

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
TEXARKANA DIVISION**

MAXELL, LTD.,

Plaintiff,

v.

APPLE INC.,

Defendant.

Case No. 5:19-cv-0036-RWS

LEAD CASE

JURY TRIAL DEMANDED

**PLAINTIFF MAXELL, LTD.'S
OPENING CLAIM CONSTRUCTION BRIEF**

TABLE OF CONTENTS

I. INTRODUCTION	1
II. SUBJECT MATTER OF THE ASSERTED PATENTS	1
III. LEGAL STANDARDS.....	1
IV. DESCRIPTION OF THE ASSERTED PATENTS AND THE PROPER CONSTRUCTION OF THE DISPUTED TERMS	2
A. The '794 Patent	2
1. Background of the '794 Patent	2
2. Level of Ordinary Skill in the Art for the '794 Patent	3
3. Disputed Term in the '794 Patent.....	3
B. The '306 Patent	6
1. Background of the '306 Patent	6
2. Level of Ordinary Skill in the Art for the '306 Patent	6
3. Disputed Term in the '306 Patent.....	7
C. The '438 Patent	8
1. Background of the '438 Patent	8
2. Level of Ordinary Skill in the Art for the '438 Patent	9
3. Disputed Terms in the '438 Patent	9
D. The '991 Patent	14
1. Background of the '991 Patent	14
2. Level of Ordinary Skill in the Art for the '991 Patent	14
3. Disputed Term in the '991 Patent.....	15
E. The '493 Patent	17
1. Background of the '493 Patent	17
2. Level of Ordinary Skill in the Art for the '493 Patent	17
3. Disputed Terms in the '493 Patent	18
F. The '317/'999/'498 Patents.....	25
1. Background of the '317/'999/'498 Patents	25
2. Level of Ordinary Skill in the Art for the '317/'999/'498 Patents	26
3. Disputed Terms in the '317/'999/'498 Patents.....	26
V. CONCLUSION	30

TABLE OF AUTHORITIES

	Page(s)
Cases	
<i>Apple, Inc. v. Motorola, Inc.</i> , 757 F.3d 1286 (Fed. Cir. 2014).....	4
<i>Biscotti Inc. v. Microsoft Corp.</i> , Case No. 2:13-cv-01015, 2016 U.S. Dist. LEXIS 155336 (E.D. Tex. Nov. 9, 2016)	15
<i>Blue Calypso, Inc. v. Groupon, Inc.</i> , 93 F. Supp. 3d 575 (E.D. Tex. 2015).....	15
<i>Comark Comm’ns, Inc. v. Harris Corp.</i> , 156 F.3d 1182 (Fed. Cir. 1998).....	12, 21
<i>Cypress Lake Software, Inc. v. Samsung Elecs. Am., Inc.</i> , 382 F. Supp. 3d 586 (E.D. Tex. 2019).....	11
<i>E-Watch Inc. v. Apple, Inc.</i> , Case No. 2:13-CV-1061, 2015 WL 1387947 (E.D. Tex. Mar. 25, 2015)	4
<i>EPOS Techns. LTD v. Pegasus Techns. LTD</i> , 766 F.3d 1338 (Fed. Cir. 2014).....	16
<i>Free Stream Media Corp. v. Alphonso Inc.</i> , Case No. 2:15-CV-1725, 2017 WL 1165578 (E.D. Tex. Mar. 29, 2017)	4, 8
<i>GE Lighting Sols., LLC v. AgiLight, Inc.</i> , 750 F.3d 1304 (Fed. Cir. 2014).....	12
<i>Globetrotter Software, Inc. v. Elan Comput. Grp., Inc.</i> , 362 F.3d 1367 (Fed. Cir. 2004).....	8
<i>Maxell Ltd. v. Huawei</i> , Case No. 5:16-cv-00178, Dkt. No. 175	3
<i>Maxell Ltd. v. Huawei Device USA Inc.</i> , 297 F. Supp. 3d 668 (E.D. Tex.2018).....	1, 14
<i>Personalized Media Commc’ns v. ITC</i> , 161 F.3d 696 (Fed. Cir. 1998).....	4
<i>Phillips v. AWH Corp.</i> , 415 F.3d 1303 (Fed. Cir. 2005) (en banc).....	3, 7

<i>Skky, Inc. v. MindGeek, s.a.r.l.</i> , 859 F.3d 1014 (Fed. Cir. 2017).....	8
<i>SRAM Corp. v. AD-II Eng’g Inc.</i> , 465 F.3d 1351 (Fed. Cir. 2006).....	28
<i>SynQor Inc. v. Artesyn Techns.</i> 709 F.3d 1365 (Fed. Cir. 2013).....	16
<i>Thorner v. Sony Comput. Entm’t Am. LLC</i> , 669 F.3d 1362 (Fed. Cir. 2012).....	16, 21
<i>THX, Ltd. v. Apple, Inc.</i> , Case No. 13-cv-01161, 2016 U.S. Dist. LEXIS 153557 (N.D. Cal. Nov. 4, 2016)	28
<i>TiVo Inc. v. EchoStar Commc’ns Corp.</i> , Case No. 2:04-CV-1, 2005 U.S. Dist. LEXIS 46879 (E.D. Tex. Aug. 18, 2005)	10
<i>U.S. Surgical Corp. v. Ethicon, Inc.</i> , 103 F.3d 1554 (Fed. Cir. 1997).....	3, 22, 24
Statutes	
35 U.S.C. § 112, ¶ 6.....	<i>passim</i>

TABLE OF EXHIBITS

Exhibit 1	Expert Declaration of Michael Brogioli, PH.D.
Exhibit 2	Excerpts of Expert Declaration of Daniel Menasce, PH.D.
Exhibit 3	Excerpts of Deposition Transcript of Joseph Paradiso, PH.D.
Exhibit 4	Expert Declaration of Robert Maher, PH.D.
Exhibit 5	Excerpts of Expert Declaration of Benjamin Bederson, PH.D.
Exhibit 6	Expert Declaration of Tim Williams, PH.D.
Exhibit 7	Excerpts of IBM's 1994 Dictionary of Computing
Exhibit 8	Expert Declaration of Vijay Madisetti, PH.D.
Exhibit 9	U.S. Patent No. 5,828,406
Exhibit 10	Excerpts of Deposition Transcript of Vijay Madisetti, PH.D.
Exhibit 11	Expert Declaration of Craig Rosenberg, PH.D.
Exhibit 12	Excerpts of Declaration of Joseph Paradiso, PH.D.
Exhibit 13	Excerpts of Deposition Transcript of Daniel Menasce, PH.D.
Exhibit 14	Excerpts of Deposition Transcript of Tim Williams, PH.D.

I. INTRODUCTION

Maxell’s proposed constructions for the disputed terms of the asserted patents¹ follow the canons of claim construction and provide interpretations that flow from the intrinsic record. In contrast, Apple’s proposed constructions import limitations from preferred embodiments, often times improperly invoking 35 U.S.C. § 112, ¶ 6 as an excuse for unduly narrowing the words the inventors selected to describe their innovations. Rather than look for meaning in the claim language and the specification, Apple further looks for ways to narrow the scope of the claims, lifting language from exemplary embodiments and refusing to apply clear precedent about readily understandable words such as “detector” and “input unit.”

In sum, Apple repeatedly departs from a proper claim construction analysis. Its proposals should therefore be rejected, and Maxell’s adopted.

II. SUBJECT MATTER OF THE ASSERTED PATENTS

The asserted patents generally fall into six areas of technology: power control and management (6,329,794 (“the ’794 Patent”) and 6,408,193 (“the ’193 Patent”)), alert generation and control (6,928,306 (“the ’306 Patent”)), device to device authentication (7,116,438 (“the ’438 Patent”) and 10,212,586 (“the ’586 Patent”)), video call management (10,084,991 (“the ’991 Patent”)), image processing (8,339,493 (“the ’493 Patent”)), and GPS and navigation functions (6,748,317 (“the ’317 Patent”); 6,580,999 (“the ’999 Patent”); and 6,430,498 (“the ’498 Patent”)). Additional descriptions of the patents are provided in Section IV.

III. LEGAL STANDARDS

This Court knows well the legal standards governing claim construction. *See, e.g., Maxell Ltd. v. Huawei Device USA Inc.*, 297 F. Supp. 3d 668, 677-681 (E.D. Tex.2018). As such, Maxell will

¹ Only eight of the ten asserted patents contain limitations for which the parties have claim construction disputes. For completeness, however, Maxell’s technology tutorial addresses all ten asserted patents.

not recount those principles for the Court here, but will rely on authority where appropriate in discussions for the terms below.

IV. DESCRIPTION OF THE ASSERTED PATENTS AND THE PROPER CONSTRUCTION OF THE DISPUTED TERMS

A. The '794 Patent

1. Background of the '794 Patent

The '794 Patent, which has a priority date of May 22, 2000, solves a problem in conventional information processing devices. Prior to the inventions disclosed in the '794 Patent, these devices would attempt to increase power efficiency by, for example, reducing the power consumed by function devices (*e.g.*, applications) that were in use, or by stopping or restricting operations of unused function devices. '794 Patent at 1:12-22.

But the devices could not prioritize one function over another; either all function devices had their power restricted, or none did. *Id.* at 1:23-31. For example, in an information processing device containing an audio communication function (typical phone function) and a videophone function, a user may wish to prioritize the audio phone function over the videophone function, so that the user could continue a call even after the battery is too depleted to effectively use the videophone. *Id.* at 1:31-41. But conventional devices would continue operation of all functions, so that higher priority functions lost power at the same time as lower priority functions. *Id.*

The '794 Patent solves this problem by assigning different priorities to the various functions. *Id.* at 1:49-67. The patent describes a controller that controls the operation of the function devices based on remaining battery capacity. *Id.* at 1:55-67, 4:36-61. The controller also sends power reduction instructions to different function devices at different times. *Id.* at 4:36-61. The effect is that lower-priority function devices (such as a videophone function) can be powered down before other, higher-priority function devices (such as audio communication). This

priority-based power management allows users to manage power more effectively, and to continue using desired functions longer. *Id.* at 1:55-67.

2. Level of Ordinary Skill in the Art for the '794 Patent

For the '794 Patent, a person of ordinary skill in the art has a working knowledge of power management systems, gained through a Bachelor of Science in Electrical Engineering or an equivalent degree and one year of experience in the field of power management.

3. Disputed Term in the '794 Patent

“capacity detector for detecting a remaining capacity of said battery”

Maxell's Proposed Construction	Apple's Proposed Construction
Plain and ordinary meaning	Function: detect a remaining capacity of battery Structure: Capacity Detector 107 (as configured in Figs. 1, 6, 10, or 11) performing the steps shown in Fig. 4; or equivalents thereof

Where the ordinary meaning of claim language is readily understood by one of ordinary skill in the art, claim construction “involves little more than the application of the widely accepted meaning of commonly understood words.” *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005) (en banc). In these situations, no construction is needed. *U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997).

In the *ZTE* case, involving this same patent, the parties, their experts, this Court, and the lay jurors had no trouble understanding “capacity detector” without a construction by the Court. *See, e.g., Maxell Ltd. v. Huawei*, Case No. 5:16-cv-00178, Dkt. No. 175 at 12 (parties agreeing that “capacity detector for detecting a remaining capacity of said battery” should be given its plain and ordinary meaning). No construction is needed this time, either.

Both parties' experts agree that the term connotes sufficient structure to a person of ordinary skill in the art in the form of one or more known hardware and/or software solutions. *See Brogioli Decl.* (Ex. 1) ¶¶ 30, 37; *Menasce Decl.* (Ex. 2) ¶ 63 (identifying at least four hardware and/or software solutions for implementing the claimed “capacity detector.”). Despite

this consistent understanding Apple uses § 112, ¶ 6, as a proxy to unreasonably limit the scope of the claims. Apple is wrong for several reasons.

First, it is well-established that “detector” alone connotes sufficiently definite structure to persons of ordinary skill in the art, thereby avoiding the ambit of § 112, ¶ 6. *See Apple, Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1299 (Fed. Cir. 2014)(“detector” is a structural term); *Personalized Media Commc’ns v. ITC*, 161 F.3d 696, 705 (Fed. Cir. 1998) (“digital detector” does not invoke § 112, ¶ 6 because “[e]ven though the term ‘detector’ does not specifically evoke a particular structure, it does convey to one knowledgeable in the art a variety of structures known as ‘detectors’”); *see also E-Watch Inc. v. Apple, Inc.*, Case No. 2:13-CV-1061, 2015 WL 1387947, at *12 (E.D. Tex. Mar. 25, 2015). Apple concedes as much in its agreement to construe “an image-instability **detector**” as “a **detector** . . . capable of detecting an image instability of the electric camera.” *See* Dkt. No. 99 at 2. Not only is Apple’s position here incompatible with the applicable law, it is inconsistent with the positions it takes on other terms in this case. *Id.*

Second, the claim language and specification reinforce that a person of skill in the art would understand “capacity detector” to connote sufficient structure. *See* ’794 Patent at 4:24-35; Ex. 1 ¶¶ 32-33. Claims 1 and 9 are clear: the “capacity detector” detects the remaining capacity of the battery. This descriptive language does not detract from the definiteness of structure—“it further narrows the scope of those structures covered by the claim and makes the term more definite.” *See Personalized Media*, 161 F.3d at 705 (emphasis added). In other words, the claims themselves convey sufficiently definite structure. *See Free Stream Media Corp. v. Alphonso Inc.*, Case No. 2:15-CV-1725, 2017 WL 1165578, at *25 (E.D. Tex. Mar. 29, 2017) (declining to construe “client device” as an MPF term because “the claims themselves connote sufficiently definite structure by describing how the ‘client device’ operates within the claimed invention to

achieve its objectives”).

In fact, both parties’ experts were able to identify a number of software and hardware solutions for implementing the capacity detector, confirming that the term itself conveys “a variety of structures” to persons skilled in the art. Ex. 2 ¶ 63 (explaining that battery capacity detector could be implemented in (1) software that implements an algorithm; (2) specialized hardware components; (3) analog circuit designed to output a signal; (4) digital circuit that turns on or off; and (5) any combination of the foregoing hardware or software solutions); *See* Ex. 1 ¶¶ 32-36 (identifying several hardware and/or software solutions). Another of Apple’s experts in this case even conceded that “battery capacity detector” has a “much more” specific structure than the claim term “device.” *Paradiso Dep. Tr.* (Ex. 3) 48:24-49:1.

Third, Apple’s construction is nothing more than an attempt to shoehorn additional limitations into the claims. Apple’s proposed function—“detect a remaining capacity of battery [sic]”—appropriately comports with the claim language. Yet, its proposed structure—“Capacity Detector 107 (as configured in Figs. 1, 6, 10, or 11) performing the steps shown in Fig. 4; or equivalents thereof”—does not. At step 401, “the remaining capacity of battery 102 is retrieved.” ’794 Patent at 4:24-25. This is plainly within the scope of the claims, and should be the only step necessary to accomplish Apple’s stated function. Apple’s proposed structure, however, includes remaining steps 402-405, which are not stated functions of the capacity detector as claimed. For example, steps 403 and 405 describe providing a notification when the battery reaches a particular capacity—both of which would occur after the proposed function of detecting a remaining capacity of the battery. *See Id.* at FIG. 4. Apple’s construction is thus not only unnecessary, but logically inconsistent.

Accordingly, the term “capacity detector for detecting a remaining capacity of said

battery” is not a means-plus-function term and should be given its plain and ordinary meaning.

B. The '306 Patent

1. Background of the '306 Patent

The '306 Patent, which has a priority date of January 7, 2000, solves a problem in the techniques of generating and controlling alerts in portable mobile units. Prior to the inventions disclosed in the '306 Patent, conventional mobile devices had limited capability for generating alerts and notifying a user when an incoming call was received. '306 Patent at 1:11-23. This led to confusion when multiple devices in the same area happened to have the same ringtone. *Id.* Similarly, there was no way of identifying the caller audibly. *Id.* at 2:37-56. Adding audio files to the mobile devices to address this problem required additional memory, increasing the devices' size and expense. *Id.* at 1:50-53.

The '306 Patent solves these problems by including multiple sounds sources within a single mobile device, allowing for alerts having “an infinite number of variations” without requiring an infinite number of audio files. *Id.* at 2:34-36. By allowing the device to use multiple types of sound data—including FM, PCM, MIDI, MP3, and human voices—the invention enables generating distinct alerts based on the user's preference. *Id.* at 5:1-10, 8:48-61. It also enables the device to announce the name of the caller—a benefit for many, but crucial for the visually impaired. *See Id.* The '306 Patent also describes suppressing alerts under certain user-specified conditions, allowing flexibility for users who wish to avoid audible alerts at certain times, such as during court appearances or from “midnight to the early morning.” *Id.* at 10:51-64.

2. Level of Ordinary Skill in the Art for the '306 Patent

For the '306 Patent, a person of ordinary skill in the art has a working knowledge of audio signal processing, gained through a Bachelor of Science in Electrical Engineering or equivalent degree and at least two years' experience in the field of audio signal processing.

3. Disputed Term in the '306 Patent

“ringing sound generator”

Maxell's Proposed Construction	Apple's Proposed Construction
Plain and ordinary meaning	Function: to generate a ringing sound Structure: Element 1519 in Figure 15 comprising 1, 3a-3c, and 4a-4c in Figure 1; or equivalents thereof

There is no reason to depart from the plain and ordinary meaning of “ringing sound generator.” A person of ordinary skill in the art would have understood the meaning of this term when used in the context of a “portable mobile,” as claimed. Maher Decl. (Ex. 4) ¶ 31. By the time of the invention on January 7, 2000, even a novice mobile phone user would have known that the phone must have components that allow it to generate sound. An electrical engineer with two years of experience in the field of audio signal processing certainly would have recognized the claimed ringing sound generator as the class of structure filling that role. *Id.*

Apple has not identified any lexicography or disavowal for departing from the plain and ordinary meaning of the term. Instead, Apple invokes § 112, ¶ 6, to import limitations into the claim. Apple's expert justifies this by arguing that the sound generator could be confused with “electric generators, engine generators, gas generators, motor generators, signal generators,” or even a “cow bell.” Bederson Decl. (Ex. 5) ¶ 32. But Apple's expert ignores the context of this patent (mobile phones), and by including devices such as gas generators and cow bells as examples of “generators,” has failed to consider the meaning of this term in view of the “single best guide” to the term's meaning: the '306 Patent's specification. *See Phillips*, 415 F.3d at 1316.

Put in the proper context, the term “ringing sound generator” denotes a definite structure or class of structures, namely, the circuitry and software in portable devices that produces audio alerts. Indeed, a person of ordinary skill in the art would understand, both from the claim language itself and from the descriptions of a “ringing sound generator” in the specification, that

this term refers to a definite class of structures that generate sound using different sound sources. '306 Patent at 2:11-24, FIG. 1 (disclosing an exemplary structure for ringing sound generator that includes, among other things, a memory, a plurality of reproducers, and a reproduction timing memory). The claim and the specification describe in detail exemplary structures for the “ringing sound generator,” showing that this term has sufficiently definite structure and should simply be given its plain and ordinary meaning. *See Alphonso*, 2017 WL 1165578, at *25; *see also Skky, Inc. v. MindGeek, s.a.r.l.*, 859 F.3d 1014, 1019 (Fed. Cir. 2017).

Apple’s proposed construction is also improper because it limits the term to one embodiment to the exclusion of the others. By limiting the ringing sound generator to sound sources 3a-3c in Figure 1 (FM, PCM, and MIDI), Apple has ignored the specification’s teaching that “sound data should not be restricted only to the above, and also the sound data of the MP3 method can be used.” '306 Patent at 5:1-8. Because a “claim interpretation that excludes a preferred embodiment from the scope of the claim ‘is rarely, if ever, correct,” Apple’s proposed construction should be rejected. *See Globetrotter Software, Inc. v. Elan Comput. Grp., Inc.*, 362 F.3d 1367, 1381 (Fed. Cir. 2004).

“Ringing sound generator” is not a means-plus-function term and would be readily understood by those of skill in the art as the name for a class of structures. Accordingly, this term needs no specific construction, and it should be read according to its plain meaning.

C. The '438 Patent

1. Background of the '438 Patent

The '438 Patent has a priority date of May 22, 2003, and is directed to the field of device-to-device authentication. At the time of the '438 Patent, conventional systems involving display devices did not have any ability to implement a requirement whereby only a device in a physical location near the display device could change the content displayed on the display device. '438

Patent at 1:24-41. This posed a security risk: anyone with an Internet connection could access a display device on an unsecure network and remotely change the displayed content (*e.g.*, arrival time of flights or trains in an airport or train station). *Id.* This lack of capability to account for physical proximity during the authentication process resulted in unacceptable vulnerability in conventional devices at the time.

The '438 Patent solves this problem by requiring authentication using a short-distance communication process, which ensures that the remote device is in close proximity to the display device. *See Id.* At 9:65-10:8. Consequently, if the remote device has not been authenticated by short-distance communication, it will not be permitted to exchange data for display using its primary means of transmitting data. *See Id.* At 6:51-7:46. A remote device authenticated by using short-distance communication in accordance with the '438 Patent, however, will be permitted to exchange data. *Id.* The disclosed techniques thus allow one device to share data with an additional device in close proximity in a secure manner, increasing the efficiency and security between the devices. *Id.* At 7:52-8:51, FIG. 8.

2. Level of Ordinary Skill in the Art for the '438 Patent

For the '438 Patent, a person of ordinary skill in the art has a working knowledge of wireless communications, gained through a Bachelor of Science in Electrical Engineering or equivalent and at least one year experience working in the field of wireless communications.

3. Disputed Terms in the '438 Patent

a. “an input unit for receiving an input entered by a user”

Maxell's Proposed Construction	Apple's Proposed Construction
Plain and ordinary meaning	Function: to receive input entered by a user Structure: a keyboard; or equivalents thereof

“An input unit for receiving an input entered by a user” would be readily understood by a person of ordinary skill in the art and requires no construction. *See Williams Decl.* (Ex. 6) ¶¶ 27-

29; *see also* *TiVo Inc. v. EchoStar Commc'ns Corp.*, Case No. 2:04-CV-1, 2005 U.S. Dist.

LEXIS 46879, at *25 (E.D. Tex. Aug. 18, 2005) (applying the plain and ordinary meaning to “input section”).

The '438 Patent consistently uses the term “input unit” in a manner consistent with its plain and ordinary meaning:

The input/output unit 103 is a component for displaying information to the user and receiving data entered by the user. The input/output unit 103 typically includes a liquid crystal display device and a ten-key board. However, the input/output unit 103 is not limited to the liquid crystal display device and the ten-key board. That is to say, the input/output unit 103 can be any component as long as the component is capable of receiving an input entered by the user and displaying an output to the user.

'438 Patent at 3:59-67 (emphasis added).

There is no lexicography by the inventors of the '438 Patent that indicates a new meaning for this easily-understood term. Nor is there any disavowal that justifies limiting this claim. As a result, there is no reason to depart from the plain and ordinary meaning of “input unit.”

Extrinsic evidence also confirms that the '438 Patent uses the term “input unit” consistent with its plain an ordinary meaning. *See* IBM's 1994 Dictionary of Computing (Ex. 7) at 343 (defining “input unit” as a “device in a data processing system by means of which data can be entered into the system”). Accordingly, a person of ordinary skill in the art would readily understand, both from the claim language itself and from the descriptions of an “input unit” in the specification, that this term refers to a definite class of structures that are used to receive an input entered by a user. Ex. 6 ¶¶ 27-29; *see also* '438 Patent at 3:59-67, FIG. 2 (showing that the input unit 103 is being used within, for example, a mobile terminal).

Yet Apple once again turns to § 112, ¶ 6, to limit the scope of the claim, this time to a “keyboard,” despite the specification's plain teaching that the input unit “is not limited to” a

keyboard. *See* '438 Patent at 3:59-67. Even Apple's own expert opines that a person of ordinary skill in the art would understand that "input unit" corresponds to known structures such as a "mouse, keyboard, touch screen, touch-pen, [and] voice-activated inputs." Menasce Decl. (Ex. 2) ¶ 79; *see also* Menasce Dep. (Ex. 13) at 85:12-18 and 86:13-15 (admitting that he was able to think of these examples without any "special research," and that a person of ordinary skill in the art would also have been aware of "[a]t least some of" these examples).

"Input unit" refers to a broad, but known, class of structures, and there is no reason to stray from this generally understood meaning. *See Cypress Lake Software, Inc. v. Samsung Elecs. Am., Inc.*, 382 F. Supp. 3d 586, 658, 667 (E.D. Tex. 2019) (claim terms reciting "input device" are "not governed by 35 U.S.C. § 112, ¶ 6, and should be given its plain and ordinary meaning"); *see also* Ex. 7 at 341 ("input device" is a "[s]ynonym for input unit"). When the patentee intended to use means-plus-function claiming, it did so explicitly, for example by reciting "means for selecting an object displayed" '438 Patent at 10:32-34. That it did not do so with this term is telling.

"Input unit" is not a means plus function term, it would be readily understood by a person of ordinary skill in the art, and is used in a manner consistent with this understanding by the '438 Patent. Thus, the term should simply be given its plain and ordinary meaning.

b. "display apparatus"

Maxell's Proposed Construction	Apple's Proposed Construction
a display device comprising a first short-distance communication apparatus for carrying out a short distance communication with an information processing terminal and a second communication apparatus for carrying out a communication with the information-processing terminal through a network	an electronic notice board

When describing "display apparatus" the inventors of the '438 Patent acted as lexicographers, and Maxell's proposed construction tracks their definition:

a display apparatus according to the present invention comprises a first short-

distance communication apparatus for carrying out a short-distance communication with an information-processing terminal and a second communication apparatus for carrying out a communication with the information-processing terminal through a network.

'438 Patent, 2:5-10; Ex. 6 ¶¶ 35-38. Accordingly, “display apparatus” should be construed as expressly defined by the inventors of the '438 Patent. *See GE Lighting Sols., LLC v. AgiLight, Inc.*, 750 F.3d 1304, 1309 (Fed. Cir. 2014).

Apple's attempt to limit the term to “an electronic notice board” fails for several reasons. First, it is contrary to the '438 Patent's teaching that “display unit 212 can be any display device as long as the display device is capable of displaying information.” '438 Patent at 4:50-52; *see also* Ex. 6 ¶¶ 38-39 (identifying extrinsic evidence defining a display device as “display screen, display unit, display monitor, display station, or an output device that displays images” without limiting it to an electronic notice board).

Second, Apple's proposal violates the doctrine of claim differentiation. Claims 6 and 7 explicitly recite an “electronic notice-board,” thereby narrowing the display apparatus of claim 4 to the very same embodiment that Apple proposes. *See* '438 Patent at 10:60-65.

Third, Apple's proposed construction simply reads into the claims a particular embodiment. This is improper. *See Comark Comm'ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1187 (Fed. Cir. 1998).

Accordingly, Apple's proposal should be rejected and the Court should adopt the construction proposed by Maxell, which is taken directly from the inventors' definition.

c. “adding a comment to contributed data”

Maxell's Proposed Construction	Apple's Proposed Construction
Plain and ordinary meaning	written content responsive to contributed data

“Adding a comment to contributed data” would be readily understood and requires no construction. There is no lexicography or disavowal that requires this simply-understood term to

be redefined in the way Apple proposes. For example, the word “responsive” does not appear anywhere in the ’438 Patent, yet Apple would rewrite the claim to require this temporal limitation. The ’438 Patent provides numerous examples of users providing comments that are displayed on a screen. *See e.g.*, ’438 Patent at FIGS. 10, 12, 13. These comments are of varying subjects (*e.g.*, dog, computer, pictures), and the ’438 Patent provides no disclosures that restricts the subject matter of the comments such that they are “responsive to contributed data.”

Likewise, Apple attempts to limit the claimed “comment” to “written content” only. But even Apple’s expert admits that lay persons would understand the meaning of “comment” and that a comment as it is generally understood would not be limited just to written content. *See Ex. 13 at 102:10-15.* No justification exists to import these limitations. Apple’s proposal should simply be rejected and Maxell’s adopted.

d. “means for selecting an object displayed on said display apparatus”

Maxell’s Proposed Construction	Apple’s Proposed Construction
Function: No dispute Structure: input/output unit 103 and associated software that allows for the claimed selection function; or equivalents thereof	Function: No dispute Structure: input/output unit 103, including a liquid crystal display device and a keyboard, and associated software; or equivalents thereof

The dispute between the parties for this term is familiar: Apple again attempts to limit the scope of the claim by requiring “input/output unit 103” to include a liquid crystal display device and a keyboard, even though the ’438 Patent explicitly states “the input/output unit 103 is not limited to the liquid crystal display device and the ten-key board.” ’438 Patent, 3:62-63 (emphasis added); *see also* Ex. 6 ¶¶ 42-47.

There is no need to limit the disclosed structure to a level of specificity more particular than “input/output unit 103 and associated software that allows for the claimed selection function.” A person of ordinary skill in the art would readily understand the class of structures being invoked. *See Ex. 6 ¶ 46; Williams Dep. (Ex. 14) at 45:14-17* (“if I spoke to one of ordinary

skill in the art and told them I needed an input unit, they wouldn't be confused about what I needed").

Moreover, this Court has already adopted a construction of this term with the structure Maxell proposes. *See Huawei Device USA Inc.*, 297 F. Supp. at 719-723. To one of ordinary skill, an "input/output unit 103" connotes sufficient structure, and there is no reason to narrow the term to a specific embodiment, especially when the patent expressly contradicts such narrowing. Apple's proposal should be rejected, and Maxell's adopted.

D. The '991 Patent

1. Background of the '991 Patent

The '991 Patent, which has a priority date of September 25, 2008, is directed to an apparatus that allows a user to seamlessly and automatically switch between watching content and participating in a video call in a single device. *See, e.g.*, '991 Patent at 2:32-48. At the time of the '991 Patent, conventional systems included separate equipment for watching programming content and making video calls. *Id.* at 2:6-31. For example, if a user was watching television when a video call came in, the user would need to manually stop the programming in order to begin the video call. *Id.* When the call ended, the user would then need to manually resume watching the content. *Id.*

The inventors of the '991 Patent overcame this problem by providing an integrated system that allows the user to switch between watching content and participating in a video call, without having to perform manual operations. *Id.* at 2:32-55. For example, the inventors developed an apparatus for automatically pausing programming content to allow the user to answer a video call and, after ending the call, to automatically resume the content. *Id.* at 6:25-29.

2. Level of Ordinary Skill in the Art for the '991 Patent

For the '991 Patent, a person of ordinary skill in the art has a working knowledge of

image processing and/or networking, gained through a Bachelor of Science in Electrical Engineering, computer engineering, computer science or equivalent, and at least two years of experience in the field of image processing and/or networking.

3. Disputed Term in the '991 Patent

“communication apparatus”

Maxell's Proposed Construction	Apple's Proposed Construction
Plain and ordinary meaning	videophone function-added TV receiver

There is no reason to depart from the plain, easily-understood language of “communication apparatus.” A person of ordinary skill in the art would have understood this term, and it needs no redefinition here. *See Biscotti Inc. v. Microsoft Corp.*, Case No. 2:13-cv-01015, 2016 U.S. Dist. LEXIS 155336, at *16 (E.D. Tex. Nov. 9, 2016) (construing claim terms such as “communication device” and “communication,” to have their plain and ordinary meaning); *Blue Calypso, Inc. v. Groupon, Inc.*, 93 F. Supp. 3d 575, 604 (E.D. Tex. 2015) (same). This element is plain-English, and readily-understandable, yet Apple would rewrite this simple term as one of the patent’s embodiments: a “videophone function-added TV receiver” (essentially, a TV with a videophone added to it).

First, by limiting the claimed “communication apparatus” to “videophone function-added TV receiver,” Apple is excluding preferred embodiments. For example, when explaining that the disclosure is directed to combining the feature of watching programming content and participating in a video call, the '991 Patent explains that “this technology provides a new and improved TV receiver with TV function (referred to as videophone function-added TV receiver hereafter) set having videophone call handling functionality, which performs both.” '991 Patent, 2:32-36 (emphasis added). But the '991 Patent also explains that “[t]his technology also provides a video telephone system using a plurality of videophone function-added TV receiver sets which

are linked together via a network for enabling users to make videophone calls between these videophone function-added TV receivers.” *Id.* at 2:56-60 (emphasis added). Thus, in addition to a videophone function-added TV receiver (*i.e.*, the TV with a videophone function added), the ’991 Patent also describes other types of apparatus, such as a video telephone system “using” [but not including] videophone function-added TV receiver sets. *See id.* at 3:29-33, 4:8-10, 5:26-28, 6:8-10 (all disclosing “[t]his technology also/further provides a video telephone system”).

These descriptions confirm that the inventors of the ’991 Patent contemplated and disclosed multiple types of communication systems including a video telephone system or a videophone function-added TV receiver. And to make it even clearer that the claims are not limited to any particular one of these embodiments, the ’991 Patent states “although the foregoing description has been made on embodiments of the invention, the invention is not limited thereto and various changes and modifications may be made without departing from the spirit of the invention and the scope of the appended claims.” *Id.* at 32:32-36 (emphases added). The inventors did not disavow any claim scope or practice lexicography to justify narrowing the claimed “communication apparatus” to a “videophone function-added TV receiver” while excluding a video telephone system. *See SynQor Inc. v. Artesyn Techs.* 709 F.3d 1365, 1378-79 (Fed. Cir. 2013).

Second, Apple’s expert confuses repetition with redefinition when he opines that “the specification describes a ‘videophone function-added TV receiver’ 284 times.” Ex. 5 ¶ 53. The specification’s repeated use of this term is irrelevant. Even if the only disclosed embodiment was that of a videophone function-added TV receiver, it is nevertheless improper to read specific embodiments into the claims. *See EPOS Techs. Ltd. v. Pegasus Techs. Ltd.*, 766 F.3d 1338, 1341 (Fed. Cir. 2014); *see also Thorner v. Sony Comput. Entm’t Am. LLC*, 669 F.3d 1362, 1365 (Fed.

Cir. 2012). For at least these reasons, no construction is necessary.

E. The '493 Patent

1. Background of the '493 Patent

Electric (or digital) cameras operate using image sensing devices sometimes called “image sensors.” ’493 Patent at 1:23-29. An exemplary image sensor disclosed in the ’493 Patent contains an array of picture elements (or “pixels”) arranged in a two-dimensional grid. *Id.* at 4:38-41. Each pixel in the array generates a signal in response to light falling on the pixel. *Id.* at 4:38-63. These signals are collected by specialized circuitry and output as a digital image. *Id.*

Prior to the inventions disclosed in the ’493 Patent, which has a priority date of January 11, 2000, conventional electric cameras could not effectively capture both still and moving images. When taking still pictures with a camera designed for taking moving images, the number of pixels was insufficient for a high-quality still image. *Id.* at 2:62-64. Conversely, when taking moving images with a camera designed for taking still images, the dynamic image quality of the moving image would deteriorate, and more circuitry would be required, making the camera expensive and bulky. *Id.* at 2:65-3:2. As the inventors of the ’493 Patent themselves stated, “[t]aking both moving and static images of satisfactory quality with a single camera is difficult to achieve.” *Id.* at 2:67-3:2.

The inventors solved these problems. For example, the claims of the ’493 Patent recite devices that allow signal charges from differing numbers of pixels to be used based on whether the device is operating in still image recording mode, monitoring mode, or moving video recording mode. *See, e.g., id.* at cl. 1; *see also* Madisetti Decl. (Ex. 8) at ¶¶ 36-43. In this way, a device that practices the ’493 Patent can achieve higher-resolution images and better dynamic image quality with a smaller number of pixels, thereby saving weight and cost.

2. Level of Ordinary Skill in the Art for the '493 Patent

For the '493 Patent, a person of ordinary skill in the art has a Bachelor of Science in Electrical Engineering/Computer Engineering, Computer Science, or equivalent, at least two years of experience in the field of image/video processing, and is familiar with digital image and video processing for electric cameras and similar devices. Ex. 8 ¶¶ 29-30.

3. Disputed Terms in the '493 Patent

a. “effective scanning lines . . . of a display screen”

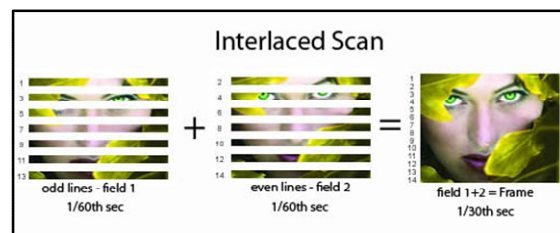
Maxell's Proposed Construction	Apple's Proposed Construction
the number of lines on a display screen corresponding to an actually displayed image	the lines displayed in a single field of an interlaced scanning display

The dispute for the “effective scanning lines” term centers on whether claim 1 of the '493 Patent is limited to “interlaced scanning” displays, as proposed by Apple. But the term should not be so limited and should instead be given its plain meaning: “the number of lines on a display screen corresponding to an actually displayed image.”

(i) Interlaced versus Progressive Scanning

To understand why Apple's construction is unduly limiting, it is helpful to understand the differences between “interlaced” scanning and “progression” scanning. Maxell's expert—Dr. Vijay Madiseti—explains the techniques as follows.

“Interlaced” scanning involves displaying half of the pixel lines (for example, every odd-numbered line of pixels) in a display in one frame and the other half (for example, every even-numbered line of pixels) in the next frame, as shown in the following illustration. Madiseti Decl. Ex. 8 ¶ 72.



Because frames are cycled many times every second, viewers do not realize that only “half” of the picture is being displayed at any given point; the brain simply “assembles” the two halves together to form something indistinguishable from a complete image. *Id.* at ¶ 74.

Another known technique as of January 2000 is called progressive scanning. *Id.* at ¶ 75. “Progressive” scanning—sometimes called “non-interlaced” scanning—involves displaying each of the pixel lines of a display in sequence for each frame. *Id.* at ¶ 76. By the time of the invention of the ’493 Patent in January 2000, those of skill in the art were also familiar with progressive scanning techniques. *Id.* at ¶ 77.

Dr. Madisetti provides several examples of pre-2000 disclosures of progressive scanning to support his opinions. For example, he cites to U.S. 5,828,406 (“Parulski ’406” (Ex. 9))², a 1994 patent assigned to Kodak. . Madisetti Decl. Ex. 8 at ¶¶ 78-79 (citing Ex. 9).

At his deposition, Dr. Madisetti reinforced this point. There, he testified that those of ordinary skill in the art would “know the general aspects of TV broadcast and signal formats. Both progressive, as well as interlaced approaches. Because they have been around since the 1930s and ‘40s.” Madisetti Dep. Tr. (Ex. 10) at 45:2-9. He also noted other evidence showing that progressive scanning was known to those of skill in the art by January 2000. *See id.* at 157:2-16 (discussing article on how to use progressive scanning with NTSC and PAL systems).

(ii) Support for Maxell’s Proposed Construction

Apple’s proposal would exclude progressive scanning displays, which were known at the time of the invention and were in no way excluded from the claims. The language the inventors selected for this term—“a display screen”—is simple, unambiguous, and non-limiting. Indeed, the display screen of claim 1 of the ’493 Patent need only be capable of “display[ing] an image

² Parsulski ’406 refers to a “progressive scan interline image sensor having a noninterlaced architecture” and that a “progressive scan readout method” “allows the entire image to be read out in a single scan.” Parsulski ’406 (Ex. 17) at 5:31-32 and 6:1-2.

corresponding to the image signals.” *See* ’493 Patent at 15:64-67 (claim 1).

There being no basis in the claim’s language to limit claim 1 to interlaced scanning displays, Apple may look to the specification for descriptions to import into this limitation. But the specification here supports Maxell’s plain-meaning proposal, not Apple’s. For example, throughout the specification, the ’493 Patent explains that “effective scanning” refers to “the actually displayed image”: “In FIG. 3, during a period T3 included in the vertical blanking period before the vertical effective scanning period (the vertical scanning period minus the vertical blanking period which corresponds to the actually displayed image)....” *Id.* at 5:34-44 (emphases added); *see also id.* at 5:56-66.

Throughout the specification, the inventors used “effective” consistently to refer to that which is actually being used. For instance, in one example, the ’493 Patent states that “the signals from the area of 960 pixels ... out of the 1200 vertically arranged pixels are used as effective signals and the remaining 240 pixels ... are not used for image forming.” *Id.* at 5:11-15 (emphases added). The patent also describes an “effective pixel area” in the context of embodiments for image instability correction as the area of the pixel array actually used for capturing image information. *Id.* at 7:9-26 (“[T]he position of an extracted area (effective pixel area) on the light receiving surface is shifted....”).

Dr. Madisetti agreed that these teachings would have shown the ordinarily skilled artisan that “effective” in this context meant something that is actually being utilized, such as the lines actually being utilized to display an image. Ex. 8 ¶¶ 65-69; Ex. 10 at 111:12-15 (“And in the NTSC example, which, again, is a non-limiting example, the patent covers other television systems that – and other displays that include progressive scanning as well.”). He also testified that a person of skill in this field would have been familiar with the terminology used by the

inventors. Ex. 8 ¶ 68.

The background of the patent also describes one example of an NTSC system using an interlaced scanning technique, and states that the “effective scanning line number” is “the number of scanning lines actually displayed on the monitor.” *Id.* at 1:37-43. While this example illustrates that the inventors used the term “effective scanning lines” to refer to “the number of scanning lines actually displayed,” it provides no justification for restricting the claim to the example NTSC embodiment. *See Harris Corp.*, 156 F.3d at 1187. Indeed, the specification cautions against the very sort of overly narrow claim interpretation Apple advances: it expressly states that “the invention can also be applied to other television systems,” not just the interlaced NTSC embodiment described in the patent’s background. ’493 Patent at 10:18-21.

Dr. Madisetti testified that a person of ordinary skill in the art would have understood this statement to mean that the claimed inventions are not limited to particular display systems, such as those using interlaced scanning. Ex. 8 at ¶¶ 84-85. He also testified that, through the patent’s discussion of “other television systems,” “progressive scanning is covered, and disclosed, and described in the – as an embodiment through the explicit disclosure of other TV systems.” Ex. 10 at 116:12-15, 123:22-124:19, 156:14-20. Dr. Madisetti concluded that “there is nothing in the claim that limits anything to interlacing or ... progressive. It covers both.” *Id.* at 120:6-8.

Apple’s expert, Dr. Bovik, argues that claim 1 of the ’493 Patent should be limited to interlaced scanning displays because the patent’s use of “vertical” and “horizontal” “blanking periods” suggests that the patent’s examples describe interlaced scanning. This argument fails both legally and technically. First, the ’493 Patent’s preferred embodiments are just that, and Dr. Bovik’s efforts to read the descriptions of those embodiments into the claims should be rejected. *Sony Comput.*, 669 F.3d at 1365. Second, Dr. Bovik’s arguments are not even technically

correct. For example, Dr. Madisetti explained that “the vertical blanking period and the horizontal blanking period apply to both interlaced and progressive [scanning].” Ex. 10 at 137:21-23; *see also Id.* at 137:15-138:13 (explaining why Dr. Bovik’s premise is wrong).

At bottom, descriptions of interlaced scanning in the ’493 Patent are merely “example[s],” *see* ’493 Patent at 1:37-38, and Apple is wrong to graft such examples onto the claim language. The intrinsic evidence confirms that “effective scanning lines” as used in the ’493 Patent are those lines that correspond to an actual displayed image. Therefore, the term should be construed as Maxell proposes.

b. “culling signal charges accumulated in the N number of vertically arranged pixel lines” / “culled from the N number of vertically arranged pixel lines”³

Maxell’s Proposed Construction	Apple’s Proposed Construction
Plain an ordinary meaning	“culling” / “culled” means selecting pixels for output by skipping pixels at predetermined intervals / selected

No construction is necessary for “culling” and “culled” because these terms are familiar, easily-understood terms by those of skill in the art. Any attempt to further define these words would only unnecessarily limit or inaccurately state their meaning. Apple’s construction here is inappropriate because it is, at best, redundant with other claim language and, at worst, unduly limiting by using words not found in the specification’s description of the “culling” operation.

The claim construction process “is a matter of resolution of disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims....” *U.S. Surgical Corp.*, 103 F.3d at 1568. Claim construction “[i]s not an obligatory exercise in redundancy.” *Id.* But Apple’s proposed construction is just that: a needless exercise in redundancy. There is no need to rewrite the claim using imprecise language when one of

³Apple has proposed construing these phrases but does not appear to be advancing a construction for the entire limitation. Thus, Maxell’s discussion of this “term” will focus on the construction for “culling” and “culled.”

ordinary skill would have no difficulty understanding its meaning (*see* Ex. 8 ¶¶ 49-50), and when none of the infringement or invalidity issues to be tried in this case hinge on one party's definition or the other's.

Apple's construction is also unduly limiting. It requires "skipping pixels at predetermined intervals," but this language is at least partially redundant with other limitations in the claims, such as "to provide pixel lines only at pixel intervals of K2 pixels" in claim 1 and "to only include pixel lines separated from one another by intervals of a first distance" in claim 5. *See* '493 Patent at 16:10-11 (claim 1), 16:51-52 (claim 5). If the phrase "skipping pixels at predetermined intervals" has the same meaning as these other limitations already in the claim, Apple's addition is redundant and thus unnecessary. If it means something different, it is an unwarranted narrowing of the claimed invention. In either case, Apple's proposal is improper.

Apple's proposal should fail also because it uses words nowhere found in the '493 Patent's specification. "Selecting," "skipping," and "predetermined intervals" are never used in the written description or figures to describe "culling" operations. They should not be used in the construction either.

What the specification does say removes all doubt that "culling" and "culled" need any redefinition. The patent's descriptions of "culling" signal charges would be familiar to and easily understood by a person of ordinary skill. *See, e.g.*, 493 Patent at 8:52-55, 10:6-12, 14:10-32. Dr. Madisetti testified that these descriptions tell a person of ordinary skill in the art that it is desirable in certain circumstances to reduce the number of signal charges read out from pixel array so that signal charges from fewer than all pixels in the array are output for recording or display. Ex. 8 ¶¶ 51-55. He also explains that these descriptions would confirm that the ordinarily skilled artisan's understanding of "culling" from her experience in image processing

comports with the way this term is used in the '493 Patent. *Id.* at ¶¶ 56-57.

Moreover, no one other than Apple has had trouble understanding “culled” and “culling.” In the three petitions for *inter partes* review filed against the '493 Patent to date, neither “culled” nor “culling” needed any construction. In prior suit in this Court involving this patent, these terms needed no construction. And when the jury found ZTE to have infringed claims 5 and 6 of this patent at trial, it did so without needing a specific definition for these terms. Apple has provided no reason for rewriting the claims now other than to place undue limits on their scope. That approach should be rejected.

c. “mixing . . . signal charges accumulated in the N number of vertically arranged pixel lines” / “mixed . . . from the N number of vertically arranged pixel lines”⁴

Maxell’s Proposed Construction	Apple’s Proposed Construction
“mixing . . . signal charges” means “combining signal charges from multiple pixels” / “mixed” means “combined”	“mixing” / “mixed” means collecting charges from multiple pixels for combined transfer / collected

The dispute for the terms “mixing” and “mixed” involves determining whether the claims should be limited to “collecting signal charges” for a “combined transfer” (as proposed by Apple), or whether the terms should have their plain, ordinary meaning of “combining” and “combined” (as proposed by Maxell). Maxell’s plain-meaning approach should be adopted.

“Mixing” and “mixed” are ordinary, easy-to-understand words. Indeed, in the three petitions for *inter partes* review filed against the '493 Patent, and throughout the ZTE jury trial involving this patent, no one professed any confusion about what these terms meant. Nor do any issues of infringement or invalidity turn on the interpretation of this term. This is just another “obligatory exercise in redundancy,” *U.S. Surgical Corp.*, 103 F.3d at 1568, and should be rejected.

⁴Apple has proposed definitions only for “mixing” / “mixed.” Thus, Maxell’s discussion of this “term” will focus on the construction for “mixing” and “mixed.”

While Maxell originally stated that no construction is necessary for this term, during the meet and confer period prescribed by the local rules, Maxell offered its present construction as a compromise. In particular, Maxell proposed to use the same word (“combining”) that Apple applied in its construction.⁵ The rejection of that compromise gave rise to the present dispute.

Notwithstanding Maxell’s agreement to “combining,” Apple’s construction improperly limits the claims to an undefined “combined transfer” of charges. This phrase—*combined transfer*—does not appear in the ’493 Patent, nor does it have an accepted meaning in the art.

That term is also unclear. Does “combined transfer” refer simply to the gathering and transfer of signal charges without additional processing (as in a combination of apples, grapes, and melon in a fruit salad)? Or does “combined transfer” mean that some altering of the signals must take place to arrive at something new (as in a combination of yellow and blue paint to make green paint)? Adopting Apple’s proposal would lead to further fights about “combined transfer,” whereas adopting Maxell’s would preserve the inventors’ intentions that all “combinations” of signals fall within the meaning of “mixed.” For these reasons, Maxell’s proposal should prevail.

F. The ’317/’999/’498 Patents

1. Background of the ’317/’999/’498 Patents

The ’317/’999/’498 Patents all claim priority to July 12, 1999 and all have the same specification. These patents solve numerous problems that existed in conventional navigation systems at the time. For example, prior to the ’317 Patent, conventional navigation systems were unsuitable for walking navigation. ’317 Patent at 1:31-43. Conventional systems were too large to be carried by a walking user, would not provide information about the direction and

⁵ Alternate conjugations of the word “combining” are used throughout the ’493 Patent to refer to how pixel charges are processed. *See, e.g.*, ’493 Patent at 1:48-49 (“... the combination of pixels to be cyclically mixed together ...”), 6:2-3 (“...the combination of four pixel rows to be cyclically mixed together...”), 8:8 (“FIG. 6 shows combinations of pixels to be cyclically mixed....”).

orientation of a user, and were unsuitable for display on the smaller screens of portable devices, among other problems. *Id.* at 1:31-52.

Recognizing these shortcomings, the inventors conceived a portable terminal that would aid users who wished to have real-time directions while walking. *Id.* at 2:51-61. They implemented a portable terminal that displays information about the direction a user is facing and displays navigation information that can be displayed on screens of different sizes, including a narrow screen of a portable terminal. *Id.* at 3:5-42. Further, these patents allowed users to identify a location of a friend, get walking directions to navigate to the location of a friend, and learn about the neighborhood and/or different shops around the user's location. *Id.* at 3:27-63.

2. Level of Ordinary Skill in the Art for the '317/'999/'498 Patents

For the '317/'999/'498 Patents, a person of ordinary skill in the art has a working knowledge of GPS/navigation systems, gained through a Bachelor of Science in Electrical Engineering, Computer Engineering, Computer Science or equivalent, and at least one year of experience in the field of GPS systems.

3. Disputed Terms in the '317/'999/'498 Patents

a. "device for getting location information denoting a present place of said terminal"

Maxell's Proposed Construction	Apple's Proposed Construction
Function: No dispute Structure: a wireless or cellular antenna, a GPS, a PHS, or the like; such a data receiver as an infrared ray sensor, or the like; and a CPU for analyzing received data; or equivalents thereof.	Function: No dispute Structure: a wireless or cellular antenna, or a GPS, or a Personal Handyphone System (PHS); and an infrared ray sensor; and a control unit for analyzing received data, with the control unit calculating location information as disclosed in '498 at 5:48-56 and Fig. 2; or equivalents thereof

The parties agree that this term is a means-plus-function term and agree on the function corresponding to this term. For the structural components, however, Apple's proposed construction takes the structure disclosed in the specification and narrows it improperly. The patents explicitly disclose the structure for this term:

The device for getting location information 77 is provided with such a wireless antenna, a GPS, a PHS, or the like; such a data receiver as an infrared ray sensor, or the like; and a control unit for analyzing received data.

See, e.g., '498 Patent, 9:39-44. Maxell's proposed construction closely tracks this disclosed structure and further defines "control unit" as a CPU because the patents disclose that "[t]he portable terminal 61 is provided with a CPU 71, which is a control unit." *Id.* at 9:30-31; *see also* Rosenberg Decl. (Ex. 11) ¶¶ 47-48. Maxell's proposed construction is also consistent with additional disclosures in the patents that recite the infrared sensor as an example of a data receiver and/or as an alternative to a GPS or PHS. '498 Patent at 5:53-56 ("such an infrared ray sensor as a GSP, PHS, or the like").

Apple's proposed construction, however, rewrites the passage of the specification by "narrowing the claim in multiple ways." Ex. 11 ¶ 47. For example, Apple rewrites the non-limiting phrase of "such a data receiver as an infrared ray sensor, or the like" to "and an infrared ray sensor." Apple also proposes limiting the control unit's functions to techniques disclosed at 5:48-56,⁶ but this unnecessarily excludes other examples provided in the specification. For example, the '498 Patent explains:

Furthermore, in the portable terminal of the present invention with the function of walking navigation, location information to get is represented by a latitude/longitude or coordinates and an altitude. For example, such a wireless antenna as a GPS, a PHS, etc., as well as an infrared ray sensor is used to measure location information. The portable terminal of the present invention may also be provided with any one of the above methods for measuring a position or some possible methods combined for measuring a position.

'498 Patent at 4:6-13.

Further, Apple's proposal requires the claim to perform a location calculation whereas the only function required to be performed by the CPU is analyzing and/or receiving the data as

⁶ This section of the '498 Patent discloses calculating location using latitude/longitude or coordinates and an altitude.

explicitly mentioned in the disclosed structure and claim. '498 Patent at 9:43-47. Specifically, the claim recited “getting” location information, not calculating. While getting may include calculating, the claim or the specification does not limit the structure to performing a location calculation by using only latitude/longitude or coordinates and an altitude.

Apple’s only justification for narrowing the proposed structure appears to be based on a construction proposed by ASUS in an *inter partes* petition under a different claim construction standard. Paradiso Decl. (Ex. 12) ¶ 32. But “this court is not bound by the PTO’s claim interpretation” because of the different claim construction standards in District Court and the PTAB. *See SRAM Corp. v. AD-II Eng’g Inc.*, 465 F.3d 1351, 1359 (Fed. Cir. 2006). Even Apple conceded that District Courts are not “bound by PTAB’s construction.” *See THX, Ltd. v. Apple, Inc.*, Case No. 13-cv-01161, 2016 U.S. Dist. LEXIS 153557, at *13(N.D. Cal. Nov. 4, 2016). Thus, the IPR proceedings under a different claim construction standard do not provide a clear disavowal of claim scope that justifies limiting the structure for “a device for getting location information” to always require an infrared ray sensor. Accordingly, the Court should adopt Maxell’s proposed construction, taken verbatim from the specification.

b. “a device for getting a location information of another portable terminal [from said another portable terminal via connected network”] / “a device for retrieving a route . . .”

Maxell’s Proposed Construction	Apple’s Proposed Construction
Functions: No disputes	Function: No disputes
Structure: CPU and device for data communication 76 of a portable terminal; or equivalents thereof	Structure: CPU 71 and device for data communication 76 of a portable telephone and a Personal Handyphone System (PHS) terminal (Figure 10, '317 Patent at 9:40–50); or equivalents thereof

The parties agree that these terms are means-plus-function terms and agree on their functions. Further, the parties agree that the proposed structures should be the same. The only dispute between the parties arises with respect to Apples’ proposed structure which narrows the

claims to a device for data communication 76 of a portable telephone and a Personal Handyphone System (PHS) terminal. This, however, is not correct because the claim is directed to a “portable terminal,” not to a portable telephone and a Personal Handyphone System (PHS) terminal, as required by Apple’s proposed construction.

The patents disclose that portable terminals include “portable telephone and a Personal Handyphone System (PHS) . . . and a personal data assistance (PDA) terminal provided with portable telephone or PHS data communication functions.” ’498 Patent at 1:5-10. Thus, the claimed “portable terminal” is not limited to a device for data communication of a portable telephone and a Personal Handyphone System (PHS) terminal. Rather, the patents provide exemplary structures as communication devices that were used in ordinary portable telephones and personal handyphone systems (PHS), not that there be two devices of data communication in the portable terminal at each time. Ex. 11 ¶ 63 (citing ’498 Patent, 2:56-62 (“the portable terminal of the present invention with the function of walking navigation is provided with data communication, input, and display devices just like those of ordinary portable telephones and PHS terminals.” (emphases added)). Further, using “device for data communication 76 of a portable terminal” also ensures that the disclosed embodiment of the PDA is not excluded. ’498 Patent at 1:5-10.

Maxell’s proposed construction is also supported by the additional disclosures in the patents, each of which use an “or” or an “and/or” between a portable telephone and a PHS terminal to confirm that the specification was not limiting the structure to require two devices of data communication in the portable terminal, but requires only that the device for data communication be like those implemented in portable telephone and PHS terminals. Ex. 11 ¶¶ 66-68 (citing ’498 Patent, 2:16-19, 2:38-42, 2:44-49, 3:39-43, 3:56-58, 5:6-10, 8:8-10, 8:50-54,

9:9-11, 9:52-55, and 10:17-22).

Thus, Maxell's proposed construction accounts for all the structures disclosed in the specification and the Court should adopt it.

V. CONCLUSION

As shown above, Apple has only one goal in this claim construction process: limit the scope of the claims by importing limitations from the specifications into the claims. Apple does so either by invoking § 112, ¶ 6, where it should not be, or treating exemplary disclosures as disavowals. In contrast, Maxell offers proposed constructions only when necessitated by the principles of claim construction. Accordingly, Maxell respectfully requests that Apple's proposed constructions be rejected and Maxell's proposed constructions be adopted.

Dated: November 18, 2019

/s/ Jamie B. Beaber

Geoff Culbertson

Kelly Tidwell

Patton, Tidwell & Culbertson, LLP

2800 Texas Boulevard (75503)

Post Office Box 5398

Texarkana, TX 75505-5398

Telephone: (903) 792-7080

Facsimile: (903) 792-8233

gpc@texarkanalaw.com

kbt@texarkanalaw.com

Jamie B. Beaber

Alan M. Grimaldi

Kfir B. Levy

James A. Fussell, III

Baldine B. Paul

Tiffany A. Miller

Saqib Siddiqui

Bryan Nese

William J. Barrow

Alison T. Gelsleichter

Clark S. Bakewell

MAYER BROWN LLP

1999 K Street, NW

Washington, DC 20006

Telephone: (202) 263-3000

Facsimile: (202) 263-3300

jbeaber@mayerbrown.com

agrimaldi@mayerbrown.com

klevy@mayerbrown.com

jfussell@mayerbrown.com

bpaul@mayerbrown.com

tmiller@mayerbrown.com

ssiddiqui@mayerbrown.com

bnese@mayerbrown.com

wbarrow@mayerbrown.com

agelsleichter@mayerbrown.com

cbakewell@mayerbrown.com

Robert G. Pluta

Amanda Streff Bonner

MAYER BROWN LLP

71 S. Wacker Drive
Chicago, IL 60606
(312) 782-0600
rpluta@mayerbrown.com
asbonner@mayerbrown.com

Counsel for Plaintiff Maxell, Ltd.

CERTIFICATE OF SERVICE

I hereby certify that all counsel of record who are deemed to have consented to electronic service are being served this 18th day of November, 2019, with a copy of this document via the Court's CM/ECF system.

/s/ Jamie B. Beaber

Jamie B. Beaber