165 | FCC Test Report No. FC391202 |
| 166 | FCC Test Report No. FC422203-01 |
| 167 | G33 (MTK) User Manual, FCC ID YHLBLUG33 |
| 168 | G33 (USC) User Manual, FCC ID YHLBLUG33 |
| 169 | G53 (MTK) User Manual, FCC ID YHLBLUG53 |
| 170 | G63 User Manual, FCC ID YHLBLUG63WW |
| 171 | G73 User Manual, FCC ID YHLBLUG73W |
| 172 | G93 User Manual |
| 173 | motorola edge+ - 2023 Antenna Report |
| 174 | motorola razr+ Antenna Report |
| 175 | SAR Test Report No. I21Z61482-SEM01 |
| 176 | TCL 40 X 5G Encore TF Antenna Report |
| 177 | TCL 40 XL 2ACCJH170 Antenna Report |
| 178 | TCL 50 LE 2ACCJH180 Tsup Antenna Report |
| 179 | Test Report No. F690501 |
| 180 | Test Report No. FA1N0415 |
| 181 | Test Report No. FA022101 |
| 182 | Test Report No. I20Z60571-WMD01 |
| 183 | Test Report No. I22Z62463-SEM03 |
| 184 | Test Report No. SEWM2304000115RG01 |
| 185 | Test Report No. SZ23080275W04, Model No. G73L |

| Exhibit No. | Description |
|---|---|
| 186 | "Japan court awards rare victory to Pantech in SEP battle…," https://www.mlex.com/mlex/intellectual-property/articles/2356054 |
| 187 | User Manual_BEJGEN11NAN R2 |
| 188 | XD6U626AA User Guide |
| 189 | BLU Products Fact Set |
| 190 | Florida Profit Corporation Annual Report |
| 191 | BLU Smartphones Launches Its 1st Flagship for 2022, Bringing Optimal Balance to End-Users with the New G91 MAX |
| 192 | The Iconic BOLD Smartphones Return: BLU Launches the All-New BOLD N3, Elevating Style and Performance to New Heights! |
| 193 | BLU Facebook page |
| 194 | BLU Facebook page |
| 195 | Proof of order for TCL TAB 10 NXTPAPER 5G |
| 196 | Proof of order for Lenovo Tab K11 |
| 197 | Product packaging labels for Lenovo Tab K11 |
| 198 | AT&T link for downloading excel spreadsheet showing LGE DI Product certifications, https://www.business.att.com/content/dam/attbusiness/collateral/ATT_Approved_Modules.xlsx |
| 199 | Product packaging for Lenovo Think Pad P16v Gen 2 Intel (16") Mobile Workstation |
| 200 | Product packaging for ThinkPad Fibocom FM350-GL 5G Sub-6 GhZ M.2 WWAN Module for X1 Carbon Gen 11 |
| 201 | Proof of order for Lenovo Think Pad P16v Gen 2 Intel (16") Mobile Workstation and ThinkPad Fibocom FM350-GL 5G Sub-6 GhZ M.2 WWAN Module for X1 Carbon Gen 11 |

| Exhibit No. | Description |
|---|---|
| 202 | Proof of order for HMD T21 |
| 203 | Picture of sample BLU Bold K50 |
| 204 | Product packaging for HMD T21 |
| 205 | IDC Quarterly Mobile Phone Tracker Historical Update |
| 206 | SAR Test Report 24T04Z101721-018 V1.0 |
| 207 | SAR Test Report No. PSU-NQN2403180115SA02 for HMD Global Oy Model No. TA-1600 |
| 208 | SAR Test Report No. I22Z62357-SEM12 for HMD Global Oy Model TA-1486 |
| 209 | SAR Test Report No. I22Z60248-SEM01 for Model U616AT |
| 210 | FCC Test Report No. 24040810587EMC-1, Model No. K10 |
| 211 | SAR Test Report No. 24T03Z100164-011 for TCL Model T614J |
| 212 | SAR Test Report No. 24T04Z102259-015 for TCL Model T702Z |
| 213 | SAR Test Report No. 23T04Z80937-15 for TCL Model T702W |
| 214 | SAR Test Report No. 24T03Z100164-011 for TCL Model T614J |
| 215 | SAR Test Report No. R2301A0001-S1 for TCL Model T609V |
| 216 | SAR Test Report No. I23N00016-SAR for TCL Model T609J |
| 217 | SAR Test Report No. I21Z62337-SEM03 for TCL Model T779W |
| 218 | SAR Test Report No. I22Z60130-SEM03 for TCL Model T776O |
| 219 | SAR Test Report No. I21Z61051-SEM03 for TCL Model T767H |

| Exhibit No. | Description |
|---|---|
| 220 | SAR Test Report No. I20Z62335-SEM03 for TCL Model T810S |
| 221 | SAR Test Report No. I21Z60746-SEM03 for TCL Model T768S |
| 222 | SAR Test Report No. FA3O1004 for TCL Model T410D |
| 223 | SAR Test Report No. FA2O1305 for TCL Model T608DL |
| 224 | SAR Test Report No. I21Z62272-SEM03 for TCL Model T671G |
| 225 | SAR Test Report No. I21Z62345-SEM03 for TCL Model 4188R |
| 226 | SAR Test Report No. I20Z62070-SEM05 for TCL Model T773O |
| 227 | SAR Test Report No. I21Z60989-SEM05 for TCL Model 5087Z |
| 228 | SAR Test Report No. I19Z62156-SEM01 for TCL Model T799B |
| 229 | SAR Test Report No. FA051926 for TCL Model T790S |
| 230 | SAR Test Report No. I19Z60229-SEM03 for TCL Model T770B |
| 231 | SAR Test Report No. I22Z61716-SEM01 for TCL Model T607DL |
| 232 | SAR Test Report No. B22W00685-SAR-Rev1 |
| 233 | SAR Test Report No. No. I21Z62674-SEM01 for TCL Model A509DL |
| 234 | SAR Test Report No. I20Z60681-SEM05 for TCL Model 5004S |
| 235 | SAR Test Report No. 223T04Z80940-13 for TCL Model 9199S |
| 236 | SAR Test Report No. I21Z60861-SEM03 for TCL Model 9198S |
| 237 | SAR Test Report No. I20Z60563-SEM03 for TCL Model T790Y |



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| Exhibit No. | Description |
|---|---|
| 238 | SAR Test Report No. I23Z60093-SEM01 for TCL Model 9138S |
| 239 | SAR Test Report No. I22Z61632-SEM01 for TCL Model 9137W |
| 240 | SAR Test Report No. I19Z60823-SEM01 for TCL Model 9029W |
| 241 | SAR Test Report No. I23Z60093-SEM01 for TCL Model 9150S |
| 242 | SAR Test Report No. I20Z60705-SEM03 for TCL Model 9049L |
| 243 | SAR Test Report No. I21Z61482-SEM01 for Model No. T781S, T781SPP |
| 244 | TCL 40 T Antenna Report |
| 245 | User Manual - BEJGEN11NAN R2 |
| 246 | Test Report No. F690501/RF-RTL011620-1 for Model GEN11NAN |
| 247 | TLVUW3IU-N Product Images |
| 248 | LG TLVUW31U-N Connectivity Unit User Guide |
| 249 | BEJTLVUW3IUN FCC Report |
| 250 | Product Equality Declaration |
| 251 | AT&T Approved Modules |
| 252 | External Photos of TM05FNNAGM0 and TM05FNNAGM1 |
| 253 | Internal Photos of TM05FNNAGM0 and TM05FNNAGM1 |
| 254 | BLU Products Announces Its Latest Selfie-Focused Phone with the BLU Pure View, with Dual Front Cameras, 1.3GHz Octa-Core CPU, 3GB RAM and 5.7-inch 18:9 Widescreen Display |
| 255 | Product packaging label for TCL TAB 10 NXTPAPER 5G |

| Exhibit No. | Description |
|---|---|
| 256 | LG Electronics USA Corporate Profile, https://www.lg.com/us/business/corporate-profile#:~:text=Based%20in%20Englewood%20Cliffs%2C%20N.J.,%2C%20home%20appliances%2C%20and%20more. |
| 257 | "LG Electronics to Establish U.S. Factory for Electric Vehicle Components in Michigan," https://www.lg.com/us/PDF/press-release/LG%20-%20MICHIGAN%20VEHICLE%20COMPONENTS%20PLANT%20-%20AUG%20%2022%202017%20FINAL%20FINAL.pdf |
| 258 | LG Electronics USA, Inc. North American Headquarters, Turner Construction, https://www.turnerconstruction.com/projects/lg-electronics-usa-inc-north-american-headquarters |
| 259 | Business Units, LG Electronics USA, https://lge-careers.com/individual-business-units/ |
| 260 | Michigan Economic Development Corporation, "Catalytic projects highlight MSF board approvals," https://www.michiganbusiness.org/press-releases/2017/08/catalytic-projects-highlight-msf-board-approvals/ |
| 261 | LinkedIn profile for Colin Brady, Validation Manager, LG Electronics North America, https://www.linkedin.com/in/colin-brady-a6494869/ |
| 262 | LinkedIn profile for Younghoon Choi, Mobile and Telematics Engineer, LG Electronics Vehicle component Solutions, https://www.linkedin.com/in/pchoi63/ |
| 263 | "LG Electronics To Establish U.S. Factory For Electric Vehicle Components In Michigan, https://www.prnewswire.com/news-releases/lg-electronics-to-establish-us-factory-for-electric-vehicle-components-in-michigan-300507822.html |
| 264 | LinkedIn profile for Jeremy Mannikko, Telematics Integration Engineer / Development Engineer 1, LG Electronics North America, https://www.linkedin.com/in/jeremy-mannikko-26ba58b3/ |
| 265 | LinkedIn profile for Jerry Hyun, Director of North America Program Management on Automotive, LG Electronics, https://www.linkedin.com/in/jerry-hyun-272419a/ |
| 266 | LinkedIn profile for Pablo Zambrano, Senior Sales Director, LG Electronics, https://www.linkedin.com/in/pablo-zambrano48307/ |
| 267 | Job posting for Quality Engineer I Bilingual, LG Electronics USA, https://jobs.mitalent.org/job-seeker/job-details/JobCode/303108035 |
| 268 | LinkedIn profile for Kenneth Choi, Principal Engineer, LG Electronics Vehicle component Solutions, https://www.linkedin.com/in/kenchoi/ |
| 269 | LinkedIn profile for Sunghun Kwak, Validation Engineer, LG Electronics Vehicle component Solutions, https://www.linkedin.com/in/sunghun-kwak/ |
| 270 | LinkedIn profile for Linh Nguyen, Test Engineer, LG Electronics Vehicle Solution, https://www.linkedin.com/in/linh-nguyen-995294348/ |

| Exhibit No. | Description |
|---|---|
| 271 | LinkedIn Profile for Sinae Kim, Quality Director / Team Lead, LG Electronics Vehicle Solution, https://www.linkedin.com/in/sinae-kim-229828204/ |
| 272 | "LG Innotek Enters the Market with Automotive AP Modules, Boosting Its Semiconductor Component Business, https://www.lgcorp.com/media/release/28713 |
| 273 | LG Innotek website, Global Network, https://www.lginnotek.com/company/domestic_campus.lgit?locale=en |
| 274 | OneStop report for LG Innotek USA, Inc. |
| 275 | LG Innotek USA job posting for "Lead Architect, Automotive HPC SoC3 (R&D Lab)," https://lge-careers.com/posting/?job_id=4750257008 |
| 276 | "Two recent SEP rulings from the Tokyo District Court," Toshifumi Futamata, https://www.linkedin.com/pulse/two-recent-sep-rulings-from-tokyo-district-court-toshifumi-futamata-nmbyc/ |

## APPENDICES

| Appendix Letter | Description |
|---|---|
| A | Certified copy of the prosecution history of U.S. Patent No. 9,548,839 |
| B | Certified copy of the prosecution history of U.S. Patent No. 11,659,503 |
| C | Certified copy of the prosecution history of U.S. Patent No. 11,051,344 |
| D | Certified copy of the prosecution history of U.S. Patent No. 12,267,876 |
| E | Prosecution histories of the priority applications for U.S. Patent No. 9,548,839 |
| F | Prosecution histories of the priority applications for U.S. Patent No. 11,659,503 |
| G | Prosecution histories of the priority applications for U.S. Patent No. 11,051,344 |
| H | Prosecution histories of the priority applications for U.S. Patent No. 12,267,876 |

## I. INTRODUCTION

1. Complainant Pantech Corporation ("Pantech" or "Complainant") files this Complaint pursuant to Section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337 ("Section 337").

2. Pantech brings this action to remedy violations of Section 337 arising from the unlawful and unauthorized importation into the United States, the sale for importation into the United States, and the sale within the United States after importation of certain wireless communication equipment (the "OnePlus Accused Products," "Lenovo Accused Products," "TCL Accused Products," "Tinno Accused Products," and "HMD Accused Products") (collectively, the "Accused Products").

3. The proposed OnePlus Respondents (collectively referred to as "OnePlus") are: OnePlus Technology (Shenzhen) Co., Ltd. and OnePlus USA Corp.

4. The proposed Lenovo Respondents (collectively referred to as "Lenovo") are: Lenovo Group Ltd., Lenovo (United States) Inc., and Motorola Mobility LLC.

5. The proposed TCL Respondents (collectively referred to as "TCL") are: TCL Industries Holdings Co., Ltd., TCL Electronics Holdings Ltd., TCL Communication Ltd., TCL Communication Technology Holdings Ltd., TCL Mobile International Ltd., Huizhou TCL Mobile Communication Co., Ltd., and TCL Mobile Communication (HK) Company Ltd..

6. The proposed Tinno Respondents (collectively referred to as "Tinno") are: Tinno USA, Inc., and Shenzhen Tinno Mobile Technology Corp.

7. The proposed HMD Respondents (collectively referred to as "HMD") are: HMD Global; HMD Global OY and HMD America, Inc.

8. OnePlus, Lenovo, TCL, Tinno, and HMD are collectively referred to as "Respondents."

9. On information and belief, Respondents have engaged in unfair acts in violation of Section 337 through and in connection with the unlicensed importation into the United States, sale for importation into the United States, and/or sale within the United States after importation of Accused Products that infringe one or more claims of United States Patent Nos. 9,548,839 (the "'839 Patent"); 11,659,503 (the "'503 Patent"); 11,051,344 (the "'344 Patent"); and 12,267,876 (the "'876 Patent") (collectively, the "Asserted Patents"). The certified copies of the Asserted Patents are attached to this Complaint as Exhibits 1-4.

10. Complainant asserts that Respondents directly infringe, contributorily infringe, and/or induce the infringement of at least the following claims of the Asserted Patents (collectively, the "Asserted Claims"), in violation of Section 337(a)(1)(B)(i) and 35 U.S.C. § 271(a), (b), and/or (c), either literally or under the doctrine of equivalents, as explained more fully herein and in the appended claim charts:

| Asserted Patents | Asserted Claims[1] |
|---|---|
| 9,548,839 | **9**-12 |
| 11,659,503 | **5**, 7, 8 |
| 11,051,344 | **2**, 6 |
| 12,267,876 | **4**-6 |

11. Respondents had knowledge of at least the '839, '503, '344, and '876 Patents and/or the applications leading to those patents prior to the service of this Complaint through the parties'

[1] Bolded numbers denote independent claims.



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prior dealings, as outlined further herein. In addition, Respondents have knowledge of the Asserted Patents by virtue of the service of this Complaint.

12. On information and belief, Respondents have induced, and continue to induce, under 35 U.S.C. § 271(b) others to directly infringe the asserted claims of the Asserted Patents. Respondents have taken active steps to encourage and facilitate direct infringement by others, such as partners, clients, customers/subscribers, and end users of the Accused Products, with knowledge of that infringement, such as by contracting for the distribution of the Accused Products, by marketing the Accused Products, and by creating and/or distributing user manuals, white papers, datasheets, marketing materials, training and services, and/or similar materials with instructions for using the Accused Products. The use of the Accused Products in their ordinary and customary fashion also results in infringement of the asserted claims of the Asserted Patents.

13. Any party, including Respondents' partners, clients, customers/subscribers, and end users, using the Accused Products necessarily infringes the asserted claims of the Asserted Patents because the inventions of the Asserted Patents are required to comply with the relevant cellular standards. Respondents advertise their Accused Products as compliant with LTE, LTE Advanced, and/or 5G wireless telecommunications standards, which induces others to infringe the asserted claims of the Asserted Patents.

14. On information and belief, Respondents have contributorily infringed, and continue to contributorily infringe, under 35 U.S.C. § 271(c) the asserted claims of the Asserted Patents by contributing to the direct infringement of others, such as partners, clients, customers/subscribers, and end users of the Accused Products. Respondents have sold for importation into the United States, offered for sale within the United States, and/or imported into the United States Accused Products that embody a material part of the claimed inventions, that are known by Respondents to

be especially made or especially adapted for use in an infringing manner and that are not staple articles or commodities suitable for substantial noninfringing use. For example, on information and belief, the Accused Products and/or components thereof are specifically made and not a staple article of commerce suitable for substantial non-infringing use. In particular, the Accused Products are advertised to be compliant with the relevant standards and primarily used in compliance with such standards.

15. As relief for Respondents' unfair acts, Pantech seeks the following: (a) an investigation into Respondents' violations of Section 337; (b) a public hearing concerning whether Respondents have violated Section 337; (c) a permanent limited exclusion order barring from entry into the United States products that infringe one or more claims of the Asserted Patents; (d) a permanent cease-and-desist order prohibiting activities including but not limited to the importation, sale, sale for importation, offer for sale, and soliciting of the sale in the United States of the Accused Products that infringe at least one claim of the Asserted Patents; (e) the imposition of a bond on importation and sales of infringing products during the 60-day Presidential review period pursuant to 19 U.S.C. § 1337(j); and (f) any such other relief as the Commission deems proper.

16. A domestic industry exists as the result of activities and investments in the United States related to products that practice the Asserted Patents. Pantech's licensees have, in the United States, made significant investments in plant, equipment, labor and capital, and made substantial investments in engineering and research and development related to products protected by the Asserted Patents. These activities are set forth in more detail in Section IX, *infra*.

## II. THE PARTIES

### A. Complainant

17. Complainant Pantech Corporation is an entity organized under the laws of South Korea, with a place of business at 13 Saimdang-ro 8-gil, Suite 402-J420, Seocho-gu, Seoul 06640, Republic of Korea. Ex. 27 at ¶ 4. Pantech Corporation is the sole owner by assignment of all rights, title, and interest in the Asserted '839, '503, '344, and '876 Patents. *Id.* at ¶ 11. Certified copies of the recorded assignments of the Asserted '839 and '344 Patents are attached as Exhibits 5 and 7. Non-certified copies of the assignments for the Asserted '503 and '876 Patent are attached as Exhibits 6 and 8.[2]

18. Pantech Co., Ltd., the predecessor to what is now Pantech Corp., was originally founded in 1991 in Seoul, South Korea as a competitor in the wireless phone marketplace. *Id.* at ¶ 5.

19. Throughout the 1990s and 2000s, Pantech Co., Ltd. rose to become a leading manufacturer of mobile phones. *Id.* By 2012, Pantech Co., Ltd. had become the second best-selling Korean handset maker. *Id.* Pantech Co., Ltd.'s products were sold in South Korea, the United States, Japan, China, Europe, Vietnam, and other countries around the world. *Id.* Pantech Co., Ltd. launched operations in the United States in 2003. *Id.*

20. As the result of a restructuring and acquisition in 2015, Pantech Co., Ltd. became Pantech, Inc. *Id.* at ¶ 7. Thereafter, Pantech Corporation was formed. *Id.* Pantech, Inc. transferred its assets to Pantech Corp. as part of an asset sale in 2020. *Id.* (Hereinafter in this section II, Pantech

[2] Pantech is waiting to receive certified copies of these assignments from the U.S. Patent and Trademark Office, and will submit them as soon as Pantech receives them.

Co., Ltd., Pantech, Inc., and Pantech Corp. are referred to collectively as "Pantech" unless otherwise identified.)

21. Pantech's portfolio of intellectual property is broad and extensive, comprising thousands of worldwide patents and patent applications in the areas of telecommunications, "smart" devices, and Internet of Things products. Pantech's portfolio, in one aspect, covers wireless communication systems and devices and methods for using those communication systems. *Id.* at ¶ 9. In the wireless technology space alone, Pantech holds more than 200 U.S. patents and applications, many of which have been declared standard essential patents. *Id.*

22. Pantech invested heavily in research and development, investing, on average, over 10% of its annual revenue in research and development. Pantech's research and development efforts in network technology include, but are not limited to, technologies focused on LTE & 5G networks, WCDMA/CDMA, WiMAX, Wi-Fi, Near Field Communication (NFC), Visible Light Communication, Human Body Communication, Ultra-Wideband Communication and IP Mesh networks. *Id.* at ¶ 6.

23. Pantech enthusiastically contributed to the 3rd Generation Partnership Project (3GPP) LTE/LTE-A standardization by submitting proposals to TSG RAN, RAN1, and RAN2. Indeed, Pantech secured numerous standard essential patents and patent applications ("SEPs") essential to the LTE standards in connection with its contributions. *Id.* In 2014, National Applied Research Labs in Taiwan reported that Pantech held 1% of LTE-related SEPs, and that number has only increased since 2014. *Id.*

24. Recognizing the value of its own portfolio and its potential role in the Fourth Industrial Revolution, Pantech has committed to making its intellectual property available in the marketplace, including to competitors. *Id.* at ¶ 10. On its website, under the heading "IP Umbrella

Services," Pantech offers to exchange intellectual property and technology, and collaborate with competitors and patent holders, through licenses, to enable the market to identify new technological ventures. *Id.*; Ex. 9.

25. Pantech Corp. is the owner by assignment of a portfolio of patents, including the Asserted '839, '503, '344, and '876 Patents, that relate to, *inter alia*, technology for cellular communications networks, including variations or generations of cellular communication network technology such as, but not limited to, LTE and 5G, as discussed herein. Exs. 5-8.

**B. Proposed OnePlus Respondents**

26. On information and belief, Respondent OnePlus Technology (Shenzhen) Co., Ltd. is a corporation duly organized and existing under the laws of China, with its principal place of business at 18F, Tairan Building, Block C, Tairan 8th Road, Chegongmiao, Futian District, Shenzhen, Guangdong, 518040, China.

27. On information and belief, Respondent OnePlus USA Corp., is a corporation duly organized and existing under the laws of Nevada, with its principal place of business at 5000 Riverside Drive, Suite 300, Irving, TX 75039.

28. On information and belief, Respondent OnePlus, either itself or through third-parties working on its behalf, designs, develops, manufactures, makes, markets, tests, imports into the United States, supports products manufactured outside of the United States, offers for sale, sells for importation into the United States, and sells in the United States after importation, infringing wireless communication equipment, including for example through its website (https://www.oneplus.com/us/store). Ex. 10.

29. For example, OnePlus sells for importation into the United States, imports into the United States, and/or sells within the United States after importation one or more mobile cellular

communications devices, such as the OnePlus 13. Pantech reserves the right to accuse additional products of OnePlus as discovery proceeds.

### C. Proposed Lenovo Respondents

30. On information and belief, Respondent Lenovo Group Ltd. is a corporation organized and existing under the laws of China, with its principal place of business located at No. 6 Chuang Ye Road, Haidian District, Shangdi Information Industry Base, Beijing, 100085, China.

31. On information and belief, Lenovo Group Ltd. is the parent company of a multinational conglomerate that operates under the name "Lenovo" and refers to itself and its subsidiaries as the "Group." Lenovo purports to be a US$60 billion Fortune Global 500 company serving customers in 180 markets around the world.

32. On information and belief, Respondent Lenovo (United States) Inc. is a corporation organized and existing under the laws of the state of Delaware, with its principal place of business located at 1009 Think Place, Morrisville, North Carolina 27650. On information and belief, Lenovo (United States) Inc. is, indirectly, a wholly-owned subsidiary of Lenovo Group Ltd. and is part of the Lenovo Group.

33. On information and belief, Respondent Motorola Mobility LLC is a corporation organized and existing under the laws of the state of Delaware, with its principal place of business located at 600 N. U.S. Highway 45, Libertyville, IL 60048. On information and belief, Motorola Mobility is a subsidiary of or otherwise controlled by Lenovo Group. On information and belief, Motorola Mobility LLC is, indirectly, a wholly-owned subsidiary of Lenovo Group Ltd. and is part of the Lenovo Group.

34. On information and belief, Lenovo Group Ltd., Lenovo (United States) Inc., and Motorola Mobility LLC are related entities; these entities are therefore collectively referred to

herein as "Lenovo." For example, in Lenovo Group Ltd.'s 2024/25 Interim Report, it states that "Lenovo or 'Lenovo Group' or the 'Group' refers to Lenovo Group Limited together with its subsidiaries." Ex. 11.

35. On information and belief, the Lenovo Respondents are part of the same corporate structure and distribution chain (together with other Lenovo subsidiaries, affiliates, and intermediaries) responsible for the design, manufacture, use, importation into the United States, offering to sell in the United States, and/or sale in the United States of Lenovo Accused Products, including for example through their websites (https://www.lenovo.com/us/en/tablets/; https://www.motorola.com/us/smartphones). Exs. 12, 13.

36. For example, the Lenovo Respondents each sell for importation into the United States, import into the United States, and/or sell within the United States after importation one or more mobile cellular communications devices, such as the Motorola razr ultra 2025. Pantech reserves the right to accuse additional products of the Lenovo Respondents as discovery proceeds.

**D. Proposed TCL Respondents**

37. On information and belief, TCL Industries Holdings Co., Ltd. ("TCL Industries Holdings") is a limited liability company registered in the People's Republic of China, with its principal place of business located at 22/F, TCL Technology Building, No. 17, the Huifeng Third Road, Zhongkai Hi-Tech Development District, Huizhou City, Guangdong, PRC, 516006. On information and belief, TCL Industries Holdings participates in the design, manufacture, sale, and/or offer for sale of the TCL Accused Products.

38. On information and belief, TCL Electronics Holdings Ltd. ("TCL Electronics") is a limited liability company duly organized and existing under the laws of the Cayman Islands, having an address of 5th Floor, Building 22E, 22 Science Park East Avenue, Hong Kong Science

Park, Shatin, New Territories, Hong Kong. The registered address of TCL Electronics is P.O. Box 309, Ugland House, Grand Cayman, KY1-1104, Cayman Islands. On information and belief, TCL Electronics is an indirect wholly-owned subsidiary of TCL Industries Holdings and is involved in the manufacture and sales of TVs, smartphones, smart commercial displays, and smart home products, including the TCL Accused Products. TCL Electronics operates the website at http://electronics.tcl.com (Ex. 14), and includes a Small-and-Medium-Sized Display unit, which oversees mobile communication devices and tablets, such as the TCL Accused Products.

39. As noted in TCL Electronics's 2023 Annual Report, it and its fellow TCL companies ranked fourth in smartphone shipments in the United States, and third in the United States for shipments of tablets. Ex. 15.

40. On information and belief, TCL Communication Ltd. ("TCL Communication") is a corporation duly organized and existing under the laws of China, having an address of 5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science Park, Shatin, New Territories, Hong Kong. On information and belief, TCL Communication is involved in the manufacture and sale of smartphones and connective devices, and in the provision of related services. For example, TCL Communication applies for United States Federal Communication Commission ("FCC") certifications for use and sale of the TCL Accused Products in the United States, and has declared to the FCC that it is the manufacturer of the Accused Products. *See, e.g.,* Ex. 16.

41. On information and belief, TCL Communication Technology Holdings Ltd. ("TCL Communications Tech.") is a limited liability company registered in the People's Republic of China, with its principal place of business located at 22/F, TCL Technology Building, No. 17, the Huifeng Third Road, Zhongkai Hi-Tech Development District, Huizhou City, Guangdong, PRC,

516006. On information and belief, TCL Communications Tech. participates in the design, manufacture, sale, and/or offer for sale of the TCL Accused Products.

42. On information and belief, TCL Mobile International Ltd. ("TCL Mobile") is a corporation duly organized and existing under the laws of Hong Kong, and conducts business from its corporate headquarters at 5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science Park, Shatin, New Territories, Hong Kong. On information and belief, TCL Mobile is indirectly the wholly owned subsidiary of TCL Electronics and is engaged in the activity of importing and/or distributing mobile devices and other products, such as the TCL Accused Products, and the rendering of related services.

43. On information and belief, Huizhou TCL Mobile Communication Co., Ltd. ("Huizhou TCL Mobile") is a corporation duly organized and existing under the laws of the People's Republic of China, and conducts business from its corporate headquarters at 86 Hechang 7th West Road, Zhongkai Hi-Tech Development Zone, Huizhou, Guangdong 516006, China. On information and belief, Huizhou TCL Mobile is indirectly the wholly owned subsidiary of TCL Electronics and is engaged in the activity of importing and/or distributing mobile devices and other products, such as the TCL Accused Products, and the rendering of related services.

44. On information and belief, TCL Mobile Communication (HK) Company Ltd. ("TCL Mobile HK") is a corporation duly organized and existing under the laws of Hong Kong, and conducts business from a principal place of business at 5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science Park, Shatin, New Territories, Hong Kong. On information and belief, TCL Mobile HK is indirectly the wholly owned subsidiary of TCL Electronics and is engaged in the activity of importing and/or distributing mobile devices and other products, such as the Accused Products, and the rendering of related services.

45. On information and belief, TCL Industries Holdings, TCL Electronics, TCL Communication, TCL Communications Tech., TCL Mobile, Huizhou TCL Mobile, and TCL Mobile HK are part of an interrelated group of companies that together comprise one of the world's largest manufacturers of televisions and smartphones and one of the leading sellers of televisions and smartphones in the United States, including the TCL brands; these entities are therefore collectively referred to herein as "TCL." For example, TCL Electronics refers to itself and its subsidiaries as the "Group," such as in its 2023 Annual Report, describes itself as "a world-leading consumer electronics company" and states that the Group is involved in the "Small-and-Medium-Sized Display" business, which includes the sale of smartphones and tablets in the United States. Ex. 15.

46. On information and belief, the TCL Respondents are part of the same corporate structure and distribution chain (together with other TCL subsidiaries, affiliates, and intermediaries) responsible for the design, manufacture, use, importation into the United States, offering to sell in the United States, and/or sale in the United States of TCL Accused Products, including for example through their website (https://www.tcl.com/us/en/products/mobile/Smartphones). Ex. 17.

47. For example, the TCL Respondents each sell for importation into the United States, import into the United States, and/or sell within the United States after importation one or more mobile cellular communications devices, such as the TCL 50 XL NXTPAPER 5G. Pantech reserves the right to accuse additional products of the TCL Respondents as discovery proceeds.

**E. Proposed Tinno Respondents**

48. On information and belief, Respondent Shenzhen Tinno Mobile Technology Corporation is a corporation duly organized and existing under the laws of China, with its principal



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place of business at 27-001, South Side of Tianlong Mobile Headquarters Building, Tongfa South Road, Xili Community, Xili Street, Nanshan District, Shenzhen, Guangdong, P.R. China 518000.

49. On information and belief, Respondent Tinno USA, Inc. is organized and existing under the laws of the state of Delaware, with its principal place of business located at 2301 W Plano Pkwy #102, Plano, TX 75075. On information and belief, Tinno USA, Inc. is a wholly-owned subsidiary of Shenzhen Tinno Mobile Technology Corporation.

50. On information and belief, Shenzhen Tinno Mobile Technology Corporation and Tinno USA, Inc. are related entities; these entities are therefore collectively referred to herein as "Tinno."

51. On information and belief, the Tinno Respondents, either themselves or through third parties working on their behalf, design, develop, manufacture, make, market, test, import into the United States, support products manufactured outside of the United States, offer for sale, sell for importation into the United States, and sell in the United States after importation infringing wireless communication equipment, including for example through their website (https://www.tinno.us, Ex. 18), through websites of U.S. telecommunications network providers such as Boost Mobile (*e.g.*, https://www.boostmobile.com/shop/celero5g-001426.html, Ex. 19), Cricket Wireless (*e.g.*, https://www.cricketwireless.com/shop/smartphones/cricket-debut-flex-graphite-gray, Ex. 20), AT&T (*e.g.*, https://www.att.com/device-support/article/wireless/KM1510558/ATT/ATTU668AA/, Ex. 21), by otherwise supplying to U.S. telecommunications carriers for sale under their own brands, and through websites of other U.S. retailers such as Walmart (*e.g.*, https://www.walmart.com/ip/AT-T-Calypso-16GB-Chameleon-Blue-Prepaid-Smartphone/763076279, Ex. 22).

52. For example, the Tinno Respondents each sell for importation into the United States, import into the United States, and/or sell within the United States after importation one or more mobile cellular communications devices, such as the Boost Mobile Celero 5G. Pantech reserves the right to accuse additional products of the Tinno Respondents as discovery proceeds.

**F. Proposed HMD Respondents**

53. On information and belief, Respondent HMD Global ("HMD Global") is a company organized and existing under the laws of Finland, with its principal place of business located at Karaportti 2, FIN-02610, Espoo, Finland. On information and belief, HMD Global manufactures, imports, sells for importation, offers for sale, and/or sells within the United States after importation the HMD Accused Products.

54. Proposed Respondent HMD Global OY ("HMD Global OY") is a company organized and existing under the laws of Finland, with its principal place of business at Bertel Jungin aukio 9, 02600, Espoo, Finland. On information and belief, HMD Global OY manufactures, imports, sells for importation, offers for sale, and/or sells within the United States after importation the HMD Accused Products.

55. Proposed Respondent HMD America, Inc. ("HMD America") is a corporation organized and existing under the laws of the state of Florida, with its principal place of business at 1200 Brickell Ave., Suite 510, Miami, Florida 33131. On information and belief, HMD America offers for sale and/or sells within the United States after importation the HMD Accused Products.

56. On information and belief, HMD Global, HMD Global OY, and HMD America are related entities; these entities are therefore collectively referred to herein as "HMD."

57. On information and belief, the HMD Respondents, either themselves or through third parties working on their behalf, design, develop, manufacture, make, market, test, import into

the United States, support products manufactured outside of the United States, offer for sale, sell for importation into the United States, and sell in the United States after importation infringing wireless communication equipment, including for example through their website (https://www.hmd.com/en_us/smartphones). Ex. 23

58. For example, the HMD Respondents each sell for importation into the United States, import into the United States, and/or sell within the United States after importation one or more mobile cellular communications devices, such as the HMD Skyline. Pantech reserves the right to accuse additional products of the HMD Respondents as discovery proceeds.

## III. THE TECHNOLOGY AND PRODUCTS AT ISSUE

59. Pursuant to 19 C.F.R. § 210.12(a)(12), the category of products accused of infringing the Asserted Patents is smartphones, tablets, and laptop computers that are compliant with LTE, LTE Advanced, and/or 5G cellular network standards. If the Commission grants the Complainant's request to institute an investigation, Complainant will provide exemplary physical exhibits for the Commission's inspection.

60. Respondents infringe—directly and/or indirectly through inducement and/or contributory infringement—one or more claims of the Asserted Patents through the selling for importation into the United States, importing into the United States, and/or selling within the United States after importation certain Accused Products. Exemplary Accused Products and infringing activities of Respondents are provided in Section V, *infra*.

## IV. THE ASSERTED PATENTS

61. The Asserted Patents are directed to improved technology for use in cellular communications networks, including but not limited to those utilizing and operating in accordance with LTE, LTE-Advanced ("LTE-A"), and 5G telecommunications standards. This section

provides high-level descriptions of each of the Asserted Patents, along with an identification of their ownership and foreign counterparts.

62. All non-technical descriptions of the patents herein are presented to give a general background of those inventions. Such statements are not intended to be used, nor should they be used for purposes of patent claim interpretation. Pantech presents these statements subject to, and without waiver of, its right to argue that claim terms should be construed in a particular way, as contemplated by claim interpretation jurisprudence and the relevant evidence.

### A. The '839 Patent

#### 1. Identification and Ownership of the '839 Patent

63. Pantech Corp. owns by assignment the entire right, title, and interest in and to the '839 Patent. Ex. 5 (USPTO Assignment Record for the '839 Patent).

64. A certified copy of the '839 Patent is attached as Exhibit 1. Certified copies of the assignment records for the '839 Patent are attached as Exhibit 5. A certified copy of the prosecution history of the '839 Patent is included as Appendix A.

65. The '839 Patent is titled *Method for Mapping Physical Hybrid Automatic Repeat Request Indicator Channel*; was filed on May 29, 2015; and names Jung Hoon Lee and Joon Kui Ahn (both from Korea) as inventors. '839 Patent at (22), (54), (72). The '839 Patent claims priority to KR 10-2008-0124084, which was filed on December 8, 2008. *Id.* at (30).

66. The '839 Patent issued on January 17, 2017 (*id.* at (45)), and is expected to expire on March 22, 2029.

#### 2. Non-Technical Description of the '839 Patent

67. The '839 Patent provides critical improvements that allow user equipment (UE) devices to process signals from base stations indicating whether the base station successfully

received transmissions from the phone (uplink transmissions). More specifically, the '839 Patent discloses at least apparatuses and methods for mapping a physical hybrid automatic repeat request indicator channel (PHICH) to at least one orthogonal frequency division multiplexing (OFDM) symbol. Indices of resource element groups in which the PHICH is transmitted are determined according to a ratio involving the number of available resource element groups in the OFDM symbol.

68. For example, claims 9-12 of the '839 Patent recite elements of PHICH mapping mandated by the LTE standard, including at least 3GPP TS 36.211, TS 36.213, and TS 36.331. *See* Ex. 102, 3GPP TS 36.211 v8.9.0 at 48-49, 61-65 (§§ 3.1, 6.2.4, 6.9.1, 6.9.3) (OFDM symbols comprise a plurality of resource element groups, mapping PHICH to OFDM symbols; determination of resource element group indexes); Ex. 105, 3GPP TS 36.213 v8.8.0 at 65-66 (§ 9.1.2) (UE determination of PHICH resource); and Ex. 112, 3GPP TS 36.331 v8.7.0 at 24, 25, 84, 85, 103, 119, 125 (§§ 5.2.2.6, 5.2.2.9, 6.2.2, 6.3.1, 6.3.2) (UE determination of indexes); Ex. 113, 3GPP TS 36.521-1 v14.5.0 at 3133-3209 (§ 8.5).

69. On June 23, 2025, a Japanese district court ruled in favor of Pantech that a foreign counterpart to the '839 Patent — Japanese Patent No. 6401224 — had been infringed, and issued an injunction. This is the first time the Tokyo District Court has issued an injunction involving a patent subject to FRAND obligations. Exs. 186, 276.

### 3. Unissued U.S. Counterpart Applications

70. The following U.S. patent application, which has not issued as a patent, corresponds to the '839 Patent.

| Application No. | Status |
|---|---|
| 18/372,094 | Pending |

71. To the best of Pantech's knowledge, there are no others.

### 4. Foreign Counterparts to the '839 Patent

72. The following foreign patents and patent applications correspond to the '839 Patent:

| Jurisdiction | Application / Publication No. | Status | Patent No. |
|---|---|---|---|
| Australia | AU2009332929A1 | Issued | AU2009332929B2 |
| Canada | CA2715941A | Issued | CA2715941C |
| China | CN200980000075A | Issued | CN101682489B |
| China | CN201310194226A | Issued | CN103354491B |
| EPO | EP09153111A | Issued | EP2093924B1 |
| EPO | EP13170420A | Issued | EP2637348B1 |
| EPO | EP15166204A | Issued | EP2922233B1 |
| Japan | JP2009554464A | Issued | JP4982653B2 |
| Japan | JP2012037585A | Issued | JP5400186B2 |
| Japan | JP2013221358A | Issued | JP5694479B2 |
| Japan | JP2015020714A | Issued | JP6038974B2 |
| Japan | JP2016215172A | Issued | JP6401224B2 |
| Korea | KR20080124084A | Issued | KR100925439B1 |
| WIPO | WO2009104880A1 | Published | |
| Taiwan | TW98105169A | Issued | TWI422201B |

73. To the best of Pantech's knowledge, there are no other foreign patents or foreign patent applications corresponding to the '839 Patent.

### B. The '503 Patent

#### 1. Identification and Ownership of the '503 Patent

74. Pantech Corp. owns by assignment the entire right, title, and interest in and to the '503 Patent. Ex. 6 (USPTO Assignment Record for the '503 Patent).

75. A certified copy of the '503 Patent is attached as Exhibit 2. Certified copies of the assignment records for the '503 Patent are attached as Exhibit 6. A certified copy of the prosecution history of the '503 Patent is included as Appendix B.

76. The '503 Patent is titled *Apparatus and Method for Establishing Uplink Synchronization in a Wireless Communication System*; was filed on May 17, 2021; and names Kibum Kwon and Myungcheul Jung (both from Korea) as inventors. '503 Patent at (22), (54), (72). The '503 Patent claims priority to KR 10-2010-0012564, filed on February 10, 2010, KR 10-2010-0027230, filed on March 26, 2010, KR 10-2011-0008683, filed on January 28, 2011, and U.S. Patent Application No. 13/578,531, filed on February 10, 2011. *Id.* at (30), (65).

77. The '503 Patent issued on May 23, 2023 (*id*. at (45)), and is expected to expire on April 18, 2031.

#### 2. Non-Technical Description of the '503 Patent

78. The '503 Patent provides improvements for uplink synchronization in telecommunications networks that use carrier aggregation. This is critical because uplink transmissions (transmissions from a phone to a base station) must be synchronized so that they arrive at the base station at the same time.

79. More specifically, the '503 Patent discloses at least apparatuses and methods for establishing uplink synchronization in a wireless communication system supporting primary and secondary component carriers ("CCs"), through the use of timing groups. For instance, a user

equipment, contains a processor configured to cause the apparatus to receive, through a primary CC belonging to a first uplink timing group, a Radio Resource Control (RRC) message comprising information related to a second uplink timing group, receive information indicating a random access preamble (RAP), transmit a RAP through one or more uplink CCs, each being set as a delegate CC for a respective second uplink timing group, and receive a random access response (RAR) including a timing advance (TA) value based on the RAP associated with the delegate CC or the respective second uplink timing group, together with uplink grant information. The processor is also configured to cause the UE to apply each TA value to the secondary CC for the respective second uplink timing group.

80. For example, claims 5, 7, and 8 of the '503 Patent recite elements of carrier aggregation functionality mandated by the LTE Advanced standard, Release 11 and higher, including 3GPP TS 36.300, TS 36.321, TS 36.213, TS 36.211, and TS 36.331. *See* Ex. 100, 3GPP TS 36.331 v11.2.0 at 195-97 (§ 6.3.2); Ex. 101, 3GPP TS 36.211 v11.1.0 at 8-9 (§ 3.1), 10 (§ 4), 46 (§ 6.2.3), 104 (§ 8.1); Ex. 102, 3GPP TS 36.331 v11.2.0 at 43 (§ 5.3.3.4); Ex. 103, 3GPP TS 36.213 v11.1.0 at 9-10 (§ 4.2.3); Ex. 106, 3GPP TS 36.300 v11.6.0 at 13 (§ 1), 16 (§ 3.1), 16-17 (§ 3.2), 19 (§ 4), 48 (§ 5.5), 60 (§ 7.5), 72 (§ 10.1.2.7) (specifying multiple timing advance capability and multiple timing advance groups; addition and configuration of secondary cells with uplink component carriers; and use of timing reference cells); *id.* at 72-75 (§ 10.1.5) (non-contention based random access procedure used to obtain timing advance alignment for secondary timing advance group ("sTAG")); *id.* at 76-77 (§ 10.1.5.2) (specifying random access procedure steps performed by the UE including reception of preamble assignment, transmission of random access preamble, and reception of random access response); Ex. 108, 3GPP TS 36.321 v11.1.0 at 8 (§ 3.1), 13 (§§ 5.1, 5.1.1), 14 (§5.1.2), 14-15 (§5.1.3), 15 (§ 5.1.4), 17-18 (§ 5.2), 43-44 (§ 6.1.5),

45-46 (§ 6.2.2), 46 (§ 6.2.3) (MAC Random Access Responses include Timing Advance Command and UL Grant fields; UE applies Timing Advance Command upon receiving MAC); Ex. 103, 3GPP TS 36.213 v11.1.0 at 9-10 (§ 4.2.3) (UE adjusts uplink transmission timing of sTAG upon reception of Timing Advance Command); Ex. 101, 3GPP TS 36.211 v11.1.0 at 104 (§ 8.1) (specifying uplink-downlink frame timing); Ex. 110, 3GPP 36.331 v11.2.0 at 37 (§§ 5.3, 5.3.1, 5.3.1.1), 40 (§§ 5.3.3, 5.3.3.1), 43 (§ 5.3.3.4), 50 (§§ 5.3.5, 5.3.5.1), 51 (§ 5.3.5.3), 64 (§§ 5.3.10, 5.3.10.0), 66 (5.3.10.4) (the UE receives, through RRC signaling, configuration information relating to secondary timing advance group sTAG for a secondary component carrier); *id*. at 195-198 (§ 6.3.2).

81. As another example, claims 5, 7, and 8 of the '503 Patent recite elements of carrier aggregation functionality mandated by the 5G standard, Release 16 and higher, including 3GPP TS 37.340, 3GPP TS 38.300, 3GPP TS 38.321, 3GPP TS 38.213, 3GPP TS 38.211, and/or 3GPP TS 38.331. *See* Ex. 114, 3GPP TS 36.211 v16.0.0 at 193 (§8.1); Ex. 115, 3GPP TS 36.213 v16.0.0 at 12-13 (§4.2.3); Ex. 116, 3GPP TS 36.300 v16.0.0 at 8 (§1), 24-25 (§3.1), 73 (§5.5.0), 100 (§7.5); 101-102 (§7.6), 116-117 (§10.1.2.7), 136 (§10.1.5.0), 139-140 (§10.1.5.2); Ex. 117, 3GPP TS 36.321 v16.0.0 at 31-32 (§5.2), 94 (§6.1.3.5), 110-111 (§6.1.5), 117 (§6.2.3); Ex. 118, 3GPP TS 38.331 v16.0.0 at 121-123 (§5.3.5.3); Ex. 119, 3GPP TS 37.340 v16.2.0 at 7-8 (§3.1), 8 (§3.2), 9 (§4.1.1), 9 (§4.1.2), 10 (§4.1.3), 10-11 (§4.2.1), 11-12 (§4.2.2), 15 (§5), 15 (§6.1), 27-28 (§10.2.2); Ex. 120, 3GPP TS 38.211 v16.0.0 at 12 (§4.3.1); Ex. 122, 3GPP TS 38.213 v16.0.0 at 11 (§4.2); Ex. 123, 3GPP TS 38.313 v16.2.0 at 11-12 (§4.2); Ex. 124, 3GPP TS 38.300 v16.0.0 at 8 (§1), 11 (§3.2), 11-12 (§4.1), 24 (§5.4.1), 37 (§7.7), 58-59 (§9.2.6), 59-60 (§9.2.9); Ex. 126, 3GPP TS 38.321 v16.0.0 at 9-10 (§3.1), 34-35 (§5.2), 100-101 (§6.1.3.4); Ex. 127, 3GPP TS 38.321 v16.1.0 at 29 (§5.1.4), 108-109 (§6.1.3.4), 142-143 (§6.2.3); Ex. 129, 3GPP TS 38.331 v16.0.0 at 23 (§3.1),

24-25 (§3.2), 31 (§5.1.3), 49 (§5.3.3.1), 50-51 (§5.3.3.4), 55-56 (§5.3.5.1), 56-58 (§5.3.5.3), 62-63 ((§5.3.5.5.1, §5.3.5.5), 65-66 (§5.3.5.5.5), 239-241 (§6.2.2), 335-339, 404-405, 568-571, 605 (§6.3.2); This also includes incorporated portions of the LTE standard, Release 16 and higher, such as those cited in the preceding paragraph.

**3. Unissued U.S. Counterpart Applications**

82. The following U.S. patent applications, which have not issued as patents, correspond to the '503 Patent.

| Application No. | Status |
|---|---|
| 15/820,980 | Abandoned |
| 18/136,253 | Pending |

83. To the best of Pantech's knowledge, there are no others.

**4. Foreign Counterparts to the '503 Patent**

84. The following foreign patents and patent applications correspond to the '503 Patent:

| Jurisdiction | Application / Publication No. | Status | Patent No. |
|---|---|---|---|
| China | CN102812762A | Issued | CN102812762B |
| China | CN107070615A | Issued | CN107070615B |
| EPO | EP2536227A2 | Issued | EP2536227B1 |
| JP | JP2015-154385 | Issued | JP6175466B2 |
| Korea | KR20110008683 | Issued | KR101803015B1 |
| WIPO | WO2011099795A2 | Published | |

85. To the best of Pantech's knowledge, there are no other foreign patents or foreign patent applications corresponding to the '503 Patent.

### C. The '344 Patent

#### 1. Identification and Ownership of the '344 Patent

86. Pantech Corp. owns by assignment the entire right, title, and interest in and to the '344 Patent. Ex. 7 (USPTO Assignment Record for the '344 Patent).

87. A certified copy of the '344 Patent is attached as Exhibit 3. Certified copies of the assignment records for the '344 Patent are attached as Exhibit 7. A certified copy of the prosecution history of the '344 Patent is included as Appendix C.

88. The '344 Patent is titled *Method for Transmitting and Receiving Random Access Request and Transmitting and Receiving Random Access Response*; was filed on December 11, 2019; and names Min Seok Noh, Yeong Hyeon Kwon, Jin Sam Kwak, Dong Cheol Kim, Sung Ho Moon, Seung Hee Han, Hyun Woo Lee, and Dragan Vujcic (all from Korea, with the exception of D. Vujcic from France) as inventors. '344 Patent at (22), (54), (72). Through a series of continuation applications, the '344 Patent claims priority to KR 10-2008-0047656, filed May 22, 2008, U.S. Provisional App. No. 61/018,492, filed January 1, 2008. *Id.* at (30, 60, 63).

89. The '344 Patent issued on June 29, 2021 (*id.* at (45)), and is expected to expire on December 31, 2028.

#### 2. Non-Technical Description of the '344 Patent

90. The '344 Patent discloses at least apparatuses and methods to receive a random access response from a base station within a time period. The time period starts at a time point after an end time of transmitting the random access preamble obtained, and is obtained by adding an offset to a subframe number corresponding to the end time of transmitting the random access preamble. The offset equals three. Further, the Patent discloses a processor configured to extract information associated with a subframe number of a subframe in which a random access preamble

was transmitted by the user equipment, and determine that the received random access response is a response to the transmitted random access preamble.

91. For example, claims 2 and 6 of the '344 Patent recite elements of random access procedures mandated by the LTE standard, including at least 3GPP TS 36.300, TS 36.321, TS and TS 36.331 release 8 and higher. *See* Ex. 104, 3GPP TS 36.213 v8.5.0 at 16-17 (§ 6.1); Ex. 107, 3GPP TS 36.300 v8.5.0 at 50 (§ 10.1.5.1) (the UE receives a RAR); Ex. 109, 3GPP 36.321 v8.5.0 at 12-13 (§ 5.1.1, 5.1.2), 14 (§§ 5.1.3, 5.1.4) (the UE performs a random access procedure, including transmitting a RAP, monitoring for a RAR within a RA response window, and receives a RAR), 35-36 (§ 6.1.5), 37-38 (§ 6.2.2); Ex. 109, 3GPP TS 36.321 v8.5.0 at 12-13 (§ 5.1.1), 13 (§ 5.1.2), 14 (§ 5.1.3), 14 (§ 5.1.4), 35 (§ 6.1.5), 36 (§ 6.1.5), 37-38 (§ 6.2.2); Ex. 111, 3GPP TS 36.331 v8.5.0 at 123-124 (§§ 5.1.1, 6.3.2).

**3. Unissued U.S. Counterpart Applications**

92. The following U.S. patent applications, which have not issued as patents, correspond to the '344 Patent.

| Application No. | Status |
|---|---|
| 19/043,417 | Pending |

93. To the best of Pantech's knowledge, there are no others.

**4. Foreign Counterparts to the '344 Patent**

94. The following foreign patents and patent applications correspond to the '344 Patent:

| Jurisdiction | Application / Publication No. | Status | Patent No. |
|---|---|---|---|
| China | CN101960906A | Issued | CN101960906B |

| Jurisdiction | Application / Publication No. | Status | Patent No. |
|---|---|---|---|
| China | CN201410265062A | Issued | CN103997794B |
| EPO | EP2227923A2 | Issued | EP2227923B1 |
| Korea | KR20090074106A | Issued | KR101519345B1 |
| Korea | KR20150024363A | Issued | KR101540418B1 |
| WIPO | WO2009084924A2 | Published | |

95. To the best of Pantech's knowledge, there are no other foreign patents or foreign patent applications corresponding to the '344 Patent.

**D. The '876 Patent**

**1. Identification and Ownership of the '876 Patent**

96. Pantech Corp. owns by assignment the entire right, title, and interest in and to the '876 Patent. Ex. 8 (USPTO Assignment Record for the '876 Patent).

97. A certified copy of the '876 Patent is attached as Exhibit 4. Certified copies of the assignment records for the '876 Patent are attached as Exhibit 8. A certified copy of the prosecution history of the '876 Patent is included as Appendix D.

98. The '876 Patent is titled *Method for Transmitting and Receiving Random Access Request and Transmitting and Receiving Random Access Response*; was filed on September 22, 2023; and names Min Seok Noh, Yeong Hyeon Kwon, Jin Sam Kwak, Dong Cheol Kim, Sung Ho Moon, Seung Hee Han, Hyun Woo Lee, and Dragan Vujcic (all from Korea, with the exception of D. Vujcic from France) as inventors. '876 Patent at (22), (54), (72). Through a series of continuation applications, the '876 Patent claims priority to KR 10-2008-0047656, filed May 22, 2008, U.S. Provisional App. No. 61/018,492, filed January 1, 2008. *Id.* at (30, 60, 63).

99. The ’876 Patent issued on April 1, 2025 (*id*. at (45)), and is expected to expire on December 31, 2028.

### 2. Non-Technical Description of the ’876 Patent

100. The same teachings of the ’344 Patent written description are also contained in the ’876 Patent written description, and the corresponding discussion at Section IV(C)(2), *supra*, is hereby incorporated herein

101. For example, claims 4-6 of the ’876 Patent recite elements of random access procedures mandated by the LTE standard, including at least 3GPP TS 36.300, TS 36.321, TS and TS 36.331 release 8 and higher. *See* Ex. 100, 3GPP TS 36.101 v8.5.0 at 13 (§ 5.5), 18 (§§ 6.1-6.2), 23 (§ 6.3.4.2), 38 (§ 7.1), 66-67 (§ 8.4); Ex. 104, 3GPP TS 36.213 v8.5.0 at 16-17 (§ 6.1); Ex. 107, 3GPP TS 36.300 v8.5.0 at 50 (§ 10.1.5.1) (the UE receives a RAR); Ex. 109, 3GPP 36.321 v8.5.0 at 12-13 (§ 5.1.1), 13-15 (§§ 5.1.2-5.1.4) (the UE performs a random access procedure, including transmitting a RAP, monitoring for a RAR within a RA response window, and receives a RAR); *id*. at 50 (§ 10.1.5.1); Ex. 111, 3GPP TS 36.331 v8.5.0 at 123-124 (§6.3.2).

### 3. Unissued U.S. Counterpart Applications

102. The following U.S. patent applications, which have not issued as patents, correspond to the ’876 Patent.

| Application No. | Status |
|---|---|
| 19/043,417 | Pending |

103. To the best of Pantech’s knowledge, there are no others.

### 4. Foreign Counterparts to the ’876 Patent

104. The following foreign patents and patent applications correspond to the ’876 Patent:

| Jurisdiction | Application / Publication No. | Status | Patent No. |
|---|---|---|---|
| China | CN101960906A | Issued | CN101960906B |
| China | CN103997794A | Issued | CN103997794B |
| EPO | EP2227923A2 | Issued | EP2227923B1 |
| Korea | KR20090074106A | Issued | KR101519345B1 |
| Korea | KR20150024363A | Issued | KR101540418B1 |
| WIPO | WO2009084924A2 | Published | |

105. To the best of Pantech's knowledge, there are no other foreign patents or foreign patent applications corresponding to the '876 Patent.

**E. Licensees**

106. Exhibit 24 is a list of those entities that have licensed one or more of the Asserted Patents that are known to Pantech. To the best of Pantech's knowledge, there are no other current licensees to the Asserted Patents.

## V. RESPONDENTS' UNLAWFUL AND UNFAIR ACTS

### A. The 3GPP and LTE/5G Standardization Process

107. The accused technology for the Asserted Patents relates to the LTE, LTE-Advanced, and 5G cellular standards developed by the 3rd Generation Partnership Project ("3GPP") and promulgated by the European Telecommunications Standards Institute ("ETSI") and other standards-setting organizations ("SSOs").

108. In order to enable devices manufactured by different entities to interoperate, SSOs such as 3GPP and ETSI have formed to develop and publish industry standards, which define communication protocols and technical specifications that can be adopted by different manufacturers to ensure interoperability between their devices and networks.

109. 3GPP is a collaborative project comprised of various telecommunications SSOs, including ETSI, the Association of Radio Industries and Businesses (ARIB), the Alliance for Telecommunications Industry Solutions (ATIS), and others. 3GPP develops and maintains the technical specifications for cellular standards, including LTE, LTE-Advanced, and 5G, which are adopted globally and implemented in a wide range of wireless communication equipment.

110. ETSI, founded in 1988, is a recognized European SSO responsible for standardizing information and communications technologies, including fixed, mobile, radio, converged, broadcast, and internet technologies. ETSI is a founding organizational partner of 3GPP and plays a central role in the development and maintenance of cellular standards. ETSI's mission is to produce globally applicable standards for information and communications technologies, including those for mobile communications.

111. Within 3GPP and ETSI, members—including technology companies, network operators, and equipment manufacturers—collaborate in working groups to propose, evaluate, and adopt technical solutions that best meet the needs of the industry. The goal is to develop standards that incorporate the most effective and innovative technologies, ensuring high-quality, interoperable, and future-proof communications systems. The LTE, LTE-Advanced, and 5G standards are detailed in a series of 3GPP Technical Specifications, including the 36, 37, and 38-series technical specifications. Illustrative examples of LTE technical specifications are TS 36.211, TS 36.213, and TS 36.331.

112. To facilitate the widespread adoption of and contribution to its standards, ETSI has established an Intellectual Property Rights ("IPR") Policy that seeks to balance the need for open, accessible standards with the rights of patent holders to be compensated for their innovations. ETSI IPR Policy, Ex. 25 (https://www.etsi.org/images/files/IPR/etsi-ipr-policy.pdf.) ETSI's IPR Policy

requires that patents that are "essential" to the implementation of a standard—*i.e.*, standard essential patents ("SEPs")—be made available to implementers on fair, reasonable, and non-discriminatory ("FRAND") terms and conditions. This ensures that manufacturers can access the technology necessary to implement the standard, while patent holders are incentivized to contribute their innovations to the standardization process.

113. ETSI defines an "essential" patent as one that is necessarily infringed by any implementation of the standard, such that it is not possible, on technical grounds, to make, sell, or use equipment or perform methods compliant with the standard without infringing the patent. ETSI's IPR Policy further requires that patent holders who participate in standards-setting declare their SEPs and commit to licensing them on FRAND terms. The policy is designed to prevent "patent hold-up" and to promote contribution to, and the broad adoption of, standardized technologies.

114. The ETSI IPR Policy provides that, if a standard cannot be implemented without infringing a declared SEP, the patent holder must be willing to grant licenses to all implementers on FRAND terms. If a patent holder is unwilling to do so, the standard must be modified to avoid reliance on that technology. Patent holders who participate in standards-setting activities are required to submit a written declaration to ETSI, using the appropriate "IPR Information Statement and Licensing Declaration" form, indicating their willingness to license on FRAND terms.

115. The ETSI Guidelines further clarify that "essential" patents are those with claims that are necessary to implement a specific standard, and that the obligation to license on FRAND terms applies to all such patents. The Guidelines also explain the procedures for declaring SEPs and for resolving disputes regarding licensing terms.

116. The LTE, LTE-Advanced, and 5G standards specify the implementation of both user equipment (UE) and network infrastructure, including detailed requirements for uplink and downlink communications, random access procedures, synchronization, and other core functionalities. The Asserted Patents are essential to the implementation of these standards, as they cover technical solutions that are required for compliance with the relevant and mandatory 3GPP specifications.

### B. Pantech's Compliance with ETSI FRAND Licensing Obligations, and Respondents' Hold-Out

117. Consistent with the ETSI IPR Policy, Pantech and any prior rights holders declared to ETSI that they were prepared to grant licenses to the essential claims of the Asserted Patents on FRAND terms and conditions. Specifically, the claims of the Asserted Patents are essential to the LTE, LTE-Advanced, and 5G standards, and Pantech has been and remains willing to grant a license under FRAND terms to any implementer of these standards.

118. Pantech has negotiated in good faith and made substantial efforts to enter into license agreements with Respondents on FRAND terms, as demonstrated by Pantech's conduct in licensing negotiations with each Respondent, as further detailed in Sections V.C through V.G below. Pantech has provided detailed information regarding its patent portfolio, the essentiality of its patents, and the technical basis for its infringement allegations, and has offered licenses at rates consistent with those accepted by other licensees in the industry.

119. The recent decision in *G+ Communications LLC v. Samsung Electronics Co., Ltd.*, No. 2:22-cv-00078-JRG (E.D. Tex. Jan. 22, 2024), provides important clarification regarding the reciprocal obligations of both SEP holders and implementers during FRAND licensing negotiations. There, the court held that under French law, which governs ETSI FRAND commitments, both parties are required to negotiate in good faith, and if either the SEP holder or



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the implementer fails to do so the other party's obligation to continue negotiations is suspended. Thus, the *G+* decision underscores that exclusionary or injunctive relief may be appropriate where an implementer's bad faith conduct frustrates the FRAND licensing process, while also making clear that SEP holders are not required to continue negotiating with parties acting in bad faith.

120. In line with the principles articulated in the *G+* decision, Pantech's conduct demonstrates its willingness to license on FRAND terms. Pantech has made clear, repeated, and specific offers to license its SEPs on FRAND terms, provided technical claim charts, and responded to requests for information. Pantech's offers have been transparent, reasonable, and non-discriminatory, and have been validated by comparable agreements with licensees.

121. The *G+* decision further clarifies that, while an SEP holder must be willing to license on FRAND terms, implementers are equally obligated to engage in good-faith negotiations. An implementer's pattern of delay, failure to respond, or refusal to make a bona fide counteroffer is evidence of unwillingness to take a license. Here, Respondents have repeatedly failed to engage in good-faith negotiations, have ignored or delayed responses to Pantech's offers, and have refused to take a license to Pantech's SEPs.

122. For example, Pantech Corp.'s predecessor in ownership first notified Lenovo of now-Pantech's SEPs and offered a license in March 2018. Pantech has since provided additional information and repeated offers, including detailed claim charts and technical analysis. Lenovo has not substantively responded to the offers or provided a counteroffer, and has instead engaged in delay tactics and holdout behavior.

123. Similarly, Pantech has made multiple licensing offers to OnePlus, TCL, Tinno, and HMD, providing technical details and evidence of infringement, but each of these Respondents has failed to engage in meaningful negotiations or to accept a license on FRAND terms. In some



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cases, Respondents have insisted on protracted negotiations over nondisclosure agreements, or have simply ignored Pantech's communications altogether.

124. Pantech has complied with all conditions precedent under its FRAND commitment and the ETSI IPR Policy to seek the relief it requests in this case.

125. Pantech has granted numerous licenses to its LTE/5G SEP portfolio, covering a wide range of product types and industry participants. Pantech's existing licensees include major manufacturers of mobile devices, reflecting the broad applicability and essentiality of Pantech's patented technology. Thus, Pantech's portfolio has been licensed to multiple industry participants, and its licensing terms have been validated by industry practice. And Pantech's licensing terms have been further validated by a jury verdict in Pantech's favor against OnePlus, which included a finding that OnePlus willfully infringed the '839 Patent and a family member of the '503 Patent.

126. Pantech made license offers to Respondents using Pantech's standard licensing terms. Pantech's license offers to Respondents are consistent with the rates and terms accepted by Pantech's licensees for the same technology. Moreover, Pantech has been transparent about its pricing expectations, its bases therefor, and its bases for its FRAND offers.

127. Despite Pantech's good faith efforts to license its SEPs on FRAND terms, Respondents have persistently refused to constructively negotiate a license, repeatedly made counteroffers below FRAND, or simply failed to respond, and are currently engaged in "hold out." Respondents have continued to import, sell, and use products that implement the LTE, LTE-Advanced, and 5G standards without a license to Pantech's essential patents. Respondents' refusal to substantively engage in licensing discussions, to negotiate in good faith, and to accept a FRAND license demonstrates their unwillingness to take a license to Pantech's SEPs, and constitutes holdout behavior. Respondents engaged in such holdout in an effort to force Pantech to incur



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litigation and other costs, and to avoid having to pay licensing fees, or otherwise pay fees that are unfairly low both to Pantech and to Pantech's licensees, who are industry participants. Under these circumstances, this Complaint is necessary to put an end to Respondents' infringing conduct as unwilling licensees.

128. As detailed below, Respondents' conduct in response to Pantech's attempted negotiations confirms that they are unwilling to take a license to Pantech's essential patent claims on FRAND terms, and instead seek to delay resolution and continue their unlicensed use of Pantech's patented technology. For example, Respondents have:

- Repeatedly engaged in dilatory licensing tactics while making use of Pantech's intellectual property;
- Refused to accept Pantech's FRAND license offers;
- Failed to pay any compensation for use of Pantech's SEPs; and
- Failed to make FRAND counteroffers.

129. Under such circumstances, an exclusion order is warranted to put an end to Respondents' conduct as unwilling licensees.

### C. OnePlus's Prior Dealings with Pantech and Awareness of the Asserted Patents

130. Pantech has made multiple, sustained efforts to notify OnePlus and its related entities of the existence, essentiality, and infringement of the Asserted Patents:

131. **Initial Outreach:** Pantech, by letter dated June 12, 2020, sent correspondence to Mr. Zuohu Liu, CEO of OnePlus Technology (Shenzhen) Co., Ltd., offering to license patents owned and/or managed by Pantech, including those essential to cellular standards such as LTE and LTE-Advanced. This correspondence specifically identified OnePlus products (including, for example, the OnePlus 6T, OnePlus 7, OnePlus 7 Pro, OnePlus 7T, OnePlus 7T Pro, OnePlus 8,



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and OnePlus 8 Pro) as being covered by the claims of the offered patents, and included a list of Pantech's patents, explicitly identifying the '839 Patent as being infringed by the identified OnePlus products and related products. Ex. 27 at ¶ 13.

132. **Follow-Up Communications:** Pantech provided additional details regarding its patent portfolio and licensing proposal to OnePlus on at least September 24, 2020, January 21, 2021, March 25, 2021, April 16, 2021, May 4, 2021, June 1, 2021, and July 9, 2021. *Id*. at ¶ 14. These communications included technical details, lists of patents, and identification of the Asserted Patents (or family members with the same specification and claim scope), as well as references to the relevant portions of the cellular standards covered by the respective patents. *Id*.

133. **Notice of Standards Essentiality:** In these communications, Pantech specifically called attention to the standards-essential nature of the Asserted Patents, referencing the relevant 3GPP standards that are implemented in OnePlus's products. *Id*. at ¶ 15.

134. **Additional Portfolio Notice:** On May 14, 2021, Pantech provided OnePlus with notice that its subsidiary, Pantech Wireless LLC, had acquired the Signal Trust portfolio of patents, which included additional standard essential patents, and provided a list of the acquired patents. *Id*. at ¶ 16. On July 9, 2021, Pantech provided further information regarding OnePlus's practice of such patents and made a licensing offer that included both the Pantech and Pantech Wireless patents, at a rate reflecting a substantial discount. *Id*. at ¶ 17.

135. **Lack of Good Faith Engagement:** Despite these repeated efforts, Pantech was met with constant delay, ignored communications, and prolonged periods for responses, [redacted]. *Id*. at ¶ 18. OnePlus did not substantively respond to Pantech's communications or licensing offers outside of litigation,

has not provided a good faith counteroffer even after Pantech instituted district court litigation and obtained a jury verdict of willful infringement against OnePlus, including as to the '839 Patent and a family member of the '503 Patent. *Id*. OnePlus has instead engaged in holdout behavior, refusing to engage in good faith negotiations.

136. **Litigation and Continued Notice:** On June 3, 2022, Pantech and its subsidiary Pantech Wireless sued OnePlus for patent infringement in the Eastern District of Texas, resulting in jury findings of infringement, no invalidity, willfulness, and damages for certain of Pantech's patents, including the '839 Patent, a family member of the '503 Patent of which the '503 Patent is a continuation of, and another standard essential patent. Exs. 28-31. With respect to the '839 Patent and other standard essential patents at issue in that suit, the jury substantially adopted Pantech's damages claim, which is consistent with its FRAND licensing rate offered in licensing negotiations. Exs. 29-30. Demonstrating its holdout behavior and willful infringement, OnePlus dropped all of its patent invalidity defenses against Pantech's asserted standards essential patents, but not until the day before OnePlus's technical expert was scheduled to testify at trial. Despite these verdicts, OnePlus has refused to accept a license on FRAND terms or provide a reasonable counteroffer. Ex. 27 at ¶¶ 19, 21. On March 14, 2024, Pantech and Pantech Wireless again sued OnePlus for patent infringement, along with a claim for breach of FRAND and unjust enrichment, in the Eastern District of Texas. Yet, OnePlus continues to operate without a license to Pantech's standard essential and other patents, including the Asserted Patents. Ex. 27 at ¶ 20.

137. **Constructive Knowledge:** As a participant in the global telecommunications market and a member of standard-setting organizations, OnePlus has constructive knowledge of the Asserted Patents by virtue of their declaration as SEPs and their inclusion in public standards documentation.

### D. Lenovo's Prior Dealings with Pantech and Awareness of the Asserted Patents

138. Pantech and its predecessor entities have made repeated and sustained efforts to notify Lenovo and its related entities of the existence, essentiality, and infringement of the Asserted Patents:

139. **Initial Outreach by Predecessor:** On March 22, 2018, Goldpeak Innovations, Inc. (Pantech Corp.'s predecessor in ownership of the Asserted Patents or their family members) sent a letter to Mr. Thomas V. Miller, VP, Intellectual Property of Motorola Mobility, LLC, offering to license patents owned and/or managed by Goldpeak and Pantech Inc., including those essential to cellular standards such as LTE and LTE-Advanced. This correspondence identified Lenovo products (including Moto E 2015, Moto G LTE, DROID Turbo, Moto X, DROID MAXX, DROID Mini, ELECTRIFY M, DROID RAZR HD, DROID RAZR MAXX HD, DROID RAZR M, PHOTON Q 4G LTE, and Moto Z Force 4G LTE) as being covered by the claims of the offered patents and attached a list of Pantech's patents. *Id*. On information and belief, Lenovo did not accept Goldpeak's offer to negotiate a license to the patents.

140. **Follow-Up by Pantech:** After acquiring the patents from Goldpeak and Pantech Inc., Pantech sent a follow-up letter to Lenovo on June 12, 2020, addressed to Mr. Yuanqing Yang (CEO of Lenovo (Beijing) Ltd.), Ms. Laura Quatela (Chief Legal Officer of Lenovo (United States), Inc.), and Mr. Sergio Buniac (President of Motorola Mobility LLC). Ex. 27 at ¶ 23. This letter notified Lenovo of Pantech's acquisition of the patents, provided an exemplary list of patents being infringed by Lenovo (including the '839 Patent), and listed numerous Lenovo and Motorola products that infringe. *Id*.

141. **Ongoing Communications:** Pantech continued to provide additional details regarding its portfolio and licensing proposal to Lenovo on at least January 8, 2021, April 7, 2021,

and May 28, 2021. *Id*. at 24. These communications included technical details, lists of patents, identification of the Asserted Patents (or family members with the same specification and claim scope), and references to the relevant portions of the cellular standards covered by the respective patents. *Id*.

142. **Notice of Standards Essentiality:** In these communications, Pantech specifically called attention to the standards-essential nature of the Asserted Patents, referencing the relevant 3GPP standards that are implemented in Lenovo's products. *Id*. at ¶ 25.

143. **Notice of Additional Portfolio:** During negotiations, on April 7, 2021, and May 28, 2021, Pantech provided Lenovo with notice that its subsidiary, Pantech Wireless LLC, had acquired the Signal Trust portfolio of patents, which included additional standard essential patents, and provided a list of the acquired patents. *Id*. at 26. In the May 28, 2021, correspondence and subsequent discussions, Pantech provided Lenovo with detailed claim charts and made a licensing offer that included both the Pantech and Pantech Wireless patents, at a rate reflecting a substantial discount. *Id*.

144. **Lack of Good Faith Engagement:** Despite multiple efforts to engage with Lenovo, Pantech was met with constant delay, ignored communications, and prolonged periods for responses. *Id*. at ¶ 27. Even after technical presentations and promises of feedback, Lenovo never substantively responded to Pantech's offer or provided a counteroffer. *Id*. Following years of silence, Pantech sent another letter to Lenovo on January 2, 2025, highlighting recent developments and licensing activity, which Lenovo ignored. *Id*.

145. **Constructive Knowledge:** As a major participant in the global telecommunications market and a member of standard-setting organizations, Lenovo has

constructive knowledge of the Asserted Patents by virtue of their declaration as SEPs and their inclusion in public standards documentation.

### E. TCL's Prior Dealings with Pantech and Awareness of the Asserted Patents

146. Pantech and its predecessor entities, including Goldpeak Innovations, Inc., have made repeated and sustained efforts to notify TCL and its related entities of the existence, essentiality, and infringement of the Asserted Patents:

147. **Initial Outreach by Predecessor**: On March 6, 2018, Goldpeak Innovations, Inc. (Pantech Corp.'s predecessor in ownership of the Asserted Patents or their family members) sent a letter to TCL's executive leadership, directed to the General Counsel. This letter offered to license patents then owned and/or managed by Goldpeak and Pantech Inc., including patents essential to cellular standards such as LTE and LTE-Advanced. The correspondence identified TCL products, such as Alcatel Idol 4S with Windows, Alcatel Fierce 4, Alcatel Cinch, Alcatel Streak, Alcatel Dawn Alcatel POP 7 LTE, and Alcatel Idol 4, as being covered by claims of the offered patents, and attached a list of Pantech's patents, including those covering TCL's products. On information and belief, TCL did not accept Goldpeak's offer to negotiate a license to the patents.

148. **Follow-Up by Pantech:** After Pantech Corp. acquired the patents from Goldpeak and Pantech Inc., Pantech sent a follow-up letter to TCL's executive leadership on June 19, 2020. Ex. 27 at ¶ 30. This letter notified TCL of Pantech Corp.'s acquisition of the patents, provided a list of the patents, provided an exemplary list of patents being infringed by TCL (including the '839 Patent), and listed a number of TCL products that infringe. *Id*.

149. **Ongoing Communications:** Pantech provided TCL with additional details regarding its patent portfolio and licensing proposal through subsequent correspondence on at least

January 8, 2021, April 7, 2021, September 3, 2021, February 15, 2022, June 7, 2023, and January 8, 2025. *Id.* at ¶ 31. These communications included technical details, updated lists of patents, and identification of the Asserted Patents (or family members), as well as references to the relevant 3GPP standards that are implemented in TCL's products. *Id*. Pantech also provided claim charts and technical analysis demonstrating how TCL's products practice the claims of the Asserted Patents, and provided TCL with a draft license agreement. *Id*.

150. **Notice of Standards Essentiality:** In these communications, Pantech specifically called attention to the standards-essential nature of the Asserted Patents, referencing the relevant 3GPP standards that are implemented in TCL's products. *Id*. at ¶ 32.

151. **Notice of Additional Portfolio:** On September 3, 2021, Pantech provided TCL with notice that its subsidiary, Pantech Wireless LLC, had acquired the Signal Trust portfolio of patents, which included additional standard essential patents, and provided a list of the acquired patents. Pantech provided TCL with additional information regarding TCL's practice of such patents and made a licensing offer that included both the Pantech and Pantech Wireless patents, at the same rate as previously offered, reflecting a substantial discount. *Id*. at ¶ 33.

152. **Lack of Good Faith Engagement:** Despite these repeated efforts, Pantech was met with constant delay, ignored communications, and prolonged periods for responses, [redacted]. *Id*. Pantech followed up by sending an updated list of Pantech's patents and exemplary claim charts on June 7, 2023. *Id*. [redacted]

[redacted]. In fact, TCL never engaged again following these discussions and correspondence. *Id*. Following TCL's extended silence, Pantech sent another letter on January 7, 2025, highlighting recent developments and licensing activity, which TCL ignored. *Id*. Thus, TCL has engaged in holdout behavior, including for example refusing to engage in good faith negotiations or to address the infringement allegations in a substantive manner.

153. **Constructive Knowledge:** As a major participant in the global telecommunications market, and with its affiliates being members of standard-setting organizations, TCL has constructive knowledge of the Asserted Patents by virtue of their declaration as standard essential patents (SEPs) and their inclusion in public standards documentation. TCL's ongoing importation, sale, and offer for sale of standard-compliant products in the United States further evidences its awareness and knowledge of the Asserted Patents.

**F. Tinno's Prior Dealings with Pantech and Awareness of the Asserted Patents**

154. Pantech has made multiple, sustained efforts to notify Tinno and its related entities of the existence, essentiality, and infringement of the Asserted Patents:

155. **Initial Outreach:** Pantech, by letter dated June 19, 2020, sent correspondence to Mr. Michel Assadorian, CEO of Wiko SAS (a Tinno affiliate), and Mr. Brandy Kang, CEO of Wiko USA, Inc. (another Tinno affiliate), offering to license patents owned and/or managed by Pantech, including those essential to cellular standards such as LTE and LTE-Advanced. Ex. 27 at ¶ 36. This correspondence specifically identified a number of Tinno products as being covered by the claims of the offered patents, and included a list of Pantech's patents. *Id*.

156. **Follow-Up Communications:** Pantech provided additional details regarding its patent portfolio and licensing proposal to Tinno (by way of Wiko SAS and Wiko Mobile) on at

least January 8, 2021. *Id*. at ¶ 37. On April 7, 2021, Pantech followed up with Wiko Mobile and Tinno Mobile Technology Corp., and followed up again on June 17, 2021, September 20, 2021, and December 1, 2021. *Id*. These communications included technical details, lists of patents, and identification of the Asserted Patents (or family members with the same specification and claim scope), as well as references to the relevant portions of the cellular standards covered by the respective patents. *Id*.

157. **Notice of Standards Essentiality:** In these communications, Pantech specifically called attention to the standards-essential nature of the Asserted Patents, referencing the relevant 3GPP standards that are implemented in Tinno's products. *Id*. at ¶ 38.

158. **Additional Portfolio Notice:** On June 17, 2021, Pantech provided Tinno with notice that its subsidiary, Pantech Wireless LLC, had acquired the Signal Trust portfolio of patents, which included additional standard essential patents, and provided a list of the acquired patents. Pantech provided further information regarding Tinno's practice of such patents and made a licensing offer that included both the Pantech and Pantech Wireless patents, at a rate reflecting a substantial discount. *Id*. at ¶ 39.

159. **Lack of Good Faith Engagement:** Despite these repeated efforts, Pantech was met with constant delay, ignored communications, and prolonged periods for responses, including an almost one-year delay by Tinno in responding to Pantech's initial request to start negotiations. *Id*. at ¶ 40. Tinno has not substantively responded to Pantech's communications or licensing offers outside of litigation, has not provided a counteroffer, and has not taken a license to the Asserted Patents. *Id*. at ¶ 41. Tinno has instead engaged in holdout behavior, including refusing to engage in good faith negotiations.

160. **Constructive Knowledge:** As a participant in the global telecommunications market, Tinno has constructive knowledge of the Asserted Patents by virtue of their declaration as SEPs and their inclusion in public standards documentation.

### G. HMD's Prior Dealings with Pantech and Awareness of the Asserted Patents

161. Pantech has made multiple, sustained efforts to notify HMD and its related entities of the existence, essentiality, and infringement of the Asserted Patents:

162. **Initial Outreach:** Pantech, by letter dated June 12, 2020, sent correspondence to Mr. Florian Seiche, CEO of HMD Global Oy, offering to license patents owned and/or managed by Pantech, including those essential to cellular standards such as LTE and LTE-Advanced. Ex. 27 at ¶ 42. This correspondence specifically identified a number of HMD products as being covered by the claims of the offered patents, and included a list of Pantech's patents. *Id*.

163. **Follow-Up Communications:** Pantech provided additional details regarding its patent portfolio and licensing proposal to HMD on at least August 20, 2020, and December 20, 2021. *Id*. at 43. These communications included technical details, lists of patents, and identification of the Asserted Patents (or family members with the same specification and claim scope), as well as references to the relevant portions of the cellular standards covered by the respective patents. *Id*.

164. **Notice of Standards Essentiality:** In these communications, Pantech specifically called attention to the standards-essential nature of the Asserted Patents, referencing the relevant 3GPP standards that are implemented in HMD's products. *Id*.

165. **Additional Portfolio Notice:** On December 20, 2021, Pantech provided HMD with notice that its subsidiary, Pantech Wireless LLC, had acquired the Signal Trust portfolio of patents, which included additional standard essential patents, and provided a list of the acquired patents.

Pantech provided further information regarding HMD's practice of such patents and made a licensing offer that included both the Pantech and Pantech Wireless patents, at a rate reflecting a substantial discount. *Id*. at ¶ 44.

166. **Lack of Good Faith Engagement:** Despite these repeated efforts, and HMD initially purporting to express interest in negotiating a license, HMD never responded to Pantech following the parties' August 2020 video conference. *Id*. at ¶ 45. Further, though HMD had promised to provide a counteroffer, it never responded to Pantech's December 20, 2021 correspondence, simply ignoring it. *Id*. In fact, HMD never engaged substantively again following the parties' discussion in August 2020. *Id*. Following HMD's extended silence, Pantech sent another letter on January 8, 2025, highlighting recent developments and licensing activity, which HMD ignored. *Id*. In sum, HMD has engaged in holdout behavior, including refusing to engage in good faith negotiations or to address the infringement allegations in a substantive manner.

167. **Constructive Knowledge:** As a participant in the global telecommunications market, HMD has constructive knowledge of the Asserted Patents by virtue of their declaration as SEPs and their inclusion in public standards documentation.

### H. Instances of Infringement

168. Respondents infringe (literally or under the doctrine of equivalents) at least the claims set out in the below paragraphs and attached claim charts of the Asserted Patents under 35 U.S.C. § 271(a), (b), and/or (c).

#### 1. OnePlus's Instances of Infringement

169. On information and belief, OnePlus imports, sells for importation into the United States, and/or sells within the United States after importation certain Accused Products, including, for example, the OnePlus 13, OnePlus 13R, OnePlus 12, OnePlus 12R, OnePlus Nord N30 5G,

and OnePlus Open (collectively, the "OnePlus Accused Products"). A chart identifying each of the OnePlus Accused Products, their LTE, LTE-A, and/or 5G standards compliance, other functionalities, and pertinent hardware components is attached as Exhibit 33.

***a) '839 Patent***

170. OnePlus directly infringes (literally or under the doctrine of equivalents) at least claims 9-12 of the '839 Patent under 35 U.S.C. § 271(a). The OnePlus Accused Products each satisfy all limitations of these claims at the time of importation into the United States.

171. OnePlus also indirectly infringes (literally or under the doctrine of equivalents) at least claims 9-12 of the '839 Patent under 35 U.S.C. § 271(b) and/or (c). OnePlus has induced, and continues to induce infringement of the asserted claims of the '839 Patent with the specific intent that its inducement cause infringement. For example, on information and belief, OnePlus actively encourages, promotes, instructs, supports, and/or aids and abets others (including without limitation customers, end users, partners, affiliates, subsidiaries, importers, distributors, property managers, and/or sellers) to directly infringe the above-identified claims of the '839 Patent through at least drafting and distributing user guides, online instruction materials, white papers, datasheets, marketing materials, and online resources, such as websites. As set forth in Section V.C, OnePlus had knowledge of the '839 Patent and on information and belief knew, and continues to know, that its actions would induce infringement of the '839 Patent.

172. OnePlus has contributed and continues to contribute to the infringement (literally or under the doctrine of equivalents) of the above-identified claims of the '839 Patent by offering to sell, selling, and/or importing a patented component constituting a material part of the invention, knowing the same (*see, e.g.*, Section V.C) to be especially made or especially adapted for use in

infringement and not a staple article or commodity of commerce suitable for substantial non-infringing use.

173. Photographs of a representative OnePlus Accused Product (OnePlus 13) are shown in Exhibit 34.

174. A claim chart comparing claims 9-12 of the '839 Patent to the OnePlus Accused Products is attached as Exhibit 35.

175. The identification of accused elements presented in this claim chart is preliminary and exemplary, and Pantech reserves the right to modify its infringement theories as a result of information learned during discovery and positions taken by OnePlus in any investigation instituted from this Complaint.

***b) '503 Patent***

176. OnePlus directly infringe (literally or under the doctrine of equivalents) at least claims 5, 7, and 8 of the '503 Patent under 35 U.S.C. § 271(a). The OnePlus Accused Products each satisfy all limitations of these claims at the time of importation into the United States.

177. OnePlus also indirectly infringes (literally or under the doctrine of equivalents) at least claims 5, 7, and 8 of the '503 Patent under 35 U.S.C. § 271(b) and/or (c). OnePlus has induced, and continues to induce, infringement of the asserted claims of the '503 Patent with the specific intent that its inducement cause infringement. For example, on information and belief, OnePlus actively encourages, promotes, instructs, supports, and/or aids and abets others (including without limitation customers, end users, partners, affiliates, subsidiaries, importers, distributors, property managers, and/or sellers) to directly infringe the above-identified claims of the '503 Patent through at least drafting and distributing user guides, online instruction materials, white papers, datasheets, marketing materials, and online resources, such as websites. As set forth in

Section V.C, OnePlus had knowledge of the '503 Patent and on information and belief knew, and continues to know, that its actions would induce infringement of the '503 Patent.

178. OnePlus has contributed and continues to contribute to the infringement (literally or under the doctrine of equivalents) of the above-identified claims of the '503 Patent by offering to sell, selling, and/or importing a patented component constituting a material part of the invention, knowing the same (*see, e.g.*, Section V.C) to be especially made or especially adapted for use in infringement and not a staple article or commodity of commerce suitable for substantial non-infringing use.

179. Photographs of a representative OnePlus Accused Product (OnePlus 13) are shown in Exhibit 34.

180. A claim chart comparing claims 5, 7, and 8 of the '503 Patent to the OnePlus Accused Products based on their compliance with LTE-A is attached as Exhibit 36. A claim chart comparing claims 5, 7, and 8 of the '503 Patent to the OnePlus Accused Products based on their compliance with 5G based on their compliance with 5G is attached as Exhibit 37.

181. The identification of accused elements presented in this claim chart is preliminary and exemplary, and Pantech reserves the right to modify its infringement theories as a result of information learned during discovery and positions taken by OnePlus in any investigation instituted from this Complaint.

***c) '344 Patent***

182. OnePlus directly infringes (literally or under the doctrine of equivalents) at least claims 2 and 6 of the '3442 Patent under 35 U.S.C. § 271(a). The OnePlus Accused Products each satisfy all limitations of these claims at the time of importation into the United States.

183. OnePlus also indirectly infringe (literally or under the doctrine of equivalents) at least claims 2 and 6 of the '344 Patent under 35 U.S.C. § 271(b) and/or (c). OnePlus has induced, and continues to induce, infringement of the asserted claims of the '344 Patent with the specific intent that its inducement cause infringement. For example, on information and belief, OnePlus actively encourages, promotes, instructs, supports, and/or aids and abets others (including without limitation customers, end users, partners, affiliates, subsidiaries, importers, distributors, property managers, and/or sellers) to directly infringe the above-identified claims of the '344 Patent through at least drafting and distributing user guides, online instruction materials, white papers, datasheets, marketing materials, and online resources, such as websites. As set forth in Section V.C, OnePlus had knowledge of the '344 Patent and on information and belief knew, and continues to know, that its actions would induce infringement of the '344 Patent.

184. OnePlus has contributed and continues to contribute to the infringement (literally or under the doctrine of equivalents) of the above-identified claims of the '344 Patent by offering to sell, selling, and/or importing a patented component constituting a material part of the invention, knowing the same (*see, e.g.*, Section V.C) to be especially made or especially adapted for use in infringement and not a staple article or commodity of commerce suitable for substantial non-infringing use.

185. Photographs of a representative OnePlus Accused Product (OnePlus 13) are shown in Exhibit 34.

186. A claim chart comparing claims 2 and 6 of the '344 Patent to the OnePlus Accused Products is attached as Exhibit 38.

187. The identification of accused elements presented in this claim chart is preliminary and exemplary, and Pantech reserves the right to modify its infringement theories as a result of

information learned during discovery and positions taken by OnePlus in any investigation instituted from this Complaint.

***d) '876 Patent***

188. OnePlus directly infringes (literally or under the doctrine of equivalents) at least claims 4-6 of the '876 Patent under 35 U.S.C. § 271(a). The OnePlus Accused Products each satisfy all limitations of these claims at the time of importation into the United States.

189. OnePlus also indirectly infringes (literally or under the doctrine of equivalents) at least claims 4-6 of the '876 Patent under 35 U.S.C. § 271(b) and/or (c). OnePlus has induced, and continues to induce, infringement of the asserted claims of the '876 Patent with the specific intent that its inducement causes infringement. For example, on information and belief, OnePlus actively encourages, promotes, instructs, supports, and/or aids and abets others (including without limitation customers, end users, partners, affiliates, subsidiaries, importers, distributors, property managers, and/or sellers) to directly infringe the above-identified claims of the '876 Patent through at least drafting and distributing user guides, online instruction materials, white papers, datasheets, marketing materials, and online resources, such as websites. As set forth in Section V.C, OnePlus had knowledge of the '876 Patent and on information and belief knew, and continues to know, that its actions would induce infringement of the '876 Patent.

190. OnePlus has contributed and continue to contribute to the infringement (literally or under the doctrine of equivalents) of the above-identified claims of the '876 Patent by offering to sell, selling, and/or importing a patented component constituting a material part of the invention, knowing the same (*see, e.g.*, Section V.C) to be especially made or especially adapted for use in infringement and not a staple article or commodity of commerce suitable for substantial non-infringing use.

191. Photographs of a representative OnePlus Accused Product (OnePlus 13) are shown in Exhibit 34.

192. A claim chart comparing claims 4-6 of the '876 Patent to the OnePlus Accused Products is attached as Exhibit 39.

193. The identification of accused elements presented in this claim chart is preliminary and exemplary, and Pantech reserves the right to modify its infringement theories as a result of information learned during discovery and positions taken by OnePlus in any investigation instituted from this Complaint.

### 2. Lenovo's Instances of Infringement

194. On information and belief, Lenovo imports, sells for importation into the United States, and/or sells within the United States after importation certain Accused Products, including, for example, the motorola razr ultra 2025, motorola razr 2025, motorola razr+, motorola razr 2024, motorola razr 2023, motorola razr+ 2023, moto g stylus 2025, moto g power – 2025, moto g – 2025, moto g stylus 5G – 2024, moto g 5G – 2024, moto g power 5G – 2024, moto g play – 2024, motorola edge – 2024, motorola edge+ - 2023, Lenovo Tab K11 LTE, Lenovo ThinkPad P16s Gen 3 Intel (16") Mobile Workstation, Lenovo ThinkPad P16v Gen 2 Intel (16") Mobile Workstation, Lenovo ThinkPad X1 Fold Intel (16"), (collectively, the "Lenovo Accused Products"). A chart identifying each of the Lenovo Accused Products, their LTE, LTE-A, and/or 5G standards compliance, other functionalities, and pertinent hardware components is attached as Exhibit 40.

#### *a) '839 Patent*

195. Lenovo directly infringes (literally or under the doctrine of equivalents) at least claims 9-12 of the '839 Patent under 35 U.S.C. § 271(a). The Lenovo Accused Products each satisfy all limitations of this claim at the time of importation into the United States.

196. Lenovo also indirectly infringes (literally or under the doctrine of equivalents) at least claims 9-12 of the '839 Patent under 35 U.S.C. § 271(b) and/or (c). Lenovo has induced, and continues to induce, infringement of the asserted claims of the '839 Patent with the specific intent that its inducement cause infringement. For example, on information and belief, Lenovo actively encourages, promotes, instructs, supports, and/or aids and abets others (including without limitation customers, end users, partners, affiliates, subsidiaries, importers, distributors, property managers, and/or sellers) to directly infringe the above-identified claims of the '839 Patent through at least drafting and distributing user guides, online instruction materials, white papers, datasheets, marketing materials, and online resources, such as websites. As set forth in Section V.D, Lenovo had knowledge of the '839 Patent and on information and belief knew, and continues to know, that its actions would induce infringement of the '839 Patent.

197. Lenovo has contributed and continues to contribute to the infringement (literally or under the doctrine of equivalents) of the above-identified claims of the '839 Patent by offering to sell, selling, and/or importing a patented component constituting a material part of the invention, knowing the same (*see, e.g.*, Section V.D) to be especially made or especially adapted for use in infringement and not a staple article or commodity of commerce suitable for substantial non-infringing use.

198. Photographs of a representative Lenovo Accused Product (motorola razr ultra 2025) are shown in Exhibit 41.

199. A claim chart comparing claims 9-12 of the '839 Patent to the Lenovo Accused Products is attached as Exhibit 42.

200. The identification of accused elements presented in this claim chart is preliminary and exemplary, and Pantech reserves the right to modify its infringement theories as a result of

information learned during discovery and positions taken by Lenovo in any investigation instituted from this Complaint.

***b) '503 Patent***

201. Lenovo directly infringe (literally or under the doctrine of equivalents) at least claims 5, 7, and 8 of the '503 Patent under 35 U.S.C. § 271(a). The Lenovo Accused Products each satisfy all limitations of these claims at the time of importation into the United States.

202. Lenovo also indirectly infringes (literally or under the doctrine of equivalents) at least claims 5, 7, and 8 of the '503 Patent under 35 U.S.C. § 271(b) and/or (c). Lenovo has induced, and continues to induce, infringement of the asserted claims of the '503 Patent with the specific intent that its inducement cause infringement. For example, on information and belief, Lenovo actively encourages, promotes, instructs, supports, and/or aids and abets others (including without limitation customers, end users, partners, affiliates, subsidiaries, importers, distributors, property managers, and/or sellers) to directly infringe the above-identified claims of the '503 Patent through at least drafting and distributing user guides, online instruction materials, white papers, datasheets, marketing materials, and online resources, such as websites. As set forth in Section V.D, Lenovo had knowledge of the '503 Patent and on information and belief knew, and continues to know, that its actions would induce infringement of the '503 Patent.

203. Lenovo has contributed and continues to contribute to the infringement (literally or under the doctrine of equivalents) of the above-identified claims of the '503 Patent by offering to sell, selling, and/or importing a patented component constituting a material part of the invention, knowing the same (*see, e.g.*, Section V.D) to be especially made or especially adapted for use in infringement and not a staple article or commodity of commerce suitable for substantial non-infringing use.

204. Photographs of a representative Lenovo Accused Product (motorola razr ultra 2025) are shown in Exhibit 41.

205. A claim chart comparing claims 5, 7, and 8 of the '503 Patent to the Lenovo Accused Products based on their compliance with LTE-A is attached as Exhibit 43. A claim chart comparing claims 5, 7, and 8 of the '503 Patent to the Lenovo Accused Products based on their compliance with 5G is attached as Exhibit 44.

206. The identification of accused elements presented in this claim chart is preliminary and exemplary, and Pantech reserves the right to modify its infringement theories as a result of information learned during discovery and positions taken by Lenovo in any investigation instituted from this Complaint.

***c) '344 Patent***

207. Lenovo directly infringes (literally or under the doctrine of equivalents) at least claims 2 and 6 of the '3442 Patent under 35 U.S.C. § 271(a). The Lenovo Accused Products each satisfy all limitations of these claims at the time of importation into the United States.

208. Lenovo also indirectly infringe (literally or under the doctrine of equivalents) at least claims 2 and 6 of the '344 Patent under 35 U.S.C. § 271(b) and/or (c). Lenovo has induced, and continue to induce, infringement of the asserted claims of the '344 Patent with the specific intent that its inducement cause infringement. For example, on information and belief, Lenovo actively encourages, promotes, instructs, supports, and/or aids and abets others (including without limitation customers, end users, partners, affiliates, subsidiaries, importers, distributors, property managers, and/or sellers) to directly infringe the above-identified claims of the '344 Patent through at least drafting and distributing user guides, online instruction materials, white papers, datasheets, marketing materials, and online resources, such as websites. As set forth in Section V.D, Lenovo

had knowledge of the '344 Patent and on information and belief knew, and continues to know, that its actions would induce infringement of the '344 Patent.

209. Lenovo has contributed and continues to contribute to the infringement (literally or under the doctrine of equivalents) of the above-identified claims of the '344 Patent by offering to sell, selling, and/or importing a patented component constituting a material part of the invention, knowing the same (*see, e.g.*, Section V.D) to be especially made or especially adapted for use in infringement and not a staple article or commodity of commerce suitable for substantial non-infringing use.

210. Photographs of a representative Lenovo Accused Product (motorola razr ultra 2025) are shown in Exhibit 41.

211. A claim chart comparing claims 2 and 6 of the '344 Patent to the Lenovo Accused Products is attached as Exhibit 45.

212. The identification of accused elements presented in this claim chart is preliminary and exemplary, and Pantech reserves the right to modify its infringement theories as a result of information learned during discovery and positions taken by Lenovo in any investigation instituted from this Complaint.

***d) '876 Patent***

213. Lenovo directly infringes (literally or under the doctrine of equivalents) at least claims 4-6 of the '876 Patent under 35 U.S.C. § 271(a). The Lenovo Accused Products each satisfy all limitations of this claim at the time of importation into the United States.

214. Lenovo also indirectly infringes (literally or under the doctrine of equivalents) at least claims 4-6 of the '876 Patent under 35 U.S.C. § 271(b) and/or (c). Lenovo has induced, and continue to induce, infringement of the asserted claims of the '876 Patent with the specific intent

that its inducement cause infringement. For example, on information and belief, Lenovo actively encourages, promotes, instructs, supports, and/or aids and abets others (including without limitation customers, end users, partners, affiliates, subsidiaries, importers, distributors, property managers, and/or sellers) to directly infringe the above-identified claims of the '876 Patent through at least drafting and distributing user guides, online instruction materials, white papers, datasheets, marketing materials, and online resources, such as websites. As set forth in Section V.D, Lenovo had knowledge of the '876 Patent and on information and belief knew, and continues to know, that its actions would induce infringement of the '876 Patent.

215. Lenovo has contributed and continue to contribute to the infringement (literally or under the doctrine of equivalents) of the above-identified claims of the '876 Patent by offering to sell, selling, and/or importing a patented component constituting a material part of the invention, knowing the same (*see, e.g.*, Section V.D) to be especially made or especially adapted for use in infringement and not a staple article or commodity of commerce suitable for substantial non-infringing use.

216. Photographs of a representative Lenovo Accused Product (motorola razr ultra 2025) are shown in Exhibit 41.

217. A claim chart comparing claims 4-6 of the '876 Patent to the Lenovo Accused Products is attached as Exhibit 46.

218. The identification of accused elements presented in this claim chart is preliminary and exemplary, and Pantech reserves the right to modify its infringement theories as a result of information learned during discovery and positions taken by Lenovo in any investigation instituted from this Complaint.



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### 3. TCL's Instances of Infringement

219. On information and belief, TCL imports, sells for importation into the United States, and/or sells within the United States after importation certain Accused Products, including, for example, the TCL 50 XE NXTPAPER 5G, TCL 50 XL NXTPAPER 5G, TCL 50 XL 5G, TCL 50 XE 5G, TCL 40 X 5G, TCL 40 XE 5G, TCL Stylus 5G, TCL 30 5G, TCL 30 V 5G, TCL 30 XE 5G, TCL 20 Pro 5G, TCL 20 A 5G, TCL 50 LE, TCL 40 XL, TCL 40 T, TCL 30 XL, TCL 30 SE, TCL 30 Z, TCL 30 LE, TCL 20 AX 5G, TCL 20S, TCL 20 SE, TCL 20 XE, TCL 10 Pro, TCL 10 5G UW, TCL 10 L, TCL K11, TCL ION V, TCL ION X, TCL ION Z, TCL A30, TCL SIGNA, TCL TAB 10 NXTPAPER 5G, TCL Tab Pro 5G, TCL TAB 10 5G, TCL Tab 8 Plus, TCL Tab 8 LE, TCL Tab 8 SE, TCL Tab, TCL Tab Disney Edition 2, TCL Tab Disney Edition, and TCL Tab Family Edition (collectively, the "TCL Accused Products"). A chart identifying each of the TCL Accused Products, their LTE, LTE-A, and/or 5G standards compliance, other functionalities, and pertinent hardware components is attached as Exhibit 47.

#### *a) '839 Patent*

220. TCL directly infringes (literally or under the doctrine of equivalents) at least claims 9-12 of the '839 Patent under 35 U.S.C. § 271(a). The TCL Accused Products each satisfy all limitations of this claim at the time of importation into the United States.

221. TCL also indirectly infringes (literally or under the doctrine of equivalents) at least claims 9-12 of the '839 Patent under 35 U.S.C. § 271(b) and/or (c). TCL has induced, and continue to induce, infringement of the asserted claims of the '839 Patent with the specific intent that its inducement cause infringement. For example, on information and belief, TCL actively encourages, promotes, instructs, supports, and/or aids and abets others (including without limitation customers, end users, partners, affiliates, subsidiaries, importers, distributors, property managers, and/or



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sellers) to directly infringe the above-identified claims of the '839 Patent through at least drafting and distributing user guides, online instruction materials, white papers, datasheets, marketing materials, and online resources, such as websites. As set forth in Section V.E, TCL had knowledge of the '839 Patent and on information and belief knew, and continues to know, that its actions would induce infringement of the '839 Patent.

222. TCL has contributed and continues to contribute to the infringement (literally or under the doctrine of equivalents) of the above-identified claims of the '839 Patent by offering to sell, selling, and/or importing a patented component constituting a material part of the invention, knowing the same (*see, e.g.*, Section V.E) to be especially made or especially adapted for use in infringement and not a staple article or commodity of commerce suitable for substantial non-infringing use.

223. Photographs of a representative TCL Accused Product (TCL 50 XL NXTPAPER 5G) are shown in Exhibit 48.

224. A claim chart comparing claims 9-12 of the '839 Patent to the TCL Accused Products is attached as Exhibit 49.

225. The identification of accused elements presented in this claim chart is preliminary and exemplary, and Pantech reserves the right to modify its infringement theories as a result of information learned during discovery and positions taken by TCL in any investigation instituted from this Complaint.

***b) '503 Patent***

226. TCL directly infringe (literally or under the doctrine of equivalents) at least claims 5, 7, and 8 of the '503 Patent under 35 U.S.C. § 271(a). The TCL Accused Products each satisfy all limitations of these claims at the time of importation into the United States.

227. TCL also indirectly infringes (literally or under the doctrine of equivalents) at least claims 5, 7, and 8 of the '503 Patent under 35 U.S.C. § 271(b) and/or (c). TCL has induced, and continue to induce, infringement of the asserted claims of the '503 Patent with the specific intent that its inducement cause infringement. For example, on information and belief, TCL actively encourages, promotes, instructs, supports, and/or aids and abets others (including without limitation customers, end users, partners, affiliates, subsidiaries, importers, distributors, property managers, and/or sellers) to directly infringe the above-identified claims of the '503 Patent through at least drafting and distributing user guides, online instruction materials, white papers, datasheets, marketing materials, and online resources, such as websites. As set forth in Section V.E, TCL had knowledge of the '503 Patent and on information and belief knew, and continues to know, that its actions would induce infringement of the '503 Patent.

228. TCL has contributed and continues to contribute to the infringement (literally or under the doctrine of equivalents) of the above-identified claims of the '503 Patent by offering to sell, selling, and/or importing a patented component constituting a material part of the invention, knowing the same (*see, e.g.*, Section V.E) to be especially made or especially adapted for use in infringement and not a staple article or commodity of commerce suitable for substantial non-infringing use.

229. Photographs of a representative TCL Accused Product (TCL 50 XL NXTPAPER 5G) are shown in Exhibit 48.

230. A claim chart comparing claims 5, 7, and 8 of the '503 Patent to the TCL Accused Products based on their compliance with LTE-A is attached as Exhibit 50. A claim chart comparing claims 5, 7, and 8 of the '503 Patent to the TCL Accused Products based on their compliance with 5G is attached as Exhibit 51.

231. The identification of accused elements presented in this claim chart is preliminary and exemplary, and Pantech reserves the right to modify its infringement theories as a result of information learned during discovery and positions taken by TCL in any investigation instituted from this Complaint.

***c) '344 Patent***

232. TCL directly infringes (literally or under the doctrine of equivalents) at least claims 2 and 6 of the '344 Patent under 35 U.S.C. § 271(a). The TCL Accused Products each satisfy all limitations of these claims at the time of importation into the United States.

233. TCL also indirectly infringe (literally or under the doctrine of equivalents) at least claims 2 and 6 of the '344 Patent under 35 U.S.C. § 271(b) and/or (c). TCL has induced, and continues to induce, infringement of the asserted claims of the '344 Patent with the specific intent that its inducement cause infringement. For example, on information and belief, TCL actively encourages, promotes, instructs, supports, and/or aids and abets others (including without limitation customers, end users, partners, affiliates, subsidiaries, importers, distributors, property managers, and/or sellers) to directly infringe the above-identified claims of the '344 Patent through at least drafting and distributing user guides, online instruction materials, white papers, datasheets, marketing materials, and online resources, such as websites. As set forth in Section V.E, TCL had knowledge of the '344 Patent and on information and belief knew, and continues to know, that its actions would induce infringement of the '344 Patent.

234. TCL has contributed and continues to contribute to the infringement (literally or under the doctrine of equivalents) of the above-identified claims of the '344 Patent by offering to sell, selling, and/or importing a patented component constituting a material part of the invention, knowing the same (*see, e.g.*, Section V.E) to be especially made or especially adapted for use in

infringement and not a staple article or commodity of commerce suitable for substantial non-infringing use.

235. Photographs of a representative TCL Accused Product (TCL 50 XL NXTPAPER 5G) are shown in Exhibit 48.

236. A claim chart comparing claims 2 and 6 of the '344 Patent to the TCL Accused Products is attached as Exhibit 52.

237. The identification of accused elements presented in this claim chart is preliminary and exemplary, and Pantech reserves the right to modify its infringement theories as a result of information learned during discovery and positions taken by TCL in any investigation instituted from this Complaint.

***d) '876 Patent***

238. TCL directly infringes (literally or under the doctrine of equivalents) at least claims 4-6 of the '876 Patent under 35 U.S.C. § 271(a). The TCL Accused Products each satisfy all limitations of this claim at the time of importation into the United States.

239. TCL also indirectly infringes (literally or under the doctrine of equivalents) at least claims 4-6 of the '876 Patent under 35 U.S.C. § 271(b) and/or (c). TCL has induced, and continues to induce, infringement of the asserted claims of the '876 Patent with the specific intent that its inducement cause infringement. For example, on information and belief, TCL actively encourages, promotes, instructs, supports, and/or aids and abets others (including without limitation customers, end users, partners, affiliates, subsidiaries, importers, distributors, property managers, and/or sellers) to directly infringe the above-identified claims of the '876 Patent through at least drafting and distributing user guides, online instruction materials, white papers, datasheets, marketing materials, and online resources, such as websites. As set forth in Section V.E, TCL had knowledge

of the ’876 Patent and on information and belief knew, and continues to know, that its actions would induce infringement of the ’876 Patent.

240. TCL has contributed and continue to contribute to the infringement (literally or under the doctrine of equivalents) of the above-identified claims of the ’876 Patent by offering to sell, selling, and/or importing a patented component constituting a material part of the invention, knowing the same (*see, e.g.*, Section V.E) to be especially made or especially adapted for use in infringement and not a staple article or commodity of commerce suitable for substantial non-infringing use.

241. Photographs of a representative TCL Accused Product (TCL 50 XL NXTPAPER 5G) are shown in Exhibit 48.

242. A claim chart comparing claims 4-6 of the ’876 Patent to the TCL Accused Products is attached as Exhibit 53.

243. The identification of accused elements presented in this claim chart is preliminary and exemplary, and Pantech reserves the right to modify its infringement theories as a result of information learned during discovery and positions taken by TCL in any investigation instituted from this Complaint.

**4. Tinno’s Instances of Infringement**

244. On information and belief, Tinno imports, sells for importation into the United States, and/or sells within the United States after importation certain Accused Products, including, for example, the WIKO VOIX, AT&T Calypso, AT&T Calypso 4, AT&T Maestro 3, AT&T Radiant Max, Boost Celero3 5G+,[3] Cricket Debut Flex, Cricket Debut S3, Cricket Magic 2 5G /

[3] This also includes the Boost Celero5G 2024 and the Boost Celero5G+ 2024, to the extent that such phones are manufactured by Tinno. *See* Ex. 54.

AT&T Propel 2 5G, Cricket Ovation 3 / AT&T Motivate Max (collectively, the "Tinno Accused Products"). A chart identifying each of the Tinno Accused Products, their LTE, LTE-A, and/or 5G standards compliance, other functionalities, and pertinent hardware components is attached as Exhibit 54.

***a) '839 Patent***

245. Tinno directly infringes (literally or under the doctrine of equivalents) at least claims 9-12 of the '839 Patent under 35 U.S.C. § 271(a). The Tinno Accused Products each satisfy all limitations of this claim at the time of importation into the United States.

246. Tinno also indirectly infringes (literally or under the doctrine of equivalents) at least claims 9-12 of the '839 Patent under 35 U.S.C. § 271(b) and/or (c). Tinno has induced, and continue to induce, infringement of the asserted claims of the '839 Patent with the specific intent that its inducement cause infringement. For example, on information and belief, Tinno actively encourages, promotes, instructs, supports, and/or aids and abets others (including without limitation customers, end users, partners, affiliates, subsidiaries, importers, distributors, property managers, and/or sellers) to directly infringe the above-identified claims of the '839 Patent through at least drafting and distributing user guides, online instruction materials, white papers, data sheets, marketing materials, and online resources, such as websites. As set forth in Section V.F, Tinno had knowledge of the '839 Patent and on information and belief knew, and continues to know, that its actions would induce infringement of the '839 Patent.

247. Tinno has contributed and continues to contribute to the infringement (literally or under the doctrine of equivalents) of the above-identified claims of the '839 Patent by offering to sell, selling, and/or importing a patented component constituting a material part of the invention, knowing the same (*see, e.g.*, Section V.F) to be especially made or especially adapted for use in

infringement and not a staple article or commodity of commerce suitable for substantial non-infringing use.

248. Photographs of a representative Tinno Accused Product (Boost Mobile Celero3 5G+) are shown in Exhibit 55.

249. A claim chart comparing claims 9-12 of the '839 Patent to the Tinno Accused Products is attached as Exhibit 56.

250. The identification of accused elements presented in this claim chart is preliminary and exemplary, and Pantech reserves the right to modify its infringement theories as a result of information learned during discovery and positions taken by Tinno in any investigation instituted from this Complaint.

***b) '503 Patent***

251. Tinno directly infringe (literally or under the doctrine of equivalents) at least claims 5, 7, and 8 of the '503 Patent under 35 U.S.C. § 271(a). The Tinno Accused Products each satisfy all limitations of these claims at the time of importation into the United States.

252. Tinno also indirectly infringes (literally or under the doctrine of equivalents) at least claims 5, 7, and 8 of the '503 Patent under 35 U.S.C. § 271(b) and/or (c). Tinno has induced, and continue to induce, infringement of the asserted claims of the '503 Patent with the specific intent that its inducement cause infringement. For example, on information and belief, Tinno actively encourages, promotes, instructs, supports, and/or aids and abets others (including without limitation customers, end users, partners, affiliates, subsidiaries, importers, distributors, property managers, and/or sellers) to directly infringe the above-identified claims of the '503 Patent through at least drafting and distributing user guides, online instruction materials, white papers, datasheets, marketing materials, and online resources, such as websites. As set forth in Section V.F, Tinno

had knowledge of the '503 Patent and on information and belief knew, and continues to know, that its actions would induce infringement of the '503 Patent.

253. Tinno has contributed and continues to contribute to the infringement (literally or under the doctrine of equivalents) of the above-identified claims of the '503 Patent by offering to sell, selling, and/or importing a patented component constituting a material part of the invention, knowing the same (*see, e.g.*, Section V.F) to be especially made or especially adapted for use in infringement and not a staple article or commodity of commerce suitable for substantial non-infringing use.

254. Photographs of a representative Tinno Accused Product (Boost Mobile Celero 5G) are shown in Exhibit 55.

255. A claim chart comparing claims 5, 7, and 8 of the '503 Patent to the Tinno Accused Products based on their compliance with LTE-A is attached as Exhibit 57. A claim chart comparing claims 5, 7, and 8 of the '503 Patent to the Tinno Accused Products based on their compliance with 5G is attached as Exhibit 58.

256. The identification of accused elements presented in this claim chart is preliminary and exemplary, and Pantech reserves the right to modify its infringement theories as a result of information learned during discovery and positions taken by Tinno in any investigation instituted from this Complaint.

***c) '344 Patent***

257. Tinno directly infringes (literally or under the doctrine of equivalents) at least claims 2 and 6 of the '344 Patent under 35 U.S.C. § 271(a). The Tinno Accused Products each satisfy all limitations of these claims at the time of importation into the United States.



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258. Tinno also indirectly infringe (literally or under the doctrine of equivalents) at least claims 2 and 6 of the '344 Patent under 35 U.S.C. § 271(b) and/or (c). Tinno has induced, and continue to induce, infringement of the asserted claims of the '344 Patent with the specific intent that its inducement cause infringement. For example, on information and belief, Tinno actively encourages, promotes, instructs, supports, and/or aids and abets others (including without limitation customers, end users, partners, affiliates, subsidiaries, importers, distributors, property managers, and/or sellers) to directly infringe the above-identified claims of the '344 Patent through at least drafting and distributing user guides, online instruction materials, white papers, da tasheets, marketing materials, and online resources, such as websites. As set forth in Section V.F, Tinno had knowledge of the '344 Patent and on information and belief knew, and continues to know, that its actions would induce infringement of the '344 Patent.

259. Tinno has contributed and continues to contribute to the infringement (literally or under the doctrine of equivalents) of the above-identified claims of the '344 Patent by offering to sell, selling, and/or importing a patented component constituting a material part of the invention, knowing the same (*see, e.g.*, Section V.F) to be especially made or especially adapted for use in infringement and not a staple article or commodity of commerce suitable for substantial non-infringing use.

260. Photographs of a representative Tinno Accused Product (Boost Mobile Celero 5G) are shown in Exhibit 55.

261. A claim chart comparing claims 2 and 6 of the '344 Patent to the Tinno Accused Products is attached as Exhibit 59.

262. The identification of accused elements presented in this claim chart is preliminary and exemplary, and Pantech reserves the right to modify its infringement theories as a result of

information learned during discovery and positions taken by Tinno in any investigation instituted from this Complaint.

***d) '876 Patent***

263. Tinno directly infringes (literally or under the doctrine of equivalents) at least claims 4-6 of the '876 Patent under 35 U.S.C. § 271(a). The Tinno Accused Products each satisfy all limitations of this claim at the time of importation into the United States.

264. Tinno also indirectly infringes (literally or under the doctrine of equivalents) at least claims 4-6 of the '876 Patent under 35 U.S.C. § 271(b) and/or (c). Tinno has induced, and continue to induce, infringement of the asserted claims of the '876 Patent with the specific intent that its inducement cause infringement. For example, on information and belief, Tinno actively encourages, promotes, instructs, supports, and/or aids and abets others (including without limitation customers, end users, partners, affiliates, subsidiaries, importers, distributors, property managers, and/or sellers) to directly infringe the above-identified claims of the '876 Patent through at least drafting and distributing user guides, online instruction materials, white papers, datasheets, marketing materials, and online resources, such as websites. As set forth in Section V.F, Tinno had knowledge of the '876 Patent and on information and belief knew, and continues to know, that its actions would induce infringement of the '876 Patent.

265. Tinno has contributed and continue to contribute to the infringement (literally or under the doctrine of equivalents) of the above-identified claims of the '876 Patent by offering to sell, selling, and/or importing a patented component constituting a material part of the invention, knowing the same (*see, e.g.*, Section V.F) to be especially made or especially adapted for use in infringement and not a staple article or commodity of commerce suitable for substantial non-infringing use.

266. Photographs of a representative Tinno Accused Product (Boost Mobile Celero 5G) are shown in Exhibit 55.

267. A claim chart comparing claims 4-6 of the '876 Patent to the Tinno Accused Products is attached as Exhibit 60.

268. The identification of accused elements presented in this claim chart is preliminary and exemplary, and Pantech reserves the right to modify its infringement theories as a result of information learned during discovery and positions taken by Tinno in any investigation instituted from this Complaint.

### 5. HMD's Instances of Infringement

269. On information and belief, HMD imports, sells for importation into the United States, and/or sells within the United States after importation certain Accused Products, including, for example, the HMD Fusion, HMD Skyline, HMD XR21, HMD Vibe, HMD T21, HMD Barbie Phone, Nokia 2780 Flip, Nokia 225, and Nokia 2760 Flip (collectively, the "HMD Accused Products"). A chart identifying each of the HMD Accused Products, their LTE, LTE-A, and/or 5G standards compliance, other functionalities, and pertinent hardware components is attached as Exhibit 61.

#### *a) '839 Patent*

270. HMD directly infringes (literally or under the doctrine of equivalents) at least claims 9-12 of the '839 Patent under 35 U.S.C. § 271(a). The HMD Accused Products each satisfy all limitations of this claim at the time of importation into the United States.

271. HMD also indirectly infringes (literally or under the doctrine of equivalents) at least claims 9-12 of the '839 Patent under 35 U.S.C. § 271(b) and/or (c). HMD has induced, and continue to induce, infringement of the asserted claims of the '839 Patent with the specific intent

that its inducement cause infringement. For example, on information and belief, HMD actively encourages, promotes, instructs, supports, and/or aids and abets others (including without limitation customers, end users, partners, affiliates, subsidiaries, importers, distributors, property managers, and/or sellers) to directly infringe the above-identified claims of the '839 Patent through at least drafting and distributing user guides, online instruction materials, white papers, datasheets, marketing materials, and online resources, such as websites. As set forth in Section V.G, HMD had knowledge of the '839 Patent and, on information and belief, knew and continues to know, that its actions would induce infringement of the '839 Patent.

272. HMD has contributed and continues to contribute to the infringement (literally or under the doctrine of equivalents) of the above-identified claims of the '839 Patent by offering to sell, selling, and/or importing a patented component constituting a material part of the invention, knowing the same (*see, e.g.*, Section V.G) to be especially made or especially adapted for use in infringement and not a staple article or commodity of commerce suitable for substantial non-infringing use.

273. Photographs of a representative HMD Accused Product (HMD Skyline) are shown in Exhibit 62.

274. A claim chart comparing claims 9-12 of the '839 Patent to the HMD Accused Products is attached as Exhibit 63.

275. The identification of accused elements presented in this claim chart is preliminary and exemplary, and Pantech reserves the right to modify its infringement theories as a result of information learned during discovery and positions taken by HMD in any investigation instituted from this Complaint.



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***b) '503 Patent***

276. HMD directly infringe (literally or under the doctrine of equivalents) at least claims 5, 7, and 8 of the '503 Patent under 35 U.S.C. § 271(a). The HMD Accused Products each satisfy all limitations of these claims at the time of importation into the United States.

277. HMD also indirectly infringes (literally or under the doctrine of equivalents) at least claims 5, 7, and 8 of the '503 Patent under 35 U.S.C. § 271(b) and/or (c). HMD has induced, and continue to induce, infringement of the asserted claims of the '503 Patent with the specific intent that its inducement cause infringement. For example, on information and belief, HMD actively encourages, promotes, instructs, supports, and/or aids and abets others (including without limitation customers, end users, partners, affiliates, subsidiaries, importers, distributors, property managers, and/or sellers) to directly infringe the above-identified claims of the '503 Patent through at least drafting and distributing user guides, online instruction materials, white papers, datasheets, marketing materials, and online resources, such as websites. As set forth in Section V.G, HMD had knowledge of the '503 Patent and on information and belief knew, and continues to know, that its actions would induce infringement of the '503 Patent.

278. HMD has contributed and continues to contribute to the infringement (literally or under the doctrine of equivalents) of the above-identified claims of the '503 Patent by offering to sell, selling, and/or importing a patented component constituting a material part of the invention, knowing the same (*see, e.g.*, Section V.G) to be especially made or especially adapted for use in infringement and not a staple article or commodity of commerce suitable for substantial non-infringing use.

279. Photographs of a representative HMD Accused Product (HMD Skyline) are shown in Exhibit 62.

280. A claim chart comparing claims 5, 7, and 8 of the '503 Patent to the HMD Accused Products based on their compliance with LTE-A is attached as Exhibit 64. A claim chart comparing claims 5, 7, and 8 of the '503 Patent to the HMD Accused Products based on their compliance with 5G is attached as Exhibit 65.

281. The identification of accused elements presented in this claim chart is preliminary and exemplary, and Pantech reserves the right to modify its infringement theories as a result of information learned during discovery and positions taken by HMD in any investigation instituted from this Complaint.

***c) '344 Patent***

282. HMD directly infringes (literally or under the doctrine of equivalents) at least claims 2 and 6 of the '344 Patent under 35 U.S.C. § 271(a). The HMD Accused Products each satisfy all limitations of these claims at the time of importation into the United States.

283. HMD also indirectly infringe (literally or under the doctrine of equivalents) at least claims 2 and 6 of the '344 Patent under 35 U.S.C. § 271(b) and/or (c). HMD has induced, and continue to induce, infringement of the asserted claims of the '344 Patent with the specific intent that its inducement cause infringement. For example, on information and belief, HMD actively encourages, promotes, instructs, supports, and/or aids and abets others (including without limitation customers, end users, partners, affiliates, subsidiaries, importers, distributors, property managers, and/or sellers) to directly infringe the above-identified claims of the '344 Patent through at least drafting and distributing user guides, online instruction materials, white papers, datasheets, marketing materials, and online resources, such as websites. As set forth in Section V.G, HMD had knowledge of the '344 Patent and on information and belief knew, and continues to know, that its actions would induce infringement of the '344 Patent.



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284. HMD has contributed and continues to contribute to the infringement (literally or under the doctrine of equivalents) of the above-identified claims of the ’344 Patent by offering to sell, selling, and/or importing a patented component constituting a material part of the invention, knowing the same (*see, e.g.*, Section V.G) to be especially made or especially adapted for use in infringement and not a staple article or commodity of commerce suitable for substantial non-infringing use.

285. Photographs of a representative HMD Accused Product (HMD Skyline) are shown in Exhibit 62.

286. A claim chart comparing claims 2 and 6 of the ’344 Patent to the HMD Accused Products is attached as Exhibit 66.

287. The identification of accused elements presented in this claim chart is preliminary and exemplary, and Pantech reserves the right to modify its infringement theories as a result of information learned during discovery and positions taken by HMD in any investigation instituted from this Complaint.

***d) ’876 Patent***

288. HMD directly infringes (literally or under the doctrine of equivalents) at least claims 4-6 of the ’876 Patent under 35 U.S.C. § 271(a). The HMD Accused Products each satisfy all limitations of this claim at the time of importation into the United States.

289. HMD also indirectly infringes (literally or under the doctrine of equivalents) at least claims 4-6 of the ’876 Patent under 35 U.S.C. § 271(b) and/or (c). HMD has induced, and continues to induce, infringement of the asserted claims of the ’876 Patent with the specific intent that its inducement cause infringement. For example, on information and belief, HMD actively encourages, promotes, instructs, supports, and/or aids and abets others (including without



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limitation customers, end users, partners, affiliates, subsidiaries, importers, distributors, property managers, and/or sellers) to directly infringe the above-identified claims of the '876 Patent through at least drafting and distributing user guides, online instruction materials, white papers, datasheets, marketing materials, and online resources, such as websites. As set forth in Section V.G, HMD had knowledge of the '876 Patent and on information and belief knew, and continues to know, that its actions would induce infringement of the '876 Patent.

290. HMD has contributed and continue to contribute to the infringement (literally or under the doctrine of equivalents) of the above-identified claims of the '876 Patent by offering to sell, selling, and/or importing a patented component constituting a material part of the invention, knowing the same (*see, e.g.*, Section V.G) to be especially made or especially adapted for use in infringement and not a staple article or commodity of commerce suitable for substantial non-infringing use.

291. Photographs of a representative HMD Accused Product (HMD Skyline) are shown in Exhibit 62.

292. A claim chart comparing claims 4-6 of the '876 Patent to the HMD Accused Products is attached as Exhibit 67.

293. The identification of accused elements presented in this claim chart is preliminary and exemplary, and Pantech reserves the right to modify its infringement theories as a result of information learned during discovery and positions taken by HMD in any investigation instituted from this Complaint.

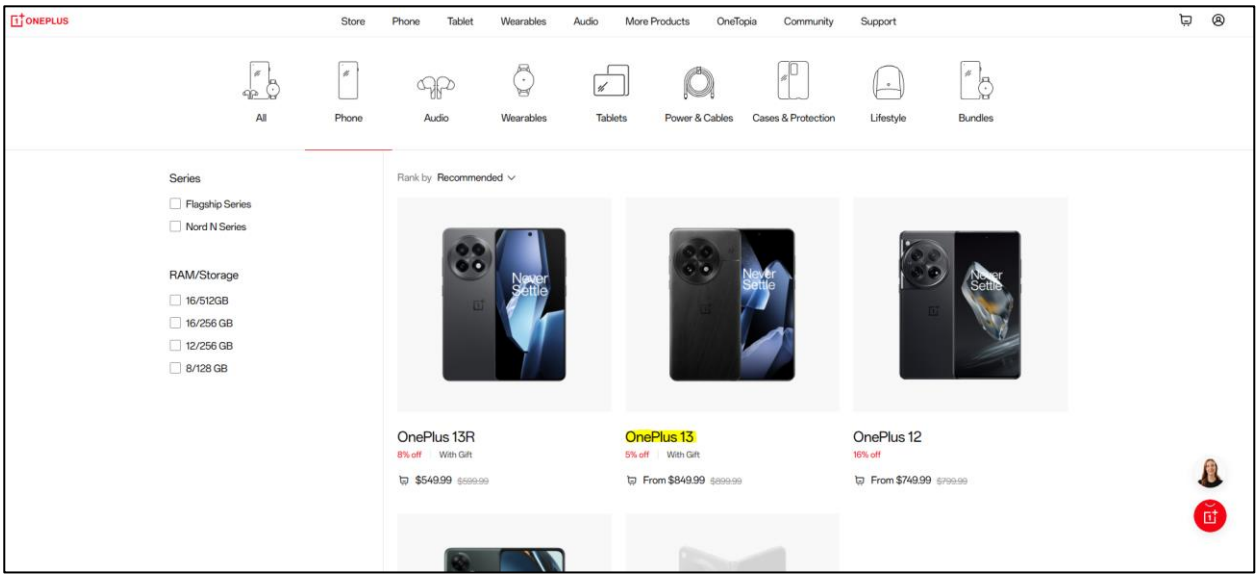
## VI. SPECIFIC INSTANCES OF IMPORTATION

294. On information and belief, the OnePlus Accused Products, Lenovo Accused Products, TCL Accused Products, Tinno Accused Products, and HMD Accused Products are each

manufactured outside of the United States and sold for importation into the United States, imported into the United States, and/or sold within the United States after importation.

### A. OnePlus's Specific Instances of Importation

295. OnePlus offers the OnePlus Accused Products for sale in the United States on OnePlus's website (https://www.oneplus.com/us/store/phone), as shown in Exhibit 68.




296. A sample of a representative OnePlus Accused Product, the OnePlus 13 (CPH2655), was manufactured in China and imported into the United States on or before May 20, 2025, through OnePlus.

297. The sample OnePlus 13 (CPH2655), was purchased on May 19, 2025 through OnePlus's website, and shipped to Complainant's counsel's office in Washington, D.C. Exhibit 69 below shows a product packaging label identifying the product as a OnePlus 13 (CPH2655), and identifying the country of manufacture as China.

**EXHIBIT 69**

298. The following is an order conformation for the sample OnePlus 13 phone.

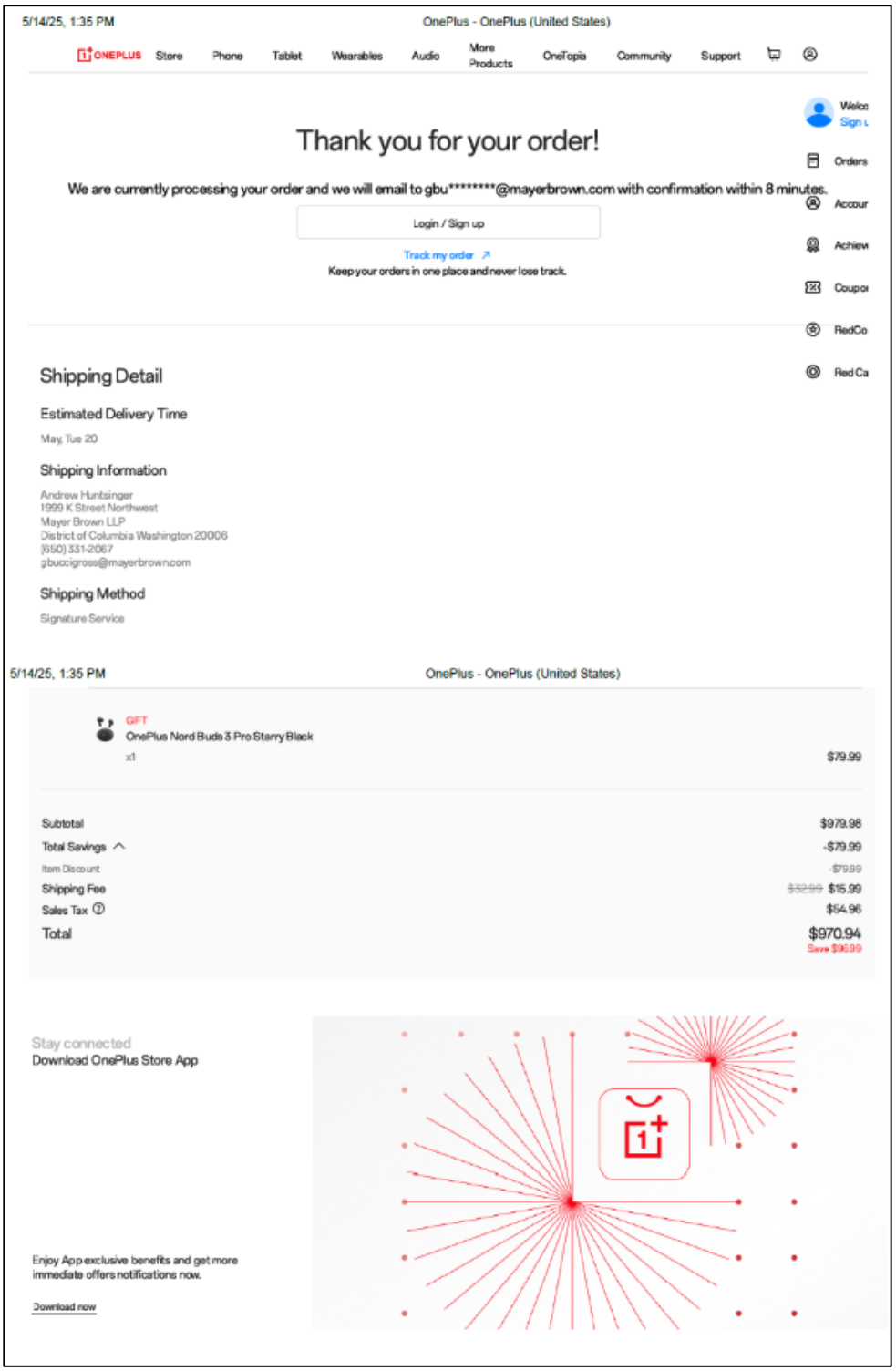



**EXHIBIT 70**

299. The purchase occurred after the issue dates of each of the Asserted Patents.

300. On information and belief, the remaining OnePlus Accused Products are also made overseas (*e.g.*, in China) and are imported into the United States.

**B. Lenovo's Specific Instances of Importation**

301. Lenovo offers the Lenovo Accused Products for sale in the United States on Lenovo's website (*e.g.*, at https://www.motorola.com/us/en/smartphones/), shown in Exhibit 71.

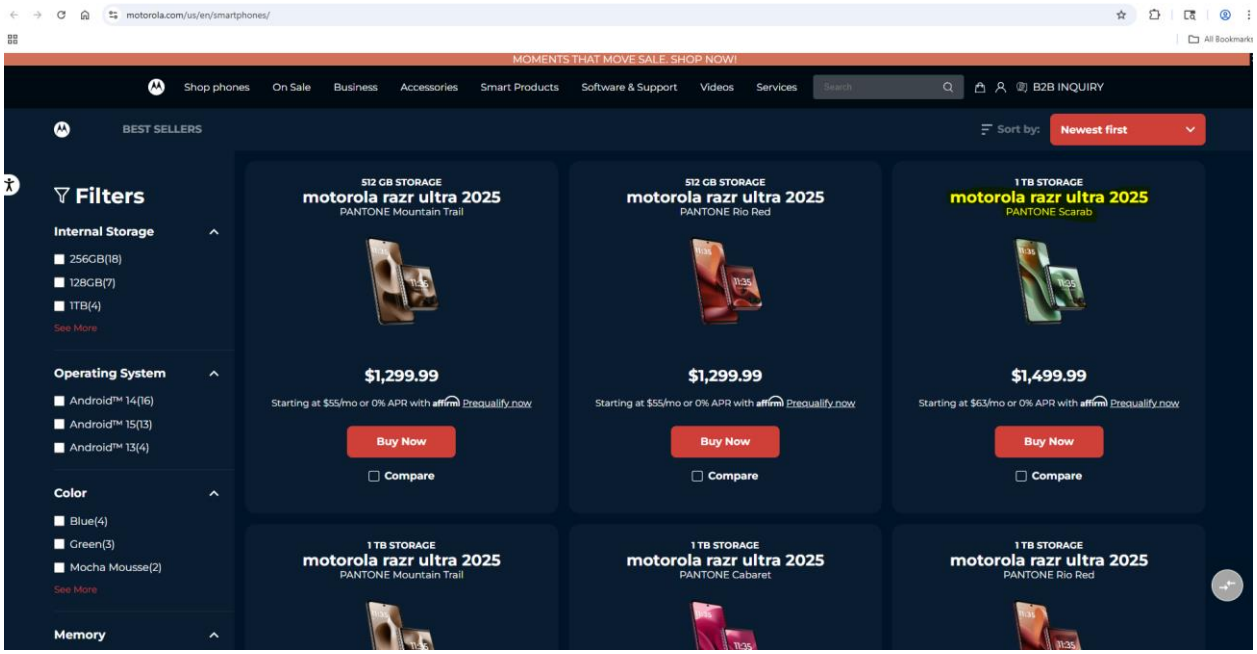



**EXHIBIT 71**

302. A sample of a representative Lenovo Accused Product, the Razr Ultra (XT2551-1), was manufactured in China and imported into the United States on or before May 19, 2025, through Lenovo.

303. The sample Razr Ultra (XT2551-1) was purchased on May 14, 2025 through Best Buy's website, and shipped to Complainant's counsel's office in Washington, D.C. Exhibit 72 below shows product packaging labels identifying the product as a motorola razr ultra (XT2551-1) and the country of manufacture as China. It also states that the product was imported.

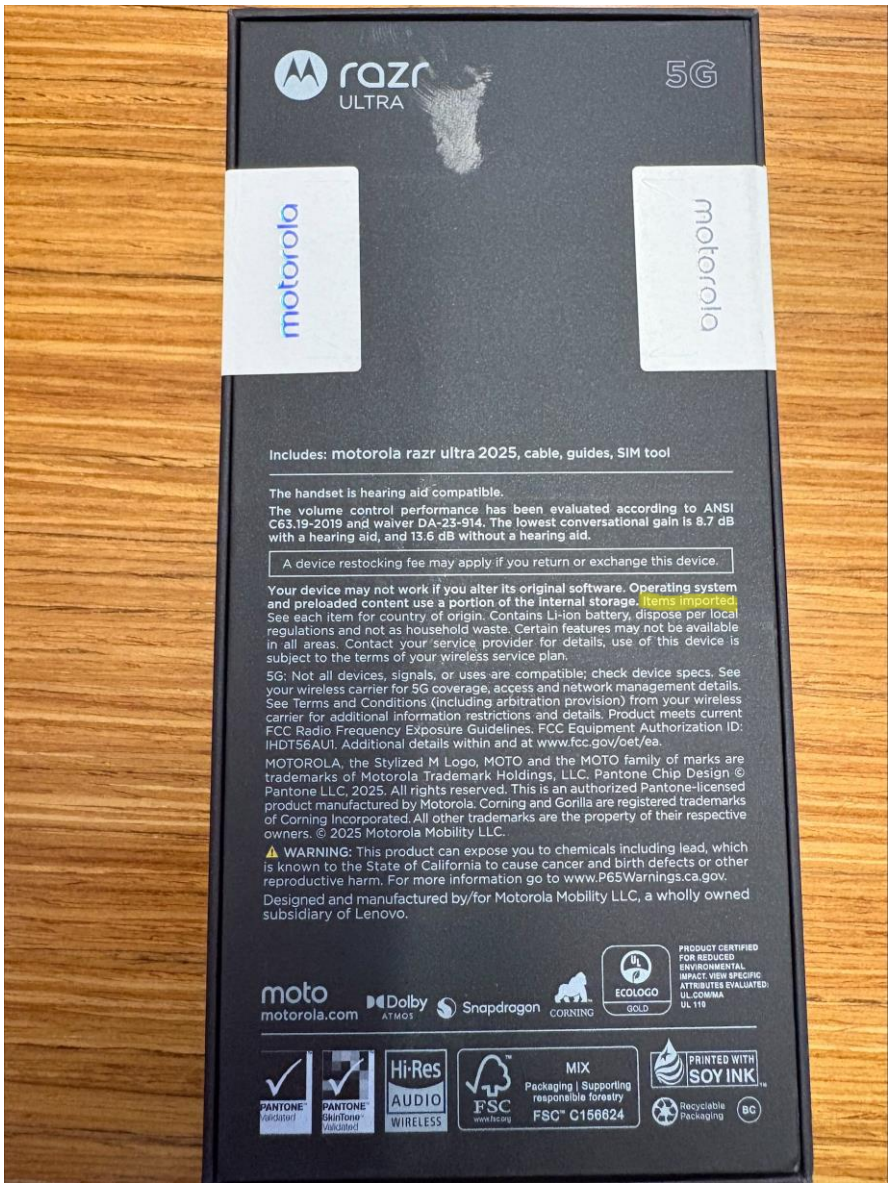



**EXHIBIT 72**

**EXHIBIT 72**

304. The following is a proof of order for the sample razr ultra phone.

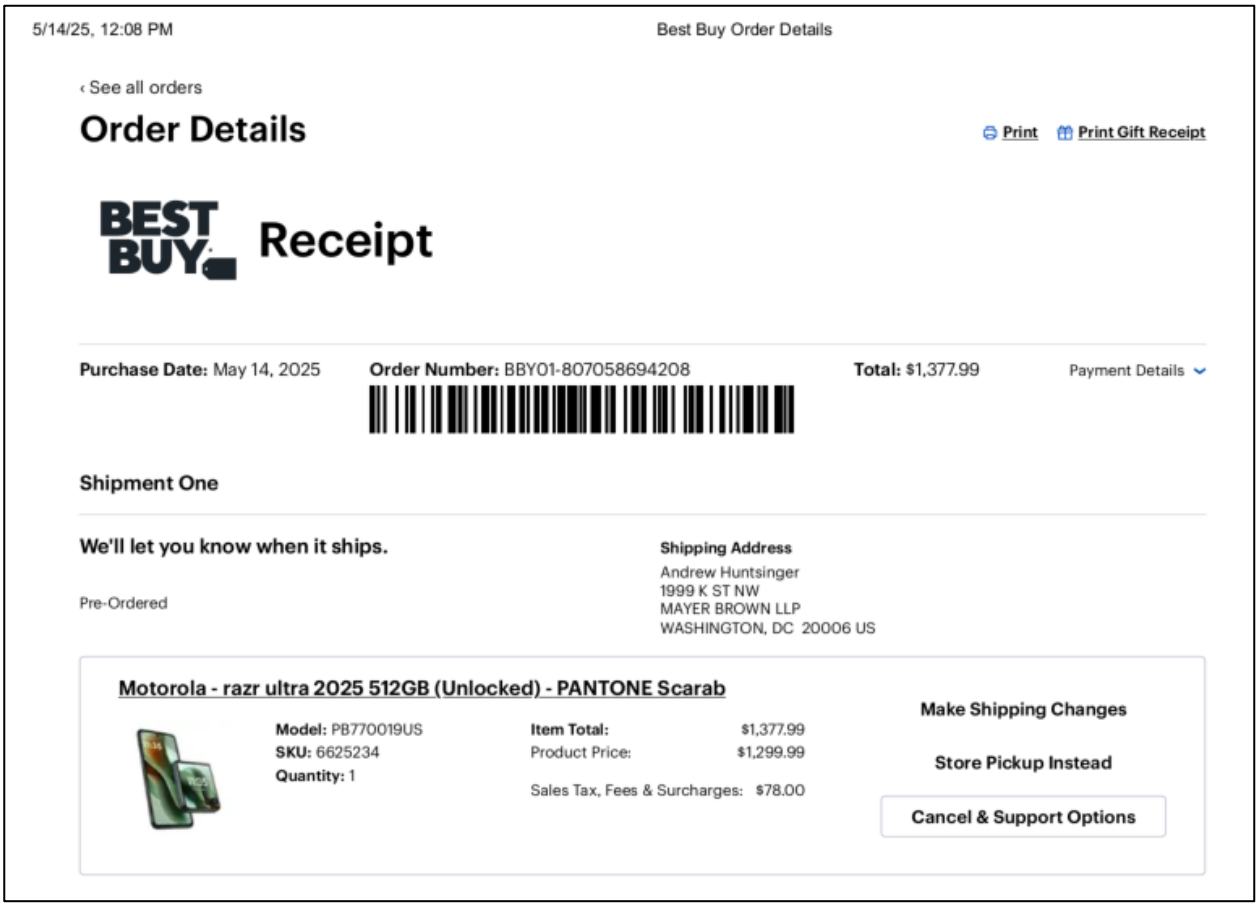



**EXHIBIT 73**

305. The purchase occurred after the issue dates of each of the Asserted Patents.

306. Another sample of a representative Lenovo Accused Product, the Lenovo Tab K11, was manufactured in China and imported into the United States on or before June 4, 2025, through Lenovo.

307. The sample Lenovo Tab K11 was purchased on June 4, 2025 through Lenovo's website, and shipped to Complainant's counsel's office in New York City. Exhibit 197 below shows product packaging labels identifying the product as a Lenovo Tab K11 and the country of manufacture as China.

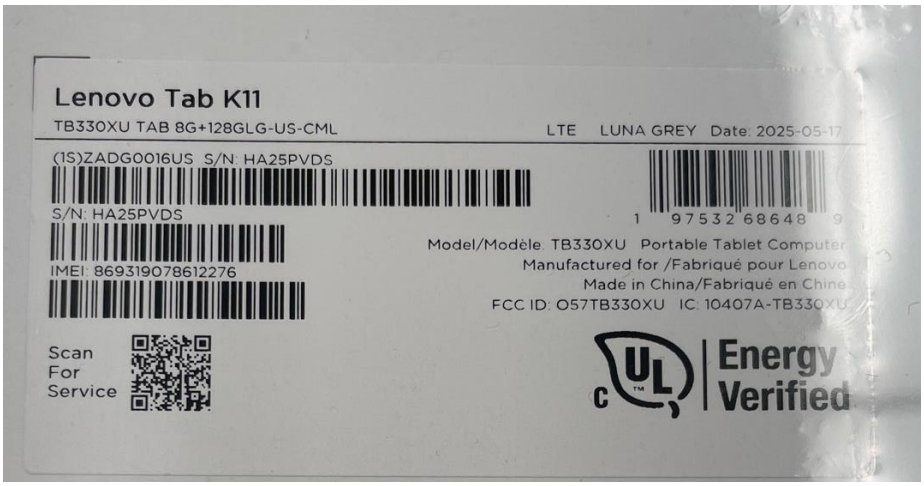



**EXHIBIT 197**

308. The following is a proof of order for the sample Lenovo Tab K11 tablet.

**Your order summary:**

| | ITEM | DELIVERY METHOD | QTY | TOTAL PRICE |
|---|---|---|---|---|
| | **Lenovo Tab K11 LTE**<br>ZADG0016US | Get it by Mon. Jun 09 | 1 | $279.99 |

**Billing Details:**
[redacted]
New York
US-NY
10065
United States of America
PayPal

**Shipping Details:**
1221 Avenue of the Americas
New York
US-NY
10065
United States of America

Sub total: $279.99
Tax: $24.85
Shipping: FREE
**Total: $304.84**

**EXHIBIT 196**

309. The purchase occurred after the issue dates of each of the Asserted Patents.

310. Another sample of a representative Lenovo Accused Product that is a laptop computer, the Lenovo Think Pad P16v Gen 2 Intel (16") Mobile Workstation, was manufactured in Vietnam and imported into the United States on or before June 23, 2025, through Lenovo. The

Lenovo Think Pad P16v Gen 2 Intel (16") Mobile Workstation is configured to incorporate the sample ThinkPad Fibocom FM350-GL 5G Sub-6 GhZ M.2 WWAN Module for X1 Carbon Gen 11 ("ThinkPad Fibocom Module"), which was manufactured in China, sold through Lenovo's website, and imported into the United States on or before June 23, 2025, through Lenovo.

311. The sample Lenovo Think Pad P16v Gen 2 Intel (16") Mobile Workstation and ThinkPad Fibocom Module were purchased on June 18, 2025, through Lenovo's website, and shipped to Complainant's counsel's office in New York City. Exhibit 199 below shows product packaging labels identifying the product as a Lenovo Think Pad P16v Gen 2 Intel (16") Mobile Workstation and the country of manufacture as Vietnam.

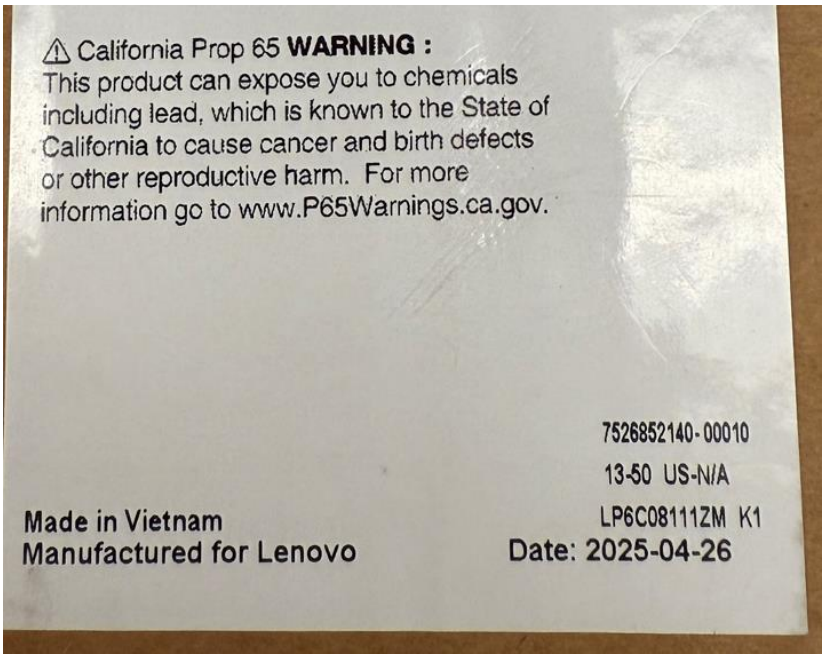



**EXHIBIT 199**

312. The sample ThinkPad Fibocom Module was also shipped to Complainant's counsel's office in New York City, and received the same day as the Lenovo Think Pad P16v Gen



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2 Intel (16") Mobile Workstation was received. Exhibit 200 below shows product packaging labels identifying the product as a ThinkPad Fibocom Module and the country of manufacture as China.

**EXHIBIT 200**

313. The following is a proof of order for the sample Lenovo Think Pad P16v Gen 2 Intel (16") Mobile Workstation computer and the sample ThinkPad Fibocom Module.

## Your order summary:

| | ITEM | DELIVERY METHOD | QTY | TOTAL PRICE |
|---|---|---|---|---|
| | **ThinkPad Fibocom FM350-GL 5G Sub-6 GHz M.2 WWAN Module for X1 Carbon Gen 11**<br>4XC1M72800 | Get it by Mon. Jun 23 | 1 | $282.15 |
| | **ThinkPad P16v Gen 2 Intel (16") Mobile Workstation**<br>21KX002PUS | Get it by Mon. Jun 23 | 1 | $2,319.84 |

**Billing Details:**
1221 Avenue Of The Americas
New York

**Shipping Details:**
1221 Avenue Of The Americas
New York

Sub total: $3,201.99
eCoupon Savings: -$500.00
Cart Threshold Savings: -$100.00
Tax: $230.93

1

US-NY
10020-1001
United States of America
Card Payment

US-NY
10020-1001
United States of America

Shipping: FREE
**Total: $2,832.92**

**EXHIBIT 201**

314. The purchase occurred after the issue dates of each of the Asserted Patents.

315. On information and belief, the remaining Lenovo Accused Products are also made overseas (*e.g.*, in China) and are imported into the United States.

### C. TCL's Specific Instances of Importation

316. TCL offers the TCL Accused Products for sale in the United States on TCL's website (*e.g.*, at https://www.tcl.com/us/en/products/mobile), shown in Exhibit 74.

**Exhibit 74**

317. A sample of a representative TCL Accused Product, the TCL 50 XL NXTPAPER 5G (T702Z), was manufactured in China and imported into the United States on or before May 19, 2025, through TCL.

318. The sample TCL Accused Product TCL 50 XL NXTPAPER 5G (T702Z) was purchased on May 15, 2025 through Boost Mobile, and shipped to Complainant's counsel's office in Washington, D.C. Exhibit 75 below shows product packaging labels identifying the product as a TCL 50 XL NXTPAPER 5G (T702Z) and identifying the country of manufacture as China.

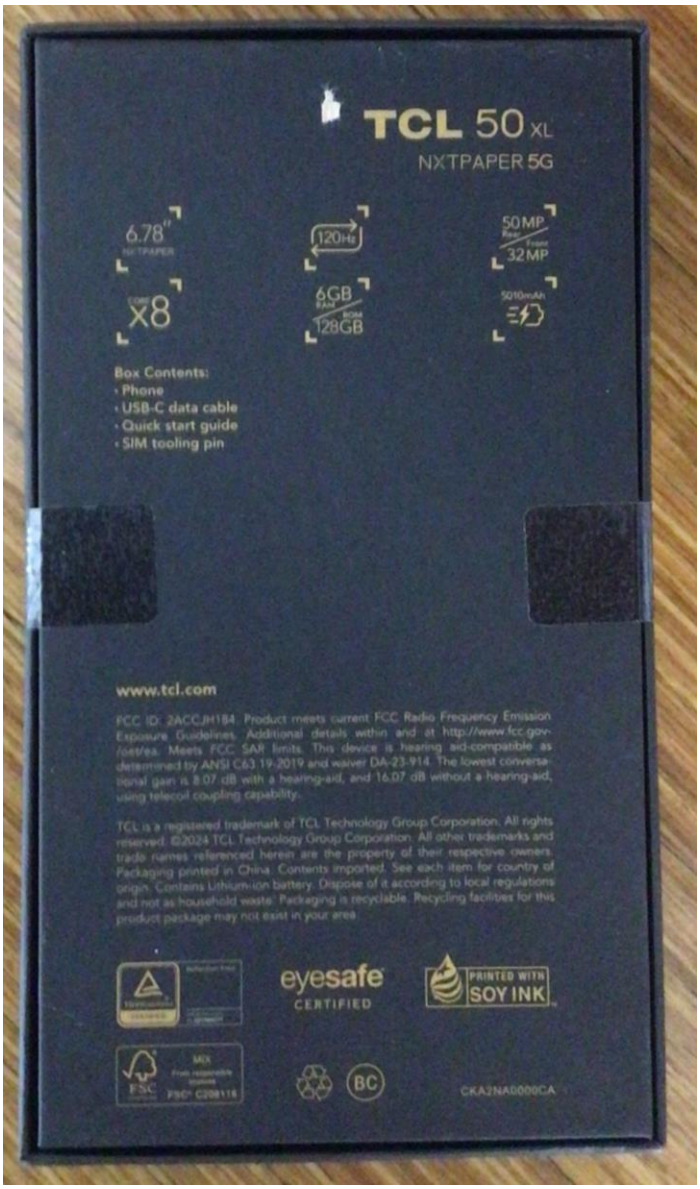
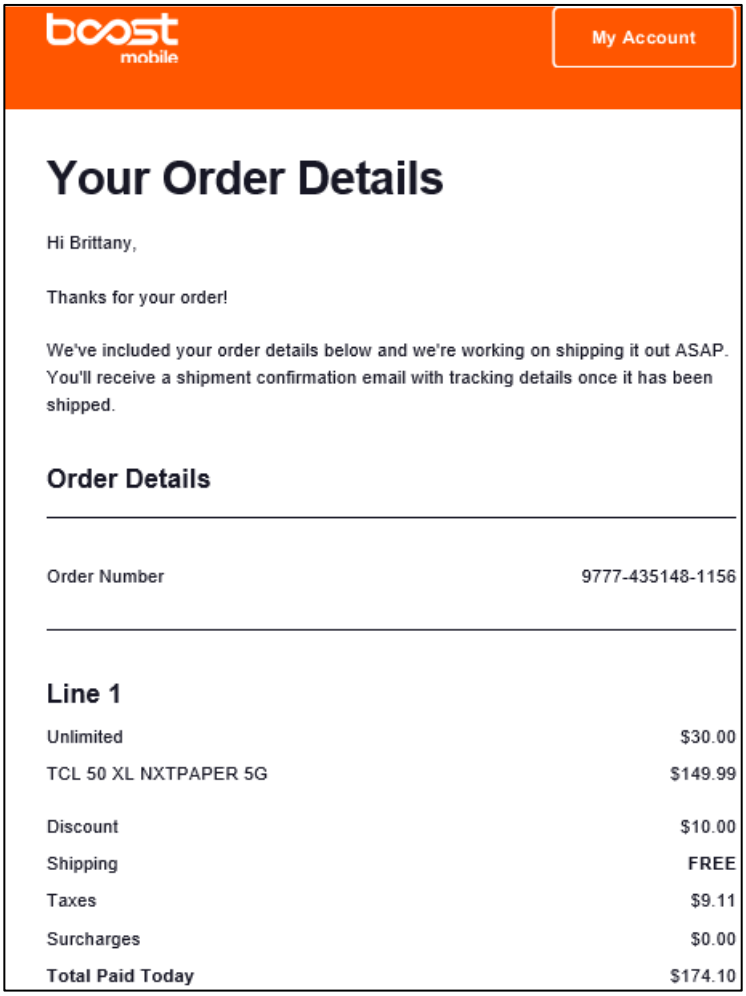

TCL 50 XL
NXTPAPER 5G
6.78"
120Hz
50MP
32MP
X8
6GB
128GB
5010mAh
Box Contents:
· Phone
· USB-C data cable
· Quick start guide
· SIM tooling pin
www.tcl.com
FCC ID: 2ACCJH184. Product meets current FCC Radio Frequency Emission Exposure Guidelines. Additional details within and at http://www.fcc.gov/oet/ea. Meets FCC SAR limits. This device is hearing aid-compatible as determined by ANSI C63.19-2019 and waiver DA-23-914. The lowest conversational gain is 8.07 dB with a hearing-aid, and 16.07 dB without a hearing-aid, using telecoil coupling capability.
TCL is a registered trademark of TCL Technology Group Corporation. All rights reserved. ©2024 TCL Technology Group Corporation. All other trademarks and trade names referenced herein are the property of their respective owners. Packaging printed in China. Contents imported. See each item for country of origin. Contains Lithium-ion battery. Dispose of it according to local regulations and not as household waste. Packaging is recyclable. Recycling facilities for this product package may not exist in your area.
eyesafe
CERTIFIED
PRINTED WITH SOY INK
FSC
BC
CKA2NA0000CA

**EXHIBIT 75**

SKU: TCLT702ZBL128
IMEI1: 016605000490563
IMEI2: 016605000490654
TCL 50 XL NXTPAPER 5G BLUE 128 GB
1 Transceiver
1 USB-C Cable
1 SIM Pin
Printed Material
Made in China
Date: 04/01/2025
8 89063 53046 0
SO

**EXHIBIT 75**

319. The following is a proof of order from that sample TCL 50 XL NXTPAPER 5G (T702Z) phone.



boost mobile

My Account

# Your Order Details

Hi Brittany,

Thanks for your order!

We've included your order details below and we're working on shipping it out ASAP. You'll receive a shipment confirmation email with tracking details once it has been shipped.

## Order Details

| | |
|---|---|
| Order Number | 9777-435148-1156 |

## Line 1

| | |
|---|---|
| Unlimited | $30.00 |
| TCL 50 XL NXTPAPER 5G | $149.99 |
| Discount | $10.00 |
| Shipping | FREE |
| Taxes | $9.11 |
| Surcharges | $0.00 |
| **Total Paid Today** | $174.10 |

**EXHIBIT 76**

320. The purchase occurred after the issue dates of each of the Asserted Patents.

321. Another sample of a representative TCL Accused Product that is a tablet, the TCL TAB 10 NXTPAPER 5G, was manufactured in China and imported into the United States on or before June 19, 2025, through TCL.

322. The sample TCL Accused Product TCL TAB 10 NXTPAPER 5G was purchased on June 11, 2025, through Verizon Wireless, and shipped to Complainant's counsel's office in New York City. Exhibit 255 below shows product packaging labels identifying the product as a TCL TAB 10 NXTPAPER 5G and identifying the country of manufacture as China.

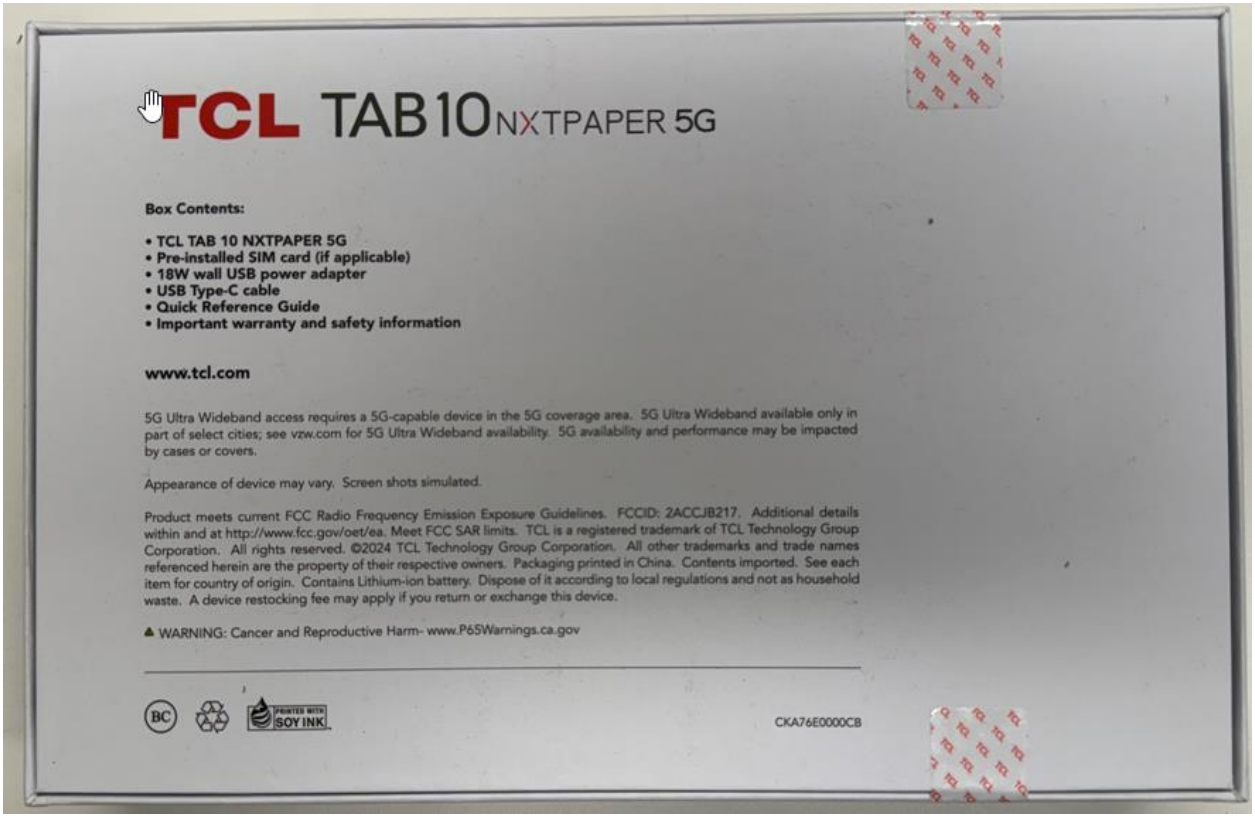



**EXHIBIT 255**

**EXHIBIT 255**

323. The following is a proof of order from that sample TCL TAB 10 NXTPAPER 5G tablet.

**Shipping**

**Track my order**

We're preparing your order for shipping.

**Devices**

**TCL TAB 10 NXTPAPER 5G**

Mobile number ending in 1131

Your device is back-ordered.
Expected deliver by date: 6/20/2025

**EXHIBIT 195**

324. The purchase occurred after the issue dates of each of the Asserted Patents.

325. On information and belief, the remaining TCL Accused Products are also made overseas (*e.g.*, in China) and are imported into the United States.

**D. Tinno's Specific Instances of Importation**

326. The Tinno Accused Products are offered for sale through Tinno's US website (Ex. 18), through websites of U.S. telecommunications network providers such as Boost Mobile (Ex. 19), Cricket Wireless (Ex. 20), AT&T (Ex. 21), and through websites of other U.S. retailers such as Walmart (Exs. 22 and 77) shows an example of a Tinno Accused Product, the Cricket Debut S3, on sale through Walmart's website:

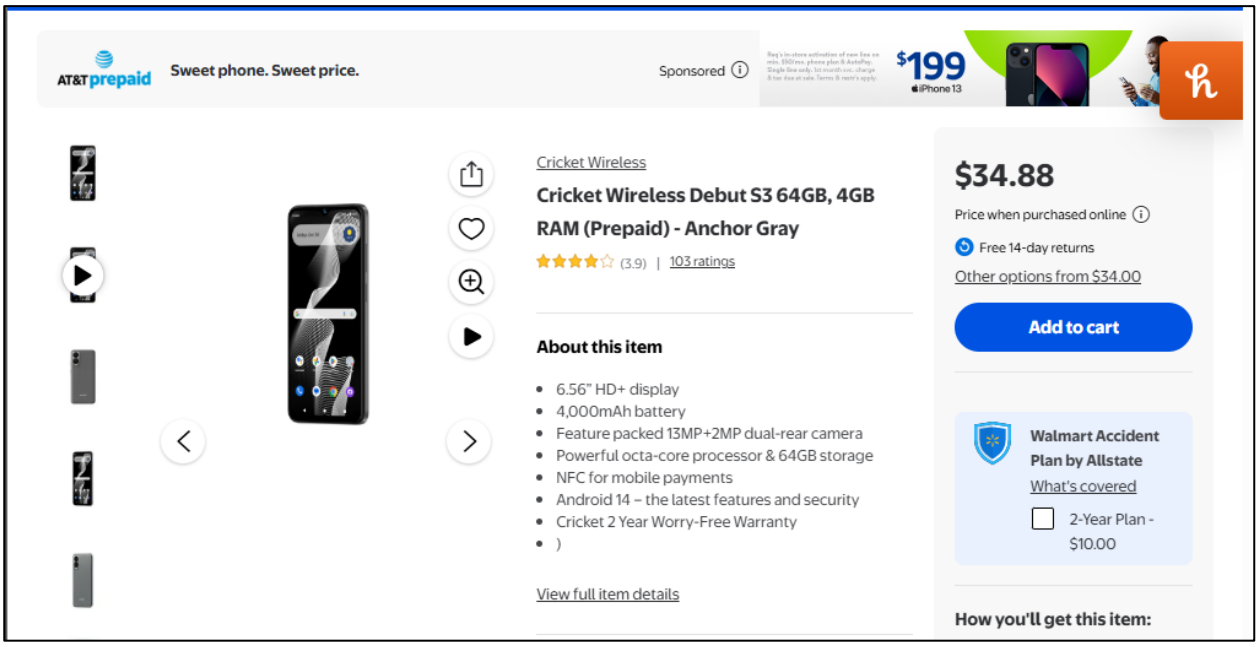



**EXHIBIT 77**

327. A sample of a representative Tinno Accused Product Cricket Debut S3 was manufactured in China and imported into the United States on or before June 26, 2025, through Tinno.

328. The sample Tinno Accused Product Cricket Debut S3 was purchased on June 26, 2025 through Walmart (https://www.walmart.com/ip/Cricket-Wireless-Debut-S3-64GB-Anchor-Gray-Prepaid-Smartphone/6516517798, Ex. 77), and delivered to Complainant's counsel's home in El Cajon, California. Exhibit 78 below shows product packaging identifying the product as a Cricket Debut S3, identifying the country of manufacture as China, and identifying the product as an imported product.

cricket
Debut S3
Powerful, all-day battery
Immersive 6.6" HD+ display with LED flash
13MP+2MP dual-rear cameras for crisp photos
64GB built-in storage, expandable up to 512GB
Backed by 2-year warranty
Android™ 14

MODEL: U572AC
H/W: V1.0
Made in China
FCC ID: XD6U572AA
Voltage Rating: 3.85V
SKU: DEMK4129
MFD: 241025
IMEI: 863454070963033
WARNING: Non-removable battery cover and battery. Do not attempt to disassemble or remove the battery. Doing so may result in personal injury and damage to the battery or device.
AVISO:Tapa y batería de batería no extraíbles. No intentes desarmar o quitar la batería. Hacer esto puede causar lesiones corporales y dañar la batería o el teléfono.
cricket

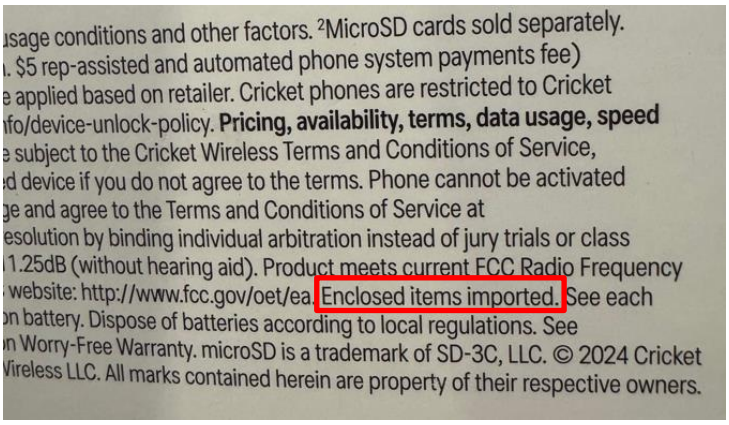

usage conditions and other factors. [2]MicroSD cards sold separately.
. $5 rep-assisted and automated phone system payments fee)
e applied based on retailer. Cricket phones are restricted to Cricket
nfo/device-unlock-policy. **Pricing, availability, terms, data usage, speed**
e subject to the Cricket Wireless Terms and Conditions of Service,
d device if you do not agree to the terms. Phone cannot be activated
ge and agree to the Terms and Conditions of Service at
esolution by binding individual arbitration instead of jury trials or class
1.25dB (without hearing aid). Product meets current FCC Radio Frequency
website: http://www.fcc.gov/oet/ea. Enclosed items imported. See each
on battery. Dispose of batteries according to local regulations. See
n Worry-Free Warranty. microSD is a trademark of SD-3C, LLC. © 2024 Cricket
Wireless LLC. All marks contained herein are property of their respective owners.

**EXHIBIT 78**

329. The following is a proof of order from that sample Cricket Debut S3phone.

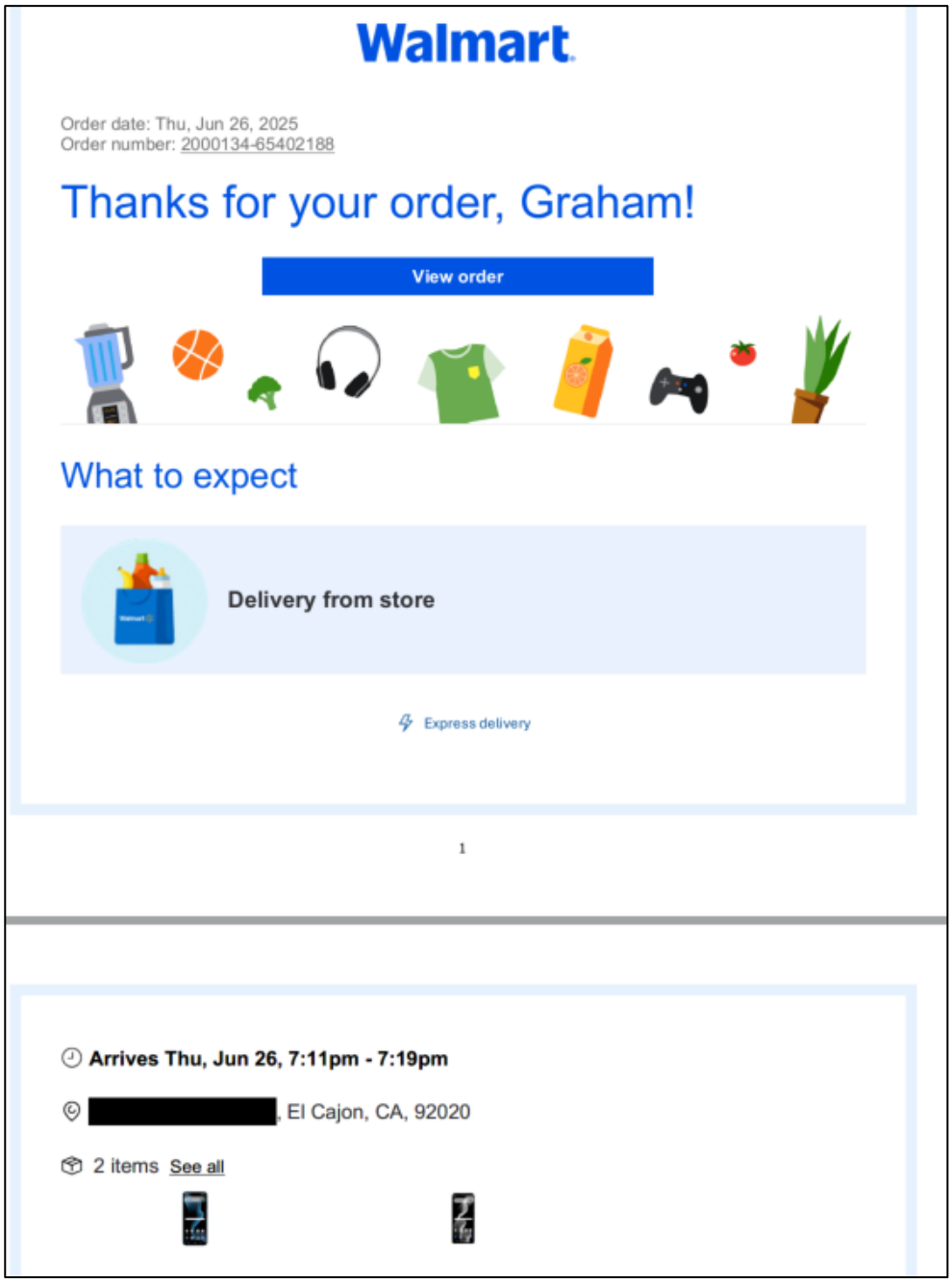



**EXHIBIT 79 (personal information redacted)**

330. On information and belief, the remaining Tinno Accused Products are also made overseas (*e.g.*, in China) and are imported into the United States.

331. Publicly available importation records show that Tinno regularly imports the Tinno Accused Products into the United States. For example, on or around May 9, 2025, Tinno imported the WIKO VOIX products, which were made in Vietnam, into the United States from China.

**Contact info**

| Type | Name | Address | Follow company |
|---|---|---|---|
| IMPORTER | TINNO USA INC. | 2301 WEST PLANO PARKWAY SUITE 102 PLANO TX 75075 US | Follow |
| NOTIFY PARTY | -NOT AVAILABLE- | -NOT AVAILABLE- | Follow |
| SHIPPER | TINNO VIETNAM COMPANY LIMITED | PLOT C03 OF PLOT CN12 AN DUONG INDU HONG PHONG TOWNSHIP, AN DUONG DISTR HAI PHONG VN | Follow |

**Product details**

| Container no. | Description area |
|---|---|
| TRHU1376310 | ANDROID SMARTPHONE HTS: 851713 |

| | |
|---|---|
| US Port | Long Beach, California |
| Foreign Port | Yantian |
| Country of Origin | China |
| Place of Receipt | HAIPHONG |
| Bill of Lading | EXDO65T0066838 |
| Arrival Date | 2025-05-09 |
| Quantity | 9 PKG |
| Container Count | 1 |
| Weight (LB / KG) | 7392.00 / 3360.00 |
| CBM | 14 CM |
| House vs Master | H |
| Master Bill of Lading | ZIMUHAI80134442 |

**Other info**

| Container no. | Description area |
|---|---|
| TRHU1376310 | VOIX MADE IN VIETNAM |

**Exhibit 80**

### E. HMD's Specific Instances of Importation

332. HMD offers the HMD Accused Products for sale in the United States on HMD's website (*e.g.*, at https://www.hmd.com/en_us/smartphones), shown in Exhibit 23.

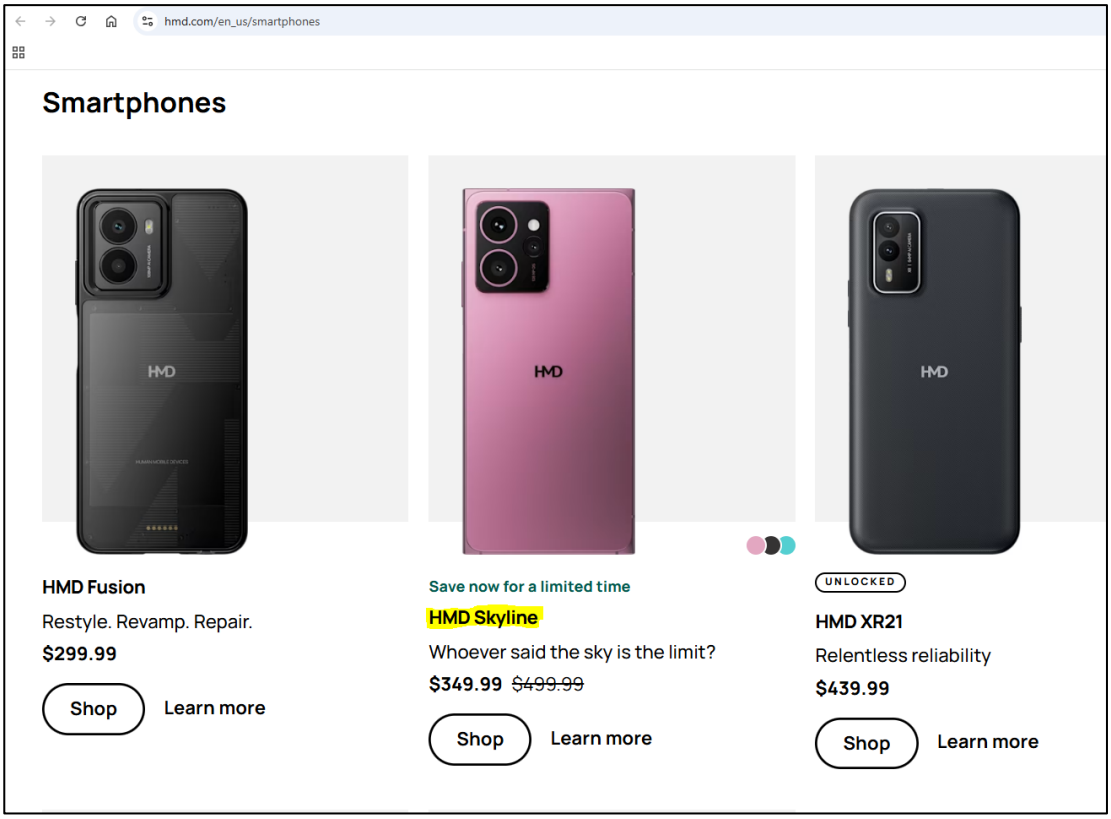


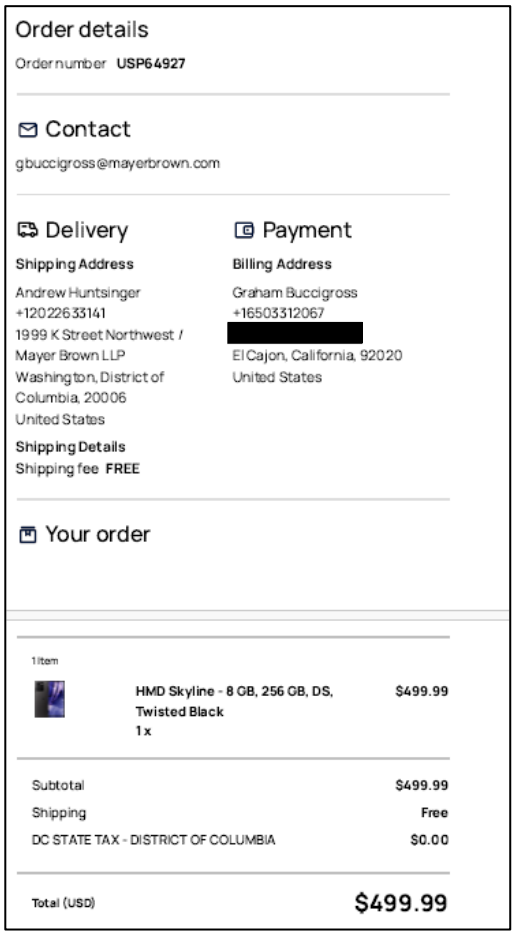

**Exhibit 23**

333. A sample of a representative HMD Accused Product, the HMD Skyline (TA-1600), was manufactured in China and imported into the United States on or before May 16, 2025, through HMD.

334. The sample HMD Skyline (TA-1600) was purchased on May 15, 2025 through HMD, and shipped to Complainant's counsel's office in Washington, D.C. Exhibit 81 below shows a product packaging label identifying the product as the Skyline (TA-1600) and identifying the country of manufacture as China.

**EXHIBIT 81**

335. The following is a proof of order from the sample HMD Skyline (TA-1600).



Order details

Order number USP64927

Contact

gbuccigross@mayerbrown.com

Delivery

Shipping Address

Andrew Huntsinger
+12022633141
1999 K Street Northwest /
Mayer Brown LLP
Washington, District of
Columbia, 20006
United States

Shipping Details

Shipping fee FREE

Payment

Billing Address

Graham Buccigross
+16503312067
[redacted]
El Cajon, California, 92020
United States

Your order

1 item

HMD Skyline - 8 GB, 256 GB, DS, Twisted Black
1 x
$499.99

| | |
|---|---|
| Subtotal | $499.99 |
| Shipping | Free |
| DC STATE TAX - DISTRICT OF COLUMBIA | $0.00 |
| Total (USD) | $499.99 |

**EXHIBIT 82**

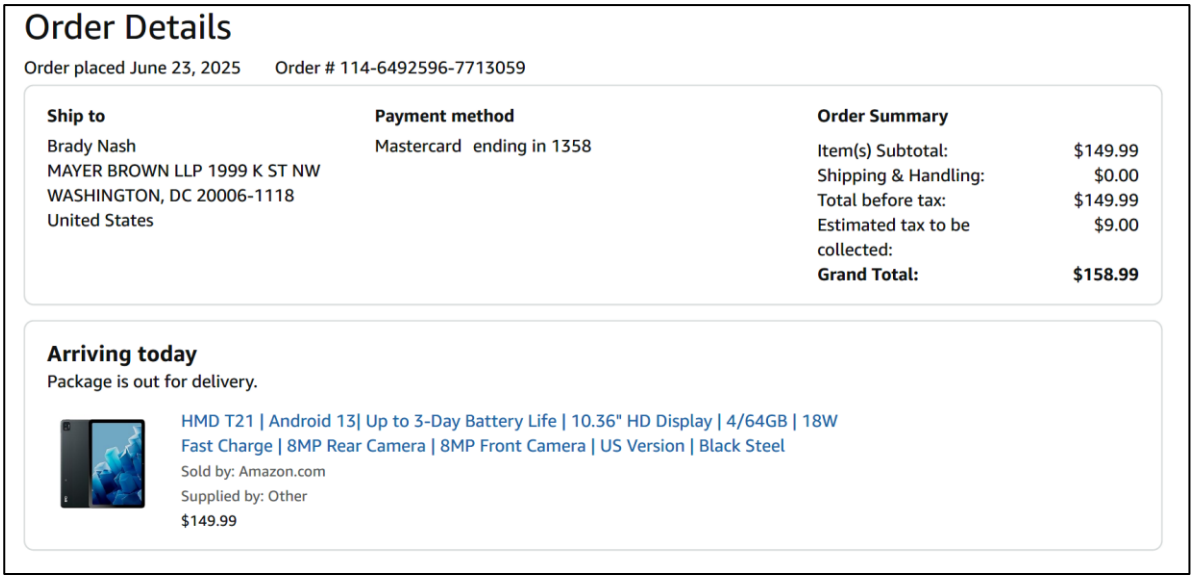
336. The purchase occurred after the issue dates of each of the Asserted Patents.

337. Another sample of a representative HMD Accused Product that is a tablet, the HMD T21, was manufactured in China and imported into the United States on or before June 25, 2025, through HMD.

338. The sample HMD T21 was purchased on June 23, 2025, through Amazon.com, and shipped to Complainant's counsel's office in Washington, D.C. Exhibit 204 below shows a product packaging label identifying the product as the T21 and identifying the country of manufacture as China.

**EXHIBIT 204**

339. The following is a proof of order from the sample HMD T21.



Order Details

Order placed June 23, 2025 Order # 114-6492596-7713059

**Ship to**
Brady Nash
MAYER BROWN LLP 1999 K ST NW
WASHINGTON, DC 20006-1118
United States

**Payment method**
Mastercard ending in 1358

**Order Summary**

| | |
|---|---|
| Item(s) Subtotal: | $149.99 |
| Shipping & Handling: | $0.00 |
| Total before tax: | $149.99 |
| Estimated tax to be collected: | $9.00 |
| **Grand Total:** | **$158.99** |

**Arriving today**
Package is out for delivery.

HMD T21 | Android 13| Up to 3-Day Battery Life | 10.36" HD Display | 4/64GB | 18W Fast Charge | 8MP Rear Camera | 8MP Front Camera | US Version | Black Steel
Sold by: Amazon.com
Supplied by: Other
$149.99

**EXHIBIT 202**

340. The purchase occurred after the issue dates of each of the Asserted Patents.

341. On information and belief, the remaining HMD Accused Products are also made overseas (*e.g.*, in China) and are imported into the United States.

## VII. CLASSIFICATION OF THE ACCUSED PRODUCTS UNDER THE HARMONIZED TARIFF SCHEDULE

342. On information and belief, the OnePlus Accused Products, Lenovo Accused Products, TCL Accused Products, Tinno Accused Products, and HMD Accused Products are classified under at least the following subheadings of the Harmonized Tariff Schedule of the United States: 8517.12.00 (mobile phones) and 8471.30.01, 8471.41.01, or 8471.49.00 (handheld computers); 8473.30, 8471.60.90 (other input/output units, whether or not containing storage units combined in the same house); and 8471.41.01 (Other automatic data processing machines: Comprising in the same housing at least a central processing unit and an input and output unit, whether or not combined).

343. These classifications are exemplary in nature and are not intended to restrict the scope of any exclusion order or other remedy ordered by the Commission.

## VIII. RELATED LITIGATION

344. The '839 Patent is the only patent currently subject to domestic litigation or administrative proceedings. Specifically, appeals currently pending in the Federal Circuit involving Pantech and OnePlus, Case Nos. 25-1628 and 25-1629, are appeals after a jury verdict in Pantech's favor of infringement and no invalidity of the '839 Patent in the Eastern District of Texas, *Pantech Corp. v. OnePlus Technology (Shenzhen) Co., Ltd.*, No. 5:22-cv-00069 (E.D. Tex. June 3, 2022).

## IX. DOMESTIC INDUSTRY

345. An industry as required by Section 337(a)(2) and defined by Section 337(a)(3) exists in the United States as a result of domestic activities relating to products that practice the Asserted Patents. These activities include the current significant and substantial domestic

investments of Pantech's licensees, including without limitation BLU Products, Inc. ("BLU"), and LG Electronics, Inc. and its subsidiaries ("LGE") (collectively, the "DI Licensees").

346. Collectively, the DI Licensees have made significant domestic investments in plant, equipment, labor and capital, and made substantial domestic investments in engineering and research and development related to products that practice and are protected by the Asserted Patents.

**A. BLU's Domestic Industry Products**

347. Pursuant to Commission Rule 210.12(a)(9)(iv), Pantech has attached as Exhibit 146 a copy of its confidential licensing agreement with DI Licensee BLU (the "BLU Patent License Agreement").

348. [redacted]

349. The BLU domestic industry products are smartphones and a tablet that are compliant with the LTE, LTE-A, and 5G cellular standards (collectively, the "BLU DI Products"). A chart identifying each of the BLU DI Products, their LTE, LTE-A, and/or 5G standards compliance, other functionalities, and pertinent hardware components is attached as Exhibit 140.

350. An example of a BLU DI Product is the BLU Bold K50. A sample Bold K50 is depicted below:

**EXHIBIT 203**

351. To establish a domestic industry with respect to the ’839, ’503, ’344, and ’876 Patents, Pantech relies on the investments and activities in the United States by licensee BLU, relating to the BLU DI Products, as follows:

| Asserted Patent | Exemplary BLU DI Products Practicing and Protected by Patent |
|---|---|
| ’839 Patent | BOLD K30, BOLD K20, BOLD K5, BOLD K50, BOLD N3, BOLD K10, G65L, G35, G44 Plus, G84, G74, G64, G64L, G44, G34, G93, G73L, G73, G63, G53 (MTK), G33 (USC), G33 (MTK), F5 5G, J12, View 5 Pro, View 5, VIEW SPEED 5G, and M10L Pro 2023 |
| ’503 Patent | BOLD K30, BOLD K20, BOLD K5, BOLD K50, BOLD N3, BOLD K10, G65L, G35, G44 Plus, G84, G74, G64, G64L, G44, G34, G93, G73L, G73, G63, G53 (MTK), G33 (USC), G33 (MTK), F5 5G, J12, View 5 Pro, View 5, and VIEW SPEED 5G |
| ’344 Patent | BOLD K30, BOLD K20, BOLD K5, BOLD K50, BOLD N3, BOLD K10, G65L, G35, G44 Plus, G84, G74, G64, G64L, G44, G34, G93, |

| Asserted Patent | Exemplary BLU DI Products Practicing and Protected by Patent |
|---|---|
| | G73L, G73, G63, G53 (MTK), G33 (USC), G33 (MTK), F5 5G, J12, View 5 Pro, View 5, VIEW SPEED 5G, and M10L Pro 2023 |
| '876 Patent | BOLD K30, BOLD K20, BOLD K5, BOLD K50, BOLD N3, BOLD K10, G65L, G35, G44 Plus, G84, G74, G64, G64L, G44, G34, G93, G73L, G73, G63, G53 (MTK), G33 (USC), G33 (MTK), F5 5G, J12, View 5 Pro, View 5, VIEW SPEED 5G, and M10L Pro 2023 |

**1. Technical Prong**

352. BLU, through the BLU DI Products, practices at least one claim of each of the '839, '503, '344, and '876 Patents. Exs. 87-91. The claims practiced by the BLU DI Products are listed in the below chart:

| Asserted Patents | Domestic Industry Claims |
|---|---|
| '839 Patent | **9**-12 |
| '503 Patent | **5,** 7, 8 |
| '344 Patent | **2**, 6 |
| '876 Patent | **4**-6 |

353. Exhibit 141 is a claim chart showing how certain exemplary BLU DI Products practice claims 9-12 of the '839 Patent. The representative products shown within are charted as examples only, and the chart demonstrates how each cited BLU DI Product practices those claims, as will be further established during the investigation.

354. Exhibit 142 is a claim chart showing how certain exemplary BLU DI Products practice claims 5, 7, and 8 of the '503 Patent, based on their compliance with LTE-A. Exhibit 143 is a claim chart showing how certain exemplary BLU DI Products practice claims 5, 7, and 8 of the '503 Patent, based on their compliance with 5G. The representative products shown within are



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charted as examples only, and the chart demonstrates how each cited BLU DI Product practices those claims, as will be further established during the investigation.

355. Exhibit 144 is a claim chart showing how certain exemplary BLU DI Products practice claims 2 and 6 of the '344 Patent. The representative products shown within are charted as examples only, and the chart demonstrates how each cited BLU DI Product practices those claims, as will be further established during the investigation.

356. Exhibit 145 is a claim chart showing how the BLU DI Products practice claims 4-6 of the '876 Patent. The representative products shown within are charted as examples only, and the chart demonstrates how each cited BLU DI Product practices those claims, as will be further established during the investigation.

357. The identification of elements presented in these claim charts are preliminary and exemplary, and Pantech reserves the right to modify its technical domestic industry theories as a result of information learned during discovery and positions taken by Respondents in any investigation instituted from this Complaint.

### 2. Economic Prong

358. There is a domestic industry as defined under 19 U.S.C. § 1337(a)(3)(A), (B), and/or (C), comprising significant investments made in the United States by BLU in facilities and equipment, employment of labor and capital, and substantial investment in exploitation of the Asserted Patents. Specific, non-limiting examples of such investments are set forth below.

359. The BLU DI Products fall within the scope of the BLU Patent License Agreement.

360. [redacted]



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[redacted]

361. BLU Products, Inc. is a company organized under the laws of the State of Florida with its principal place of business at 8600 NW 36th Street, Ste. 300, Doral, Florida 33172. *See* Ex. 132 at 2; Ex. 190 at 1.

362. BLU's domestic investments and expenditures in activities relating to the BLU DI Products and the '839, '503, '344, and '876 Patents include significant investments and expenditures in facilities and equipment, marketing and sales, and significant employment of labor and capital.

363. BLU's domestic investments and expenditures in activities relating to the BLU DI Products and the '839, '503, '344, and '876 Patents further include substantial investments in the exploitation of the technology claimed by these Asserted Patents.

364. On information and belief, BLU's significant investments in labor and capital relate to, among other things, the design, research and development, engineering, testing, compliance, distribution, warranty and repair, and customer service and support of mobile devices, including the BLU DI Products. BLU's substantial investments in the exploitation of the technology claimed by the '839, '503, '344, and '876 Patents are based on investments in design, research and development, and engineering relating to technology claimed by the '839, '503, '344, and '876 Patents, which include the BLU DI Products.

365. BLU only sells smartphones and tablets. Therefore, most, if not all of BLU's investments are tied to the BLU DI Products. For instance, all of the products that BLU currently sells in the United States support LTE, LTE-A, and/or 5G connectivity, and are therefore BLU DI

Products. All of the products that BLU currently sells in the United States comply with LTE, and are therefore BLU DI Products that utilize the technology claimed by the '839, '344, and '876 Patents. Further, all of the smartphones that BLU currently sells in the United States are LTE-A compliant, and therefore utilize the technology claimed by the '503 Patent.

366. BLU has represented that "[w]hile it is true that BLU devices can be found throughout the world, BLU's operations are solely based in the Southern District of Florida." Ex. 132 at 4-5.

367. On information and belief, BLU does not manufacture the BLU DI Products. Therefore, essentially all of BLU's business activities relating to BLU DI Products that have been and are sold in the United States have been and continue to be conducted within the United States, using United States facilities, equipment, employees, and investments.

368. As a U.S. company headquartered in Doral, Florida, BLU, the self-proclaimed "fastest-growing reputable brands in the mobile industry" is a market leader in unlocked devices. Ex. 133 at 2. According to data generated by the International Data Corporation, between 2020 and 2024 BLU sold more than 9.9 million devices in the United States and had sales exceeding $167 million. *See* Ex. 205.

369. In 2019, BLU contracted with Verizon to bring BLU devices, including BLU DI Products, to Verizon customers. Ex. 135 at 3. As of 2025, BLU has sold over 70 million of its devices globally. Ex. 133 at 2.

370. BLU's Florida headquarters consists of a warehouse facility spanning over 800,000 square feet. Ex. 134 at 1. BLU additionally has 13 local offices, between representatives and subsidiaries, throughout the Miami, Florida, region. *Id*. On information and belief, because BLU's only headquarters is in Florida, BLU designs the BLU DI Products in Florida.

371. On information and belief, BLU invests substantial amounts on its facilities and equipment in the United States that support product development, importation, pre-delivery activities such as product deployment, supply chain management, logistics, and distribution, as well as post-sale activities, including technical support, customer service, and warranty and repair service for the BLU DI Products.

372. On information and belief, BLU invests significant amounts in salary and personnel expenses for its employees in the United States. BLU has over 300 employees. *Id*. Employees at BLU's Florida headquarters include, among others, sales personnel, logistics personnel, product managers, and customer service representatives. Ex. 136 at 1.

373. BLU engages in substantial advertising for its products, including the BLU DI Products. On information and belief, BLU invested, created, and developed, "BLU Products Media Relations" to facilitate its advertising for its products. *See* https://www.bluproducts.com/news/2018-pure-view.html (Press release published by BLU Products Media Relations), Ex. 254. For example, BLU created its own U.S. YouTube account which has amassed over 57,300 subscribers. https://www.youtube.com/@BLUProductsGlobal/videos, Ex. 138. BLU also has also invested in a dedicated U.S. Facebook page which has generated over 966,000 followers. https://www.facebook.com/BLU.Products, Ex. 137 at 1. BLU has additionally invested in substantial advertising via its U.S. Instagram page wherein it has posted over 4,000 times and has cultivated over 118,000 followers. https://www.instagram.com/blu_products/, Ex. 139. These few examples of BLU's advertising of its products, including the BLU DI Products, provide support for its substantial investments in labor, facilities, equipment, and research and development.



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374. BLU also invests substantial capital in advertising its individual product lines, including the BLU DI Products, through focused marketing advertisements. For example, BLU Products Media Relations, through the expenditure of significant labor, capital, and other resources, advertised the BLU DI Products, such as the BLU G91 MAX on the internet via online articles. *See* https://www.prnewswire.com/news-releases/blu-smartphones-launches-its-1st-flagship-for-2022-bringing-optimal-balance-to-end-users-with-the-new-g91-max-301478653.html, Ex. 191. BLU also announced "The Iconic BOLD Smartphones Return: BLU Launches the All-New BOLD N3, Elevating Style and Performance to New Heights!" in September, 2023.. https://www.prnewswire.com/news-releases/the-iconic-bold-smartphones-return-blu-launches-the-all-new-bold-n3-elevating-style-and-performance-to-new-heights-301932744.html, Ex. 192. These examples further illustrate some of BLU's significant investments in plant, equipment, labor, and capital relating to design, customer service, and support of the BLU DI Products.

375. Additionally, BLU has also specifically advertised the BLU DI Products on its dedicated YouTube, Facebook, and Instagram platforms. For example, "Meet the K50: Powerful, Portable & Affordable – 5G Under $200!" was posted to the BLU YouTube channel on September 11, 2024. https://www.youtube.com/watch?v=DGgtRS24OqU. As an additional example, BLU specifically advertised the G64 on its dedicated Facebook platform on June 11, 2025. https://www.facebook.com/story.php?story_fbid=1140976518065515&id=100064595324910&rdid=IER92LGCWt9RCTBL#, Ex. 193. BLU also advertised its BLU F5 5G, another BLU DI Product, on June 4, 2025. https://www.facebook.com/BLU.Products/posts/fast-affordable-and-now-even-cheaper-get-the-blu-f5-5g-for-just-99-unlocked-on-a/1135175141978986/, Ex. 194.



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These additional examples of BLU's substantial investment in U.S. advertising substantiate and further demonstrate its domestic industry.

376. Taken together, BLU's domestic investments satisfy the economic prong with respect to the Asserted Patents under subsections (A), (B), and (C) of Section 337(a)(3).

377. BLU is expected to provide additional bases and supporting information under this section through discovery or otherwise. Such bases and information are expected to include, without limitation, data on BLU's domestic investments in labor (including information on the number of domestic employees, responsibilities of employees, and salaries and other costs associated with such employees), facilities (including expenditures on facilities), equipment (including information on types and cost of equipment implemented at facilities), and R&D in mobile devices, including the BLU DI Products. Discovery from BLU is also expected to provide bases by which to apportion overall domestic investments to the BLU DI Products, such as through percentage of sales made up by such products or through records identifying work performed.

**B. LGE's Domestic Industry Products**

378. Pursuant to Commission Rule 210.12(a)(9)(iv), Pantech has attached as Exhibit 83 a copy the agreement LGE a license to the Asserted Patents (the "LGE Patent License Agreement").

379. [redacted]

380. The LGE domestic industry products are telematics control units ("TCUs") and application processor modules ("AP Modules"), which are modules that are incorporated into automobiles, including in the U.S., that provide cellular connectivity, compliant with the LTE,



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LTE-A, and 5G cellular standards (collectively, the "LGE DI Products"). A chart identifying each of the LGE DI Products, their LTE, LTE-A, and/or 5G standards compliance, other functionalities, and pertinent hardware components is attached as Exhibit 84.

381. An example of an LGE DI Product that is a TCU is the LGE model number TTA20ANEBN. The TTA20ANEBN is used in many General Motors cars that are made, sold, and used in the U.S., such as the 2025 Chevrolet Trax, 2024 Chevrolet Trax, 2024 Cadillac XT5, 2024 Chevrolet Blazer, 2024 Chevrolet Equinox, 2024 GMC Terrain, 2023 Cadillac XT5, and 2023 Chevrolet Blazer model trims. The TTA20ANEBN has General Motors part number 86579859. A sample TTA20ANEBN from a 2024 Chevrolet Trax is depicted below:

**EXHIBIT 85**

**EXHIBIT 85**

382. The LG TTA20ANEBN TCU is compliant with the LTE and LTE-A cellular standards. For instance, AT&T's website (https://iotdevices.att.com/certified-device-list.aspx) shows that the device is a factory installed TCU and complies with LTE category 9, which supports LTE-A and carrier aggregation:

| Manufacturer | Model Name/Number | Device Type | Radio Technol... | LTE Technology |
|---|---|---|---|---|
| LG Electronics | TTA20ANEBN | TCU - Factory Installed | 4G LTE,3G,2G | CAT 9 |

**EXHIBIT 86**

383. To establish a domestic industry with respect to the ’839, ’503, ’344, and ’876 Patents, Pantech relies on the investments and activities in the United States by licensee LGE, relating to products that practice and are protected by such patents (collectively, “LGE DI Products”), as follows:

| Asserted Patent | Exemplary LGE DI Products Practicing and Protected by Patent |
|---|---|
| ’839 Patent | TTA20ANEBN, TLVUW3IU-N, TFGMEIBBCD1, TFGMEIBBCD2, TFGMEIBBCD3, TM05FNNAGM0, TM05FNNAGM1, TN1T23NN, TFHOBINN0D1, TLVHM3IU-N, TLVLP3IU-N, TTA20BNGNN, TTA20BNGBN, TLVLM3IU-N, Gen10BTNBU, TTA20BNENN, TTA20BNEBN, TVA20ANFNN, TVA20ANFBN, TTA20ANENN, TTA20ANEBN, Gen10ALNB, Gen10AL, Gen10BLNB, Gen10BL, TL3HEB-N, TL3LNB-N, Gen10DLNB, Gen10DL, Gen10CLNB, Gen10CL, TTA19ANENN, TTA19ANEBN, Gen10BTBU, Gen10LNB, Gen10L, TLVHE4IU-N, TLVHW3IU-N, TN1R23NN, TLVUE4IU-N, TLVUW3IU-N, TLVUM3IU-N, TLHOBINN0D1, TCAA19ANANN(A), TLHOBENN0D1, TLHOBDNN0B2, TLHOBDNN0B1, TL21BNN2, TL21BNN1, TL19BNN, TFHOBINN0D2, Gen10, TM12ANNAGM0, Gen10A, Gen10D, Gen10C, Gen11NAN, Gen10B, TM01GAN-N, TM01LA-N, TM01LANAJL, TM03LNNATY0, TM05NNNABM0, TM15FNNAHD0, TM15FNNATY0, TM19FNNAHD2, TM03LNNAHD0, and TM03LNNATY1 |
| ’503 Patent | TLVUW3IU-N, TFGMEIBBCD1, TFGMEIBBCD2, TFGMEIBBCD3, TM05FNNAGM0, TM05FNNAGM1, TN1T23NN, TFHOBINN0D1, TLVHM3IU-N, TTA20BNGNN, TTA20BNGBN, TTA20BNENN, TTA20BNEBN, TVA20ANFNN, TVA20ANFBN, TTA20ANENN, TTA20ANEBN, TTA19ANENN, TTA19ANEBN, TLVHE4IU-N, TLVHW3IU-N, TN1R23NN, TLVUE4IU-N, TLVUW3IU-N, TCAA19ANANN(A), TFHOBINN0D2, TM12ANNAGM0, Gen11NAN, TM05NNNABM0, TM15FNNAHD0, and TM15FNNATY0, TM19FNNAHD2 |
| ’344 Patent | TTA20ANEBN, TLVUW3IU-N, TFGMEIBBCD1, TFGMEIBBCD2, TFGMEIBBCD3, TM05FNNAGM0, TM05FNNAGM1, TN1T23NN, TFHOBINN0D1, TLVHM3IU-N, TLVLP3IU-N, TTA20BNGNN, TTA20BNGBN, TLVLM3IU-N, Gen10BTNBU, TTA20BNENN, TTA20BNEBN, TVA20ANFNN, TVA20ANFBN, TTA20ANENN, TTA20ANEBN, Gen10ALNB, Gen10AL, Gen10BLNB, Gen10BL, TL3HEB-N, TL3LNB-N, Gen10DLNB, Gen10DL, Gen10CLNB, Gen10CL, TTA19ANENN, TTA19ANEBN, Gen10BTBU, Gen10LNB, |



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| Asserted Patent | Exemplary LGE DI Products Practicing and Protected by Patent |
|---|---|
| | Gen10L, TLVHE4IU-N, TLVHW3IU-N, TN1R23NN, TLVUE4IU-N, TLVUW3IU-N, TLVUM3IU-N, TLHOBINN0D1, TCAA19ANANN(A), TLHOBENN0D1, TLHOBDNN0B2, TLHOBDNN0B1, TL21BNN2, TL21BNN1, TL19BNN, TFHOBINN0D2, Gen10, TM12ANNAGM0, Gen10A, Gen10D, Gen10C, Gen11NAN, Gen10B, TM01GAN-N, TM01LA-N, TM01LANAJL, TM03LNNATY0, TM05NNNABM0, TM15FNNAHD0, TM15FNNATY0, TM19FNNAHD2, TM03LNNAHD0, and TM03LNNATY1 |
| ’876 Patent | TTA20ANEBN, TLVUW3IU-N, TFGMEIBBCD1, TFGMEIBBCD2, TFGMEIBBCD3, TM05FNNAGM0, TM05FNNAGM1, TN1T23NN, TFHOBINN0D1, TLVHM3IU-N, TLVLP3IU-N, TTA20BNGNN, TTA20BNGBN, TLVLM3IU-N, Gen10BTNBU, TTA20BNENN, TTA20BNEBN, TVA20ANFNN, TVA20ANFBN, TTA20ANENN, TTA20ANEBN, Gen10ALNB, Gen10AL, Gen10BLNB, Gen10BL, TL3HEB-N, TL3LNB-N, Gen10DLNB, Gen10DL, Gen10CLNB, Gen10CL, TTA19ANENN, TTA19ANEBN, Gen10BTBU, Gen10LNB, Gen10L, TLVHE4IU-N, TLVHW3IU-N, TN1R23NN, TLVUE4IU-N, TLVUW3IU-N, TLVUM3IU-N, TLHOBINN0D1, TCAA19ANANN(A), TLHOBENN0D1, TLHOBDNN0B2, TLHOBDNN0B1, TL21BNN2, TL21BNN1, TL19BNN, TFHOBINN0D2, Gen10, TM12ANNAGM0, Gen10A, Gen10D, Gen10C, Gen11NAN, Gen10B, TM01GAN-N, TM01LA-N, TM01LANAJL, TM03LNNATY0, TM05NNNABM0, TM15FNNAHD0, TM15FNNATY0, TM19FNNAHD2, TM03LNNAHD0, and TM03LNNATY1 |

**1. Technical Prong**

384. LGE, through the LGE DI Products, practices at least one claim of each of the ’839, ’503, ’344, and ’876 Patents. Exs. 87-91. The claims practiced by the LGE DI Products are listed in the below chart:

| Asserted Patents | Domestic Industry Claims |
|---|---|
| ’839 Patent | **9**-12 |
| ’503 Patent | **5,** 7, 8 |
| ’344 Patent | **2**, 6 |
| ’876 Patent | **4**-6 |

385. Exhibit 87 is a claim chart showing how certain exemplary LGE DI Products practice claims 9-12 of the '839 Patent. The representative products shown within are charted as examples only, and the chart demonstrates how each cited LGE DI Product practices those claims, as will be further established during the investigation.

386. Exhibit 88 is a claim chart showing how certain exemplary LGE DI Products practice claims 5, 7, and 8 of the '503 Patent, based on their compliance with LTE-A. Exhibit 89 is a claim chart showing how certain exemplary LGE DI Products practice claims 5, 7, and 8 of the '503 Patent, based on their compliance with 5G. The representative products shown within are charted as examples only, and the chart demonstrates how each cited LGE DI Product practices those claims, as will be further established during the investigation.

387. Exhibit 90 is a claim chart showing how certain exemplary LGE DI Products practice claims 2 and 6 of the '344 Patent. The representative products shown within are charted as examples only, and the chart demonstrates how each cited LGE DI Product practices those claims, as will be further established during the investigation.

388. Exhibit 91 is a claim chart showing how the LGE DI Products practice claims 4-6 of the '876 Patent. The representative products shown within are charted as examples only, and the chart demonstrates how each cited LGE DI Product practices those claims, as will be further established during the investigation.

389. The identification of elements presented in these claim charts are preliminary and exemplary, and Pantech reserves the right to modify its technical domestic industry theories as a result of information learned during discovery and positions taken by Respondents in any investigation instituted from this Complaint.



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### 2. Economic Prong

390. There is a domestic industry as defined under 19 U.S.C. § 1337(a)(3)(A), (B), and/or (C), comprising significant investments made in the United States by LGE in plant and equipment, employment of labor and capital, and substantial investment in exploitation of the Asserted Patents. Specific, non-limiting examples of such investments are set forth below.

391. [redacted]

392. The LGE DI Products fall within the scope of the LGE Patent License Agreement.

393. [redacted]

394. LG Electronics, Inc. is a company organized under the laws of the Republic of Korea with its principal place of business at LG Twin Towers 20 Yoido-dong, Youngdungpo-gu, Seoul, South Korea.

395. LGE's domestic investments and expenditures in activities relating to the LGE DI Products and the '839, '503, '344, and '876 Patents include significant investments and expenditures in plant and equipment and significant employment of labor and capital.

396. LGE's domestic investments and expenditures in activities relating to the LGE DI Products and the '839, '503, '344, and '876 Patents further include substantial investments in the exploitation of the technology claimed by these Asserted Patents.

397. Taken together, LGE's domestic investments satisfy the economic prong with respect to the Asserted Patents under subsections (A), (B), and (C) of Section 337(a)(3).

398. The underlying technology, inventions, and earlier-filed applications that the '839, '344, and '876 patents continue from and claim priority to, originated with LG. Further, when assigning[4] the intellectual property underlying the '839, '344, and '876 Patents, LG received grant-back licenses to that technology, and, through a series of continuation applications, the '839, '344, and '876 patents.

399. On information and belief, LGE's significant investments in plant, equipment, labor, and capital relate to, among other things, the design, research and development, engineering, testing, regulatory compliance, sales, marketing, distribution, warehousing, quality control, warranty and repair, and customer service and support of the LGE DI Products. LGE's substantial investments in the exploitation of the technology claimed by the Asserted Patents are based on investments in at least design, research and development, and engineering relating to technology claimed by the '839, '503, '344, and '876 Patents, which include the LGE DI Products.

***a) LGE Electronics, U.S.A., Inc.***

400. LGE has a US headquarters through LG Electronics, U.S.A., Inc. ("LGE USA"), which is based in New Jersey at 111 Sylvan Ave., Englewood Cliffs, NJ 07632. (https://www.lg.com/us/business/corporate-profile#:~:text=Based%20in%20Englewood%20Cliffs%2C%20N.J.,%2C%20home%20appliances%2C%20and%20more., Ex. 256)

[4] The inventors assigned the parent applications to the '839, '503, '344, and '876 patents, and any continuations thereto, to LG Electronics Inc. On February 15, 2012, LG Electronics Inc. assigned the interests to Pantech Co., Ltd. Those interests were eventually assigned to Pantech Corp.

401. On information and belief, as further explained below, LGE USA shares officers and employees with the LGE business units and entities that conduct research, development, design, engineering, testing, distribution, warehousing, support for, regulatory compliance, marketing, and sales of the LGE DI Products in the United States. This includes officers and employees working at LGE US's New Jersey headquarters.

402. LGE has made significant investments in facilities in the U.S. relating to the DI Products.

403. This includes LGE US's flagship New Jersey headquarters. According to an LGE press release, LGE invested $300 million in its US headquarters in New Jersey. (https://www.lg.com/us/PDF/press-release/LG%20-%20MICHIGAN%20VEHICLE%20COMPONENTS%20PLANT%20-%20AUG%20%2022%202017%20FINAL%20FINAL.pdf, Ex. 257)

404. The LGE USA headquarters was completed in 2020 and "consist[s] of a 352,000 sq. ft. headquarters facility" with "a 3-story south wing, 4-story north wing, 'Cube' connector, and a 3-story parking garage." It "include[s] office space, conference rooms, executive offices, cafeteria, fitness center, mechanical space, loading dock, multi-purpose space, science center, and showroom. This building is a state-of-the-art facility that is a flagship of green design for both LG and the city of Englewood Cliffs. The green/sustainable features of this facility include[] rooftop solar panels that generate 1,500 megawatt hours of electrical power annually, the restoration and mitigation of five wetlands, the creation of a retention pond to reduce site runoff, indirect site lighting, and automatic shades to mitigate light pollution." (https://www.turnerconstruction.com/projects/lg-electronics-usa-inc-north-american-headquarters, Ex. 258)

405. LGE USA also has invested in a campus that it has in Huntsville, AL. (https://lge-careers.com/individual-business-units/, Ex. 259)

***b) LGE Domestic Industry TCU Products***

406. According to market research, LG is, globally, the leading supplier of TCUs. (https://www.counterpointresearch.com/insight/global-tcu-sales-up-8-yoy-in-2024-lg-continues-to-lead/, Ex. 97; https://www.businesskorea.co.kr/news/articleView.html?idxno=90763, Ex. 98)

407. As of 2022, the US was among the top three geographies in the global TCU market. (https://www.counterpointresearch.com/insight/global-tcu-shipments-2021, Ex. 99)

408. On information and belief, LG Electronics Vehicle Solution (VS) Company is the business unit of LGE USA responsible for the engineering, research and development, testing, support, repair, marketing, warehousing, distribution, and sales of the LGE TCU products in the United States.

409. On information and belief, LGE treats LG Electronics Vehicle Solutions Company as a business unit of LGE USA.

410. For example, an LG press release explained that LGE USA's "senior vice president" was also "head of the LG Vehicle Components North American Business Center…." Ex. 257.

411. As another example, a press release from the Michigan Economic Development Corporation regarding LG's establishment of its Hazel Park facilities explained that "LG Electronics USA Inc. ... operates four business units," including "Vehicle Components, which collaborates with General Motors on the Chevrolet Bolt EV." (https://www.michiganbusiness.org/press-releases/2017/08/catalytic-projects-highlight-msf-board-approvals/, Ex. 260) *See also, e.g.*, https://www.linkedin.com/in/colin-brady-a6494869/,

Ex. 261 (LGE Validation Manager with TCU responsibilities listing employer on LinkedIn as "LG Electronics North America").

412. On information and belief, members of LGE USA's Vehicle Components business unit work out of LGE USA's New Jersey headquarters.

413. As a non-limiting example, LinkedIn shows that a "Mobile and Telematics Engineer" for "LG Electronics Vehicle component Solutions" has been working out of LGE USA's New Jersey headquarters since November 2023. (https://www.linkedin.com/in/pchoi63/, Ex. 262) His work has included, *e.g.*,: (a) leading development of 5G TCU technology ("[l]ed development and validation of 5G SA/NSA technology for BMW eSIM integration in concept vehicles, ensuring that the latest telematics capabilities were fully functional, tested, and integrated into the advanced for real-world deployment."); (2) working with US telecommunications carriers to ensure network compatibility of TCUs ("Collaborated closely with Mobile Network Operators (MNOs), including Verizon, to ensure seamless network compatibility and connectivity for these early-stage vehicle technologies."); and (3) TCU regulatory compliance and technical support. *Id*.

414. According to one of LGE's websites, "Based in Troy, Mich., LG Electronics Vehicle Components USA is the U.S. Engineering and sales organization under the LG Electronics Vehicle component Solutions Company, which … provides … solutions including in-vehicle … connectivity … solutions for Software Defined Vehicles." (https://www.lgnova.com/news/lg-vehicle-solutions-joins-lg-nova-innovation-program-to-explore-collaborations-with-startups-in-mobility#:~:text=About%20LG%20Vehicle%20Components%20USA,.com/global/mobility, Ex. 93); LG Electronics Vehicle Solution (VS) Company has a North American Headquarters in at 1835 Technology Drive, Troy, Michigan 48083, with local U.S. offices in Silicon Valley and



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Dallas, Texas. (https://www.lg.com/global/mobility/about-our-company/where-to-find-us, Ex. 92).

415. On information and belief, LG Electronics Vehicle Solution (VS) Company operates as LG Electronics Vehicle Components U.S.A., LLC.

416. On information and belief, LG Electronics Vehicle Components U.S.A., LLC, has at least 190 employees working at 1835 Technology Dr., Bldg. E, Troy, MI 48083. Ex. 94.

417. On information and belief, LG Electronics Vehicle Components U.S.A., LLC has at least 140 employees working at 1400 E 10 Mile Rd., Ste. 100, Hazel Park, MI 48030. Exs. 26, 94.

418. According to available press releases, in 2017, LGE invested approximately $25,000,000 in establishing the Hazel Park, MI location, and expanding LGE's R&D facilities in Troy. (https://www.prnewswire.com/news-releases/lg-electronics-to-establish-us-factory-for-electric-vehicle-components-in-michigan-300507822.html, Ex. 263)

419. On information and belief, LGE, through LGE USA's Vehicle Solution (VS) business unit, conduct various work relating to the TCU DI Products in both the Troy and Hazel Park facilities, and those employees who work in those locations.

420. LG Electronics Vehicle Solution employs teams of engineers who conduct research, development, design, testing, servicing, repair, and U.S. customer support of LGE's TCU products, in the Troy, MI location. Such engineers work with automakers in the U.S., including General Motors.

421. As a non-limiting example, LinkedIn shows that LGE has employed a "Telematics Integration Engineer" in Troy, Michigan, since July 2021, whose responsibilities include "[s]erv[ing] as feature expert for GM Telematics Platform including feature validation" and

"[s]erv[ing] as liaison between customer and LG HQ, via supporting customer issue reports and requests as well as in-field issue triage…." (https://www.linkedin.com/in/jeremy-mannikko-26ba58b3/, Ex. 264)

422. As another example, LGE's "Director of North America Program Management on Automotive" is based at LGE's Troy facilities, and "[o]ver the last 2 years, ... was ... leading North Telematics program management and technical support." (https://www.linkedin.com/in/jerry-hyun-272419a/, Ex. 265)

423. As a further example, LGE employs sales teams in Michigan, including a sales executive who "focusing on ... telematics...." (https://www.linkedin.com/in/pablo-zambrano48307/, Ex. 266)

424. As another non-limiting example, "LG Electronics USA" is currently hiring for a "Quality Engineer I Bilingual" position in LG Vehicle Solution's Troy location. (https://jobs.mitalent.org/job-seeker/job-details/JobCode/303108035, Ex. 267) The responsibilities include "[a]ssist multi-disciplinary engineering teams in resolving technical and repair issues related to Telematics/Infotainment systems" and "[p]articipate in weekly customer product development team meetings to provide updates on quality-related issues." *Id*.

425. On information and belief, employees at LGE's Hazel Park, MI facilities also perform work related to the LGE TCU Products, since that facility is also used by the LG Vehicle Solution business unit, and over 140 Vehicle Solution employees work there. Exs. 26, 94.

426. On information and belief, LGE, through LGE USA and LG Vehicle Component Solutions, also employs telematics engineers at other locations in the United States. For instance, LGE employs a "Principal Engineer" in Bellevue, Washington, whose responsibilities include certifying LGE's TCU's for use on US cellular provider's networks: "[l]ead MNO Carrier

Certification (IoT) for LG Vehicle component Solution." (https://www.linkedin.com/in/kenchoi/, Ex. 268)

427. On information and belief, LGE USA, through the LG Vehicle Solution business unit, also employs engineers in Northern California (*see, e.g.*, https://www.linkedin.com/in/sunghun-kwak/, Ex. 269) and Virginia (*see, e.g.*, https://www.linkedin.com/in/linh-nguyen-995294348/, Ex. 270)

428. On information and belief, LGE sells its TCUs to at least the following automakers for use in the U.S. market: General Motors, Ford, Stellantis, Toyota, Honda, Hyundai-Kia Motor Company, Volkswagen, Mercedes Benz, and BMW. (*See* https://www.linkedin.com/in/sinae-kim-229828204/, Ex. 271, list of "NA market-based OEM accounts")

429. On information and belief, even to the extent that LGE USA and LG Vehicle Solution direct U.S. employees and use U.S. facilities for products other than the TCUs, LGE USA's investments of capital and labor, and in facilities and equipment relating to the TCUs are necessarily a substantial portion of such overall investments. LGE USA necessarily invests heavily in facilities and equipment, and employment and labor in order to support the sales, and the concomitant research and development, engineering, testing, regulatory clearance, and technical and other support for the underlying TCU products and patented technology, especially considering that LGE USA markets to, sells to, jointly developments TCU technology with, and provides support to nearly many auto makers who sell cars in the United States, including U.S.-based automakers like General Motors and Ford.

430. LGE USA's investments in supplying automakers who sell and make vehicles in the U.S. have been highly successful, and as a result, LGE has received numerous awards from

automakers, including those based in the U.S., for the products and services that LGE USA has provided, including locally within Michigan.

431. For example, LG Electronics issued a press release on April 14, 2025, entitled "LG Recognized as 2024 Supplier of the Year by General Motors." (https://www.lg.com/global/mobility/media-center/press-release/lg-recognized-as-2024-supplier-of-the-year-by-general-motors, Ex. 95). In that press release. the President of LG's Vehicle Solution Company stated that "'[t]his latest recognition from GM serves as a testament to our commitment to developing and reliably supplying innovative automotive solutions'…."

432. As another non-limiting example, LG Electronics issued a press release on April 22, 2025, entitled "LG Honored with Toyota's 'Excellent Value Improvement Award' for the First Time." That press release states that "LG Electronics (LG), a mobile sector technology leader, has been awarded the 2024 Excellent Value Improvement Award by Toyota Motor North America (TMNA) for the first time. https://www.lg.com/global/mobility/media-center/press-release/lg-honored-with-toyota-excellent-value-improvement-award-for-the-first-time#:~:text=Corporate,-Print&text=SEOUL%2C%20April%2022%2C%202025%20%E2%80%94,TMNA)%20for%20the%20first%20time, Ex. 96) The award was presented at TMNA's Annual Supplier Business Meeting in the U.S. This award recognizes LG's contributions to component quality and technological innovation in Toyota's largest market, North America." It also explains that LG's "partnership" with Toyota "expanded in 2019 to include advanced telematics for TMNA. The LG Vehicle Solution Company leverages its expertise in 5G telematics technology to deliver advanced connectivity solutions tailored for the automotive industry. The company provides versatile telematics control units (TCUs) available in both standalone and integrated-antenna configurations. These TCUs feature cutting-edge capabilities, including 5G connectivity, Vehicle-

to-Everything (V2X) communication, and robust cybersecurity measures. The press release also quote LG Vehicle Solution USA's president, who stated: "'[o]ur advanced telematics solutions priority vehicle connectivity and safety, helping Toyota realize its vision for the future of mobility through cutting-edge technologies and continued partnership.'"

433. LGE USA is also investing in collaborations with mobility startups in the through LGE USA employees in Northern California. For example, on October 10, 2024, LG Electronics issued a press release entitled, "LG Vehicle Solutions Joins LG Nova Innovation Program to Explore Collaborations with Startups in Mobility." According to the press release, "LG NOVA, the North American Innovation Center for global innovation leader LG Electronics, is a team focused on bringing innovation from the outside to LG. LG NOVA is based in Santa Clara, Calif." (https://www.lgnova.com/news/lg-vehicle-solutions-joins-lg-nova-innovation-program-to-explore-collaborations-with-startups-in-mobility#:~:text=About%20LG%20Vehicle%20Components%20USA,.com/global/mobility, Ex. 93)

434. LGE, through LGE USA and LG Vehicle Solution Company, is continuing to develop and expand its domestic industry for the TCUs.

***c) LGE Domestic Industry AP Module Products***

435. According to a press release issued by LGE, LG Innotek is responsible for developing and marketing the LGE AP Module products. (https://www.lgcorp.com/media/release/28713, Ex. 272)

436. LGE "accounted on February 25[, 2025] that it will launch a new electronic component for vehicles, the Automotive Application Processor Module(AP Module), targeting automotive semiconductor components worldwide. … LG Innotek is currently promoting the

product to global semiconductor companies in North America and other regions, hoping to start mass-producing it in the second half of this year. … LG Innotek is planning to grow its semiconductor components business to 3 billion dollars in annual sales by 2030, largely based on high-value semiconductor substrates such as FC-BGA(Flip-Chip Ball Grid Array), RF-SiP(Radio Frequency-System in Package) and Autom[o]tive AP modules." *Id*.

437. According to LG Innotek's website, LG Innotek's U.S. affiliate, LG Innotek USA Inc. ("LG Innotek USA"), is headquartered at 2540 N. 1st St., Ste. 400, San Jose CA 95131-1016. (https://www.lginnotek.com/company/domestic_campus.lgit?locale=en, Ex. 273)

438. On information and belief, LG Innotek USA performs at least sales and engineering functions relating to the LGE AP Modules. *Id*.

439. On information and belief, LG Innotek USA has at least 14 employees working in San Jose, California, including sales and engineering employees. Ex. 274.

440. LG Innotek USA has additional U.S. offices at 2800 Livernois, Ste. 105, Troy, MI 48083, and 7220 Trade St., Ste. 162, San Diego, CA 92121. (https://www.lginnotek.com/company/domestic_campus.lgit?locale=en, Ex. 273)

441. LGE is continuing to develop and expand its domestic industry for the AP Module products. For instance, LG Innotek USA is currently hiring for research and development positions relating to the AP Modules at its US headquarters location. As a non-limiting example, LG Innotek USA currently has a job opening for a "Lead Architect, Automotive HPC SoC5 (R&D Lab)" in San Jose. (https://lge-careers.com/posting/?job_id=4750257008, Ex. 275)

5 "SoC" stands for "system on chip."



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### 3. LGE Also Employs Workers in the US to Obtain US Regulatory and Other Clearances for the DI Products

442. On information and belief, and as shown through non-limiting examples above, LGE additionally employs workers in the U.S. to obtains regulatory clearance and other certifications so that LGE can sell the LGE DI Products in the U.S., and the LGE DI Products can be used on U.S. LTE, LTE-A, and 5G telecommunications networks.

443. As an example, LGE USA obtains regulatory clearance and other certifications for the LGE DI Products. For example, LGE US employees obtain certifications from the U.S. Federal Communication Commission ("FCC") so that the LGE DI Products can be sold in the U.S. *See, e.g.*, Ex. 250 at 4.

444. On information and belief, and as described in part above, LGE USA also works with U.S. LTE, LTE-A, and 5G cellular providers (*e.g.*, AT&T, Verizon), to obtain clearances for the LGE DI Products to be sold in the U.S. and used on such providers' cellular networks.

445. LGE is expected to provide additional bases and supporting information under this Section IX(B) through discovery or otherwise. Such bases and information are expected to include, without limitation, data on LGE's domestic investments in labor (including information on the number of domestic employees, responsibilities of employees, and salaries and other costs associated with such employees), facilities (including expenditures on facilities), equipment (including information on types and cost of equipment implemented at facilities), capital, marketing, and research and development in TCUs and AP Modules, including the LGE DI Products. Discovery from LGE is also expected to provide bases by which to apportion overall domestic investments to the LGE DI Products, such as through percentage of sales made up by such products or through records identifying work performed.

## X. RELIEF REQUESTED

446. Respondents have infringed and will continue to infringe the Asserted Patents as specified in Section V, *supra*, unless the Commission prohibits the sale for importation, importation into and sale within the United States after importation of the Accused Products.

447. Accordingly, Pantech respectfully requests that the Commission provide the following relief:

a) institute an immediate investigation pursuant to Section 337(b)(1) of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337, into Respondents' violations of Section 337 arising from the sale for importation into the United States, importation, and/or sale within the United States after importation of certain wireless communication equipment that infringes the Asserted Patents;

b) schedule and conduct a hearing, pursuant to Section 337(c), for purposes of receiving evidence and hearing argument concerning whether Respondents have violated Section 337 and, following the hearing, determine that Respondents have violated Section 337;

c) issue a permanent limited exclusion order, pursuant to Section 337(d), excluding from entry into the United States Respondents' wireless communication equipment that infringe one or more claims of the Asserted Patents, including, without limitation, the specific Accused Products identified in this Complaint and the exhibits hereto;

d) issue permanent orders, pursuant to Section 337(f), directing Respondents to cease and desist from importing, selling, selling for importation, offering for sale, using, demonstrating, promoting, marketing, and/or advertising in the United States



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Respondents' wireless communication equipment that infringes one or more claims of the Asserted Patents, including, without limitation, the specific Accused Products identified in this Complaint and the exhibits hereto;

e) impose a bond on importation and sales of infringing products during the 60-day Presidential review period pursuant to 19 U.S.C. § 1337(j); and

f) grant all such other and further relief as it deems appropriate under the law, based upon the facts complained of herein and as determined by the investigation.

Dated: July 2, 2025

Respectfully submitted,

*/s/ James A. Fussell, III*

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**PUBLIC VERSION**

**VERIFICATION OF COMPLAINT**

I, Dr. Yang-Won Jung, declare as follows, in accordance with 19 C.F.R. §§ 210.4 and 210.12(a)(1), and under penalty of perjury under the laws of the United States.

1. I am the Senior Vice President of Pantech Corporation, and am duly authorized by Complainant Pantech Corporation to execute this verification of the accompanying Complaint under Section 337 of the Tariff Act of 1930, as amended.
2. I have read the foregoing Complaint and am aware of its contents.
3. To the best of my knowledge, information, and belief, and based upon a reasonable inquiry under the circumstances, the allegations and other factual contentions of the Complaint are well-grounded in fact and have evidentiary support, or, where specifically identified, are likely to have evidentiary support after a reasonable opportunity for further investigation or discovery.
4. To the best of my knowledge, information, and belief, formed after a reasonable inquiry, the claims and other legal contentions set forth in the Complaint are warranted by existing law or by good-faith, non-frivolous argument for the extension, modification, or reversal of existing law, or by the establishment of new law.
5. The Complaint is not being filed for any improper purpose, such as to harass or to cause unnecessary delay or needless increase in the cost of the Investigation or any related proceeding.

Executed on July 2, 2025.

Dr. Yang-Won Jung



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