IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
AUSTIN DIVISION

CardWare Inc.,	§	
	§	
Plaintiff,	§	
	§	
v.	§	Civil Action No. 1:25-CV-00446-ADA
	§	
Apple Inc.,	§	JURY TRIAL DEMANDED
	§	
Defendant.	§	
	§	
	§	
	§	

PLAINTIFF CARDWARE INC.'S RESPONSIVE CLAIM CONSTRUCTION BRIEF

TABLE OF CONTENTS

Page

I. INTRODUCTION 1

II. BACKGROUND 2

A. The Asserted Patents are Directed to Secure Payment Technologies 2

B. Judge Payne Already Rejected Some of the Same Indefiniteness Arguments That Apple Now Makes 2

III. ARGUMENT 3

A. Apple's Expert Declaration Should Be Disregarded. 3

B. U.S. Patent No. 10,339,520: "the payment information" (claim 10) 5

C. Multiple Asserted Patents 9

1. Alleged "Markush Group Claim Terms" ('520 patent, claims 10-14, 17-20; '820 patent, claims 1, 10-11, 13-15, 19-20;'579 patent, claims 2-3, 5-9, 11-12, 14-18, 20, 23;'538 patent, claims 1, 3, 7, 11, 19, 22, 23, 26, 30;'286 patent, claim 12;'634 patent, claim 10) 9

2. "limited-use" ('520 patent, claims 1, 10, 18; '820 patent, claims 1, 11, 15;'579 patent, claims 1, 15, 19; '538 patent, claims 1, 19, 25;'286 patent, claims 1, 15, 20;'634 patent, claims 1, 29, 39, 56) 15

3. Alleged "Printed Matter Terms" ('520 patent claim 14; '820 patent, claims 1, 2, 11, 12, 16, 15; '579 patent claims 1, 9, 15; '286 patent, claim 1, 5, 15, 10, 19, 20) 19

D. U.S. Patent No. 10,628,820: "the system of claim 15 . . . comprising . . . a user input providing for at least one user action . . ." (claim 20) 23

E. U.S. Patent No. 10,810,579: "the method of claim 1 wherein a payment processing authority verifies a limited-use number . . . and rejecting a limited use number" (claim 6) 26

F. U.S. Patent No. 11,176,538: "said secrets" (claim 27) 27

G. U.S. Patent No. 11,328,286: "its valid limitations of use" (claims 1 and 15) 30

IV. CONCLUSION 33

CARDWARE EXHIBIT 2017
APPLE v. CARDWARE IPR2025-01146
Page 2 of 38

TABLE OF AUTHORITIES

Page(s)

Cases

In re Distefano,
808 F.3d 845 (Fed. Cir. 2015).....20, 21

EPOS Techs. Ltd. v. Pegasus Techs. Ltd.,
766 F.3d 1338 (Fed. Cir. 2014).....18, 19

Gestion Proche, Inc. v. Dialight Corp.,
No. 4:16-cv-407, 2017 WL 2834695 (E.D. Tex. June 30, 2017) 12

In re Gulack,
703 F.2d 1381 (Fed. Cir. 1983).....21

Hafeman v. LG Elecs., Inc.,
No. 6:21-cv-00696-ADA-DTG, 2023 WL 2978968 (W.D. Tex. Apr. 17, 2023).....23

IOENGINE, LLC v. Ingenico Inc.,
100 F.4th 1395 (Fed. Cir. 2024) 22

IPXL Holdings v. Amazon.com, Inc.,
430 F.3d 1377 (Fed. Cir. 2005).....24, 26

In re Katz,
639 F.3d 1303 (Fed. Cir. 2011).....24

In re Kiely,
No. 2022-1076, 2022 WL 2062163 (Fed. Cir. June 8, 2022) 15

Lexington Luminance LLC v. Amazon.com Inc.,
601 F. App'x 963 (Fed. Cir. 2015) 12, 14, 15

MCOM IP, LLC v. Woodforest Nat'l Bank & Inetco Sys., Ltd.,
No. 6-21-CV-989-ADA, 2022 WL 1394551 (W.D. Tex. May 3, 2022) 4

Microsource, LLC v. Eco World Grp.,
LLC, 587 F. Supp. 3d 770 (N.D. Iowa 2022) 12

Monarch Networking Sols. LLC v. Cisco Sys., Inc.,
No. 2:20-cv-00015-JRG, 2021 WL 66551 (E.D. Tex. Jan. 7, 2021).....12

Phillips v. AWH Corp.,
415 F.3d 1303 (Fed. Cir. 2005) (*en banc*) 2, 4, 19, 31

CARDWARE EXHIBIT 2017
APPLE v. CARDWARE IPR2025-01146
Page 3 of 38

Rembrandt Data Techs., LP v. AOL, LLC,
641 F.3d 1331 (Fed. Cir. 2011).....24

Samsung Elecs. Am., Inc. v. Prisua Eng'g Corp.,
948 F.3d 1342 (Fed. Cir. 2020).....24

Stambler v. Amazon.com, Inc.,
No. 2:09-CV-310 DF, 2010 WL 11530320 (E.D. Tex. Dec. 27, 2010) 12

Teva Pharm. USA, Inc. v. Sandoz, Inc.,
574 U.S. 318 (2015).....4

Teva Pharms. Int'l GMBH v. Eli Lilly & Co.,
No. 18-cv-12029-ADB, 2021 WL 723337 (D. Mass. Feb. 24, 2021) 10

WesternGeco L.L.C. v. ION Geophysical Corp.,
876 F. Supp. 2d 857 (S.D. Tex. 2012) 13

CARDWARE EXHIBIT 2017
APPLE v. CARDWARE IPR2025-01146
Page 4 of 38

I. INTRODUCTION

Defendant Apple, Inc. ("Apple") argues that dozens of claims of six asserted patents—U.S. Patent Nos. 10,339,520 (D.I. 1-1, "the '520 patent"); 10,628,820 (D.I. 1-2, "the '820 patent"); 10,810,579 (D.I. 1-3, "the '579 patent"); 11,176,538 (D.I. 1-4, "the '538 patent"); 11,328,286 (D.I. 1-5, "the '286 patent"); and 11,620,634 (D.I. 1-6, "the '634 patent") (collectively the "Asserted Patents")—are indefinite. One of those indefiniteness challenges—concerning claim 10 of the '520 patent—rehashes arguments that were rejected by the U.S. District Court for the Eastern District of Texas in a prior case (and that Google is also re-urging in a parallel case pending before Judge Counts).[1] As with Samsung, the litigant in that prior case, Apple and its expert, Dr. Polish, fail to consider the context of the claims and the claimed invention of each patent as a whole, which make clear that the terms are not indefinite. Apple otherwise argues that dozens of claims are indefinite because of supposed claim drafting irregularities, including claims that Apple asserts include non-standard *Markush*-style introductory phrases. However, in several instances, the challenged claims are not even written as *Markush*-style claims (or otherwise do not recite even arguably open-ended phrases). As for the rest, the claims are otherwise clear to a person of ordinary skill ("POSITA") and are therefore not indefinite under Federal Circuit precedent. Indeed, Apple itself only analyzes two of the over forty claims it wholesale contends are indefinite on this basis, notwithstanding the Federal Circuit's directive that each claim must be considered separately for what it conveys to a POSITA.

For these reasons, and those set out below, all of Apple's arguments should be rejected.

[1] *CardWare, Inc. v. Google, LLC*, No. 7:24-cv-00278-DC-DTG (W.D. Tex., filed Nov. 4, 2025).

CARDWARE EXHIBIT 2017
APPLE v. CARDWARE IPR2025-01146
Page 5 of 38

II. BACKGROUND

A. The Asserted Patents are Directed to Secure Payment Technologies

Each of the Asserted Patents is generally directed to secure payment technologies, including using replacement payment information to make payments, in place of issuer provided payment information. For example, each of these patents describes and claims systems and methods for paying using an electronic device by replacing an issued credit card number (*e.g.*, what is printed on the face of a traditional credit card) with: (1) a dynamically generated limited use number; and (2) a static device account number that is specific to the particular device. *See, e.g.*, '520 patent, Fig. 7; 10:4-62; 15:14–45, 17:8–33. This replacement payment information can be validated by the issuing bank, but is otherwise useless to a fraudster who may intercept it and try to use it for an unauthorized purchase—the limited-use replacement information is specific to a transaction and a particular electronic device, and cannot be used outside of those contexts. Other Asserted Patents, including the '820 patent and '286 patent, include disclosures and claims relating to a more secure credit card that is capable of making payment transactions without having any fixed payment numbers on the card itself. *See, e.g.*, '820 patent, Fig. 11; 11:36-50; '286 patent, Fig. 11, 11:43–54. This prevents issued credit card information from being copied by a merchant or unsavory onlooker. Accordingly, the approaches described in the Asserted Patents significantly reduce if not eliminate payment fraud. These technologies are also compatible with existing payment infrastructures and consumer convenience expectations, which are likely two of the reasons that the techniques have been adopted by Google and Apple in Google Pay and Apple Pay, respectively.

B. Judge Payne Already Rejected Some of the Same Indefiniteness Arguments That Apple Now Makes

CardWare previously asserted the '520, '820, '579, '538, and '286 patents in the United

CARDWARE EXHIBIT 2017
APPLE v. CARDWARE IPR2025-01146
Page 6 of 38

States District Court for the Eastern District of Texas against Samsung. *See* Ex. A. In that case, Samsung argued that "payment information" and related terms in claim 10 of the '520 patent were indefinite, based on nearly identical indefiniteness arguments. *See id.*, at 21–23. Judge Payne rejected Samsung's arguments and held that claim 10 of the '520 patent is not indefinite and that the challenged terms therein have their plain meaning. *Id*. at 23. Judge Payne also addressed numerous arguments by Samsung regarding purported indefiniteness of other terms in the '520, '820, '579, '538, and '286 patents. *Id*. at 8–18, 23–57. He found that one challenged claim of the '538 patent (not asserted here) was indefinite, but that the rest were not indefinite.[2] *Id*. Judge Payne's decision on these terms was well-reasoned, and was decided after four rounds of briefing, submission of a technology tutorial, and approximately three hours of oral argument.

III. ARGUMENT

A. Apple's Expert Declaration Should Be Disregarded.

As the Federal Circuit has explained, expert testimony has a limited role in claim construction, such as "to provide background on the technology at issue, to explain how an invention works, to ensure that the court's understanding of the technical aspects of the patent is consistent with that of a person of skill in the art, or to establish that a particular term in the patent or the prior art has a particular meaning in the pertinent field." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1318 (Fed. Cir. 2005) (*en banc*); *see also id.* ("extrinsic evidence in general [is] less reliable"); *id.* ("expert reports and testimony [are] generated at the time of and for the purpose of litigation and thus can suffer from bias that is not present in intrinsic evidence"). Likewise, the

[2] Judge Payne found that claim 1 of the '538 patent was indefinite prior to the date when CardWare was issued a Certificate of Correction ("CoC"), but did not hold that it was indefinite after that date. Ex. A at 37-40. CardWare is not seeking pre-CoC damages.

CARDWARE EXHIBIT 2017
APPLE v. CARDWARE IPR2025-01146
Page 7 of 38

Supreme Court has explained this limited role: "experts may be examined to explain terms of art, and the state of the art, at any given time, but they ***cannot*** be used to prove the proper or legal construction of any instrument of writing." *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 574 U.S. 318, 332 (2015) (cleaned up; emphasis added).

Despite this precedent, Dr. Polish offers ***no*** technical analysis whatsoever. *See, e.g.*, Ex. B ("Polish Tr.") at 138:4-17. Instead, he offers "conclusory, unsupported assertions as to a term's definition [which] are not useful to a court." *See Phillips*, 415 F.3d at 1318; *MCOM IP, LLC v. Woodforest Nat'l Bank & Inetco Sys., Ltd.*, No. 6-21-CV-989-ADA, 2022 WL 1394551, at *3 (W.D. Tex. May 3, 2022).

For example, in several instances, Dr. Polish reads the claim terms and simply regurgitates his understanding of the law as Apple's counsel instructed him: that the claim terms are indefinite when the terms use the (supposedly) wrong introductory phrase or antecedent. Polish Tr. at 26:16-20 ("So my understanding as set forth in paragraph 27 of the declaration is that if you have a Markush claim . . . that's using something other than 'consisting of,' that . . . would be indefinite because the reader of the claim wouldn't know what the scope was"). Dr. Polish also fails to undertake any technical analysis when he opines that certain claim terms are "printed matter," and instead just repeats facts that have been represented to him by counsel. *See* D.I. 43-8 ("Polish Decl."), ¶¶ 60-63; Polish Tr. at 93:1-97:11, 101:14-102:10, 104:18-106:3.[3]

Dr. Polish's conclusions should therefore be disregarded and afforded no weight.

[3] In fact, Dr. Polish admits that a POSITA would have no knowledge of the printed matter analysis or whether or not information is printed matter. Polish Tr. at 94:21-95 ("Would a POSITA as of 2013 have an understanding of the printed matter doctrine" A: "I don't think that would have been included in a POSITA's education or background.").

CARDWARE EXHIBIT 2017
APPLE v. CARDWARE IPR2025-01146
Page 8 of 38

B. U.S. Patent No. 10,339,520: "the payment information" (claim 10)

Plaintiff's Proposed Construction	Defendant's Proposed Construction
Not indefinite. Plain and ordinary meaning.	Indefinite

Apple asserts that one of the "payment information" terms in claim 10 is indefinite because it purportedly lacks clear antecedent basis. D.I. 43 ("Br.") at 5–9. Apple's position is incorrect. The claim language, when read *in context* is definite, just as Judge Payne already found after considering the same arguments in the *Samsung* litigation. *See* Ex. A at 21–23.

Claim 10 recites a method of generating limited-use replacement payment information that can be used *instead of* issued payment information (*e.g.*, the traditional credit card information issued by a bank). For that reason, it claims multiple categories of "payment information," including (i) issued payment information, which comprises an issuer provided payment information, (ii) a dynamically generated one-time limited-use number, (iii) static device account number payment information, and (iv) complete replacement payment information that is a combination of the dynamically-generated and static device-specific numbers.

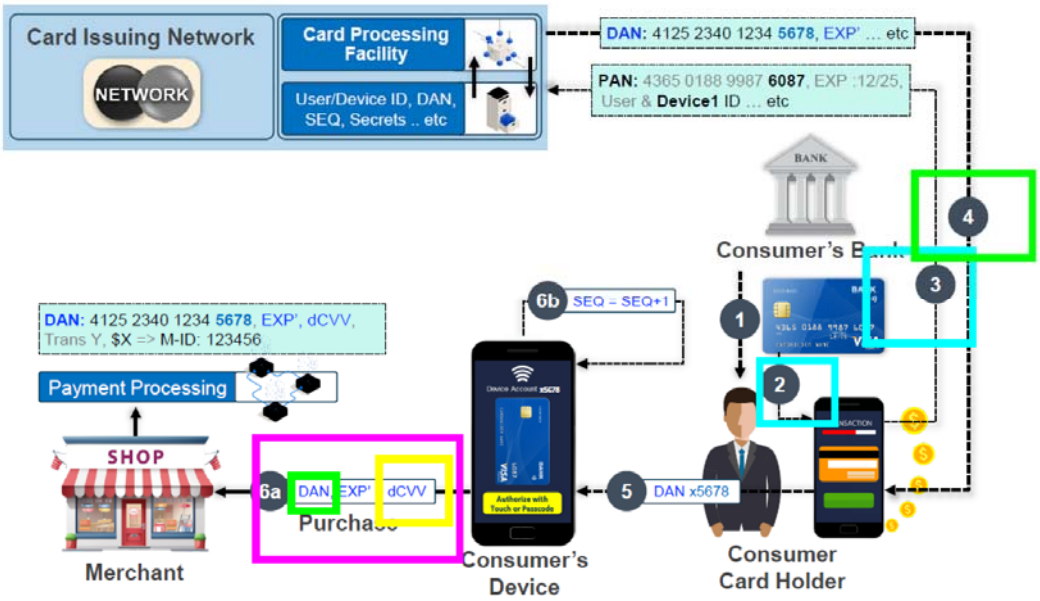
Below is a color-coded version of claim 10 showing how each of the "payment information" terms match-up with each other.

> 10. A method of storing and generating payment information in an electronic device, the method comprising:
>
> [a] accepting a user input of issued payment information input at a touch screen display of the electronic device, wherein the information comprises an issuer provided payment information [steps 1 and 2, below];
>
> [b] wherein the electronic device comprises device-specific and user-specific information; and,
>
> [c] wherein the issuer provided payment information is communicated wirelessly [step 3, below]; and,
>
> [d] receiving wirelessly a static device account number payment information for storage on the electronic device [step 4, below]; and wherein

> [e] at least a portion of the **payment information** is a limited-use number for limited use by the device, in place of a issuer provided payment information [step 6a, below]; and,
>
> [f] dynamically generating a one-time limited-use number based on at least one of a set of information including: user-identifying information; user secrets; device information; device secrets; time; merchant; facility location; sequence count; payment information; account information; amount; and transaction information [reflected in steps 6a and 6b, below]; and
>
> [g] using said static device account number and said dynamically generated one-time limited-use number together in the place of issuer provided payment information for making a payment transaction [step 6a, below].

'520 patent at 15:64–16:33 (annotated, disputed term in **bolded underline**).

The original "issued" payment information (blue) is replaced with the combination (*i.e.*, the term "together" in the last limitation 10[g]) of dynamically generated limited-use number (yellow) and the static device account number (green). The final replacement information (purple) is the combination of these two replacement pieces. That is how the claim reads, which can be illustrated through a corresponding color-coded mark-up of a diagram CardWare has created (and which will be part of CardWare's forthcoming technology tutorial) showing a possible real-world implementation.



As shown in the above diagram, the issued payment information (*e.g.*, from the issuing bank) is accepted at the electronic device (blue, step 2, limitation 10[a]) and then is wirelessly transmitted (blue, step 3, limitation 10[c]). That is clear because at each of steps 2 and 3, the claim describes the payment information as "issuer provided." What comes back is a static device account number payment information (green, step 4, limitation 10[d]). Again, the context is clear because "payment information" at step 4 is described as a "static device account number." The complete payment information (purple) is then used for purposes of a payment transaction, and includes both the static device account number (green) and a dynamically generated one-time limited use number (yellow), all of which is shown in step 6a in the diagram, corresponding to limitation 10[g]. The yellow highlighted payment information is consistently described as limited-use (and in two recitations, dynamically generated).

There is nothing indefinite about the way that the claim describes the different steps in a secure payment transaction. There are multiple categories of "payment information" recited in claim 10 because that is the nature of this secure payment technology—one type of payment information gets replaced with another, and that replacement payment information includes different sub-portions. In each recitation, the context of the claim provides clarity as to which "payment information" is being recited, whether that is the "issued" payment information, the "static device account number," the "dynamically generate[d] [] one-time limited use number" or the complete "payment information" that is used for the "payment transaction."

Apple admits that "the payment information," as bolded and underlined above, cannot refer to the issued/issuer provided payment information because claim 10 requires that "the payment information" is used in place of the issued/ issuer provided payment information. Apple nevertheless asserts that "the payment information" is indefinite because (per Apple) it could refer

CARDWARE EXHIBIT 2017
APPLE v. CARDWARE IPR2025-01146
Page 11 of 38

to "payment information" in the preamble, as Judge Payne held, or "a static device account number payment information." Br. at 7-8; Polish Decl., ¶¶ 41–46; *see* Ex. A at 23.

The disputed "payment information" does not refer to "static device account number payment information." Every time the claim refers to "static device account number payment information," it says so, both in the initial introduction of that phrase, and also in the last limitation where the claim uses the term "said static device account number." Additionally, at least a "*portion*" of the disputed "payment information" phrase is a limited-use number for limited use by the device. This further indicates that the disputed phrase is not the "static device account number." Rather, the disputed phrase has "portions[s]." The only category of "payment information" recited in the claim that is described as having "portion[s]" is the complete payment information used in the payment transaction, which, per limitation 1[g], has both the (i) static device account number, and (ii) dynamically generated one-time limited-use number.

This is exactly what Judge Payne already ruled. *See* Ex. A at 23. Apple further faults the specification for not using the exact words "device account number," but that is not enough. *See* Br. at 9; Polish Decl., ¶ 47. To the contrary, the '520 patent specification is consistent with the claim language. *See* '520 patent at 10:49–56 ("Effectively, embodiments of the present disclosure provide a credit card device that has no fixed number, and therefore the account cannot be compromised. Only the number generated at the instant of the credit card transaction matters. Accordingly, unauthorized use of the credit card device is highly unlikely, because a transaction cannot be conducted with an expired limited-duration credit card number, or only the static portion of the credit card number.")

For the reasons discussed above, Apple has not demonstrated by clear and convincing evidence that "the payment information" of claim 10 of the '520 patent is indefinite.

CARDWARE EXHIBIT 2017
APPLE v. CARDWARE IPR2025-01146
Page 12 of 38

C. Multiple Asserted Patents

1. Alleged "Markush Group Claim Terms" ('520 patent, claims 10-14, 17-20; '820 patent, claims 1, 10-11, 13-15, 19-20;'579 patent, claims 2-3, 5-9, 11-12, 14-18, 20, 23;'538 patent, claims 1, 3, 7, 11, 19, 22, 23, 26, 30;'286 patent, claim 12;'634 patent, claim 10)

Plaintiff's Proposed Construction	Defendant's Proposed Construction
Not indefinite. Plain and ordinary meaning.	Indefinite

Apple asserts that over 40 claims[4] across the six Asserted Patents are indefinite on the basis that they allegedly include "improper open-ended Markush groups." Br. at 9. There are three problems with Apple's position: (i) some of the claims use closed transition phrases (and may not even be *Markush* claims); (ii) the Federal Circuit has held that claims (even *Markush*-style claims) are not indefinite unless they would have been unclear to a person of ordinary skill, and Apple and its expert only address *two* of these limitations with any specificity; and (iii) as for the two claims Apple actually addresses, these would have been reasonably understood by a person of ordinary skill, as set out below and as explained by Dr. Goodrich.

a) Some of the Terms Apple Identifies Do Not Use Open Transition Phrases and/or Are Not *Markush* Groups

Several of the claims Apple identifies use the transition phrase "consisting of," or do not use an open-ended transition phrase at all. *See* Polish Tr. 191:20-22 ("[I]f it's using the language 'consisting' or 'consist,' its presumed to be closed[.]"). For instance, Apple argues that claim 10 of the '634 patent is indefinite, but it recites, in part: "at least one of the set consisting of: predetermined user characteristics, and challenge-responses of an authorized user, as stored in the electronic device." '634 patent at 21:30–37 (highlighting added).

[4] The at-issue allegedly indefinite "Markush Group Claim Terms" are listed in Appendix B to the Goodrich Declaration.

CARDWARE EXHIBIT 2017
APPLE v. CARDWARE IPR2025-01146
Page 13 of 38

Moreover, several of the challenged claims do not use transition phrases at all, much less an open-transition phrase. For instance, claim 1 of the '538 patent recites, in part: "wherein the human input sensor is any one of a touch sensor, a touch-screen display interface, a gesture sensor, a motion sensor, and a biometric sensor . . . ." '538 patent at 19:35–20:29 (highlighting added). Both Dr. Polish and Apple state, without any supporting analysis, that this claim is supposedly indefinite because of its use of an open-ended transition phrase. Br. at 12; Polish Decl., ¶ 58. But claim 1 does not contain a transition phrase at all (open or otherwise). In fact, it is unclear if this is even a *Markush* group (an issue that Apple does not address). *Teva Pharms. Int'l GMBH v. Eli Lilly & Co.*, No. 18-cv-12029-ADB, 2021 WL 723337, at *12 (D. Mass. Feb. 24, 2021) ("[T]he claims here do not include this 'selected from a group consisting of' language and so do not recite a Markush group.") In any case, Apple and its expert offer no real analysis showing that the absence of a transition phrase causes the claims to be indefinite. The same is true with other claims lacking transition phrases, such as '579 claims 12, 14, 16, and '538 claims 1 and 30. *See* Goodrich Decl., ¶¶ 29-53, App. B at 1-5. Apple's indefiniteness arguments regarding these claims must fail.

b) Apple Fails To Provide Any Analysis As To Why The Majority of the Over Forty Allegedly Indefinite Claims Would Not Have Been Understood By A POSITA

Apple asserts that over 40 claims are indefinite because they allegedly recite open ended lists of alternatives that fail to inform a person of ordinary skill in the art of the scope of the inventions. Br. at 11. The only evidence that Apple cites in support of this legal conclusion are ten paragraphs of Dr. Polish's declaration. *Id.* In those paragraphs, Dr. Polish examines only two of the over 40 claims with any specificity. Polish Decl., ¶¶ 54-55 (analyzing claim 10 of the '520 patent); *id.*, ¶ 57 (analyzing claim 15 of the '579 patent). Neither Apple nor Dr. Polish provide any analysis as to the other 40-plus claims. Instead, Dr. Polish vaguely states that "in my opinion, these claims are indefinite for the same reason as stated above." *Id.*, ¶ 56; Polish Tr. at 196:6-9

CARDWARE EXHIBIT 2017
APPLE v. CARDWARE IPR2025-01146
Page 14 of 38

("[I]n those paragraphs where that analysis happened, do you discuss the '820 patent?" A: "I don't discuss the '820 patent in paragraph 54."); *id.* at 198:3-199:6 (Q: "And you don't analyze the others in detail here in your declaration, right?" A: "I don't go into detail in the declaration here, no.") Because Dr. Polish fails to disclose *any* analysis regarding the other claims of the '520, '820, '579, '538, '286, and'634 patents, his unsupported conclusions regarding those claims should be disregarded. And, because Apple bases its arguments solely on Dr. Polish's mere conclusions, Apple has failed to present clear and convincing evidence that the at-issue terms are indefinite.

On the other hand, Dr. Goodrich has analyzed each of the 40-plus at-issue claims. *See generally*, Declaration of Michael T. Goodrich ("Goodrich Decl."). In Dr. Goodrich's opinion, after analyzing each of the more than 40 at-issue claims in light of the specification and with the knowledge of a person of ordinary skill in the art at the time of the invention, a POSITA would reasonably understand the scope of the claims. Goodrich Decl. ¶ 26. Therefore, Apple has failed to meet its burden in showing that at least 38 of the 40 at-issue claims are indefinite.

c) Apple Is Incorrect That The Claim Scope of the Two Terms It Actually Addresses Would Not Have Been Understood By A POSITA.

Apple and Dr. Polish only discuss two alleged *Markush* claims with any specificity, claim 10 of the '520 patent and claim 15 of the '579 patent. Br. at 18–20. Apple focuses the main thrust of its discussion on claim 10 of the '520 patent which recites, in part:

> dynamically generating a one-time limited-use number based on at least one of a set of information including: user-identifying information; user secrets; device information; device secrets; time; merchant; facility location; sequence count; payment information; account information; amount; and transaction information

'520 patent at 17:8–33. In essence, Apple argues that use of the term "including" makes the *Markush* group improper and *de facto* renders the claim indefinite. Not so. Per the leading Federal Circuit case on this issue, "[d]efiniteness involves more than an examination of the technical

correctness of the use of a Markush expression that may have slipped past the examining process. It involves evaluation of the claim in light of the written description." *Lexington Luminance LLC v. Amazon.com Inc.*, 601 F. App'x 963, 968 (Fed. Cir. 2015) (reversing the district court's indefiniteness ruling, and holding that the *Markush* group "said substrate is selected from the group comprising group III–V, group IV, group II–VI elements and alloys, ZnO, spinel and sapphire" was definite in view of the intrinsic record) (emphasis in original).

Most district courts that have examined similar issues have similarly found that claims are not indefinite simply because of the transitional phrase used. *See, e.g.*, *Monarch Networking Sols. LLC v. Cisco Sys., Inc.*, No. 2:20-cv-00015-JRG, 2021 WL 66551, at *23 (E.D. Tex. Jan. 7, 2021) (finding that Markush groups using the transition phrase "comprising" not indefinite); *Microsource, LLC v. Eco World Grp.*, LLC, 587 F. Supp. 3d 770, 831 (N.D. Iowa 2022) ("[F]ailure to use a proper transition phrase in a Markush group, however, does not in itself render the claim invalid, when the written description provides a clear description of the elements that are part of the group, sufficient to inform one skilled in the art, with reasonable certainty, of the scope of the invention."); *Gestion Proche, Inc. v. Dialight Corp.*, No. 4:16-cv-407, 2017 WL 2834695, at *24 (E.D. Tex. June 30, 2017) (construing "are selected from among" to mean "selected from the group consisting of"); *Stambler v. Amazon.com, Inc.*, No. 2:09-CV-310 DF, 2010 WL 11530320, at *22 (E.D. Tex. Dec. 27, 2010) (construing "one or more pieces of payment information including" to mean "one or more pieces of the following payment information:").

Apple argues that the phrase "based on at least one of a set of information including" is improper, because the language supposedly "leaves uncertainty as to whether using other forms of information not expressly listed in this set . . . would fall inside or outside the scope of the claim." Br. at 11. Contrary to Apple's assertions, the issue is not whether the use of "including" is

CARDWARE EXHIBIT 2017
APPLE v. CARDWARE IPR2025-01146
Page 16 of 38

technically correct from a procedural Patent Office perspective; instead, what matters is that "there is a clear list of alternatives, any one of which will bring an accused system within the scope of the claim." *WesternGeco L.L.C. v. ION Geophysical Corp.*, 876 F. Supp. 2d 857, 896 (S.D. Tex. 2012).

Claim 10 recites at the relevant part:

> 10. A method of storing and generating payment information in an electronic device, the method comprising: . . .
>
> dynamically generating a one-time limited-use number based on **at least one of a set of information including**: user-identifying information; user secrets; device information; device secrets; time; merchant; facility location; sequence count; payment information; account information; amount; and transaction information; and
>
> using said static device account number and said dynamically generated one-time limited-use number together in the place of issuer provided payment information for making a payment transaction.

'520 patent, 17:8–33 (disputed term in **bold underline**). The goal of Claim 10 is to electronically generate "payment information" that can be used in place of "issuer provided payment information" in a transaction. Goodrich Decl. ¶ 57. Claim 10 discloses that the "payment information" is produced by dynamically generating a "limited-use number" and combining it with a "static device account number" to form the "payment information" which replaces the "issuer" provided information. *Id.* The claim further clarifies the kind of information the invention uses to dynamically generate a limited-use number. This discrete list of possibilities is: (1) "user-identifying information"; (2) "user secrets"; (3) "device information"; (4) "device secrets"; (5) "time"; (6) "merchant;" (7) "facility location;" (8) "sequence count;" (9) "payment information;" (10) "account information;" (11) "amount;" and (12) "transaction information." This finite list of possibilities is closed, as is confirmed by the specification, which explains that in certain payment systems, "[the dynamic number can be] generated according to the [10] selected account, [5] a timestamp, [11] a transaction amount, [6] an indicated merchant, [2] user key or secrets, [1, 3, & 4] on-card unique hardware secrets, [9] credit card authority key or secrets, [1] user input from the

CARDWARE EXHIBIT 2017
APPLE v. CARDWARE IPR2025-01146
Page 17 of 38

card interface, [12][]other information associated with the transaction," "[7] facility information," and "[8] transaction count." *See* '520 at 7:12-18, 10:13-18; 10:28-31, Goodrich Decl. ¶ 58.

Apple and Dr. Polish offer almost no analysis of this claim term. They each assert that the specification leaves open the possibility that any "other information associated with the transaction" could be part of the claimed set. Br. at 11. But the claim itself already includes "transaction information," and neither Apple nor Dr. Polish explain what "other information associated with the transaction" might be part of the set that would not be covered by "transaction information," as is recited in claim 10 itself. Goodrich Decl. ¶ 59. Accordingly, the claim is consistent with the specification—both indicate that the dynamic generation of a limited-use number can be based on "transaction information." Apple and Dr. Polish offer no other reason why the scope of this "including" claim term is purportedly uncertain, or what other information a POSITA might think could be included in the claim set. As Dr. Goodrich explains, a POSITA would not have been uncertain about this claim phrase—it is limited to the set of information specifically recited. Goodrich Decl. ¶¶ 54-60.

Apple similarly asserts that claim 15 of the '579 patent is indefinite because it "list[s] three different open-ended Markush groups in [a] lengthy claim." Br. at 17. This is the sole evidence that Apple cites in support of its indefiniteness argument (aside from Dr. Polish, who regurgitates Apple's legal argument, almost verbatim). Br. at 12; Polish Decl. ¶ 38. In other words, neither Apple nor Dr. Polish explain why, in view of the intrinsic record, a POSITA might think that any of these limitations could include something beyond the finite recited sets. *See Lexington Luminance*, 601 F. App'x at 968. *Markush* -style claims are not *per se* indefinite simply because they use "comprising" or "including"; the question, as with all indefiniteness arguments, turns on whether the claim "informs one skilled in the art, with reasonable certainty, about the scope of the

CARDWARE EXHIBIT 2017
APPLE v. CARDWARE IPR2025-01146
Page 18 of 38

invention." *See id.* As Dr. Goodrich explains in detail, the identified terms would have been reasonably certain to a POSITA (as covering a closed list), after considering the intrinsic record as a whole. Goodrich Decl. ¶¶ 201-206.

Apple concludes by stating that because CardWare's choice to sometimes use "consisting of" in some claims indicates that *all the other Markush* groups, which do not use "consisting of," should be understood as being left intentionally open (as if CardWare intentionally drafted its claims so as to be indefinite). Br. at 13. The sole legal authority that Apple cites in the proposition is *Kiely*. *In re Kiely*, No. 2022-1076, 2022 WL 2062163, at *2 (Fed. Cir. June 8, 2022). But *Kiely* relates to an appeal from an Examiner's final rejection of a patent application, decided without any presumption of validity. *Id.*. Moreover, whether the examiner properly allowed or rejected CardWare's claims pursuant to the MPEP is not at issue here; the issue here is whether Apple has demonstrated by clear and convincing evidence that a POSITA would not have understood whether the purported *Markush* set includes elements beyond those specifically recited in the finite set. *Lexington Luminance*, 601 F. App'x at 968. Apple offers nothing for this proposition as it specifically concerns claim 15 of the '579 patent (or any other claim). Apple does not even explain, for example, what other elements (beyond those specifically recited) could possibly be included in the set.

2. "limited-use" ('520 patent, claims 1,[5] 10, 18; '820 patent, claims 1, 11, 15;'579 patent, claims 1, 15, 19; '538 patent, claims 1, 19, 25;'286 patent, claims 1, 15, 20;'634 patent, claims 1, 29, 39, 56)

Plaintiff's Proposed Construction	Defendant's Proposed Construction
Not indefinite. Plain and ordinary meaning.	"limited to a finite number of transactions or specified period of time—e.g., 2 minutes, 10 minutes, 3 hours"

[5] CardWare dropped claim 1 of the '520 patent and its dependent claims 2 through 9 before Apple filed its Brief.

CARDWARE EXHIBIT 2017
APPLE v. CARDWARE IPR2025-01146
Page 19 of 38

None of the plain meaning of this claim phrase, the claims themselves, or the specification, supports Apple's attempt to read a limitation into this otherwise unambiguous claim phrase. Apple wants to limit "limited-use" to a particular time duration or number of transactions. But that is not what "limited use" means—it could refer to a limit on a particular type of transaction, a location or facility of use, a device from which a "limited-use" number originates, or various other use-based limitations. Nor do the claims or specification support Apple's position, or equate "limited-use" with "limited-duration," as Apple argues. Rather, the Asserted Patents repeatedly explain that "limited-use" should carry its ordinary meaning and repeatedly gives examples of use-based limitations beyond just duration and transaction count.

The following examples of the claims themselves illustrate how the scope of "limited-use" (in **bolded underline** below) goes beyond just time and transaction count:

Annotated Claim Language	**Claimed Limitation On Scope of Use**
a "**limited-use** number **for *limited use by the device*** . . . " ('520 patent, claim 10, 17:8–33)	This indicates that the limitation of use can be tied to the device providing the number, and not a time or transaction count.
"wherein the **limited-use** payment information is ***limited to use by the payment device***." ('820 patent, claim 3, 20:15–27)	Again, this indicates that limited-use can be tied to the device involved in the transaction.
"wherein the card processing authority ***rejects as invalid***, any use of said **limited-use** payment information ***obtained via any means other than: a payment card reader reading*** said **limited-use** payment information ***from the reader interface***. ('820 patent, claim 4, 20:28–34)	This indicates that the limitation of use can be tied to the type of interface (*e.g.*, a particular reader interface).
"retrieving from a memory . . . a ***device-specific static*** **limited-use** payment information, ***associated with said selected payment method***,"; and "dynamically generating, by a processor of the device, ***device-specific*** **limited-use** payment information, ***for said selected payment method***." ('538 patent, claim 1, 19:35–20:29)	This indicates that the limitation of use can be linked to the selected payment method.

Annotated Claim Language	Claimed Limitation On Scope of Use
"wherein said memory comprises a static device-specific device account number of **limited-use** that originates from a card issuing authority and ***is limited to use by the electronic device in place of a card issuer account information***." ('579 patent, claim 21, 25:47–26:6)	This indicates that the limitation of use is tied to a particular device, and not some time or transaction count.
"wherein a card issuer authority is operable to compute a **limited-use** payment information ***from a transaction information, a merchant, a facility information, a sequence counter, a payment card account information, secrets and an information limited to said card device and to said computing device…*** ('286 patent, claim 6, 20:42–59)	This suggests that the limitation of use can be tied to a variety of limitation-types.

The specification is consistent: "limited-use" carries its plain meaning and is not inherently limited to some specific time, duration, or transaction count. For example, the '538 patent specification describes "a means of limiting an available credit amount." '538 patent at 12:54-55. And a payment number can be generated "according to the user's private information, a bank information, information regarding the facility performing the transaction, and the time of day." '538 patent at 10:37-39. Even the type of transaction (online vs. in-person) can be a limitation on use. *See, e.g.*, *id.* at 12:28-31 ("When performing online transactions, the multi-function electronic device 501 can uniquely generate a limited-duration payment number (as described above) for online purchases.").

Apple's argument mischaracterizes a few excerpts of the patent specifications, improperly limits "limited-use" to a few cherry-picked examples, and ignores the differences between the terms "limited-use" and "limited-duration" in the specification. Br. at 14–16. For example, the Abstract and Summary of the Invention of each Asserted Patent explain that "limited-duration" credit card number is a *type* of "limited use" credit card number that can be limited in its scope of use to a predetermined number of authorized transactions. *See, e.g.*, '520 patent at Abstract, 2:24–

CARDWARE EXHIBIT 2017
APPLE v. CARDWARE IPR2025-01146
Page 21 of 38

29 ("Methods are also described for generating a ***limited-duration*** credit card number when performing a transaction ***for the purpose of creating a*** **limited-use** credit card number**, *which is limited in scope of use to a predetermined number of authorized transactions***." (annotated, disputed term in **bolded underline**)). In other words, "limited-duration" is a sub-species of "limited-use," and is not a limitation on the plain meaning of the phrase "limited-use," itself. *See* '520 patent at 11:67–12:15 ("When performing online transactions, the credit card device 501 can ***uniquely generate a limited-duration*** credit card number . . . . This enables ***a per-transaction***, **limited-use** credit card number, ..." (annotated, disputed term in **bolded underline**)).

Further, as noted above, the Asserted Patents also describe numerous other types of limitations that can be placed on the scope of use. For example, the specification describes payment information that can be limited in use to: a unique or one-time use, the time of day of a transaction, a user, a bank account (and/or an amount of available credit for the account), a location where a transaction is made (*e.g.*, a geographic location, a merchant), the type of equipment receiving the payment, an on-line transaction, and so on. *See, e.g.*, '520 patent at 10:4-23, 11:67–12:2, 12:23–42; *id.* at 14:8-23 (noting that "the usage of limited-duration credit card numbers and other security features . . . previously described" address "to a great extent" security concerns for conventional credit cards); '820 patent at 10:56–11:9, 12:61–64, 13:20–40, 15:12–27, Fig. 10; '579 patent at 10:4–23, 11:67–12:2, 12:23–42, 14:8–23; '538 patent at 10:23–44, 12:28–31, 12:54–7, 14:47–62; '286 patent at 10:63–11:16, 13:1–4, 13:27–47, 15:19–34, Fig. 10; '634 patent at 10:33–53, 12:39–42, 12:65–18, 14:61–15:10.

In view of these specification disclosures, Apple's proposed construction—constituting a portion of an embodiment, and mostly concerning a different term ("limited-duration")—is improper and should be rejected. *See EPOS Techs. Ltd. v. Pegasus Techs. Ltd.*, 766 F.3d 1338,

CARDWARE EXHIBIT 2017
APPLE v. CARDWARE IPR2025-01146
Page 22 of 38

1341 (Fed. Cir. 2014) ("[I]t is improper to read limitations from a preferred embodiment described in the specification—even if it is the only embodiment—into the claims absent a clear indication in the intrinsic record that the patentee intended the claims to be so limited."); *Phillips*, 415 F.3d at 1323–24 ("[A]lthough the specification often describes by specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments.").

Accordingly, Apple cannot overcome the "heavy presumption" that "limited-use" should be given its plain and ordinary meaning. Its proposed construction should be rejected.

3. Alleged "Printed Matter Terms" ('520 patent claim 14; '820 patent, claims 1, 2, 11, 12, 16, 15; '579 patent claims 1, 9, 15; '286 patent, claim 1, 5, 15, 10, 19, 20)

Plaintiff's Proposed Construction	Defendant's Proposed Construction
Not indefinite. Plain and ordinary meaning.	Not entitled to patentable weight

Apple argues that elements of fifteen claims across four Asserted Patents are subject to the printed matter doctrine and not entitled to patentable weight.[6] Br. at 16. As discussed below, all of the terms Apple identifies are not printed matter and should be afforded patentable weight.

a) The Absence of Functional Payment Information

First, Apple asserts that elements from twelve claims of the '820 and '286 patents reciting the *absence* of functional information which is present in conventional payment cards are directed to printed matter. Br. at 17. These elements recite, for example, "bears no fixed payment numbers on the card device" ('820 patent, claim 15), "free of any fixed payment numbers disposed thereon" ('286 patent, claim 15)—*i.e.*, that such information should *not* be visible, or that the claimed

[6] CardWare stipulated that elements from three claims of the '820 patent and one claim of the '286 patent are directed to printed matter because these terms (and only these terms) recite the specific content of information. The remaining terms that Apple identifies do not meet the narrow exception for printed matter, because (i) they do not claim the contents of information and/or (ii) they are functionally related to the substrate.

CARDWARE EXHIBIT 2017
APPLE v. CARDWARE IPR2025-01146
Page 23 of 38

payment card devices should *not* communicate such information. Br. at 17–18. None of these elements constitute printed matter because they do not "claim[] the content of information." *In re Distefano,* 808 F.3d 845, 848 (Fed. Cir. 2015) (finding that the "although the selected web assets can and likely do communicate some information, the content of the information is not claimed."). Instead, the disputed elements claim the absence of information that would normally be present on payment devices (*e.g.*, credit cards), to serve a security-related purpose (*e.g.*, hiding payment information from would-be onlookers).

For instance, claim 1 of the '286 patent discloses a payment card (*i.e.*, "payment card device") that, unlike conventional credit cards, does not bear visible payment information like an embossed credit card number or printed card validation value ("CVV") (*i.e.*, "free of any fixed numbers visible thereon"). '286 patent at 19:50–20:16. Instead of using fixed numbers on a payment card, as with payment transactions using a conventional credit card, the computing device of claim 1 generates a limited-use number ("generate at least a portion of a limited-use card payment information for use by an authenticated card user") that is transmitted to and then validated by a card issuer authority. Thus, the payment card device of claim 1 need not convey visible payment information because the computing device of claim 1 is configured to "receive, store and transmit a card payment information not visible on the payment card device." Claim 1 does not claim the content of the payment information; to the contrary, it claims a system that is *intentionally absent* of any such information. Because printed matter only encompasses "information claimed for its communicative content" and not the absence of communicative content, for example to improve security, these claim terms are not directed to printed matter.

Apple inverts the logic of the printed matter doctrine, arguing that the absence of fixed payment information is the same as affirmatively claiming the content of written information.

CARDWARE EXHIBIT 2017
APPLE v. CARDWARE IPR2025-01146
Page 24 of 38

Br. at 18. Apple argues that, if, hypothetically, the claims were rewritten to claim the presence of credit card numbers on credit cards, then the credit card numbers would be printed matter. *Id.* In essence, Apple argues that the *absence* of information is equivalent to the presence of information. *Id.* But no such equivalency exists and Apple cites no cases in support of such an inversion.[7] By manipulating the claims to present inapplicable and irrelevant hypotheticals, Apple seeks to distract from the fact that the limitations claim *not* printing or communicating anything.

Even if the absence of functional fixed payment information is printed matter (it is not), these terms should be afforded patentable weight because they are functionally related to the claimed devices. *See DiStefano*, 808 F.3d at 850-51. For example, the claimed "no fixed payment numbers" (and similar claim terms) enhance the security of the claimed systems by removing the possibility that "a malicious third party [would] record the account number of a credit card in order to later make fraudulent transactions on the account." *See* '820 patent at 9:55–62; '286 patent at 9:62–10:2. Further, the absence of the fixed payment numbers ensure that "[o]nly the [limited-use payment information] generated at the instant the [claimed systems are] being used matters," because it is the only payment information in the claimed systems that is communicated to a merchant. *See* '820 patent at 11:36–45, 18:1–6; '286 patent at 11:43-51, 18:8-12. Because there is a functional relationship between the absence of fixed payment information and the security features of the claimed invention, the elements of the Asserted Patents that recite the absence of fixed payment information should be accorded patentable weight. *In re Gulack*, 703 F.2d 1381, 1386 (Fed. Cir. 1983) ("[T]he critical question is whether there exists any new and unobvious functional relationship between the printed matter and the substrate").

---

[7] Instead, Apple cites to three PGR institution decisions which never became final decisions and were never subject to the appellate process.

CARDWARE EXHIBIT 2017
APPLE v. CARDWARE IPR2025-01146
Page 25 of 38

b) Enabling Electronic Devices Via the Display

Apple also argues that five other claims of the '520, '579, and '286 patents reciting "displaying," "rendering" or "transmit[ting]" information are directed to printed matter. Br. at 20–21. Apple's argument fails for multiple reasons.

First, all five disputed claims claim "displaying," "rendering," or "transmit[ting]" information. These are all discrete, patentable, method steps disclosing an act of communication. Apple argues that these steps, including the verbs "displaying," "rendering," and "transmitting," should be afforded no patentable weight. But the *act* of communicating information is not printed matter. *IOENGINE, LLC v. Ingenico Inc.*, 100 F.4th 1395, 1404 (Fed. Cir. 2024) ("Printed matter encompasses what is communicated—the content or information being communicated—rather than the act of a communication itself"). This makes sense because the act of communicating information is important to the goal of the claims. For instance, claim 10 of the '286 patent depends from claim 1, which recites that a "computing device [of claim 1] is operable to convey said limited-use card payment information via an interface of the computing device." '286 patent at 19:50–20:16. Claim 10 adds details about *how* and in *what format* the device communicates the payment information—specifically by "transmit[ting] a payment information visibly . . . via the touchscreen of the device" and in "alphanumeric" form, respectively. *Id.* at 21:6–9. This is also true for the four other Apple-identified claims. *See* Br. at 20. Therefore, the printed matter analysis for these claims fails at step one.

Second, Apple's analysis of the printed matter doctrine ignores the broader context of the claims. The Asserted Patents do not claim the content of the information, but rather electronic payment systems and methods that work in a particular way and have discrete functionalities. For instance, as discussed above, claim 1 of the '286 patent describes a payment system comprising a "payment card" that does not have "fixed numbers," and a computing device that generates a

CARDWARE EXHIBIT 2017
APPLE v. CARDWARE IPR2025-01146
Page 26 of 38

"limited-use card payment" and conveys such information in connection with a payment transaction. '286 patent at 19:50–20:16. Claim 10 clarifies that the device of claim 1 communicates the "limited-use card payment information," which is used in place of "fixed information," in a particular format ("alphanumeric"). *Id.* at 21:6–9. Thus, claim 10 adds an additional functional feature that assists the system of claim 1 to "transmit" the generated "limited use" payment information. It is not directed to the content of the information. This larger context clarifies that the disputed term is not targeted at the communicative content (a context that Apple and Dr. Polish ignore). *Hafeman v. LG Elecs., Inc.*, No. 6:21-cv-00696-ADA-DTG, 2023 WL 2978968, at *8 (W.D. Tex. Apr. 17, 2023) (finding "computer recovery information" that is displayed on the screen not to be printed matter because: "[Plaintiff] did not patent the text on the screen, nor did she patent the concept of simply viewing recovery information on a computer screen. Rather, she patented recovery information popping up on the display of a computer screen via the software she created.").

Apple's arguments regarding '520 claim 14 ("rendering"), '579 claim 1 ("displaying"), '579 claim 9 ("displaying"), and '579 claim 15 ("displaying") fail for the same reasons. Each of these claim limitations target the act of communication, not the communicative content. Moreover, these steps are integrally connected to the function of the systems. Apple, and its expert Dr. Polish, improperly ignore those greater contexts which are fundamental the patentable weight of the disputed terms. Without this analysis, Apple has not met its burden under the printed matter doctrine and therefore the terms should be afforded patentable weight.

D. U.S. Patent No. 10,628,820: "the system of claim 15 . . . comprising . . . a user input providing for at least one user action . . ." (claim 20)

Plaintiff's Proposed Construction	Defendant's Proposed Construction
Not indefinite. Plain and ordinary meaning.	Indefinite

CARDWARE EXHIBIT 2017
APPLE v. CARDWARE IPR2025-01146
Page 27 of 38

Apple asserts that the disputed limitation is a method step recited in a system claim. Br. at 22–24; Polish Decl., ¶¶ 81–82. Apple is incorrect. Unlike the method step in *IPXL*, claim 20 recites a "user input," which is a structural limitation and therefore not improper. The language that follows, "providing for at least one user action…" is not a method step, but rather a limitation on the nature and functionality of the user input structure (just the same as the "operable to" language elsewhere in the system claim that Apple agrees is proper).

Apple primarily relies on *IPXL Holdings v. Amazon.com, Inc.* In that case, claim 25 of the patent-at-issue recited: "The system of claim 2 [including an input means] wherein . . . the user ***uses*** the input means . . ." 430 F.3d 1377, 1384 (Fed. Cir. 2005) (emphasis added). In other words, the system claim in *IPXL* recited an active verb—"uses"—requiring actual use of the identified structure (input means). *Id.* The Federal Circuit held that because of the "uses" term, it was "unclear whether infringement of claim 25 occurs when one creates a system that allows the user to change [the transaction information] or whether infringement occurs when the user actually uses the input means . . ." *Id.* The other Federal Circuit cases that Apple cites on this issue are no different. *See, e.g., Rembrandt Data Techs., LP v. AOL, LLC*, 641 F.3d 1331 (Fed. Cir. 2011) (device claim required standalone "transmitting" limitation); *In re Katz*, 639 F.3d 1303, 1318 (Fed. Cir. 2011) (reciting verbs, "callers digitally enter" and "callers provide," in a system claim).[8]

That is simply not the case here—claim 20 does not recite an active verb akin to the "user uses" language in *IPXL*. It describes a structure—a "user input"—and then describes the available functionality of that "user input" structure with a transitional phrase, "providing for," just the same as a variety of other limitations using the phrase "operable to" that Apple does not challenge.

[8] Apple also cites *Samsung Elecs. Am., Inc. v. Prisua Eng'g Corp.*, 948 F.3d 1342, 1355 (Fed. Cir. 2020) but there was no *IPXL* indefiniteness issue decided in this decision.

CARDWARE EXHIBIT 2017
APPLE v. CARDWARE IPR2025-01146
Page 28 of 38

Claim 20 of the '820 patent depends from claim 15. Both are directed to an online payment system including a computing device. Claim 20 is specifically directed to computing device structure used to obtain user approval for a payment transaction. It recites, in relevant part:

> 20. The system of claim 15 wherein the **computing device is further operable to obtain a user payment approval** through at least one user-interface element of the computing device, from a set comprising:
>
> a display interface,
>
> a touch-screen interface, . . . ; and, . . . ,
>
> **a user input providing for at least one user action** from a set comprising: an approving of a transaction, a denying of a transaction, and an adjusting of a transaction**,** via the user-interface.

'820 patent at 23:39–59, 24:33–63 (annotated, disputed claim language in **bold underline**).

As shown above, the limitation "a user input providing for at least one user action . . ." does not recite a method step.[9] Rather, the term "input" in this context (*i.e.*, "**a** user input")—is a noun. This understanding is consistent with the rest of the claim and the specification. Claim 20 specifies that the computing device has structure capable of obtaining a "user payment approval," including the disputed "user input." The "providing for" language that follows does not convert "a user input" into a verb; rather, it specifies the functional capabilities of the structure, namely, allowing "a user action" of "approving," "denying," or "adjusting" a transaction. This is consistent with, and parallels, claim 8 of the '820 patent, which is also directed to a device that is operable to receive "a valid user input, of at least one user action selected from a set comprising: a payment approval authorization; a payment denial; and an adjustment of a transaction payment" via a "user-interface." '820 patent at 19:58–20:7, 21:9–42. CardWare's position is also consistent with the

[9] Apple mischaracterizes the structure of claim 20, joining the preamble ("the system of claim 15") with the disputed limitation ("a user input providing for at least one user action . . .") using "comprising" from another limitation ("a user payment approval . . .").

CARDWARE EXHIBIT 2017
APPLE v. CARDWARE IPR2025-01146
Page 29 of 38

'820 patent specification, which describes a variety of user input structures. '820 patent at 6:15-17 ("A user input may be made via the touch sensor array 245, which may comprise a touch screen panel, a keypad, or a combination thereof."); 10:14–17 ("Other embodiments of the touch sensor array 445 allowing a user to input data to the multi-function electronic device 401 . . ." *id.* at 18:42–61, 19:6–14 ("Table 1") (describing a device for conducting credit transactions that "may incorporate a plurality of touch sensors arranged along the surface [used] to confirm/deny transaction information"); Fig. 8 (disclosing a touch screen panel).

Apple relies on Dr. Polish's testimony for the proposition that this limitation is a method step. Br. at 24 (citing Polish Decl. at ¶¶ 81-82). But Dr. Polish is no English-language expert, and in any event, has to read a verb (a second "providing") *into* claim 20 to support his opinion.

In summary, Apple asks this Court to hold what the Federal Circuit never has—that a claim can be indefinite under *IPXL* without reciting an active verb requiring a particular action. The Court should decline to so extend *IPXL*, and should instead hold that Apple has not demonstrated by clear and convincing evidence that this limitation in claim 20 of the '820 patent is indefinite.

E. U.S. Patent No. 10,810,579: "the method of claim 1 wherein a payment processing authority verifies a limited-use number . . . and rejecting a limited use number" (claim 6)[10]

Plaintiff's Proposed Construction	Defendant's Proposed Construction
Not indefinite. Plain and ordinary meaning.	Indefinite

Apple argues that the term "limited-use number" recited in claim 6 lacks antecedent basis because claim 6 recites "a limited-use number" three times, each of which, per Apple, "could potentially refer to a separate limited-use number." Apple is wrong. There is no antecedent basis

[10] The heading in Apple's brief corresponding to this limitation refers to "a limited user number," but that phrase appears nowhere in the '579 patent and appears to be a typographical error. *See* Br. at 24.

CARDWARE EXHIBIT 2017
APPLE v. CARDWARE IPR2025-01146
Page 30 of 38

issue here, nor could there be, since each of the claim terms is introduced with the phrase "a," meaning that they each stand on their own. Not surprisingly, Apple does not cite a single case for the proposition that a claim term introduced with "a" can be indefinite for lack of antecedent basis, as if a patentee *has to* introduce elements in certain circumstances by referring back to something else in the claim. To CardWare's knowledge, the only instances where the Federal Circuit has held claims indefinite for lack of antecedent basis are where they are introduced with phrases such as "the" and "said," purporting to refer back to something else in the claim that does not exist.

Claim 6 covers steps by a "payment processing authority" to verify and authenticate (or reject) a number as part of a transaction. The claim requires verifying a limited use number based on certain information. It separately requires "authorizing" the transaction responsive to "verifying a valid limited use number." That number must be "valid," but it otherwise can be any limited use number because the claim introduces it with the phrase "a." Apple may argue that this has implications for its infringement or prior art positions, but it certainly does not create an antecedent basis indefiniteness issue. The claim also requires "rejecting a limited-use number . . . on at least one unverifiable conduction . . . ." In other words, the rejection does not always happen —it turns on the presence of an unverifiable condition. But the number that is rejected could be any limited-use number because this is what the claim recites with the phrase "a." It is simply not indefinite under any formulation of "antecedent basis" law.

F. U.S. Patent No. 11,176,538: "said secrets" (claim 27)

Plaintiff's Proposed Construction	Defendant's Proposed Construction
Not indefinite. Plain and ordinary meaning.	Indefinite

Apple asserts that this term lacks antecedent basis because the word "secrets" is not recited elsewhere in claim 27 or in its parent claim 25. Br. at 26–29; Polish Decl., ¶¶ 93–100. Apple is incorrect.

CARDWARE EXHIBIT 2017
APPLE v. CARDWARE IPR2025-01146
Page 31 of 38

Claim 27 recites, in relevant part:

> **27.** The non-transitory, computer-readable medium of claim 25, wherein the one or more processors include a cryptographic processor, and wherein the executable instructions further cause the one or more processors to:
>
> cryptographically compute a dynamically generated one-time-use cryptogram number, . . .
>
> wherein further said cryptogram number is created by said device processor cryptographic combination of device transaction sequence counter count, a payment account information, a user information, and information stored in the device and specific to the device and which is not communicated in the transaction; and,
>
> wherein said transaction sequence counter, said information and **said secrets** are known to both said device, and to said payment processing authority; and . . .

'538 Patent at 25:41–26:5 (annotated, disputed term in **underlined bold**).

Claim 27 recites "cryptographically comput[ing] a one-time-use cryptogram number," by a "combination of device transaction sequence counter count, a payment account information, a user information, and information stored in the device and specific to the device and ***which is not communicated in the transaction***." '538 patent at 25:51–56 (annotated and emphasis added). The immediately following limitation of claim 27 recites, "wherein said transaction sequence counter, said information and **said secrets** are known to both said device, and to said payment processing authority." *Id.* at 25:57–59 (annotated, disputed term in **underlined bold**). Because "the information stored in the device and specific to the device" *is not communicated in the transaction* but is still known to the device and the payment processing authority, then such information must constitute "secrets" (because only the device and the payment processing authority know them, and they cannot be intercepted because they are not communicated in a transaction). Therefore, it logically follows, without any need to look beyond the claim language itself, that the term "said secrets" corresponds to the "information stored in the device and specific to the device and ***which is not communicated in the transaction***." Even Apple's expert agrees. *See* Polish Tr. at 155:8–15 (Q: "[A] person of ordinary skill in the art has an understanding of what secrets could mean,

CARDWARE EXHIBIT 2017
APPLE v. CARDWARE IPR2025-01146
Page 32 of 38

right, because we discussed that previously today?" A: "Well someone of ordinary skill would know in general what secrets are, which are things that are, you know, known to multiple parties and not generally known."); *id.* at 159:2–13 (Q: "[Y]ou could also not transmit it and have it be known to both the payment processor and the device; right? Like if you use an out of band communication, both the payment processor and the device would know of the secret, but the secret would not be transmitted in the transaction; isn't that right?" A: "It's possible to do that." Q: "And would a person of ordinary skill in the art understand that it is possible to do that?" A: "I think it's one of many ways you could set up a cryptographic system.").

Nevertheless, Apple asserts that claims 18, 20, 22, and 23 of the '538 patent suggest that secrets are known to a payment processing authority or a device but not both. Br. at 28; Polish Decl., ¶ 96.[11] Not so. Each of these claims recite a method in which an electronic *device* generates limited-use information based on a combination of information (including, *inter alia* payment processing authority secrets)—meaning that the recited device knows the payment processing authority secrets. *See* '538 patent at 19:35–20:29; 22:45–23:50, 24:9–43. Apple also ignores several claims of the '538 claim that also recite information known to both the electronic device and a payment processing authority, parallelling claim 27. *See id.* at 26:39-53 (dependent claim 29 reciting "combination of at least one information unique to the electronic device, and also known to at least one of a payment processing authority and a payment issuer authority, and selected from a set of information known and stored at both said payment authorities, and on said

[11] Apple does not dispute that "said transaction sequence counter" corresponds to "device transaction sequence counter count" or that "said information" corresponds to "payment account information" and "user information." *See* Br. at 27 (citing Polish Decl. at ¶ 95).

CARDWARE EXHIBIT 2017
APPLE v. CARDWARE IPR2025-01146
Page 33 of 38

device" including "a device secret, a payment processing authority secret"); *see also id.* at 22:20-22, 27:15-28:3 (dependent claims 11 and 30 reciting similar limitations).

The Court should find that Apple has failed to establish by "clear and convincing evidence" that this claim term is not indefinite and accord it its plain and ordinary meaning.

G. U.S. Patent No. 11,328,286: "its valid limitations of use" (claims 1 and 15)

Plaintiff's Proposed Construction	Defendant's Proposed Construction
Not indefinite. Plain and ordinary meaning.	Indefinite

Apple argues that "its valid limitations of use" is indefinite, but ignores the fact that claims 1 and 15, respectively, introduce generation of a "limited-use card/[] payment information" just prior to recitation of the disputed "limitations of use" phrase. Br. at 29–31; Polish Decl. ¶¶ 106-112. Apple points to other dependent claims, trying to manufacture ambiguity about the term "its," but the fact remains that there is only one prior reference in either claim to "limited-use" and, in each claim, it is this "limited-use card/[] payment information". That is what "its" is referencing.

Claims 1 and 15 recite, in relevant part:

> 1. A payment system comprising . . .
>
> a computing device comprising: a processor . . .
>
> wherein the processor is operable to generate at least a portion of a limited-use card payment information for use by an authenticated card user, and
>
> wherein the computing device is operable to convey said limited-use card payment information via an interface of the computing device, and
>
> wherein a card issuer authority is operable to reject as invalid a transaction attempt outside of **its limitations of use** . . .
>
> wherein a card issuer authority is operable to validate a card payment information as authentic when received from at least one of: an authenticated users payment card; and an authenticated users computing device, and
>
> wherein the card issuer authority is operable to permit the authentic transactions to complete. . . .
>
> 15. A payment system comprising …
>
> a card-users personal computing device operable for completing a payment transaction and comprising: a processor . . .

CARDWARE EXHIBIT 2017
APPLE v. CARDWARE IPR2025-01146
Page 34 of 38

> wherein the computing device is configured to dynamically generate limited-use payment information, and
>
> wherein the computing device is configured to convey the limited-use payment information on a computing device interface upon the authorization of a valid user . . .
>
> wherein the limited-use payment information . . . is validated by a card issuing authority when used in merchant in-store facility transactions, and
>
> wherein a card issuing authority is operable to reject as invalid, a payment information used outside of **its valid limitations of use** …

'286 Patent, 19:50-20:16, 21:47-22:12 (annotated, disputed terms in **bolded underline**).

Apple argues that, "as a matter of plain grammar," the phrase "its" in claim 1 (as bolded and underlined above) must relate to either the "card issuer authority" or the "transaction attempt." Br. at 30–31; Polish Decl. ¶¶ 106-109, 112. Apple's argument ignores the context of the claim which demonstrates that "its" refers to the "limited-use" payment information generated by the device.

Claim 1 relates to a "payment system" and introduces a computing device with a processor that "generate[s] at least a portion of ***a limited-use card payment information*** for use by an authenticated card user" and then "convey[s] ***said limited-use card payment information*** via an interface of the computing device." The "limited-use card payment information" is the *only* element of claim 1 that is "limited-use" and the only payment information that claim 1 recites as conveyed to a card-issuing authority in connection with a transaction attempt. This context simply cannot be ignored under *Phillips* and its progeny, as if the disputed limitation stands in isolation.

Even aside from this obvious contextual clue, Apple's proposal otherwise makes little sense. A "card issuing authority" does not have a use-based limitation (because it is an entity and not something that can be "use[d]"). The same is true with respect to a "transaction attempt," separate and apart from the underlying "limited-use" information that is conveyed in connection that attempt. In other words, an "attempt" and a "use" are different concepts; a "use" is tied to the approval (or rejection) of a transaction "attempt," wherein the approval or rejection is *based upon*

CARDWARE EXHIBIT 2017
APPLE v. CARDWARE IPR2025-01146
Page 35 of 38

the underlying conveyed payment information (*i.e.*, the "limited-use" information). Apple cites an example in the specification, arguing that a transaction attempt can be limited to a finite number of transactions of a specified period of time. But, this example in the specification is actually discussing the limited-duration credit card number (a type of "limited-use" payment information). '286 patent at 11:10-16; 16:51-54.[12]

Similarly, Claim 15 also relates to a "payment system" and introduces "a card-users personal computing device operable for completing a payment transaction" that "dynamically generate[s] ***limited-use payment information***" and "convey[s] the ***limited-use payment information***," "wherein the ***limited-use payment information*** . . . is validated by a card issuing authority when used in merchant in-store facility transactions." Here, too, this "limited-use payment information" is the only element of claim 15 that is "limited-use," like the "limited-use card payment information" that is the only payment information that claim 1 recites as conveyed in a transaction, and the only payment information that is validated by a card issuing authority. Here, too, "its" must refer to the "limited-use payment information."

Apple points to recitations in claim 6 to suggest that "its" in claim 1 refers to the "electronic device." Br. at 30; Polish Decl., ¶ 110. Claim 6 depends from (and is narrower than) claim 1, relates to a different use-based limitation (relating to the device itself) and has nothing to do with the otherwise clear antecedent basis specified in claims 1 and 15 themselves.

The Court should find that Apple has failed to establish by "clear and convincing evidence" that this claim term is not indefinite and accord it its plain and ordinary meaning.

[12] Apple omits the word "number" from its quote taken from 16:51-54. Br. at 30.

CARDWARE EXHIBIT 2017
APPLE v. CARDWARE IPR2025-01146
Page 36 of 38

IV. CONCLUSION

For the foregoing reasons, CardWare respectfully requests that the Court enter an order finding that all of the aforementioned claim terms are not indefinite and rejecting the positions Apple advances in its constructions.

Dated: June 17, 2025

Respectfully submitted,

/s/ Eric H. Findlay
Eric H. Findlay (State Bar No. 00789886)
Brian Craft (State Bar No. 04972020)
FINDLAY CRAFT, P.C.
7270 Crosswater Avenue, Suite B
Tyler, Texas 75703
Tel: (903)534-1100
Fax: (903)534-1137
efindlay@findlaycraft.com
bcraft@findlaycraft.com

Matthew G. Berkowitz (*pro hac vice*)
Yue (Joy) Wang (*pro hac vice*)
Navid C. Bayar (*pro hac vice*)
Leaf Williams (*pro hac vice*)
Timothy Trost (*pro hac vice)*
Reichman Jorgensen Lehman & Feldberg LLP
100 Marine Parkway, Suite 300
Redwood Shores, CA 94065
Tel: (650) 623-1401
mberkowitz@reichmanjorgensen.com
ywang@reichmanjorgensen.com
nbayar@reichmanjorgensen.com
lwilliams@reichmanjorgensen.com
ttrost@reichmanjorgensen.com

Caroline Walters (*pro hac vice*)
Khue Hoang (*pro hac vice*)
Patrick Colsher
Reichman Jorgensen Lehman & Feldberg LLP
400 Madison Avenue, Suite 14D
New York, NY 10017
Tel: (212) 381-1965
cwalters@reichmanjorgensen.com
khoang@reichmanjorgensen.com
pcolsher@reichmanjorgensen.com

Attorneys for Plaintiff

CARDWARE EXHIBIT 2017
APPLE v. CARDWARE IPR2025-01146
Page 37 of 38

CERTIFICATE OF SERVICE

I hereby certify that on the 17th day of June, 2025, I electronically filed the foregoing with the Clerk of the Court using the CM/ECF system, which will send notification of such filing to all counsel of record.

/s/ Eric H. Findlay
Eric H. Findlay

CARDWARE EXHIBIT 2017
APPLE v. CARDWARE IPR2025-01146
Page 38 of 38