

**UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

PERSONALIZED MEDIA COMMUNICATIONS, LLC	§	
	§	
Plaintiff,	§	
	§	
v.	§	Case No. 2:15-cv-01366-JRG-RSP
	§	(Lead)
APPLE, INC.,	§	
	§	
v.	§	Case No. 2:15-cv-01206-JRG-RSP
	§	(Consolidated)
TOP VICTORY ELECTRONICS (TAIWAN) CO. LTD., ET AL.,	§	
	§	
Defendants.	§	

MEMORANDUM OPINION AND ORDER

On June 28, 2016, the Court held a hearing to determine the proper construction of the disputed terms in four patents. The Court has considered the parties’ claim construction briefing (Dkt. Nos. 148, 160, 161, 162, and 163) and arguments. Based on the intrinsic and extrinsic evidence, the Court construes the disputed terms in this Memorandum Opinion and Order. *See Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005); *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831 (2015).

BACKGROUND AND THE ASSERTED PATENTS

Personalized Media Communications, (“PMC”) brought two actions alleging patent infringement. One action was brought against Apple, Inc. (“Apple”). Another action was brought against Top Victory Electronics (Taiwan) Co. Ltd., TPV Int’l (USA), Inc., Envision Peripherals, Inc., Top Victory Electronics (Fujian) Co. Ltd., TPV Electronics (Fujian) Co. Ltd., TPV

Technology Ltd., Hon Hai Precision Industry (Taiwan) Co., Ltd., Wistron Corp., Wistron Infocomm Technology (Texas) Corp., Wistron Infocomm Technology (America) Corp., and Vizio (collectively, “Vizio Defendants”). The two actions have been consolidated for pre-trial purposes. Further, the claim construction has been separated into two phases. This Opinion and Order addresses Phase 1. Phase 1 includes the construction of the four patents asserted in the action against Apple: U.S. Patent Nos. 7,752,649 (“the ’2,649 Patent”), 8,191,091 (“the ’091 Patent”), 8,559,635 (“the ’635 Patent”), and 8,752,088 (“the ’088 Patent”) (collectively, “the Phase 1 Patents”). The ’2,649 Patent is also asserted against the Vizio Defendants along with a number of other patents. The ’2,649 Patent claim terms that overlap both actions are included in the Phase 1 construction.

The Phase 1 patents are part of patent family which has extensive prosecution and litigation history, including multiple prior litigations, reexaminations and IPRs. The Phase 1 patents were originally filed in May and June 1995 and are part of a chain of continuation applications filed from U.S. Patent 4,965,825 (“the ’825 Patent). The ’825 Patent issued from an application filed in 1987. The ’825 Patent was a continuation-in-part application of another application first filed in 1981 (now U.S. Patent No. 4,694,490).¹ The parties appear to dispute which priority date is applicable to which Phase 1 Patent. At the hearing, the parties indicated that PMC originally contended that the ’635 Patent and ’088 Patent claims are entitled to a priority to the 1981 specification and the ’091 Patent and ’2,649 Patent claims are entitled to a priority to the 1987 specification. However, shortly before the hearing, PMC changed its contentions with regard to the ’091 Patent claims, now asserting priority to the 1981 specification. (Dkt. No. 194 at 13-14, 50-51.)

¹ For citations to the 1981 specification the parties cite to the ’490 Patent. For citations to the 1987 specification the parties cite to the ’091 Patent.

The disputed terms fall into 24 term groupings. In addition to the claim construction disputes, Apple and Vizio argue that PMC's expert declaration should be afforded no weight.²

The Phase 1 Patents generally relate to the delivery of programming content to consumers. More particularly, the patents relate to the concept of delivering "personalized" programming. The Phase 1 Patents share a common Abstract:

A unified system of programming communication. The system encompasses the prior art (television, radio, broadcast hardcopy, computer communications, etc.) and new user specific mass media. Within the unified system, parallel processing computer systems, each having an input (e.g., 77) controlling a plurality of computers (e.g., 205), generate and output user information at receiver stations. Under broadcast control, local computers (73, 205), combine user information selectively into prior art communications to exhibit personalized mass media programming at video monitors (202), speakers (263), printers (221), etc. At intermediate transmission stations (e.g., cable television stations), signals in network broadcasts and from local inputs (74, 77, 97, 98) cause control processors (71) and computers (73) to selectively automate connection and operation of receivers (53), recorder/players (76), computers (73), generators (82), strippers (81), etc. At receiver stations, signals in received transmissions and from local inputs (225, 218, 22) cause control processors (200) and computers (205) to automate connection and operation of converters (201), tuners (215), decryptors (224), recorder/players (217), computers (205), furnaces (206), etc. Processors (71, 200) meter and monitor availability and usage of programming.

'2,649 Abstract. In one of the IPR decisions, the concepts of the 1987 specification have been succinctly described in relation to U.S. Patent 5,887,243 as:

The '243 patent discloses a system for viewing a conventional broadcast program simultaneously with relevant user specific information at a subscriber station. Ex. 1003, 6:61-67.

Figure 1, below, is illustrative of the system.

² Apple contends that Dr. Weaver's declaration (Dkt. No. 148-41) consists of nothing more than conclusory statements and legal argument that should be given no weight. Apple further contends that Dr. Weaver admits that he is not an expert in analog or digital television or broadcast transmissions. (Dkt. No. 161 at 30 (citing Dkt. No. 161 Ex. 9, Weaver Tr. at 216:6-20).) Vizio makes similar assertions. The Court's findings as described herein do not rely on the Weaver declaration, largely rendering that dispute moot for the claim construction issues.

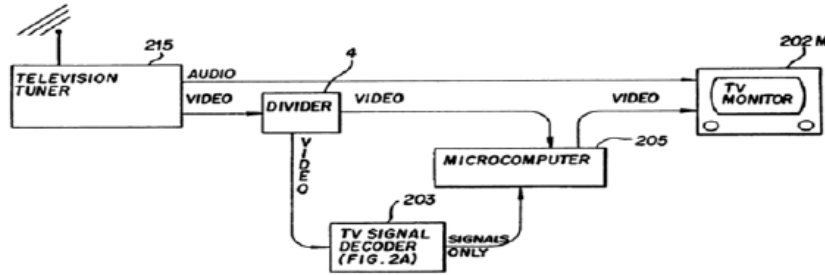


FIG. 1

Figure 1 “is a block diagram of a video/computer combined medium receiver station.” Ex. 1003, 9:39–40. The subscriber (receiver) station includes television tuner 215 for receiving a broadcast transmission, divider 4, TV signal decoder 203, microcomputer 205, and TV monitor 202M. Microcomputer 205 sends a query to a remote data source, and after receiving data from that source, generates graphics from that data that can be combined with the television broadcast video signal displayed by TV monitor 202M. *Id.* at 10:56–11:37; 236:65–237:20.

The ’243 patent provides an example of combining a graph of the market performance from a “Wall Street Week” program and financial data specific to each subscriber. In other words, monitor 205 displays “Wall Street Week” at the same time it displays previously stored data from another remote source that contains data about a user’s stock portfolio. *Id.* at 14:13–39. Microprocessor 205 accesses a floppy disk that holds a data file containing a portfolio of financial instruments owned by the specific subscriber at that subscriber station. During a program broadcast, microcomputer 205 also receives instruction signals embedded in the “Wall Street Week” programming transmission. *Id.* at 14:23–37. The embedded signals include a set of control instructions to control microcomputer 205 at each subscriber station. *Id.* at 13:1–14:38.

In response to the embedded signals, microcomputer 205 enters information at the video RAM of the graphics card for graphing the subscriber’s portfolio information. *Id.* at 13:44–65. A subsequent embedded signal instructs the microcomputer to overlay the graphic information onto the received video broadcast and transmit the combined information to TV monitor 202M, thereby displaying a dual graph showing a subscriber’s portfolio performance relative to the overall market performance generated during the “Wall Street Week” show. *Id.* at 14:23–36.

Figure 1C below, reproduced from the ’243 patent, depicts such an overlay:

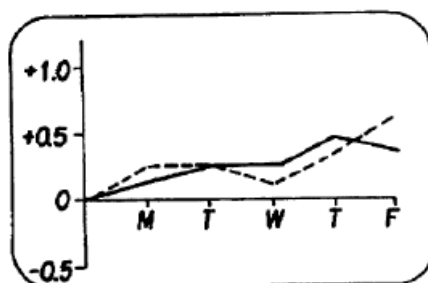


FIG. 1C

Figure 1C above depicts a dual graph representing an individual subscriber's portfolio performance overlaid on the Wall Street Week graph that represents overall market performance. As an example of creating the instruction signal to stimulate the overlay, during the broadcast of Wall Street Week, after the host describes overall market performance,

the host says, “[a]nd here is what your portfolio did.” At this point, an instruction signal is generated at said program origination studio, embedded in the programming transmission, and transmitted. . . . Said signal instructs microcomputer[] 205 . . . to overlay composite video information and transmit the combined information to TV monitor [205]. *Id.* at 14:23–33.

(Dkt. No. 161 Ex. 14 at 3-5.)

LEGAL PRINCIPLES

Claim Construction

“It is a ‘bedrock principle’ of patent law that ‘the claims of a patent define the invention to which the patentee is entitled the right to exclude.’” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quoting *Innova/Pure Water Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). To determine the meaning of the claims, courts start by considering the intrinsic evidence. *Id.* at 1313; *C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 861 (Fed. Cir. 2004); *Bell Atl. Network Servs., Inc. v. Covad Commc’ns Group, Inc.*, 262 F.3d 1258, 1267 (Fed. Cir. 2001). The intrinsic evidence includes the claims themselves, the specification, and the prosecution history. *Phillips*, 415 F.3d at 1314; *C.R. Bard, Inc.*, 388 F.3d at 861. The general rule—subject to certain specific exceptions discussed *infra*—is that each claim

term is construed according to its ordinary and accustomed meaning as understood by one of ordinary skill in the art at the time of the invention in the context of the patent. *Phillips*, 415 F.3d at 1312–13; *Alloc, Inc. v. Int’l Trade Comm’n*, 342 F.3d 1361, 1368 (Fed. Cir. 2003); *Azure Networks, LLC v. CSR PLC*, 771 F.3d 1336, 1347 (Fed. Cir. 2014) (“There is a heavy presumption that claim terms carry their accustomed meaning in the relevant community at the relevant time.”) (vacated on other grounds).

“The claim construction inquiry . . . begins and ends in all cases with the actual words of the claim.” *Renishaw PLC v. Marposs Societa’ per Azioni*, 158 F.3d 1243, 1248 (Fed. Cir. 1998). “[I]n all aspects of claim construction, ‘the name of the game is the claim.’” *Apple Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1298 (Fed. Cir. 2014) (quoting *In re Hiniker Co.*, 150 F.3d 1362, 1369 (Fed. Cir. 1998)). First, a term’s context in the asserted claim can be instructive. *Phillips*, 415 F.3d at 1314. Other asserted or unasserted claims can also aid in determining the claim’s meaning, because claim terms are typically used consistently throughout the patent. *Id.* Differences among the claim terms can also assist in understanding a term’s meaning. *Id.* For example, when a dependent claim adds a limitation to an independent claim, it is presumed that the independent claim does not include the limitation. *Id.* at 1314–15.

“[C]laims ‘must be read in view of the specification, of which they are a part.’” *Id.* (quoting *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc)). “[T]he specification ‘is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.’” *Id.* (quoting *Vitronics Corp. v. Conceptoronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)); *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1325 (Fed. Cir. 2002). But, “[a]lthough the specification may aid the court in interpreting the meaning of disputed claim language, particular embodiments and

examples appearing in the specification will not generally be read into the claims.” *Comark Commc’ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1187 (Fed. Cir. 1998) (quoting *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1571 (Fed. Cir. 1988)); *see also Phillips*, 415 F.3d at 1323. “[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.” *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 913 (Fed. Cir. 2004).

The prosecution history is another tool to supply the proper context for claim construction because, like the specification, the prosecution history provides evidence of how the U.S. Patent and Trademark Office (“PTO”) and the inventor understood the patent. *Phillips*, 415 F.3d at 1317. However, “because the prosecution history represents an ongoing negotiation between the PTO and the applicant, rather than the final product of that negotiation, it often lacks the clarity of the specification and thus is less useful for claim construction purposes.” *Id.* at 1318; *see also Athletic Alternatives, Inc. v. Prince Mfg.*, 73 F.3d 1573, 1580 (Fed. Cir. 1996) (ambiguous prosecution history may be “unhelpful as an interpretive resource”).

Although extrinsic evidence can also be useful, it is “less significant than the intrinsic record in determining the legally operative meaning of claim language.” *Phillips*, 415 F.3d at 1317 (quoting *C.R. Bard, Inc.*, 388 F.3d at 862). Technical dictionaries and treatises may help a court understand the underlying technology and the manner in which one skilled in the art might use claim terms, but technical dictionaries and treatises may provide definitions that are too broad or may not be indicative of how the term is used in the patent. *Id.* at 1318. Similarly, expert testimony may aid a court in understanding the underlying technology and determining the particular meaning of a term in the pertinent field, but an expert’s conclusory, unsupported

assertions as to a term's definition are entirely unhelpful to a court. *Id.* Generally, extrinsic evidence is "less reliable than the patent and its prosecution history in determining how to read claim terms." *Id.* The Supreme Court recently explained the role of extrinsic evidence in claim construction:

In some cases, however, the district court will need to look beyond the patent's intrinsic evidence and to consult extrinsic evidence in order to understand, for example, the background science or the meaning of a term in the relevant art during the relevant time period. *See, e.g., Seymour v. Osborne*, 11 Wall. 516, 546 (1871) (a patent may be "so interspersed with technical terms and terms of art that the testimony of scientific witnesses is indispensable to a correct understanding of its meaning"). In cases where those subsidiary facts are in dispute, courts will need to make subsidiary factual findings about that extrinsic evidence. These are the "evidentiary underpinnings" of claim construction that we discussed in *Markman*, and this subsidiary fact finding must be reviewed for clear error on appeal.

Teva Pharm. USA, Inc. v. Sandoz, Inc., 135 S. Ct. 831, 841 (2015).

Departing from the Ordinary Meaning of a Claim Term

There are "only two exceptions to [the] general rule" that claim terms are construed according to their plain and ordinary meaning: "1) when a patentee sets out a definition and acts as his own lexicographer, or 2) when the patentee disavows the full scope of the claim term either in the specification or during prosecution."³ *Golden Bridge Tech., Inc. v. Apple Inc.*, 758 F.3d 1362, 1365 (Fed. Cir. 2014) (quoting *Thorner v. Sony Comput. Entm't Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012)); *see also GE Lighting Sols., LLC v. AgiLight, Inc.*, 750 F.3d 1304, 1309 (Fed. Cir. 2014) ("[T]he specification and prosecution history only compel departure from the plain meaning in two instances: lexicography and disavowal."). The standards for finding lexicography or disavowal are "exacting." *GE Lighting Sols.*, 750 F.3d at 1309.

³ Some cases have characterized other principles of claim construction as "exceptions" to the general rule, such as the statutory requirement that a means-plus-function term is construed to cover the corresponding structure disclosed in the specification. *See, e.g., CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1367 (Fed. Cir. 2002).

To act as his own lexicographer, the patentee must “clearly set forth a definition of the disputed claim term,” and “clearly express an intent to define the term.” *Id.* (quoting *Thorner*, 669 F.3d at 1365); *see also Renishaw*, 158 F.3d at 1249. The patentee’s lexicography must appear “with reasonable clarity, deliberateness, and precision.” *Renishaw*, 158 F.3d at 1249.

To disavow or disclaim the full scope of a claim term, the patentee’s statements in the specification or prosecution history must amount to a “clear and unmistakable” surrender. *Cordis Corp. v. Boston Sci. Corp.*, 561 F.3d 1319, 1329 (Fed. Cir. 2009); *see also Thorner*, 669 F.3d at 1366 (“The patentee may demonstrate intent to deviate from the ordinary and accustomed meaning of a claim term by including in the specification expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope.”). “Where an applicant’s statements are amenable to multiple reasonable interpretations, they cannot be deemed clear and unmistakable.” *3M Innovative Props. Co. v. Tredegar Corp.*, 725 F.3d 1315, 1326 (Fed. Cir. 2013).

Definiteness Under 35 U.S.C. § 112, ¶ 2 (pre-AIA) / § 112(b) (AIA)⁴

Patent claims must particularly point out and distinctly claim the subject matter regarded as the invention. 35 U.S.C. § 112, ¶ 2. A claim, when viewed in light of the intrinsic evidence, must “inform those skilled in the art about the scope of the invention with reasonable certainty.” *Nautilus Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2129 (2014). If it does not, the claim fails § 112, ¶ 2 and is therefore invalid as indefinite. *Id.* at 2124. Whether a claim is indefinite is determined from the perspective of one of ordinary skill in the art as of the time the application for the patent was filed. *Id.* at 2130. As it is a challenge to the validity of a patent, the failure of any claim in suit to comply with § 112 must be shown by clear and convincing evidence. *Id.* at

⁴ Because the applications resulting in the Asserted Patents were filed before September 16, 2012, the Court refers to the pre-AIA version of § 112.

2130 n.10. “[I]ndefiniteness is a question of law and in effect part of claim construction.” *ePlus, Inc. v. Lawson Software, Inc.*, 700 F.3d 509, 517 (Fed. Cir. 2012).

When a term of degree is used in a claim, “the court must determine whether the patent provides some standard for measuring that degree.” *Biosig Instruments, Inc. v. Nautilus, Inc.*, 783 F.3d 1374, 1378 (Fed. Cir. 2015) (quotation marks omitted). Likewise, when a subjective term is used in a claim, “the court must determine whether the patent’s specification supplies some standard for measuring the scope of the [term].” *Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1351 (Fed. Cir. 2005); accord *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1371 (Fed. Cir. 2014) (citing *Datamize*, 417 F.3d at 1351).

In the context of a claim governed by 35 U.S.C. § 112, ¶ 6, the claim is invalid as indefinite if the claim fails to disclose adequate corresponding structure to perform the claimed functions. *Williamson*, 792 F.3d at 1351–52. The disclosure is inadequate when one of ordinary skill in the art “would be unable to recognize the structure in the specification and associate it with the corresponding function in the claim.” *Id.* at 1352.

AGREED TERMS

The parties agreed to the following constructions:

Term	Agreed Construction As Between PMC and Apple
enabling information (’091 Patent claim 26)	information that enables decryption of said encrypted information
multimedia receiving apparatus (’088 Patent claim 14)	a device that is capable of receiving and processing multiple forms of media
decryptor (’635 Patent claims 1, 2, 18, 21, 32, 33)	a device or circuitry that performs decryption
processor instructions	needs no construction

('091 Patent claim 20)	
control information	needs no construction
('2,649 Patent claims 39, 54, 62, 67)	
control signal	needs no construction
('635 Patent claims 1, 2, 3, 32; '2,649 Patent claim 54).	

(Dkt. No. 170 at 3, 5, 6, 15, 20.)

Term	Agreed Construction As Between PMC and Vizio
processor ('2,649 Patent claim 39)	a device that performs operations according to instructions
programming ('2,649 Patent claim 39)	everything that is transmitted electronically to entertain, instruct, or inform, including television, radio, broadcast, print, and computer programming as well as combined medium programming
digital video signals ('2,649 Patent claim 39)	video signals encoded as discrete numerical values instead of an analog representation
control information ('2,649 Patent claim 39)	needs no construction
control signal ('2,649 Patent claim 39)	needs no construction

(Dkt. No. 170 at 14, 15-16.)

DISPUTED TERMS

1. **decrypting or decryption** ('091 Claims 13, 20, 26; '635 Claims 1, 2, 13, 18, 20, 21, 32, 33) / **decryption key** ('091 Claims 13, 20) / **encrypted** ('091 Claims 13, 20, and 26; '635 Claims 1, 2, 18, 20, 21, 32, 33)

Term	PMC's Construction	Apple's Construction
decrypting / decryption	a method that uses a digital key in conjunction with an associated algorithm to decipher (render intelligible or usable) digital data	deciphering (rendering intelligible or usable) data using a key
decryption key	digital data used by a device or method in conjunction with an associated algorithm to decipher (render intelligible or usable) encrypted digital information	key used for deciphering (rendering intelligible or usable) data
encrypted	an operation performed on digital data in conjunction with an associated algorithm and digital key to render the digital data unintelligible or unusable	encoded (rendered unintelligible or unusable) using a key

The parties dispute if the terms only encompass “digital” processes using a “digital” key.

Positions of the Parties

PMC contends that its construction is consistent with the ruling in *Personalized Media Commc'ns v. Scientific-Atlanta, Inc.*, Civil Action. No. 1:02-cv-824-CAP (N.D. Ga. Jun. 6, 2005) and the PTO Board decisions during reexaminations of two related PMC patents. (Dkt. No. 148 at 2 (*citing* Dkt. No. 148-27 at 77–78 & Dkt. No. 148-28 at 53–54).) PMC also contends that a Delaware court found that the terms require the use of “digital.” (Dkt. No. 148 at 4 (*citing* *Pegasus Dev. Corp. v. DIRECTV, Inc.*, Case No. 1:00-cv-1020, at *2 n.1 (D. Del. Mar. 25, 2003) (Dkt. No. 715).)

PMC contends that Apple's construction ignores the fact that the Phase 1 patents make clear that decryption and encryption are processes used in connection with digital data. PMC

contends encryption/decryption does not encompass scrambling/descrambling analog signals.

PMC quotes passages from the '091 Patent:

Various scrambling means are well known in the art for scrambling, usually the video portion of analogue television transmissions in such a fashion that only subscriber stations with appropriate descrambling means have capacity to tune suitably to the television transmission and display the transmitted television image information. Encryption/decryption means and methods, well known in the art, can regulate the reception and use of, for example, digital video and audio television transmissions, digital audio radio and phonograph transmission, digital broadcast print transmission, and digital data communications.

'091 Patent 143:20-30.

It is obvious to one of ordinary skill in the art that the foregoing is presented by way of example only and that the invention is not to be unduly restricted thereby since modifications may be made in the structure of the various parts without functionally departing from the spirit of the invention. For example, the decryption cipher key information and/or algorithm instructions and/or the location or locations of said key information and/or instructions may be computed in other, more complex or less complex, fashions. And for example, the transmitted programming may be processed through fewer than three steps of decryption or more than three. And for example, the "Wall Street Week" transmission may be of conventional analog television, and the decryptors 107, 224, and 231, may be conventional descramblers, well known in the art, that descramble analog television transmissions and are actuated by receiving digital key information.

Id. 159:46-61. PMC contends that in context of the paragraphs above the last sentence does not mean that descrambling is the same as decryption. PMC points at a sentence which states that "conventional descramblers" (analog) may be used in place of, or as an alternative to, the "decryptors, 107, 224, and 231." (Dkt. No. 148 at 3.)

PMC contends that specification when read in context makes clear that decryptors may be replaced with descramblers if the transmission is "of conventional analog television" because conventional descramblers, PMC says, descramble analog transmissions and decryptors operate on digital information. (Dkt. No. 163 at 1.) PMC contends a recent Patent Trial and Appeals Board ("PTAB") panel decision and prior ruling on this issue from the Eastern District of Texas

read the specification out of context and incorrectly equate descrambling with decrypting. (Dkt. No. 148 at 3, n.8.)

PMC further points to the PTO Board statement in reexamination of a related patent:

We find encryption to be distinct from scrambling and do not find the use of one to teach the use of the other. We find that decryption has utility with digital signals, and the use of a decryptor and decryption, in the context of the instant Specification, is made specifically with respect to digital signals.

(Dkt. No. 148 Ex. K at 67–68.) PMC also points to the Board’s decision in an appeal of the ’825 Patent in which the Board stated:

We agree with Appellant that “encryption,” as it would have been commonly defined by one of ordinary skill in the art at the time of filing, requires a “digital” signal. . . . We conclude that “encryption” and “decryption” are not broad enough to read on “scrambling” and “unscrambling.”

(Dkt. No. 148 Ex. I at 53–54.) PMC contends that these two Board decisions were made with respect to the same terms and the same specifications now at issue. PMC further contends that in the reexamination, it unequivocally disclaimed any construction of “decrypt” that encompasses descrambling of analog content. PMC contends in *Pegasus Dev. Corp. v. DIRECTV, Inc.*, the Delaware court relied on this disclaimer. It also notes that Apple’s expert Mr. Wechselberger has stated in contemporaneous publications that encryption is a digital process. (Dkt. No. 148 at 3–4.)

In response, Apple contends explicit statements in the specification show that the term should not be limited to digital data. Apple notes that a prior decision from this District declined did not include a “digital-only” requirement. Apple points to the specification passage that PMC addressed above and highlights the sentence that says: “decryptors, 107, 224, and 231, may be conventional descramblers, well known in the art, that descramble analog television transmissions.” ’091 Patent 159:57–61. Apple points out a Court in this District relied on that

statement to construe several decryption-related terms in patents with the same specification. Apple further contends based on the same evidence presented by PMC, that the Court “reject[ed] PMC’s attempt to limit the encrypt/decrypt terms to digital data.” *Personalized Media Commc’ns v. Motorola, Inc.*, Case No. 2:08-cv-70-CE, Dkt. 271, at **49–54 (E.D. Tex. Sept. 30, 2011). Apple also points to recent PTAB decisions rejecting PMC’s attempt to limit decryption to digital data as support for its position. (Dkt. No. 161 at 3 (*citing* Dkt. No. 161-3 at 8–10 & Dkt. No. 161-4 at 7–11 (“decryption” encompasses analog descrambling)).)

Apple contends the construction in *Scientific Atlanta* was an agreed construction and not a court ruling. Apple also cites extrinsic dictionary definitions which equate “encryption” with “scrambling.” Apple further contends that PMC’s own extrinsic evidence notes the terms “encrypting” and “scrambling” are often used interchangeably. (Dkt. No. 161 at 4, n. 6.)

As to “decryption key,” Apple contends none of the claims specify the decryption key must be “digital” and further argues the specification’s reference to “digital key” clarifies that a key is not inherently digital. Apple contends PMC’s construction confusingly references “data used” to decipher other data. Apple contends “key” is a well understood and widely used term, as PMC’s expert acknowledges. (*Id.* at 4–5.) Apple notes PMC uses “key” in its constructions of “decrypting” and “encrypted” and that other courts have used “key” as a word in a construction. (*Id.* (*citing* Dkt. No. 161-2 at 49, 54; Dkt. No. 161-11 at 11).)

At the hearing, PMC further emphasized that that statements made by the applicants during the prosecution process made clear that the terms in question were limited to use in a digital environment. In particular, PMC pointed to three different filings. (Dkt. No. 194 at 12–16.) PMC noted that the applicants stated in a 2007 Appeal Brief that “decrypting of encrypted signals recited in claim 15 relates to digital signals” and “decryption pertains to digital signals,

which is different from descrambling, which pertains to analog signals.” (Dkt. No. 182-1 at 30.) PMC also pointed to a 2008 reexamination Reply Brief stating that “a decryptor that decrypts signals as interpreted in light of the specification does not include analog scrambling” and “[h]ere, the inventor expressly distinguished his use of terminology ‘encryption/decryption’ In essence, the inventor expressly advised the reader that terms “encryption” and “decryption” in the patent meant something beyond conventional scrambling/descrambling (Dkt. No. 182-4 at 41.) Finally, PMC identified a 2013 Amendment which stated that the applicants “have consistently asserted that encryption and decryption require a digital signal.” (Dkt. No. 182-5 at 17.)

Analysis

The Court finds the intrinsic record as a whole supports PMC’s position and that the extrinsic record does not contradict it. The parties cannot seriously dispute that the specification, as a whole, talks about decryption and encryption in the context of digital operations. The passage Apple relies on, however, states in some cases “transmission may be [] conventional analog television, and the decryptors 107, 224, and 231, may be conventional descramblers, well known in the art, that descramble analog television transmissions and are actuated by receiving digital key information.”

The Court notes that in isolation, this passage seems to support Apple’s position. As stated above, however, the intrinsic record as a whole shows that PMC reading of the passage is the correct one. The other parts of the specification show that decryption and encryption are consistently used in the context of the digital operations. For example, the specification says “[e]ncryption/decryption means and methods, well known in the art, can regulate the reception and use of, for example, digital video and audio television transmissions, digital audio radio and

phonograph transmission, digital broadcast print transmission, and digital data communications.” ’091 Patent 143:25–30; *id.* at 73:34–37 (“using standard encryption techniques, well known in the art, that encrypt binary information”); *id.* at 101:51–57; *id.* at 147:21–23 (“Decryptors, 107, 224 and 231, are conventional decryptors, well known in the art, with capacity for receiving encrypted digital information...); ’490 Patent 4:65–66 (“decryptors that may convert the received information, in part or in whole, to other digital information”). Furthermore, as noted by PMC, during prosecution the applicants repeatedly acknowledged the terms were limited to a digital context. (Dkt. No. 182-1 at 30; Dkt. No. 182-4 at 41; Dkt. No. 182-5 at 17.) Thus, the Court finds that the intrinsic record is not one passage. The intrinsic record shows that descramblers and decryptors are different and that in analog situations, instead of decrypting, descrambling may be used.

The Court finally addresses the various conclusions on this issue that sections of the Patent and Trademark Office (“PTO”) and various courts have reached. *First*, the Court notes that the PTAB applies a different claim construction standard from District Courts. Thus it is expected that the PTAB’s construction includes concepts that are not covered by the Court’s construction. *Second*, the Court notes the court in *Motorola* did not have the opportunity to address many of the prosecution history statements in this record. In sum, the Court finds the intrinsic record as a whole shows that PMC has the correct reading of this term.

The Court construes the terms as follows:

- **“decrypting” and “decryption” means “a method that uses a digital key in conjunction with an associated algorithm to decipher (render intelligible or usable) digital data”**

- **“decryption key” means “digital data used by a device or method in conjunction with an associated algorithm to decipher (render intelligible or usable) encrypted digital information”**
 - **“encrypted” means “an operation performed on digital data in conjunction with an associated algorithm and digital key to render the digital data unintelligible or unusable”**
2. **encrypted digital information transmission (’091 Claims 13, 20; ’635 Claims 18, 20, 32, 33)**

PMC’s Construction	Apple’s Construction
signals sent or passed from one location to another location to convey digital information which is in encrypted form	a transmission from one location to other locations that includes digital information in unintelligible or unusable form
“digital information” includes instructions / commands and data	

The primary issue raised by the parties relates to whether the transmission must be a one-to-many transmission or may it be a one-to-one transmission.

Positions of the Parties

Apple notes that PMC did not brief this term separately from the other encrypting terms. Apple objects to the inclusion of the “from one location to another location” limitation. Apple contends that PMC’s language suggests point-to-point individualized communications which is contrary to the intrinsic evidence. Apple contends that in the specification it is clear that the invention relates to point-to-multipoint transmissions sent via “broadcast” or “cablecast” to multiple subscribers. (Dkt. No. 161 at 5–6 (*citing* ’091 Patent 6:47–51, 7:13–15, 11:33–39, 8:34–44; 11:23–28; 15:47–57; 18:4–12; 146:62–147:18; 173:56–174:25).) Apple contends the PTO

stated in reexamination that the examples in the specification are all one-to-many communications and that PMC's expert and inventor, Harvey, admitted the same. (*Id.* at 6.) Apple contends that while the specifications describe contacting individual stations with a message that might be intelligible to just one station ('091 Patent 175:19-34, 7:40-49, 143:18-144:21), nowhere does the specification describe a transmission that can be targeted such that it is only sent to (and received by) one recipient. (Dkt. No. 161 at 6.) Apple notes that PMC's own expert admitted that, at the time of the invention, such targeting would have been impossible. (*Id.*)

Apple further objects to PMC's construction for requiring two sub-constructions ("digital information" and "encrypted"), including alternative options without explaining the difference ("signals sent or passed") and using vague terminology ("to convey"). Apple contends that PMC's construction would confuse, rather than assist, the jury.

In reply, PMC contends that a term need not be limited to only the disclosed embodiments. PMC further contends that the written description (1987 specification) describes not only point-to-multipoint transmissions but also point-to-point transmissions. (Dkt. No. 163 at 2 (citing '091 Patent 23:13-19, 23:30-33, 23:66-24:13).) PMC also contends that both its expert and the inventor further testified that the inventions describe both point-to-multipoint and point-to-point communications. (*Id.* at 2, n. 3.)

Analysis

As to the one-to-many or one-to-one dispute, the claim term in question merely references "transmission." PMC's construction attempts to indirectly include a resolution of the one-to-many or one-to-one dispute into the present disputed term. Similarly, Apple's construction attempts to render such a resolution through the use of "one location to other

locations” (plural). However, the claim term in question is merely “transmission” and is not limited to a particular type of transmission, nor has PMC or Apple identified intrinsic evidence so mandating a particular transmission. To the extent that the parties raise issues as to the meaning of “programming,” “television,” or “broadcast,” the one-to-many dispute is more appropriately addressed within such terms where the issue is squarely raised. Here, the claim term is merely “transmission.” As noted by PMC, the specification does make reference to SPAM signals containing information well known in a variety of transmission techniques, including point-to-point communications. ’091 Patent 23:13-19. The Court does not find that “transmission” as used in the ’091 Patent has been disavowed such that it is limited to only one-to-many transmissions. Having resolved the parties’ dispute and having construed the term “encrypted” above, the Court finds that the remaining elements of the term need no further construction. *See O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1362 (Fed. Cir. 2008) (“[D]istrict courts are not (and should not be) required to construe every limitation present in a patent’s asserted claims.”); *Finjan, Inc. v. Secure Computing Corp.*, 626 F.3d 1197, 1207 (Fed. Cir. 2010) (“Unlike *O2 Micro*, where the court failed to resolve the parties’ quarrel, the district court rejected Defendants’ construction.”).

The Court finds that having construed “encrypted,” “encrypted digital information transmission” needs no further construction.

3. to decrypt in a specific fashion on the basis of said code (’635 Claims 18, 33)

PMC’s Construction	Apple’s Construction
controlling the decrypting process through the selection of a decryptor, a decryption key and/or a decryption algorithm based on the received code	to decrypt with a method specified by said code

The primary issue raised is whether the code is limited to indicating the method of decryption or could it indicate the decryptor or the key also.

Positions of the Parties

PMC contends that the specification describes embodiments in which, based on the received code, the decryption process may include selection of a decryptor, decryption key and/or decryption algorithm. (Dkt. No. 148 at 5 (citing '490 Patent 14:10-27, 21:35-43, 13:24-31).) PMC objects to Apple's construction for requiring the code to specify the method of decryption. PMC contends that the claim and specification do not limit the content of the code in that manner and more broadly just state that the operation is taken "on the basis of said code." PMC contends that Apple improperly limits the term to just one embodiment and that the specifications describe operations taken on the basis of the code such as selection of a decryption key and passing the key to a selected decryptor. PMC contends that requiring the code to "specify the method" of decryption would contradict the plain language of the claim and the disclosed embodiments. (Dkt. No. 163 at 2.)

Apple contends that PMC reads out of the term "specific fashion." Apple contends that its construction properly credits the plain meaning of "fashion" as being the method according to which the step is performed. (Dkt. No. 161 at 7.) As to use of "specified" in Apple's construction, Apple contends this comes literally from the term's use of "specific" and PMC should not read out this word of the term. Apple contends that PMC distorts the meaning of the term by listing different aspects of the process or circuitry that can be selected. (*Id.*)

Analysis

The claim language merely requires a "specific fashion." Apple does not identify intrinsic evidence that would limit the "fashion" of the decryption to be the decryption algorithm. At the

hearing, PMC agreed to describing the term in context of the “way” that decryption occurs, but emphasized that the “way” includes selecting particular decryptors, keys, and/or algorithms. (Dkt. No. 194 at 32.) At the hearing, Apple agreed to a construction using “a particular way” in place of the “method” concept of Apple’s construction. However, Apple contended that the “way” decryption occurs does not include selecting a particular decryptor or key. (*Id.* at 33-34.)

As noted by PMC, the “specific fashion” that decryption occurs may include a number of factors including which decryptor is used, the key, the algorithm, etc. This conforms to the specification which describes selecting decryptors, keys or algorithms. ’490 Patent 14:10-27, 21:35-43, 13:24-31. All these variables impact how the decryption occurs. Apple has not rebutted this intrinsic evidence. The Court adopts a construction in which the term describes the way that decryption occurs. The Court explicitly notes that the “way decryption occurs” is not limited to only the selection of an algorithm but would encompass the selection of decryptors or keys as described in the specification.

The Court construes “to decrypt in a specific fashion on the basis of said code” to mean “to control the way decryption occurs based on the received code.”

4. determining a fashion in which said receiver station locates a first decryption key (’091 Claim 13)

PMC’s Construction	Apple’s Construction
<p>This term does not require construction beyond its plain and ordinary meaning.</p> <p>To the extent, however, that the Court believes such term requires construction:</p> <p>determining how the receiver station locates a first decryption key.</p>	<p>deciding which method said receiver will use to locate a first decryption key</p>

The issues raised by the parties are substantially similar to the “specific fashion” dispute of the prior claim term.

Positions of the Parties

PMC contends the term is clear on its own. PMC contends that Apple substitutes “deciding which method” for “determining a fashion.” Apple contends that in the immediately prior term, PMC included a lengthy definition for “fashion” and, thus, cannot argue that the determining term needs no construction. Apple further contends that PMC’s construction reads out of the term the “fashion” limitation (Apple relies on the “fashion” arguments for the prior term). Apple contends that in light of the specification, “fashion” does not require a receiver to just know “how” to locate a key, but it makes a decision as to the method of locating a key. (Dkt. No. 161 at 8.)

Analysis

Apple seeks to limit “fashion” to merely different methods. As noted above for the prior term, the “fashion” in which something occurs is not limited to just differing methods. In the context of the specification, the determination relates to the way the receiver station locates a first decryption key.

The Court construes “determining a fashion in which said receiver station locates a first decryption key” to mean “determining the way the receiver station locates a first decryption key.”

5. remote source (’091 Claim 26) / remote transmitter station (’635 Claim 3)

Term	PMC’s Construction	Apple’s Construction
remote source	a source of information or data that is at a location different from the receiver station that is connected via a communications path	needs no construction in the alternative, a

		separate source
remote transmitter station	a station that is at a location different from a receiver station that transmits programming or other information	needs no construction in the alternative, a separate transmitter station

The primary dispute focuses on whether “remote” merely means that the sources are separate or does “remote” mean that the source is at a different location than the receiver.

Positions of the Parties

PMC contends that the 1981 specification describes the transmitter stations having the capability to transmit data to remote sites, which are different “geographic location or locations.” (Dkt. No. 148 at 6-7 (citing ’490 Patent 8:46-55, 1:49-53, 3:20-25).) PMC contends the 1987 specification contrasts “local stations” with “remote stations.” (*Id.* at 7 (citing ’091 Patent 159:46-160:28).) PMC’s expert contends that one skilled in the art would recognize that “remote,” in context of the specification, refers to a source or transmitter that is remote from a receiver station. (*Id.*) PMC contends that Apple’s construction would encompass sources or stations that are in the same geographic location as the receiver station.

Apple contends that, on multiple occasions, PMC argued nearly identical “remote” terms require no construction. (Dkt. No. 161 at 8 (citing Dkt. No. 161 Ex. 13 *PMC v. Zynga, Inc.*, 2:12-cv-68-JRG-RSP, Dkt. No. 150 at 27 (E.D. Tex. Aug. 28, 2013) and Dkt. No. 161 Ex. 10 *PMC v. Amazon.com, Inc.*, 1:13-cv-1608, Dkt. No. 126-2 at 25, 27, (D. Del. Apr. 2, 2015)).) Apple contends that the PTAB recently determined that PMC’s “different geographic location” limitation is not supported by the intrinsic evidence. (*Id.* (citing Ex. 14, *Amazon.com, Inc. v. PMC*, IPR2014-01527 Final Written Decision, Paper 42 (P.T.A.B. Mar. 23, 2016) at 23).) Apple also contends that PMC is also overloading the terms with “connected via a communication path” and “programming or other information.” Apple contends that to the extent a construction

is needed, this Court's constructions in *PMC v. Zynga, Inc.*, 2:12-cv-68-JRG-RSP, Dkt. No. 150 at 27 (E.D. Tex. Aug. 28, 2013) should apply: "separate data source" and "separate station(s)." (Dkt. No. 161 Ex. 13 at 29.) At the hearing, Apple emphasized that the specification describes a keyboard at the same location as a computer as being a "remote keyboard." '091 Patent 4:7-31. Apple, thus, contends that the specification establishes that items at the same location may still be remote, if separate. (Dkt. No. 194 at 34-35.)

In reply, PMC contends that Apple's constructions are so broad they would include sources that are local to the receiver station. PMC contends that "remote" and "local" are the very opposite. PMC contends that the specification expressly distinguished remote sources and stations from "local" devices. (Dkt. No. 163 at 2-3 (citing '091 Patent 148:46-50 (entering information on a local input), Figure 4 (showing local input 225 at a subscriber station)).) PMC contends that the PTAB IPR decision is not controlling as the broadest reasonable interpretation standard is used in such a decision. PMC also contends that the PTAB decision construed "remote" not "remote source" or "remote transmitter station." (*Id.*)

Analysis

The dispute presented by the parties is somewhat different than that presented in the *Zynga* case. Here, the parties appear to raise the dispute as to whether a source or station at the same location as the receiver station or subscriber station is "remote." Defendants are correct that, in the context of keyboards, the specification references "remote" in the context of a device that may be located at the same location as other devices, such as a keyboard that is remote from a television. However, the terms in question are not a remote keyboard or remote controller for a television. The proper context is a "remote source" and a "remote transmitter station." In the specification and particular claims, such sources and stations are remote from the receiver station

or subscriber station, in the context of not being at the same location. This usage is not in a context such as remote controls for a television, which are disconnected from a television but still at the same location. Rather, the specifications and the claims themselves indicate the terms in question relate to a usage contrasting remote sources / stations from local sources / stations. '490 Patent 8:46-55, 3:20-25; '091 Patent 159:46-160:4.

The Court construes “remote source” to mean “a source of information or data that is at a location different from the receiver station.” The Court construes “remote transmitter station” to mean “a transmitter station that is at a location different from the subscriber station.”

6. detecting ... ('091 Claim 13, 20, 26; '635 Claims 1, 2, 13, 20, 32; '2,649 Claims 39, 62, 67)

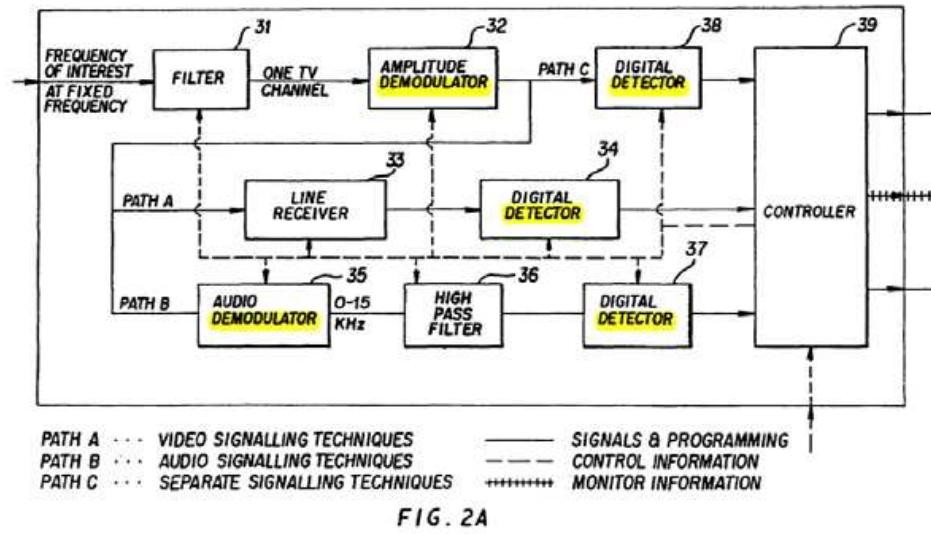
PMC’s Construction	Apple’s Construction
This term does not require construction beyond its plain and ordinary meaning	demodulating and identifying ...

The parties dispute whether or not “detecting” is limited to demodulation.

Positions of the Parties

PMC contends that various claims recite “detecting” information or signals and that the word “detecting” would be known to one skilled in the art. PMC objects to Apple’s inclusion of “demodulating.” PMC contends that in the disclosed embodiments, signal detection is performed by “digital detectors.” (Dkt. No. 148 at 8 (citing '091 Patent FIGS. 2A-2C; 18:58-60 (“... a digital detector, 34, which acts to detect the digital signal information embedded in said [video] information”); 19:3-5 (“The digital detector, 37, detects signal information embedded in said audio information ...”); 19:7-9 (“... a digital detector, 38, which detects signal information embedded in any other information portion of said television channel signal”))).) PMC also points

to the example of Figure 2A as illustrating that all of the digital detectors 34, 37 and 38 are located downstream from the demodulators 32 or 35:



'091 Patent Figure 2A (color added). PMC contends that the specification further describes the signals as being demodulated before reaching the detectors. *Id.* at 128:52-129:7, 130:46-62.

PMC contends that only when signal detection is described more generally at the decoder level is demodulation sometimes described as being part of the “detecting” step: “Decoder, 30, which is shown in detail in FIG. 2A, and decoder, 40, which is shown in FIG. 2B, detect signal information embedded in the respective inputted television and radio frequencies.” *Id.* at 16:6-9. PMC contends that other embodiments describe that signal decoders need not include any demodulator: “Receiving said embedded binary information at decoder, 203, (which does not include a filter, 31, or a demodulator, 32, because its input is a composite video transmission) causes line receiver, 33, automatically to detect and transfer said embedded information to digital detector, 34, which automatically detects the binary information ...” (*Id.* at 47:61-66) and “[s]aid decoders can be located in the aforementioned circuitry of their associated apparatus in such

fashions that said decoders do not require filters, 31, and demodulators, 32 and 35, (in the case of TV signal de-coders)...” (*Id.* at 162:11-15).

PMC also notes that the Federal Circuit previously construed “digital detector” in the related U.S. Patent 5,335,277 as “a device that ‘acts to detect the digital signal information’ in other information.” *Personalized Media Communications, LLC v. ITC*, 161 F.3d 696, 704-706 (Fed. Cir. 1998). PMC contends that the claims themselves make clear that the detector’s function is either determining the presence of a signal (’091 Patent claims 13 and 26) or detecting signals in a transmission stream (’635 Patent claims 13, 20, 32 and ’2,649 Patent claims 39, 62.) PMC also points to prior rulings in other PMC cases. (Dkt. No. 148 at 10 (citing Rpt. and Recom. of Special Master Regarding Cl. Constr., *Pegasus Dev. Corp. v. DIRECTV, Inc.*, C.A. 1:00cv1020 (D. Del. March 25, 2003) at 33-34 (construing “detecting” to mean “extracting intelligence from a signal”); *PMC v. Motorola, Inc.*, C.A. 2:08cv70 (E.D. Tex. Sept. 30, 2011) at 33 (construing “detector means” to mean a “device for determining the presence of a signal”)).)

Apple contends that PMC previously argued that a person of skill in the art would understand that the “detector” term refers to a “demodulator.” (Dkt. No. 161 Ex. 15 (Appellant Brief) *PMC v. ITC*, No. 98-1160, 1998 WL 34099922 at *26 (Fed. Cir. Apr. 20, 1998).) In particular, Apple contends that PMC stated that “those of ordinary skill in the electrical arts in 1981 would have reasonably understood that the term ‘digital detector’ 10 referred to demodulation circuitry.” (*Id.* at *26.) Apple contends that the Federal Circuit ruled in PMC’s favor in an indefiniteness dispute and found that the term had meaning to one skilled in the art. (Dkt. No. 161 at 10 (citing *PMC v. ITC*, 161 F.3d 696, 704-707 (Fed. Cir. 1998)).) Apple contends that PMC is estopped from arguing otherwise now.

Apple further contends that the demodulators that PMC identifies as allegedly being distinct from the detectors do not show such a distinction. In particular, Apple contends that the demodulators perform an earlier demodulation step that extracts other information from a signal (such as extracting a television signal from a carrier signal). Apple contends that even PMC's expert acknowledged these demodulators extract the television signal from the carrier signal. (Dkt. No. 161 at 10.) Apple contends that the signal sent to the detectors is further demodulated in the detector to extract digital information from the television signal. (Dkt. No. 161 at 10 (citing '091 Patent 18:47-19:13).)

Apple contends that PMC is wrong in asserting that only some embodiments include a demodulator. Apple contends that each detection path embodiment would include a demodulator (even if it is not in each decoder) to demodulate the baseband television signal or the composite video transmission. (Dkt. No. 161 at 11 (citing Weaver Tr.)) Apple contends that PMC's expert (Weaver) acknowledged that "detecting" had a particular technical meaning to one skilled in the art. Apple further points to several technical dictionaries to support its position that "detection" is "the procedure found in a demodulator" or equated to demodulation. (*Id.*) At the hearing, when asked by the Court if the specification disclaimed the ordinary meaning of "detecting," Apple contended that there was no disclaimer, but that disclaimer was not needed because the ordinary meaning means "demodulation." (Dkt. No. 194 at 42-43.)

In reply, PMC contends that the Federal Circuit arguments PMC made twenty years ago relate to a different claim term. In that case, the term related to a noun ("digital detector") in apparatus claims of U.S. Patent 5,335,277. PMC contends the usage was fundamentally different from the detecting method steps at issue now. PMC contends that different terms, in different claims, concerning an apparatus rather than process steps does not create estoppel. Moreover,

PMC contends the Federal Circuit rejected the arguments, in any event. (Dkt. No. 163 at 3.) PMC contends that it is notable that Apple failed to address the specification sections that make clear the “detecting” does not necessarily include “demodulation.”

Analysis

Apple has not pointed to disavowal of the meaning of “detecting” that would limit the term to “demodulator” and acknowledged that no unmistakable disclaimer exists in the specification. (Dkt. No. 194 at 42-43.) As to Apple’s estoppel and ordinary meaning arguments, the term in question, in *Personalized Media Communications, LLC v. ITC*, was “digital detector.” More importantly, the Federal Circuit has ruled that even that term is not limited to demodulators. *Personalized Media Communications, LLC v. ITC*, 161 F.3d 696, 704-706 (Fed. Cir. 1998). Apple would have this Court ignore the Federal Circuit’s ruling. Apple further ignores the specification. As shown in the specification, modulators may be provided separately from the digital detectors. ’091 Patent Figure 2A. In addition, the digital detectors are described generally without demodulation. *Id.* at 18:58-60, 19:3-5, 19:7-9. Furthermore, the decoders are, at times, described as not needing the demodulators 32 and 35. *Id.* at 162:7-22. Though Apple’s expert contends that additional demodulation would be performed in the detectors, the specification passage cited by Apple does not provide such a description, but rather just more general detection. *Id.* at 18:47-19:13. That the patent explicitly describes demodulation in some structures but does not for the digital detectors, is further evidence that the detectors are not so limited. Finally, as to Apple’s extrinsic evidence, the Court finds that such evidence does not establish that the ordinary meaning of “detecting” requires demodulation. Having rejected Apple’s narrowing construction, no further construction is needed.

The Court construes “detecting” to have its plain and ordinary meaning.

7. programming ('091 Claims 13, 20, 26; '635 Claims 1, 2, 3; '2,649 Claims 39, 54, 67)

Term	PMC's Construction	Apple's Construction
programming '091 and '2,649 Patent	everything that is transmitted electronically to entertain, instruct, or inform, including television, radio, broadcast, print, and computer programming as well as combined medium programming [As to the '2,649 Patent, Vizio agrees with PMC]	everything that is transmitted electronically to entertain, instruct, or inform, including television, radio, broadcast, print, and computer programming as well as combined medium programming, at least a portion designed for multiple recipients
programming '635 Patent	everything that is transmitted electronically to entertain, instruct, or inform, including television, radio, broadcast, print, and computer programming as well as combined medium programming	everything transmitted over television or radio intended for communication of entertainment or to instruct or inform ⁵

The parties present two different primary disputes. First, is “programming” required to be designed for multiple recipients? Second, are the patents that claim priority to the 1981 specification limited to television and radio?

Positions of the Parties

PMC contends the specification provides a definition:

The term "programming" refers to everything that is transmitted electronically to entertain, instruct or inform, including television, radio, broadcast print, and computer programming was well as combined medium programming.

'091 Patent 6:31-34. PMC contends Vizio agrees with PMC's construction.

⁵ Apple's different construction between the patents is based on PMC's initial position that the '091 Patent and '2,649 Patent claims are entitled to the 1987 priority date and that the '635 Patent claims are entitled to the 1981 priority date. At the hearing, PMC stated that it is changing its position and asserting that the '091 Patent claims are also entitled to the 1981 priority date. (Dkt. No. 194 at 13-14, 50-51.) If the '091 Patent is entitled to the 1981 priority date, presumably Apple would contend that the '091 Patent construction should match the construction Apple proposed for the '635 Patent. Supplemental claim charts have not been, however, provided to the Court.

PMC objects to Apple's inclusion of "at least a portion designed for multiple recipients" for the '091 and '2,649 Patents. PMC contends that there is no basis to add a multi-recipient requirement. PMC contends the claims merely recite "programming at a receiver station," "television programming" or "a unit of programming." Further, PMC contends the specification never limits "programming" to only multiple recipient programming. (Dkt. No. 148 at 10.) PMC contends that, to the contrary, the 1987 specification describes "personalized mass media programming" and "new user specific mass media" ('091 Patent Abstract), "user specific programming" (*id.* at 22:13-17), and "programming that is personalized and private" (*id.* at 14:53-57).

As to the '635 Patent (1981 specification), PMC contends that Apple relies on the Abstract passage:

Apparatus and methods for automatically controlling programming transmissions and presentations on television and radio equipment and monitoring the programming transmitted and presented. ("Programming" here means everything transmitted over television or radio intended for communication of entertainment or to instruct or inform.)

'490 Patent Abstract. PMC contends that the statement "programming here..." in the passage is clearly limited to the context of the immediately prior stated "controlling programming transmissions and presentations on television and radio equipment." PMC contends this does not limit "programming" to television and radio only. (Dkt. No. 148 at 11.) PMC contends that the specification conforms to PMC's position, as elsewhere "programming" can be received "from many sources including cable converter box, 133, video cassette recorder, 135, and videodisc player 137." '490 Patent 16:5-7. PMC also contends that the specification describes printed material (such as books) being provided in the programming. (Dkt. No. 148 at 11 (citing '490

Patent 21:1-22:4.) PMC contends that a parenthetical note of limited relevance in one sentence cannot override the broader description elsewhere in the specification. (*Id.*)

Apple contends that the 1981 and 1987 specifications include different express definitions of programming. Apple contends that PMC did not dispute this at the PTAB and that the PTAB concluded that PMC broadened the definition in the 1987 specification relative to the “narrower definition of ‘programming’ in the ’490 Patent (1981) specification.” (Dkt. No. 161 Ex. 14 at 33-34.)

For the ’091 and ’2,649 Patents, Apple notes that in *PMC v. Zynga*, this Court previously construed “programming” and added the clarification “at least a portion is designed for multiple recipients.” (Dkt. No. 161 Ex. 13 at 17-23.) Apple also notes that following that ruling, PMC itself proposed using the same clarifying phrase in *PMC v. Amazon*. (Dkt. No. 161 at 12 (citing Dkt. No. 161 Ex. 10 at 24).) Apple contends that PMC does not explain why language PMC previously acknowledged to be correct is now somehow incorrect.

As to the ’635 Patent, Apple notes that PMC contends this patent is entitled to the 1981 priority date. Apple contends that the term “programming” must, thus, be limited to the narrower definition in the 1981 specification: “‘Programming’ here means everything transmitted over television or radio intended for communication of entertainment or to instruct or inform.” ’490 Patent Abstract. Apple contends that PMC’s argument that the definition is limited by the use of “here” is a contrived attempt to undo the clear definition. (Dkt. No. 161 at 13.) Apple contends that at no point in the specification is “programming” used to refer to anything other than television or radio programming. Apple contends that merely because a TV set may receive programming via a cable box, VCR, or videodisc player has no bearing on what is defined as programming. (*Id.*)

In reply, PMC contends that the descriptions of receiving programming from non-TV or radio sources rebuts Apple's attempt to limit programming to TV or radio transmissions. (Dkt. No. 163 at 4.) As to the PTAB decision, PMC contends the term in question was "mass medium program" (claim 13 of U.S. Patent No. 5,887,243), not "programming." (*Id.*) At the hearing, PMC asserted that it is changing its asserted priority claim for the '091 Patent to a 1981 priority date. At the hearing, PMC did not address Apple's inclusion of "at least a portion designed for multiple recipients," rather merely rested on its briefing.

Analysis

As to the multiple recipient aspect of "programming," in *PMC v. Zynga* PMC agreed in this Court that programming is designed for multiple recipients. (Dkt. No. 161 Ex. 13 at 22.) Further, PMC argued for such a construction again in 2015 in Delaware. The Court agrees with PMC's prior positions and those asserted now by Apple. PMC points to "personalized mass media" as being disclosed in the 1987 specification: "personalized mass media programming" and "new user specific mass media" ('091 Patent Abstract), "user specific programming" (*id.* at 22:13-17), and "programming that is personalized and private" (*id.* at 14:53-57). However, in each of these cases, personalization is added to mass media or media designed to include at least some one-to-many type material. Further, as noted by PMC in *PMC v. Zynga*, the multiple recipient aspect of "programming" was the point of distinction made in the prosecution over items that PMC contended are not programming (the example being phone calls, which are point-to-point communications). (Dkt. No. 161 Ex. 13 at 19-23.) Finally, PMC has not pointed to any example of programming in the specification that does not include at least a portion designed for multiple recipients.

As to the original 1981 disclosure ('490 Patent), the Court acknowledges the Abstract statement identified by Apple only references “television and radio.” However, the parenthetical portion of the Abstract does not clearly disclaim the full scope of “programming” as opposed to merely referencing the prior recited “presentations on television and radio.” More importantly, the specification makes clear that “TV set, 131, may receive programming from many sources including cable converter box, 133, video cassette recorder, 135, and videodisc player 137.” '490 Patent 16:5-7. This would be programming that would not be transmitted over television and radio transmissions. Further, the specification describes an embodiment in which copyrighted books and movies are distributed in which the store that distributes the books reprints the books from data stored on a laser disk. The copyrighted material is described as “programming” '490 Patent 21:3-22:4. Thus, the more limiting statement in the Abstract is directly contradicted elsewhere in the 1981 specification. In its briefing and at the hearing, Apple did not rebut these portions of the specification. Apple’s construction would exclude embodiments of the specification, a construction that is rarely correct. *See Accent Packaging, Inc. v. Leggett & Platt, Inc.*, 707 F.3d 1318, 1326 (Fed. Cir. 2013) (holding that a construction that excludes the preferred embodiment “is rarely, if ever, correct.”).

The Court construes “programming” to mean “everything that is transmitted electronically to entertain, instruct, or inform, including television, radio, broadcast, print, and computer programming as well as combined medium programming, at least a portion designed for multiple recipients.”

8. tuning said receiver station to a channel ('091 Claim 26)

PMC’s Construction	Apple’s Construction
switching the input of the receiver station to	selecting a frequency for said receiver

a particular communications path	station to receive programming
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The primary questions before the Court are whether or not “channel” is limited to frequencies and what is the impact of “tuning” in the claim term.

Positions of the Parties

PMC objects to Apple equating “channel” to a particular frequency (or frequency band). PMC contends that the claim broadly recites “channel,” not “frequency channel,” “television channel,” or “radio channel.”

PMC contends that the specification teaches other examples of channels such as a “digital information channel” that provides stock prices (’490 Patent 19:31-41) and “tune to the transmission of a selected digital data channel” (’091 Patent 215:56-65, 215:9-14.) PMC contends that Apple’s “frequency” limitation ignores the “digital channel” embodiments.

PMC further contends that limiting channel, essentially to TV or radio frequencies, contradicts the specification descriptions which include “broadcast print” and “computer programming” provided via multi-channel communications. ’091 Patent 6:29-46. PMC contends one skilled in the art would understand broadcast print or computer programming may be transmitted via a communication path other than conventional TV or radio bands. (Dkt. No. 148 at 12 (citing Weaver Decl.)) PMC further contends that Apple’s own dictionary citations define “channel” more generally as a path which signals can be sent such as a data channel. (*Id.* at 12-13.)

Apple contends that PMC ignores the term “tuning.” Apple contends that the specification repeatedly explains that tuners tune to selected frequencies. (Dkt. No. 161 at 13 (quoting “tune to selected frequency, thereby causing said tuner...to receive the information of [a selected] channel” (’091 Patent 151:36-44), “controller, 20, causes a selected tuner, 214, to tune

to the frequency of cable channel 13” (’091 Patent 151:26-28), “subscriber stations ... are tuned to the frequency ...” (’091 Patent 164:17-25), “causing said tuner, 213, to tune ... to said frequency ...” (’190 Patent 210:10-19), and “tuners ... tune to given frequencies” (’490 Patent at 2:35-41)).) Apple also points to technical dictionaries that align “tune” with the selection of a frequency. (Dkt. No. 161 at 14.) Apple also identifies a number of specification citations in which a channel is a frequency or band of frequencies. (*Id.*) Apple contends that PMC’s arguments that the channel could also be something else do not apply in context of the claim which pairs the “channel” with “tuning.”

Analysis:

As noted by Apple, generally the specification describes “tuning” in the context of selecting a television or radio frequency. PMC contends that the description of digital channels teaches away from frequency based tuning. However, PMC does not provide any intrinsic or extrinsic evidence overcoming the specification descriptions cited by Apple. PMC contends that one specification passage relates “tuning” to the use of a digital data channel: “tuning to the transmission of a selected digital data channel.” (’091 Patent 215:56-65.) However, reading the full description of the passages at ’091 Patent 215:9-217:21 indicates that the digital data channels are provided to cable converter boxes 222 and 201. *Id.* at 215:9-12. Such boxes are described as receiving information in radio frequency transmissions, the boxes include tuners such as tuner 223, and “receive the transmission of a particular television frequency transmission.” *Id.* at 216:14-217:21. Thus, the example cited by PMC does not support PMC’s position. In context of the specification as a whole, “tuning” relates to the selection of a channel frequency in conformance with the specification passages cited by Apple. Such a construction also conforms to the extrinsic evidence from the relevant time period cited by

Apple. To the extent the parties present conflicting extrinsic evidence, the Court finds Apple’s evidence more persuasive. It is noted that PMC does cite to the Weaver declaration, however, the relevant declaration statement is merely conclusory and does not address the key aspect of the claim term, “tuning” to a channel. Dkt. No. 148-41 ¶49.

The Court construes “tuning said receiver station to a channel” to mean “selecting a frequency for said receiver station to receive programming.”

9. downloadable code (’635 Claim 33) / locating code (’635 Claim 18) / code⁶

Term	PMC’s Construction	Apple’s Construction
downloadable code	one or more data or instructions that are received in a transmission from a remote source	one or more instructions received in a transmission from a remote source
locating code	This term does not require construction beyond its plain and ordinary meaning	locating one or more instructions in the digital transmission

Term	PMC’s Construction	Vizio’s and Apple’s Construction
code	Plain and ordinary meaning. one or more data or instructions	one or more instructions

The parties dispute whether (1) the code terms may encompass only data (PMC’s use of “data or instructions”) or (2) the code terms require the presence of instructions. As to the term

⁶ PMC contends that the standalone term “code” should not be construed in Phase 1 because the standalone term is not at issue in both consolidated actions. PMC contends that “downloadable code” is only found in the ’635 Patent and that Vizio did not timely disclose the standalone term. (Dkt. No. 148 at 13, n. 10.) Vizio contends “code” is found in ’775 Patent (Phase 2) and seeks a consistent construction. (Dkt. No. 170 at 9.) Vizio contends that it made clear in its Local Patent Rule disclosures that “code” should be construed consistently across all patents. (Dkt. No. 160 at 13, n. 22.)

“code” alone, the term arises in the Phase 1 terms in the context of “downloadable code” and “locating code,” and it is those terms which the Court construes herein.

Positions of the Parties

PMC contends the key dispute is whether “code” should cover “data or instructions” or only “instructions.” PMC contends that the specification teaches that “downloadable code” could include data:

The signals for which the decoders are monitoring are likely to be unique digital codes that may identify each programming or data unit received and the source of each. They may identify networks, broadcast stations, channels on cable systems, and possibly times of transmission. They may convey unique identifier codes for each program or commercial. In the case of data transmitted to the microcomputer, they may be unique codes that identify the source and suppliers of the data. In the case of data received at the printer, they may identify publications, articles, publishers, distributors, advertisements, etc.

'490 Patent 15:57-68. PMC contends that Apple's construction would directly conflict with the specification. PMC further contends that Apple's specification citations even reference code not as just containing instructions but also containing information. (Dkt. No. 148 at 13 (citing '490 Patent 87:54-88:7).) PMC contends that for the same reason, “locating code” should encompass both instructions and data. PMC also objects to importing “digital transmission” into “locating code”. (*Id.* at 13-14.)

Apple contends that the claims use “code” in a context that does not mean just any “data.” Apple contends that as recited in the '635 Patent claims at issue, “code” refers to instructions: code passed to a processor and used to control a decryptor. Apple contends this conforms to the specification description that the transmitted signals will be a “conventional transmission stream but will include instructions that receiver station apparatus are preprogrammed to process.” '091 Patent 8:10-12. Apple contends that the specification describes a variety of types of program code: machine code, assembly code, higher level programs, load

and run code, etc. (Dkt. No. 161 at 15 (citing '091 Patent at 27:63-64, 86:51, 186:22-23, 194:6-9, 231:47-62).)

Apple contends that the passages PMC cites to refer to a different context: “a code” or “codes.” Apple contends this is not the context referenced in the relevant claims. Apple further contends that even in the context PMC cites to, “a code” is not merely generic data, but a specific identifier. (*Id.* at 16, n. 15.) Apple contends that PMC is attempting to conflate two different terms “a code” or “codes” with “code” that is used in the context of program instructions. Apple contends that other claims reference receiving or storing “a code” ('635 Patent claim 3, '088 Patent claim 33). Apple contends that construing “downloadable code” to be “downloadable data” or “locating code” to be “locating data” would eviscerate the claim language.

Vizio contends that in the context of the claims asserted against Vizio, code refers to processor instructions. Vizio asserts that the claims asserted against Vizio refer to “code portion.” Vizio contends that the specification describes information transmissions as including a “code portion” and that instructions comprise the code portion. (Dkt. No. 160 at 13 (citing '091 Patent 54:23-24, 72:61-62, 73:4-6, 87:58-59, 88:28, 88:62, 90:46-47, 108:30-31, 108:49-56, and '775 Patent claim 2).)

Vizio contends that PMC’s citations to “a code” or “codes” is an altogether different concept not recited in the claims at issue. Vizio contends that those citations refer to codes as identifiers which are not relevant to the “code portion” limitation at issue in the claims asserted against Vizio. (*Id.*) Vizio agrees other claims reference storing a code, but those are not the claims at issue. Vizio states that the “code portion” language of the asserted claims would be rendered meaningless if “code” merely meant “data.” (*Id.*)

In reply to Vizio, PMC contends that “code” should be given its plain and ordinary meaning. PMC contends that Vizio’s construction is too narrow because it reads out of “code” a code being able to supply “other types of information.” PMC points to “identifier codes for each program unit (including commercials); codes that identify uniquely each combining in a given combined medium program unit; codes that identify the subject matter of a program unit; . . . and unique codes that identify the sources and suppliers of computer data.” ’091 Patent 26:2-12. PMC also contends Vizio’s construction fails to account for codes that are more than instructions: data, identifiers, and suppliers of other information. (Dkt. No. 162 at 9 (quoting ’091 Patent 19:57-60 (“Said ROM and/or said EPROM may also contain one or more digital codes capable of identifying its controller, 39, 44, or 47[.]”), ’091 Patent 184:24-30 (“Executing the information of said set causes computer, 73, to . . . compile formula-and-item-of-this-transmission information into a machine language program module), and ’091 Patent 184:39-40 (“Said formula-and-item-of-this-transmission information can consist of both computer program instructions and data.”))).)

PMC contends that Vizio’s failure to include data, thus, conflicts with the specification. PMC also cites to extrinsic dictionaries which reference data. (Dkt. No. 162 at 9.)

Analysis

The parties acknowledge that “code” can carry different connotations in an ordinary meaning. These different connotations also carry over to the specification. Thus, as noted by the parties, “code” can relate to programming code, machine-code, etc. or “code” can relate to a specific identifier (the “unique code of said token,” “information code of each distinct item,” etc.). Broadly construing all uses of “code” to mean merely “data” would, thus, be improper. The context of the usage of the term in the claims and specification provides the guidance toward the

proper meaning in each usage. For example, claim 18 does not use the term “locating code” in the context of an identifier used for locating, rather the term is used as a stand-alone method step of “locating code.” This code is then provided to a processor and used to control the decryption. In this context, code is used according to the meaning of instructions for a processor. This also conforms to the specification. Similarly, claim 33 references “downloadable code” that is passed to a processor and used to control decryption. In this context, the claims and the corresponding specification descriptions reference not merely “data” but “instructions.”

At the hearing, Defendants made clear that their constructions do not exclude the inclusion of data within “downloadable code” and “locating code.” Rather, Defendants made clear that the terms require, at least, the presence of instructions. (Dkt. No. 194 at 71.) Further, Defendants have not pointed to statements that would not exclude other items normally found in computer code, in addition to instructions, and the Court does not read Defendants’ construction to limit code to only instructions.

As to Vizio’s request to construe merely “code,” as noted above, the various claims and specifications use the term in differing contexts, and such context is necessary to understand the various usages.

The Court construes “downloadable code” to mean “one or more instructions received in a transmission from a remote source” and construes “locating code” to mean “locating one or more instructions.”

10. wherein a way the signal is passed from said output port is based on said step of identifying (’088 Claim 14)

PMC’s Construction	Apple’s Construction
The parties have separately proposed a construction for “output port.” This phrase	wherein the method by which the signal is transmitted from said output port is

<p>as a whole does not require further construction.</p> <p>To the extent, however, that the Court believes such term requires construction:</p> <p>the communication path or manner through which the signal is transmitted from the output port is based on what type of signal it is.</p>	<p>based on said step of identifying a signal from at least one of said plurality of input ports</p>
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The parties dispute whether “a way” means a “method” of passing a signal verse a “path or manner” of passing a signal.

Positions of the Parties

PMC highlights the surrounding claim language:

...
 identifying a signal from at least one of said plurality of input ports;
 passing said signal from said processor to said output port, **wherein a way the signal is passed from said output port is based on said step of identifying;**

'088 Patent claim 14 (disputed term highlighted).

PMC objects to Apple changing the “way a signal is passed” to “the method by which” the signal is transmitted. PMC contends that this paraphrasing narrows the scope of the claim. PMC contends, that, in contrast, the specification describes passing the output signals to different destinations or along different communication paths based on signal type or identity. (Dkt. No. 148 at 14 (citing '490 Patent 9:63-68 (“[The controller, 20] instructs processor or monitor, 12, how to identify what signals to pass externally and where to pass them and what signals to transfer to buffer/comparator, 14....”) and 17:39-46 (“Signal processor apparatus have the ability to identify instruction and information signals in one or more inputted television and radio programing transmissions, identify and discriminate among one or more pieces of external equipment to which such signals are addressed, and transfer such signals to such equipment as

directed.”)).) PMC contends that the communication path or the manner in which the signal is transmitted could both be based on the type of signal. PMC contends that Apple’s “method” excludes where to pass the signal as an alternative to how to pass the signal. (*Id.* at 14-15.)

Apple contends that the parties’ opposing uses of “manner” and “method” both refer to how the signal is passed. Apple objects to PMC’s use of “path” as attempting to refer to where the signal is passed. Apple contends that PMC’s cited support for the “where” concept does not discuss communicating information, which is the focus of the claim, but instead identifies a signal to be passed. (Dkt. No. 161 at 18.)

In reply, PMC contends that Apple’s attack on PMC’s citations for not discussing “communicating information” is inapt, as those passages show the output of signals to different destinations or along different communication paths based on signal type or identity—which is an alternative “way the signal is passed.” ’635 Patent 9:63-68, 17:39-46. PMC contends that Apple’s citation to ’490 Patent 17:10-24 describes recording signal usage in general without limiting it to “how” a signal is passed or excluding “where” it is passed and, thus, supports PMC’s proposed construction. (Dkt. No. 163 at 5.)

Analysis

The parties agree that “manner” and “method” relate to the concept of defining how a signal is passed. The Court agrees with PMC that the path used for passing a signal would also be considered as defining how a signal is passed. As noted by PMC, the specification describes the way a signal is passed, at least at times, in relation to the path and equipment used. ’490 Patent 9:63-68, 17:39-46. Though the Court believes that Apple’s usage of “method” may be interpreted to subsume PMC’s usage of “path or manner,” to the extent Apple interprets “manner” to not include such concepts, the Court rejects Apple’s construction as conflicting with

the specification. Having rejected Apple’s narrow construction, the dispute between the parties is resolved and no further construction is needed. *See O2 Micro*, 521 F.3d at 1362.

The Court finds that “wherein a way the signal is passed from said output port is based on said step of identifying” has its plain and ordinary meaning.

11. communicating information on a use of said identified signal (’088 Claim 14)

PMC’s Construction	Apple’s Construction
<p>This term does not require construction beyond its plain and ordinary meaning.</p> <p>To the extent, however, that the Court believes such term requires construction:</p> <p>the remainder of the claim element specifies that “the use of said identified signal comprises information of the passing of said identified signal based on said step of passing.”</p>	<p>transmitting information from said receiving apparatus about a use of said identified signal</p>

The parties dispute whether the communication is required to be communication to an apparatus external to the receiving apparatus.

Positions of the Parties

The claim term in question follows the “wherein” phrase discussed above.

...
 identifying a signal from at least one of said plurality of input ports;
 passing said signal from said processor to said output port, wherein a way the signal is passed from said output port is based on said step of identifying;
communicating information on a use of said identified signal, wherein the use of said identified signal comprises information of the passing of said identified signal based on said step of passing.

’088 Patent claim 14 (disputed term highlighted).

PMC contends that Apple improperly adds “from said receiving apparatus,” a limitation not in the claim. PMC contends that though the specification does describe external transmission

of signal usage information from a receiver station to a remote data site, the “communicating” must also occur internally within the receiver station. PMC contends, for example, that such communication occurs at least prior to external transmission of the same information. (Dkt. No. 148 at 15 (citing ’490 Patent 17:13-17 (“Every instruction or information signal transmitted from processor, 140, to microcomputer, 142, is also transmitted to signal processor, 130, to be handled, recorded, and transmitted to a remote site with all other monitor information.”); ’490 Patent 4:55-5:22; ’091 Patent 16:56-58 (“... and determines whether [signals] are to be transferred to external equipment or to buffer/comparator, 14, or both.”); 16:54-17:12, 17:51-18:2).) PMC contends there is no basis to limit the “communicating” step to external transmission only.

Apple objects to PMC’s attempt to refer to “communication” as an “internal signal” that is not communicated anywhere or to anything. (Dkt. No. 161 at 16.) Apple contends that the specification explains that communication refers to transmitting to external equipment. (*Id.* (citing ’490 Patent 2:59-61 (prior art “lacked the capacity to communicate processing instructions to external equipment”), 8:9-11 (apparatus includes means for determining “when signals require transfer [] to a remote site and for communicating such a requirement . . .”), 11:8-10).) Apple contends that its construction clarifies that communicating information entails transmitting information from the claimed receiving apparatus.

Analysis

Apple does not contest that an ordinary meaning of “communicating” would not require only external communication. However, Apple contends that the specification describes the communication as being external. Apple has not pointed to disclaimer or disavowal, but rather relies merely on the disclosed embodiment. However, even a single embodiment is not

necessarily enough to read a limitation into the claim from the specification. *Arlington Indus., Inc. v. Bridgeport Fittings, Inc.*, 632 F.3d 1246, 1254 (Fed. Cir. 2011) (“[E]ven where a patent describes only a single embodiment claims will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using words of expressions of manifest exclusion or restriction.”) (citation omitted). Moreover, as described by PMC, here the specification describes internal communication. ’990 Patent 17:10-24 (“Every instruction or information signal transmitted from processor, 140, to microcomputer, 142, is also transmitted to signal processor, 130, to be handled, recorded, and transmitted to a remote site with all other monitor information.”); 4:55-5:22; 16:56-58. Apple’s construction would exclude such communication. Having rejected Apple’s construction, the dispute between the parties is resolved and no further construction is needed. *See O2 Micro*, 521 F.3d at 1362.

The Court finds that “communicating information on a use of said identified signal” has its plain and ordinary meaning.

12. wherein the use of said identified signal comprises information of the passing of said identified signal based on said step of passing (’088 Claim 14)

PMC’s Construction	Apple’s Construction
See discussion above for “communicating information on a use of said identified signal”	Indefinite

The question presented is whether or not it is indefinite to reference the “use” as “information of the passing.” PMC contends that “the use of said identified signal” means “information on the use of said identified signal.”

Positions of the Parties

PMC contends the claim language is understandable and not ambiguous:

...
identifying a signal from at least one of said plurality of input ports;
passing said signal from said processor to said output port, wherein a way the
signal is passed from said output port is based on said step of identifying;
communicating information on a use of said identified signal, **wherein the use of
said identified signal comprises information of the passing of said
identified signal based on said step of passing.**

'088 Patent claim 14 (disputed term highlighted). PMC contends that in context of the entire claim, a person of skill in the art would appreciate that “the use of said identified signal” is short for “information on the use of said identified signal” recited in the preceding element. (Dkt. No. 148 at 15-16.) PMC contends this “wherein” clause, thus, explains in plain English the composition of the signal usage information, i.e., “information of the passing of said identified signal [collected] based on said step of passing.” (*Id.* at 16.) PMC states that the specifications teach monitoring the use of signals passed between two components by recording those signals with a signal processor. '490 Patent 17:10-21 (“Signal divider, 139, illustrates another type of monitoring that signal processing apparatus and methods can facilitate). Signal divider, 139, monitors the use of signals rather than the use of programing. Every instruction or information signal transmitted from processor, 140, to microcomputer, 142, is also transmitted to signal processor, 130, to be handled, recorded, and transmitted to a remote site with all other monitor information. In a predetermined fashion, signal processor, 130, identifies and marks the source of signals as coming from a device, 139, monitoring signal usage rather than programing usage and viewership ...”). PMC further notes that Apple was capable of understanding the term enough to cite, in the IPR petition, four prior art references as allegedly disclosing this element. (Dkt. No. 163 at 5.)

Apple contends that PMC attempts to rewrite the claim language by stating that one in the art “would appreciate that ‘the use of said identified signal’ is short for ‘information on the

use of said identified signal.” Apple contends that PMC also inserts the word “[collected]” into the claim language in brackets—despite the fact that “collected” is not recited in the claim or in PMC’s proposed construction. Apple contends that the Federal Circuit “repeatedly and consistently has recognized that courts may not redraft claims, whether to make them operable or to sustain their validity,” and the Court must construe the claim “as written, not as the patentees wish they had written it.” *Chef Am., Inc. v. Lamb-Weston Inc.*, 358 F.3d 1371, 1373-74 (Fed. Cir. 2004).

Apple contends that PMC redrafts the claim because, as drafted, the “wherein” clause recites what “the use” comprises, instead of what “the information on the use” comprises. Specifically, Apple contends that as claimed, the “communicating” phrase recites “a use” to refer to how the identified signal is used. ’088 at Claim 14 (“communicating information on a use of said identified signal”). Apple contends the “wherein” clause, however, recites that “the use” includes “information.” *Id.* (“wherein the use of said identified signal comprises information of the passing of said identified signal based on said step of passing”). Apple asserts that by employing contradictory terminology—that a “use” includes “information”—a person of skill in the art is left guessing as to exactly what the claim means. (Dkt. No. 161 at 17.) At the hearing, Apple noted that in addition to the correction proposed by PMC, the claim could be corrected by changing “comprising information” to “comprising use.” (Dkt. No. 194 at 78-79.)

Analysis

The definiteness standard of 35 U.S.C. § 112, ¶ 2 requires that:

[A] patent’s claims, viewed in light of the specification and prosecution history, inform those skilled in the art about the scope of the invention with reasonable certainty. The definiteness requirement, so understood, mandates clarity, while recognizing that absolute precision is unattainable.

Nautilus, Inc. v. Biosig Instruments, Inc., 134 S. Ct. 2120, 2129–30 (2014). As drafted, the claim requires “the use” of a signal to “comprise information of the passing” of the signal. The literal language of the claim requires “use” to comprise “information,” and thus lacks clarity and understandability. At the hearing, PMC in essence acknowledged that it was seeking to change “the use of said identified signal” to “information on the use of said identified signal.” (Dkt. No. 194 at 73-74 (contending that the plain and ordinary meaning of the term means “information on the use.”).) The Federal Circuit has made clear the requirements needed for a district court to correct an error:

This case presents the question whether a district court can act to correct an error in a patent by interpretation of the patent where no certificate of correction has been issued. We hold that a district court can do so only if (1) the correction is not subject to reasonable debate based on consideration of the claim language and the specification and (2) the prosecution history does not suggest a different interpretation of the claims.

Novo Industries, LP v. Micro Molds Corp., 350 F.3d 1348, 1354 (Fed. Cir. 2003). As drafted, the literal claim language does not make sense. Further, the claim language is subject to reasonable debate as to how it should be modified. Thus, “the use” could be changed to “information on the use” as proposed by PMC, rendering the claim to read: “wherein information on the use of said identified signal comprises information of the passing of said identified signal based on said step of passing.” However, as noted by Defendants, the claim could be changed in another manner to provide an understandable claim limitation by changing “information” to “use.” Such a change would render the claim to read: “wherein the use of said identified signal comprises use of the passing of said identified signal based on said step of passing.” Here, either change could be equally appropriate in light of the specification. Thus, the term is not amenable to correction by the Court. *Novo Industries.*, 350 F.3d at 1354. Further, if the claim language might mean several different things and no informed and confident choice is available among the contending

definitions, the claim is indefinite. *See Interval Licensing LLC v. AOL Inc.*, 766 F.3d 1364, 1371 (Fed. Cir. 2014) (citing *Nautilus, Inc.*, 134 S.Ct. at 2130, n.8 (2014)). The Court finds that, as drafted, the claim does not meet the “reasonable certainty” test of *Nautilus*. *See Nautilus*, 134 S. Ct. at 2129–30.

The Court finds that “wherein the use of said identified signal comprises information of the passing of said identified signal based on said step of passing” is indefinite.

13. input ports ('088 Claim 14) / output port ('088 Claim 14)

Term	PMC’s Construction	Apple’s Construction
input ports	defined or designated connections or paths that feed received programming or instructions into a receiver for processing	physical connections for receiving signals into a device
output port	a defined or designated connection or path used by one device or circuit to output signals to another device or circuit	physical connection used by one device to output signals to another device

PMC contends that Apple’s use of “physical connection” excludes wireless transmissions. Apple objects that “paths” covers more than just the port.

Positions of the Parties

PMC contends that the specification teaches that the devices receive “inputs from each of the receiver/detector lines.” ’490 Patent 5:2-3. PMC contends that these lines are connections or paths through which programming and instructions are provided. (Dkt. No. 148 at 16-17 (citing ’490 Patent 4:55-5:11, 10:24-52, ’091 Patent 11:56-67, 15:47-17:8).) PMC contends that the

output port is used to transmit output signals to another device. (*Id.* (citing '490 Patent 5:2-11, '091 Patent 16:54-63, 20:1-31).)

PMC objects to Apple's construction as limiting the terms to "physical connections." PMC contends that the specification contradicts Apple's construction by teaching transmissions to and from devices using wireless connections and paths. (Dkt. No. 148 at 17-18 (citing '490 Patent 4:56-60, 10:31-38, '091 Patent 11:39-41, 130:31-42, 132:62-133:2).) PMC contends that it would be understood that such wireless transmissions could be wirelessly received through an input port and wirelessly transmitted through an output port. (*Id.*) PMC contends that wireless connection paths are not "physical connections." (Dkt. No. 163 at 6.)

Apple contends that the dispute is whether "ports" are physical connections. Apple contends that PMC argued to this Court, in the pending §101 motions, that ports are physical connections but now proposes connections or paths. (Dkt. No. 161 at 18-19.) Apple highlights PMC's prior statement to the Court that the "input ports" and "output ports" are "physical structures." (Dkt. No. 109 at 4.) Apple notes the specification teaches a physical structure: "jack ports to external equip'nt." '490 Patent Figure 1, 7:55-58.

Apple objects to PMC's construction as introducing a different concept, "path." Apple states that the specification describes the potential route that a particular signal may take as a "path." (Dkt. No. 161 at 19 (citing '490 Patent 9:28-40 (describing the different "paths" a signal can take in Figs. 2A-2C), 18:47-19:13).) As to PMC's wireless argument, Apple contends that because a transmission is wireless does not mean the port is no longer a physical connection. Apple contends that PMC's citations are not to the contrary. (*Id.* (noting that '091 Patent Figure 3 shows a decoder 30 which receives wireless transmissions).)

Analysis

The claim requires input ports and an output port of a multimedia receiving apparatus. As described within the specification a “port” is the structure used for passing signals from the device to external equipment. ’490 Patent Figure 1, 7:55-58; ’091 Patent 16:46-48, 16:59-62, 20:21-23, 44:35-37, 49:23-25. PMC has not pointed to usage in the specification of “port” being used to describe a signal path. Moreover, PMC does not describe how Apple’s construction would exclude ports for wireless signals. Even if the device receives or sends wireless communications, there would still be an input or output structure through which such wireless signals are transmitted (the transmitter, receiver, antennae, etc.). *See* ’490 Patent 4:56-60, 10:31-38, ’091 Patent 11:39-41, 130:31-42, 132:62-133:2. Apple’s use of “physical connection,” however, has potential of causing jury confusion, particularly with regard to inputs and outputs that are passing wireless signals. Thus, Apple’s construction could be interpreted to exclude wireless input and output ports. The specification specifically refers to such wireless signals. *See id.* The ports are merely the structure which act as an input or output for the device. The specification does not exclude wireless communications.

The Court construes “input ports” to mean “structure for receiving signals into a device” and “output port” to mean “structure used by a device to output signals to another device.”

14. “multimedia signals”⁷ (’088 Claim 14)

PMC’s Construction	Apple’s Construction	Vizio’s Construction
signals that include information in multiple forms of media such as audio, video, computer programming, and data (e.g., information, control signals, instructions)	signals that include multiple forms of media such as audio, video and/or text	“multimedia”: The combination of two or more media (i.e., channels of communication, such as radio, television, broadcast print, or internet)

The primary dispute is whether “multimedia” signals could be comprised of only data and computer programming as asserted by PMC.

Positions of the Parties

PMC objects to Apple’s exclusion of computer programming and data. PMC contends that Apple’s construction would exclude the Figure 6C embodiment in which a multimedia presentation coordinates a graphic of a viewer’s stock portfolio (data), television programming (Wall Street Week program) and computer instructions embedded with the programming. (Dkt. No. 148 at 18 (citing ’465 Patent 19:31-20:10).) PMC contends that Apple’s construction defines “multimedia presentation” but not “multimedia signals.” PMC contends that “multimedia signals” are signals that facilitate the multiple forms of media that can be perceived by a user. (Dkt. No. 163 at 6.)

Apple contends that PMC would have “multimedia signals” include any data, rather than “forms of media.” Apple contends that PMC’s construction would render “media” meaningless. Apple contends that PMC focuses on what a multimedia presentation can be based on. Apple

⁷ Similar to the dispute over “code,” PMC and Vizio disagree as to whether Vizio should be allowed to construe “multimedia” in Phase 1. PMC contends that “multimedia” is not a standalone term in the consolidated actions and that “multimedia signals” only appears in the ’088 Patent. (Dkt. No. 148 at 18, n. 11.) Vizio contends that their Local Patent Rule disclosures made clear that Vizio seeks to construe “multimedia” and that it would be appropriate to have the term constructed consistently across all the patents. (Dkt. No. 160 at 9.)

contends, however, that there is a difference between what a multimedia presentation is based on and “multimedia signals.” Apple contends that its construction appropriately includes data that can be seen or heard by a user, thus comports with the plain meaning of “multimedia” and the specification.

Vizio contends that PMC is, in essence, construing only “multimedia.” Vizio contends that its construction is consistent with what the patentees advocated to the BPAI when an appeal was made during prosecution and consistent with the construction the BPAI adopted in its opinion. Vizio contends that PMC is now attempting to expand the construction that the prosecution was based upon. (Dkt. No. 160 at 10.) Vizio points to PMC’s argument to the Board that:

...”medium” and “media” which connote a channel of communications. Accordingly, the ‘content’ of a medium should be interpreted to mean the substance, gist, meaning or significance of a channel of communications.

(Dkt. No. 160 Ex. K, Appeal Br at 32-33.) The Board then defined a medium as a “channel of communication such as radio, television, newspaper, book or Internet.” (Dkt. No. 160 Ex. L, Appeal Decision at 23.) Vizio also contends that its construction conforms to the Notice of Allowance which stated “medium—a channel of communication such as radio, television, newspaper, book or Internet.” (Dkt. No. 160 Ex. M Notice of Allowance at 2.)

Vizio objects to PMC’s construction as allowing PMC to argue that conventional television is a “multimedia presentation,” because it is composed of audio and video. Vizio contends that the specification establishes that television is a single medium—not multimedia as that term is used in the specification:

This method provides techniques whereby, automatically, single channel, *single medium presentations, be they television*, radio, or other electronic transmissions, may be recorded, coordinated in time with other programming previously transmitted and recorded, or processed in other fashions.

'490 Patent 3:51-60 (emphasis added).

In reply to Vizio, PMC contends that Vizio's proposed construction of the term as it appears in the asserted claims of the Phase 2 '217 Patent ("multimedia presentation") would render these claims nonsensical. PMC points to claim 1 of the '217 Patent which directed to "a method of outputting a multimedia presentation at a receiver station" which includes the step of "outputting and displaying said multimedia presentation to a user." PMC notes that according to the claim language, the output, or "presentation" itself, comprises "at least two media." PMC contends that the claimed method discloses a particular way of "coordinating" a "presentation" from at least two media. PMC contends that to construe "multimedia" as the "combination of two or more media" is redundant to the object of the claim, which is to "coordinate" at least two media to output a presentation. (Dkt. No. 162 at 6.)

PMC contends that its construction of "multimedia" specifies acceptable forms of media (such as audio, video, computer programming, and data) without reference to what needs to be done with the media (such as to coordinate or combine them). (*Id.*) PMC points to the specification passage "[m]ultimedia presentations may be coordinated in time and/or in place, as, for example, when real-time video program[m]ing is coordinated with presentations from a microcomputer working with data supplied earlier." '490 Patent 3:56-60. PMC contends that real-time video and data from a microcomputer are being "coordinated in time and/or in place" to make a multimedia presentation. PMC also contends the specification discloses media forms such as video and print being coordinated to make a presentation (*id.* at 6:5-7, 20:11-68); audio and video (*id.* at 18:8-42); and programming and data (*id.* at 18:43-19:29). PMC contends the language of the specification does not support Vizio's construction that "multimedia" is when two or more media have been affirmatively *combined*—rather, it merely identifies different

forms of media that may potentially be coordinated in the way(s) disclosed in the claims. (Dkt. No. 162 at 7.)

As to the file history, PMC states that Vizio mistakenly characterizes that PMC argued that “a channel of communication” constitutes a “medium and media” in its Appeal Brief. PMC contends that it argued that “a channel of communication” can contain multiple mediums such as “television programming” and “closing prices of particular stocks.” (Dkt. No. 160 Ex. K at 32-33.) PMC states that it distinguished the “content of a medium” (i.e., the “substance . . . of a channel of communications”) from “synchronization signals,” which, as “part of the [underlying] structure of an electromagnetic signal,” “are not ‘content’ of a medium.” (*Id.* at 34.) PMC contends the Board agreed with PMC that a “synchronization signal” was not “content of a medium.” (Dkt. Nol. 160 Ex. L at 51 (“The synchronizing pulse in a television signal is an electrical feature of the television signal, but the signal itself is not the ‘medium’.”).)

PMC asserts that to support the distinction the Board was drawing between “content of a medium” and “content of a signal,” the Board provided a definition of “medium” from Webster’s dictionary (“such as radio, television, newspaper, book, or Internet”), and contrasted it with the definition of a “signal” (“a detectable physical quantity or impulse . . . by which messages or information can be transmitted”). (*Id.* at 23.) PMC states that the Board provided examples of “content” of a medium to include “information in or describing the medium such as the identity of the program, and words, sounds, and images in the medium.” (*Id.* at 26.)

PMC also asserts that the Board found that video and audio from a television program could be *separate* media forms—consistent with PMC’s proposed construction: “[W]e find that Zaboklicki describes a coordinated presentation consisting of the television video (‘first medium’) and audio (‘information based on said second medium’)[.]” (*Id.* at 72.) Finally, PMC

notes that the Federal Circuit has found that an Examiner’s Statement of Reasons of Allowance is a unilateral statement that does not amount to disavowal. (Dkt. No. 162 at 6.)

Analysis

The Court finds deficiencies in each party’s construction. Apple correctly notes that PMC’s construction misses the “media” concept by allowing just programming signals and data to be “multimedia” signals. Thus, under PMC’s construction, mere database signals (programming and data) would be considered to be “multimedia.” Clearly such a construction does not conform to the specification. Further, PMC’s construction would include television signals (audio and video information). Again such construction does not conform to the specification.⁸ Likewise under PMC’s construction, an audio signal that included instructions for playing the audio signal would be a multimedia signal. PMC’s construction would thus encompass a single media with the addition of a control signal.

As to Vizio’s arguments, PMC correctly notes that the BPAI comments were directed toward what is the “content” of a “medium.” The Board’s statements do not fall squarely on the meaning of “multimedia signals.”

Finally, PMC also correctly notes that Apple is focusing on the media presentation rather than the “signals.” The signals carry the information, and are not the video or the audio itself. Correcting this aspect of Apple’s construction, the Court finds that the remaining of Apple’s construction is the most faithful to the meaning provided in the intrinsic record.

The Court construes “multimedia signals” to mean “signals that include information for multiple forms of media such as audio, video, graphics and/or text,

⁸ In the Phase 2 arguments it became clear that as between Vizio and PMC the central dispute is whether television is a single media. As addressed in the Phase 2 Order in more detail, the Court finds that the intrinsic record establishes that television is a single media.

television programing (including its video and audio components) is a single form of media”

15. processor ('091 Claims 13, 20, 26; '635 Claims 18, 21, 33; '2,649 Claims 39, 54, 62, 67; '088 Claim 14); control processor ('2,649 Claims 39, 62, 67)

Term	PMC's Construction	Apple's Construction⁹
processor	a device that performs operations according to instructions	a device that operates on data
control processor	a digital electronic device or circuit that controls other devices or circuits by operating on control information according to instructions	processor that controls other devices or circuitry [by] operating on control information

The parties dispute whether a processor must operate on instructions.

Positions of the Parties

PMC contends that Apple's construction is overly broad by not requiring the device to operate according to instructions. PMC contends that Apple's construction would have the term cover a host of devices that would never be understood to be a "processor" or "control processor." (Dkt. No. 148 at 19.) PMC contends that most computer systems include memory devices for reading and writing data and keyboards for inputting data. PMC contends that such devices "operate on data," but a person of skill in the art would not consider such devices to be a "processor." (*Id.*) Further, PMC contends that reading the specification would result in an understanding that a "processor" is distinct and separate from other devices disclosed, such as decryptors. PMC notes that the specification describes the processors as executing instructions. (*Id.* at 19-20 (citing '091 Patent 8:34-39, 118:10-13).) PMC contends that the *PMC v. Scientific-*

⁹ Vizio adopts the positions of Apple for "control processor." (Dkt. No. 160 at 14.)

Atlanta court construed “processor” as PMC proposes. (Dkt. No. 163 at 7 (citing to the agreed construction by the parties in *PMC v. Scientific-Atlanta* (N.D. Ga.), Dkt. No. 163 Ex. W at 428).)

Apple contends this Court and the PTAB construed “processor” without the instruction limitation and that even PMC offered constructions previously without the limitation. Apple contends that the prior decision of this Court in *PMC v. Zynga* squarely addressed this issue and construed “processor” as “any device capable of performing operations on data.” (Dkt. No. 161 Ex. 13 at 16.) Apple further contends that the specification describes numerous devices that process data without receiving instructions. (Dkt. No. 161 at 20 (citing ’091 Patent 19:14-16 (“FIG. 2B shows a radio signal decoder that detects and processes signal information”), 51:35-37 (“Automatically the EOFS valve of SPAM-controller, 205C, commences processing”), 115:20-22 (“recorder, 16, ... process[es] and record[s] said transferred meter record”), 134:27-31 (“TV signal decoder, 30, ... process[es] signal information”))).)

Apple also contends that consistent with this Court, the PTAB construed “processor” as “a device that operates on data.” (Dkt. No. 161 at 20-21 (citing Dkt. No. 161 Ex. 2 at 12).) Apple also contends that PMC itself previously proposed that “processor” be construed as “any device capable of performing operations on data.” (Dkt. No. 161 at 20-21 (citing Dkt. No. 161 Ex. 10, *PMC v. Amazon*, at 24).) Apple also contends that a variety of contemporaneous technical dictionary definitions, including IEEE dictionaries, further support Apple’s construction. (*Id.* at 21, n. 12.)

As to “control processor,” in addition to the instruction debate, Apple contends the parties further disagree as to whether simply a “processor” should be utilized in the construction or “digital electronic device or circuit.” Apple contends that PMC provides no reason to deviate from the “processor” definition proposed by PMC in this regard. Apple contends that like

“processor,” the specification refers to control processors generally without limitation to a digital electronic device or circuit. (*Id.* at 21 (citing ’091 Patent 82:56-63, 80:63-65, 81:24-29, 81:39-47).)

Analysis

The specification provides examples of devices that perform “processing” that are not described to be executing instructions. ’091 Patent 19:14-16, 51:35-37, 75:26-27, 115:20-22, 134:27-31. In this context, a processor, as described within the specification, is not limited to a device that executes instructions. The Court also finds that this is consistent with the extrinsic evidence dictionary definitions. (Dkt. No. 161 at 21, n. 12.)¹⁰ As to PMC’s concern regarding the breadth of Apple’s construction encompassing devices such as keyboards, the Court has replaced Apple’s use of “operates” with “processes” to remove that objection.

The Court construes “processor” to mean “a device that processes data” and “control processor” to mean “a processor that controls other devices or circuitry by processing control information.”

¹⁰ Additionally, when the instruction issue was raised in *PMC v. Zynga*, PMC agreed to this Court that the term is not limited to executing instructions. (Dkt. No. 160 Ex. 13 at 14-16.) In supplemental briefing, PMC argues that it is now presenting consistent positions to the Court as PMC presented in *PMC v. Zynga*. In particular, PMC contends that both “processor” and “processing” were at issue in *PMC v. Zynga*, that the terms could be understood from the context of the claims in which they appear, and that PMC never argued that “processor” should not be limited to a device that operates by executing instructions. (Dkt. No. 185 at 1-3.) The Court disagrees with PMC’s characterization. The issue of whether “processor” includes devices that do not execute instructions was directly contested in *PMC v. Zynga*. (Dkt. No. 160 Ex. 13 at 14-16.) In its Reply Brief in *PMC v. Zynga*, PMC explicitly stated: “PMC’s position is not that these terms ‘require computers that execute instructions’ as Zynga incorrectly states.” (*PMC v. Zynga*, Dkt. No. 86 at 3.) The Court then proposed a construction of “any device capable of performing operations on data” and PMC agreed to that proposal. (Dkt. No. 161 Ex. 13 at 16.) PMC has not provided intrinsic evidence nor extrinsic evidence contradicting the position that PMC has itself previously agreed to.

16. controllable device ('635 Claims 13, 20, 32)

PMC's Construction	Apple's Construction
a device that can be regulated or commanded based on instructions	a device controlled based on instructions in a transmission

The parties disagree as to PMC's use of "regulated or commanded" and Apple's requirement that the control must be based on something in a transmission.

Positions of the Parties

PMC points to the surrounding claim language: "passing ... [decrypted or enabled] signal(s) to a controllable device" and "controlling said controllable device" based on either "instructions" (claims 13 and 32) or "information" (claim 20) in the passed signal(s). PMC contends its construction is consistent with the plain meaning of the term. PMC objects to Apple's inclusion of "controlled" based on instructions "in a transmission." PMC contends the claims merely require that the device be "controllable" (i.e., can be controlled) rather than being actually "controlled." PMC also contends the phrase "controllable device" itself does not specify the source of instructions by which the device can be controlled. (Dkt. No. 148 at 20.) PMC contends that to require such instructions to be "in a transmission" is also unnecessary, because the subsequent "controlling" step in the respective claims specifies the source of the instructions or information used as the basis of control. PMC also asserts that nothing in the claims or specifications requires a "controllable device" always to be controlled by transmitted instructions. PMC contends that the specification describes a "programmable random access memory controller 20" controlling a number of "controllable devices" without requiring instructions from the controller to originate from an incoming transmission. (*Id.* (citing '490 Patent 8:20-9:19).)

Apple contends that PMC’s argument that a “controllable device” “can be regulated or commanded”—instead of controlled—ignores the surrounding claim language and must be rejected based on a plain reading of the claims. Apple also contends PMC’s use of the alternative terms “regulated or commanded” is vague and unsupported. As to PMC’s argument that the “controllable device” need not be actually controlled, Apple contends this ignores that each claim expressly recites “controlling said controllable device.” ’635 Patent Claims 13, 20, 32. Apple further contends that PMC ignores that the surrounding claim language requires that the instructions to be present in the received transmission. (Dkt. No. 161 at 22.) Apple points to the claim language that states that the controllable device is controlled based on “said embedded executable instructions;” the “embedded executable instructions” are embedded in “said decrypted second of said plurality of signals;” and the “plurality of signals” are detected in an information transmission. ’635 Patent claim 13.

In reply, PMC contends that Apple’s admission that the surrounding claim language states what control is based on reveals why Apple’s proposed additional limitations are unnecessary. Further, PMC contends that claim 20 of the ’635 Patent recites “controlling said controllable device on the basis of decrypted information” (not instructions). (Dkt. No. 163 at 7.)

Analysis

The claim term in question is “controllable” device. The parties have not presented evidence suggesting that the plain meaning of “controllable” should be deviated from. Thus, Apple has not supported changing “controllable” to “controlled.” To the extent that other surrounding claim language dictates that the device is controlled, such other language provides that the device is actually controlled, “controllable” does not. Likewise, to the extent that in any given claim instructions are transmitted instructions, it is the surrounding claim language that

provides such requirements not the term “controllable device.” As to PMC’s use of “regulated or commanded,” PMC has not pointed to intrinsic or extrinsic evidence that supports deviating from the clear claim language.

The Court construes “controllable device” to mean “a device that is controllable based on instructions.”

17. instruct-to-enable signal (’091 Claims 13, 20, 26)

PMC’s Construction	Apple’s Construction
a signal carrying information used by the receiver station to enable the implementation of the enumerated operation	a signal that provides an enabling instruction

The primary dispute is whether or not the signal is limited to instructions.

Positions of the Parties

PMC points to claim 26 of the ’091 Patent as describing that the instruct-to-enable signal includes “channel” information that enables the receiver station to “automatically tun[e] . . . to a channel designated by said instruct-to-enable signal.” PMC contends that the specifications similarly describe that the receiver stations receive instruct-to-enable signals carrying information used to enable the implementation of various operations. As examples, PMC points to stations that receive “program-enabling-messages” that enable them, e.g., to decrypt the “Wall Street Week” program transmission, process the information of the meter-monitor segment of the program-enabling-message, and perform other operations. (Dkt. No. 148 at 21 (citing ’091 Patent 152:12-153:39, 148:56-65, 144:47-145:13; 149:28-39; 156:28-41).)

PMC contends that Apple’s proposed construction improperly limits the scope of the claimed “signal” to “a signal that provides an enabling instruction.” PMC contends that the claim and specifications do not limit the content of the instruct-to-enable signal to “instructions.” PMC

contends that the specification describes that the instruct-to-enable signals broadly include “information:”

Transmitting said message causes the line receiver, 33, of decoder, 30, to receive the embedded SPAM information of that particular 2nd-WSW-program-enabling-message (#7) that is embedded on said line Q; the detector, 34, to detect the digital information of said message; and the controller, 39, to process said information.

'091 Patent 156:4-9; *see also id.* at 149:28-39, 152:41-48, 155:42-156:9 (content of “enabling-message[s]” including certain information). PMC contends that limiting “signal” to “instruction” is contradicted by the claims such as claims 13 and 20 which describe the instruct-to-enable signal being part of an “encrypted digital information transmission.” (Dkt. No. 163 at 7.) Also, PMC notes that claim 26 of the '091 Patent, recites that the instruct-to-enable signal includes “channel” information, rather than any instruction. (Dkt. No. 148 at 22.) PMC also contends that Apple’s construction does not add clarity to the disputed limitation, as it merely replaces the term “instruct-to-enable” with the term “enabling instruction.”

Apple contends that PMC’s construction contorts the construction beyond recognition and reads out the term “instruct.” Apple contends that none of PMC’s citations to the specification refer to an “instruct-to-enable signal,” let alone justify PMC’s construction departing from the plain meaning of the term. (Dkt. No. 161 at 22-23.) Apple contends that PMC has read out the term “instruct” in favor of “information used by the receiver.” Apple asserts that PMC’s construction provides no limit on what information might be considered to have been “used” to enable an operation. Apple contends that the disputed term simply requires a signal that provides an enabling instruction, as provided in Apple’s construction. Apple contends that “instruction” comes straight from the term to be construed: “*instruct*-to-enable signal.”

At the hearing, Apple emphasized that PMC contended in another litigation that “instruct signal” means “a signal including an instruction or series of instructions for...” (Dkt. No. 194 at 95 (citing Dkt. No. 161 Ex. 10 at 2).)

Analysis

Apple’s contention that the “instruct-to” descriptor requires an instruction is contradicted by the specification and claims. Some items described in the “instruct-to” format are explicitly instructions: “instruct-to-sample instructions” (’091 Patent claim 1), “instruct-to-record instruction” (*id.* at 92:14). But other items are not so limited: “instruct-to-meter information” (*id.* at 114:27-232), “instruct-to-process-info-failed information” (*id.* at 125:10-11), “instruct-to-receive signal” (*id.* at 140:27-33). The varying uses in the specification and claims are indicative that the terminology is not utilized solely with instructions. Moreover, some claims explicitly state that the instruct-to-enable signal includes instructions, such as ’091 Patent claim 20: “first instruct-to-enable signal including first processor instructions” and “second instruct-to-enable signal including second processor instructions.” Other, claims, such as ’091 Patent claims 13 and 26 do not include such limitations. In context of the usage in the claims and specification, “signal” is not limited to inclusion of instructions but rather to the plain meaning.

At the hearing, Apple stated that a signal that instructs is an instruction. (Dkt. No. 194 at 96.) However, Apple’s broad understanding of the term “instruction” is not clear from its construction. Apple’s construction would more likely be contemplated as requiring instructions such as programming instructions. Such an interpretation of “instruction” would exclude signals that instruct without the use of programming instructions, for example a signal that instructs something to happen merely based on the state of the signal.

As to what uses the signal and how the signal is used, the claims themselves provide guidance such that PMC’s “used by the receiver station” is unnecessary. For example, claims 13 and 26 recites “passing said instruct-to-enable signal to a processor” and claim 20 recites that one of the method steps includes executing the instructions of the instruct-to-enable signal.

The Court construes “instruct-to-enable signal” to mean “a signal that enables the implementation of the enumerated operation.”

18. message stream (’2,649 Claims 39, 54)

PMC’s Construction	Apple’s Construction	Vizio’s Construction
a series of digital data packages, each data package having a recognizable structure	a series of data packages, each data package having recognizable structure	a series of sequentially transmitted messages message – “all of the control information, transmitted in a given transmission, from the first bit of one header to the last bit transmitted before the first bit of the next header”

The constructions of PMC and Apple only differ by the inclusion of “digital” in Apple’s construction. Vizio seeks a construction of “message” that limits the message to control information.

Positions of the Parties

PMC notes that PMC’s and Apple’s constructions differ only with regard to PMC limiting the term to “digital” data. PMC contends that Apple’s construction should be rejected because the asserted claims of the ’2,649 Patent are expressly directed to applied methods for processing digital television programming. PMC also points to specification citations that reference digital video or digital audio. (Dkt. No. 148 at 22 (citing ’091 Patent 18:34-39; 8:46-50; 143:1-159:19; 148:13-16 (“the program originating studio that originates the ‘Wall Street

Week' transmission transmits a television signal that consists of so-called 'digital video' and 'digital audio,' well known in the art.”).) PMC states that nowhere is “analog” mentioned in the language of the claims.

PMC contends that Vizio attempts to limit the term “message stream” and its constituent term “message” to one embodiment described in the specification. PMC contends that the specification defines a “message” to include “all of the SPAM [signal processing apparatus and method] information, transmitted in a given transmission, from the first bit of one header to the last bit transmitted before the first bit of the next header.” ’091 Patent 30:49-52. PMC contends that this language neither limits nor equates “all the SPAM information” with “control information” as required in Vizio’s construction. PMC also contends that Vizio ignores that (1) Figure 2I is merely “one instance of a SPAM message stream”(*id.* at 9:59), (2) “FIG. 2J shows one instance of a message that consists of just a header and an execution segment and fills one byte signal word completely” (*id.* at 9:60-62), and (3) “FIG. 2K shows one instance of a message that contains execution and meter-monitor segments and fills a whole number of byte signal words completely but ends with one full byte signal word of padding bits because the last byte signal word of command information is an EOFs [end of file signal] word” (*id.* at 9:63-67). PMC states that, together, Figures 2I, 2J, and 2K illustrate various embodiments of a “message,” each being a digital data package having a structure and carrying digital data, which, in the cited figures, may include a header, a command, an execution segment, an information segment, an EOFs, and/or a meter-monitor segment. PMC contends that a “message” is not simply “all of the control information transmitted in a given transmission,” as Vizio proposes, because although “control information is detected in a message stream” (’2,649 Patent claim 64), elsewhere “cadence information is detected in a message stream” (’2,649 Patent claim 70). (Dkt. No. 148 at

23.) PMC contends its proposed construction focuses on the structure of a “message,” and should be accepted in lieu of Vizio’s construction, because it does not seek to limit the structure to just one instance of certain exemplary constituents. PMC contends the phrase “one instance” in the specification clearly introduces the makeup of a “message” as three species of a “message.” PMC states that because “header,” “command,” and “execution segment” are mere “example[s] of a broader genus” of a “message,” the Court should reject Vizio’s proposed construction “rather than limit[] the genus to the exemplary species.” (*Id.* at 23-34 (quoting *Catalina Mktg. Int’l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 811 (Fed. Cir. 2002)).)

As to Apple’s lack of inclusion of “digital,” PMC contends that the specification references messages in the context of digital data. (Dkt. No. 163 at 7 (citing ’091 Patent 9:60-62 (“FIG. 2I shows one instance of a message that ... fills one byte signal word...”), 30:47-52 (“a message consists of all the SPAM information ... from the first bit of one header to the last bit transmitted before the first bit of the next header.”)).) PMC also contends that this is the ordinary meaning of “message stream.” (*Id.* (citing a dictionary definition of “stream” being “a collection of binary digits that are transmitted in a continuous sequence, ...”).)

Apple contends that PMC asserts that because the claims of the ’2,649 use the word “digital” to describe certain items, a “message stream” must be digital. Apple contends that there is nothing inherently “digital” about a message stream, and PMC provides no intrinsic support for its construction beyond the use of the word “digital” elsewhere in the claims. (Dkt. No. 161 23.) Apple contends that claims 39 and 54 demonstrate that when the patentee wanted to claim “digital,” the patentee knew how to specifically claim a digital signal, stating that an information transmission includes “digital television signals” and “digital video signals.” ’2,649 at Claims 39, 54. Apple contends that PMC argues that Vizio’s construction unjustifiably limits “message

stream” to a single embodiment when PMC’s own construction does the same with regard to digital.

Vizio contends that in prosecution, PMC provided the Patent Office with a glossary of terms appearing in the specification (“Glossary”), and stated that it applies to all continuations of the 1987 Specification, and that the terms in quotes are “formally defined.” (Dkt. No. 160 Ex. G at 1.) Vizio contends that the Glossary includes the following definition for “message:

“message” ... page 59 line 24 ... All of the information transmitted with a given header is called a “message.” Each header begins a message, and each message begins with a header. More specifically, a message consists of all the SPAM information, transmitted in a given transmission, from the first bit of one header to the last bit transmitted before the first bit of the next header.

A SPAM message is the modality whereby the original transmission station that originates said message controls specific addressed apparatus at subscriber stations. The information of any given SPAM transmission consists of a series or stream of sequentially transmitted SPAM messages.

(*Id.* at 10.)

Vizio contends its constructions of “message” and “message stream” are taken from the Glossary with the substitution of the term “control information” for “SPAM information” to remove potential jury confusion regarding the scope of “SPAM information,” which is a potentially confusing acronym (“signal processing apparatus and method information”). *See* ’091 Patent 21:35-36. Vizio contends the Glossary describes a “SPAM message is the modality whereby the original transmission station that originates said message controls specific addressed apparatus at subscriber stations.” Vizio states that, thus, its use of “control information” rather than “SPAM information” is proper.

Vizio contends that its construction does not omit any embodiments. Vizio contends that the figures identified by PMC (2I, 2J, and 2K) all begin with a header and contain control information. Vizio states that PMC appears to be arguing that not all “SPAM information” (e.g.,

certain cadence information) is “control information.” (Dkt. No. 160 at 6.) Vizio states that each element within the depicted messages “controls” processing and would thus be “control information” under either party’s construction of that term. (*Id.* at 7.) Vizio contends that to the extent the Court believes “control information” and “SPAM information” are interchangeable, the Glossary definition in its original form should control. (*Id.* at 7, n. 12.)

Vizio contends that PMC’s position that headers, commands, and execution statements are “mere examples of a broader genus” is mistaken. Vizio contends that headers and execution segments are elements that can appear in messages—but they are not different species of messages. (*Id.* at 7 (citing ’091 Patent 31:11-12 (“SPAM message are composed of elements—headers, execution segments, meter-monitor segments, and information segments”)).) Vizio states that commands, on the other hand, are a type of message that includes both a header and an execution segment (*e.g.*, types of “control information.”) (*Id.* (citing ’091 Patent 23:30-34).)

Vizio asserts that PMC appears to agree with the premise of Vizio’s construction, stating that “the specification *defines* a ‘message,’ to include ‘all of the SPAM . . . information transmitted in a given transmission.” (Dkt. No. 148 at 22.) Vizio contends, however, that PMC abandons the Glossary and defines a “message” as a “digital data package.” Vizio states that the term, “digital data package,” however, appears nowhere in the specification (or the Glossary) and arguably allows PMC to contend that virtually any packet or defined group of bits in a transmission is a “digital data package,” and hence a “message.”

Vizio contends that PMC’s infringement contentions demonstrate that PMC will argue that digital television signals are also “messages.” (Dkt. No. 160 at 7.) Vizio states that the specification never describes television signals as being “messages” and that the specification consistently describes the message stream as being embedded in television signals—not simply

the television signals, themselves. (*Id.* at 8 (citing '091 Patent 7:63-8:8).) Vizio contends that if “messages” include television signals, then the term “digital television signals” would be read out of the claims, pointing to '2,649 Patent claim 1 (“receiving an information transmission including digital television signals and a message stream”).

In reply to Vizio, PMC points out that the Glossary definition of “message” is a word-for-word reproduction of 10 lines from the 1987 specification. (Dkt. No. 162 at 1 (citing '091 Patent 30:47-57).) PMC notes that Vizio is not faithful to the specification as Vizio changes “SPAM” (“signal processing apparatus and methods”) to “control information.” PMC contends that Vizio does not explain how “SPAM” and “control” are, in fact, interchangeable terms—an assertion that does not make sense because “SPAM” is an acronym whose member words are different from and encompass a broader scope than the word “control.” Further, PMC contends that Vizio does not address PMC’s assertion that not all “SPAM information” is “control information,” or vice versa. (*Id.*) PMC points to the inclusion of an information segment field in a message as indicating that the specification does not limit a message to carry only “control information.” (Dkt. No. 162 at 3.) Rather, PMC contends, “[i]nformation segments... can be of any length. Program instruction sets, intermediate generation sets, other computer program information, and data . . . are transmitted in information segments.” '091 Patent 27:58-61. PMC contends, thus, “SPAM information” can also include an information segment that carries digital data of any length, such as digital audio and digital video—which conclusively establishes that “SPAM information” is not synonymous with “control information.”

Analysis

At the hearing, the Court proposed a construction of “message:” “all of the signal processing information, transmitted in a given transmission, from the first bit of one header to

the last bit transmitted before the first bit of the next header.” PMC stated that PMC just wanted to “make clear on the record today that the tentative construction of signal processing information does not exclude digital video and audio signals.” (Dkt. No. 194 at 97, 100-101.) At the hearing, Vizio accepted the Court’s proposed construction. (*Id.* at 101.) Vizio, however, took issue with PMC’s contention that digital video and audio signals could be within the message stream. (*Id.*)

The specification has a section entitled “The Organization of Message Streams . . . Messages, Cadence Information, and End of File Signals.” ’091 Patent 30:45-46. This section begins with a definitional statement:

All of the information transmitted with a given header is called a "message." Each header begins a message, and each message begins with a header. More specifically, a message consists of all the SPAM information, transmitted in a given transmission, from the first bit of one header to the last bit transmitted before the first bit of the next header.

A SPAM message is the modality whereby the original transmission station that originates said message controls specific addressed apparatus at subscriber stations. The information of any given SPAM transmission consists of a series or stream of sequentially transmitted SPAM messages.

Id. at 30:47-57. During prosecution of a related patent application, the applicants provided a “Glossary” of defined terms in the 1987 priority application and reiterated this same definition. (Dkt. No. 160 Ex. G at 10.) “When a patentee explicitly defines a claim term in the patent specification, the patentee’s definition controls.” *Martek Biosciences Corp. v. Nutrinova, Inc.*, 579 F.3d 1363, 1380 (Fed. Cir. 2009) (citing *Phillips*, 415 F.3d at 1321). Here, the specification passage acts as a clear statement of lexicography. The Applicants even further confirmed this definition during prosecution.

PMC is correct that Vizio’s construction limits this definition beyond what is provided in the specification and prosecution. In particular, it is clear that as explicitly stated, a message can

be all of the SPAM information and is not limited to only control information. In addition, “[t]he term, ‘SPAM,’ is used, hereinafter, to refer to signal processing apparatus and methods of the present invention.” ’091 Patent 21:35-36. It is clear that messages can contain more than merely control information but may include all of the signal processing information. This also conforms to the examples of other information being carried by messages identified in the specification by PMC. *Id.* at 31:11-32:35, 33:57-33:34, FIGs. 2I-2J and associated text. FIG. 2I indicates that the message may include “information segments.” Further, the specification states “[i]nformation segments... can be of any length. Program instruction sets, intermediate generation sets, other computer program information, and data (all of which are organized in a fashion or fashions well known in the art) are transmitted in information segments.” ’091 Patent 27:58-61. Vizio’s caveat to its acceptance of the Court’s proposed construction would ignore that the information segment may carry “data.” Further, Vizio’s caveat would ignore that the definitional statement states that the message may include “all the SPAM [signal processing apparatus and methods]” disclosed in the specification. The signal processing apparatus and methods explicitly include

...the reception and use of, for example, digital video and audio television transmissions, digital audio radio and phonograph transmission, digital broadcast print transmission, and digital data communications.

’091 Patent 143:25-30. The Court rejects Vizio’s contention that the message cannot include the digital video and audio signals.

The Court construes “message” to mean “all the signal processing information, transmitted in a given transmission, from the first bit of one header to the last bit transmitted before the first bit of the next header.”

The Court construes “message stream” to mean “a series of messages.”

19. register memory ('2,649 Claims 39, 62, 67)

PMC's Construction	Apple's/Vizio's Construction
a memory space location to temporarily store information for use in later operations	memory in a processor to temporarily store information for use in later operations

The primary dispute raised by the parties is whether the term is limited to memory in processors.

Positions of the Parties

PMC contends that the specification references “register memory” in context of its capacity and location:

In the present invention, any microprocessor, buffer/comparator, or buffer can be adapted and preprogrammed to detect end of file signals. At any given SPAM apparatus that is so adapted and preprogrammed, particular dedicated capacity exists for said detecting. Said capacity includes standard register memory or RAM capacity, well known in the art, including three particular memory locations for comparison purposes, one particular memory location to serve as a counter, and three so-called "flag bit" locations to hold particular true/false information.

'091 Patent 35:34-43. PMC contends this passage also contradicts Defendants' “in a processor” limitation by referencing “microprocessor, buffer/comparator, or buffer.” (Dkt. No. 148 at 25.)

Defendants contend that PMC's construction blurs the distinction between “memory register” and other forms of memory. Defendants assert the portion of the specification cited by PMC contrasts “standard register memory” with “RAM [Random Access Memory].” Defendants assert the specification makes clear that there are many different types of memory which can exist in any apparatus, but not all memory is “register memory.” (Dkt. No. 161 at 24.) Defendants seek to clarify that “register memory” refers to memory in a processor. Defendants contend their construction follows the plain language of the claims, which requires passing/inputting information to a processor and selectively communicating that information to a register memory. (*Id.* at 24-25 (citing '2,649 Patent Claims 39, 62, 67).) Defendants also contend

their construction is also consistent with the specification. (*Id.* at 25, n.14 (citing '091 Patent 16:47-53 (“microprocessor . . . designed to have particular register memories”), 19:44-55, 82:1-14 (register memories of controller 39), 12:31-50 (registers of a CPU)).) Defendants also point to a prosecution statement. (*Id.* at 25, n. 15 (citing Dkt. No. 161 Ex. 24, '2,649 File History Excerpt, 1/29/10 Resp. at 3 (“[e]ach claim of the present application includes at least one limitation directed to . . . control based on processor register memory”))).)

In reply, PMC contends that none of Defendants' citations require “register memories” to be located within a microprocessor. Further, PMC notes that the passage at '091 Patent 16:46-53, identified by Defendants, references a controller having a processor and RAM (“microprocessor capacity of controller 12”). PMC contends that Defendants' other passages reference “register memories of controller 39” (*id.* at 82:1-14) and “registers of CPU” (*id.* at 12:31-50). PMC contends this highlights the differences between a controller and a processor and that the register memories could be part of various non-processor devices. PMC also notes that references in prosecution to “processor register memory” further confirm that “register memory” within a processor is just one type of “register memory.” (Dkt. No. 163 at 8.)

Analysis

Though the passage cited by Defendants may contrast “register memory” from “RAM,” it does not do so on the basis of whether or not the memory is in a processor or not. Moreover, the passage indicates that register memory may be found not just in processors but also in comparators or buffers. '091 Patent 35:34-43. There is no disavowal limiting the ordinary meaning of “register memory” to only processors. Similarly, the claims do not make such a requirement. Defendants are correct that the specification elsewhere provides processors that have register memories, however, these are not statements limiting register memories to

processors and the mere inclusion of an embodiment in the specification does not mandate reading that embodiment into the claims. *Arlington*, 632 F.3d at 1254.

The Court construes “register memory” to mean “memory to temporarily store information for use in later operations.”

20. cadence information (’2,649 Claim 67)

PMC’s Construction	Apple’s/Vizio’s Construction
fields in a data package such as headers, length tokens and/or end-of-file signals that enable a receiver apparatus to distinguish the individual messages within a message stream	information (e.g., headers, length tokens, end-of-file signals) that enables a receiver apparatus to distinguish the individual messages of a message stream

The parties dispute whether the term should include “fields in a data package” verse “information.”

Positions of the Parties

PMC objects to Defendants’ inclusion of “information” as being a nebulous term adding nothing to clarify what “cadence information” is. PMC contends that the specification describes transmitting “cadence information” as “cadence signals:”

The preferred embodiment has the advantage of requiring that long cadence signals that require time consuming processing be transmitted only with some messages and then only at times when processing speed is of relatively low priority.

’091 Patent 43:29-33. PMC contends that, in this context, the transmission of signals refers to “data packages”—such as “messages” in a “message stream”—that are being sent, received, and processed. (Dkt. No. 148 at 26.) PMC contends that because “cadence information is detected in a message stream,” (’2,649, Patent Claim 70), it, like a “message stream,” is made up of “data packages.” (*Id.*)

Defendants contend that PMC transforms the plainly understandable term “information” into the technical term “fields in a data package.” Defendants contend that “information” is understandable to a jury and needs no further construction. Defendants contend that PMC requires the Court to accept a number of leaps to turn “information” into “fields in a data package,” including that (1) the specification describes “cadence information” as “cadence signals;” (2) in the context of the ’2,649 claims, “signals” refers to a “message stream;” (3) a “message stream” contains “data packages;” and (4) “data packages” contain “fields.” (Dkt. No. 161 at 25.) Defendants contend their construction, on the other hand, is supported by the intrinsic evidence because the specification explains that:

[c]adence information which consists of headers, certain length tokens, and signals that are called ‘end of file signals’ enables subscriber station apparatus to distinguish each instance of header information in any given message stream and, hence, to distinguish the individual messages of said stream.

’091 Patent 31:4-9; *see also id.* at 35:26-32.

In reply, PMC contends that each of the examples in the ’091 Patent 31:4-9 passage cited by Defendants is indisputably a “field in a data package” and as a result, Defendants’ generic “information” expands the term’s scope beyond the disclosure. (Dkt. No. 163 at 8.)

Analysis

The claim term merely uses “information.” Further, the specification provides clarity as to the “cadence information:”

[c]adence information which consists of headers, certain length tokens, and signals that are called ‘end of file signals’ enables subscriber station apparatus to distinguish each instance of header information in any given message stream and, hence, to distinguish the individual messages of said stream.

’091 at 31:4-9. Though the various constituents described may be found in data packets, the term itself and the specification passage clearly do not limit or disclaim the scope to only data packets.

Further, the functionality, as explained in the passage above, merely allows for distinguishing individual messages in a stream.

The Court construes “cadence information” to mean “information (such as headers, length tokens, or end-of-file signals) that enables a receiver apparatus to distinguish the individual messages of a message stream.”

21. stored function invoking data (’2,649 Claims 39, 54, 62)

PMC’s Construction	Apple’s/Vizio’s Construction
data stored in memory that is used as a basis for causing preprogrammed functions stored at the receiver station to be performed	Indefinite

The parties dispute whether it is reasonably certain as to what “stored” modifies.

Positions of the Parties

PMC contends that its construction is supported by the ’091 Patent specification at 23:34-53, 12:4-13:4 (“control invoking instructions”), and 49:10-31 (“controlled-function invoking information”). PMC contends the specification describes a feature of the invention to be signal processing that depends on the interaction between transmitted “information that causes processing at the subscriber stations” and the “information preprogrammed at the various stations that controls the SPAM processing at each station.” *Id.* at 143:60-66. PMC further identifies the passage:

...to invoke any given controlled function at any given station, the received binary information of said segment (for example, "010011") must match preprogrammed controlled-function-invoking information ("010011") at each station. This feature permits each station to be preprogrammed with station specific controlled-function-invoking information that differs from station to station (which means that no single SPAM execution segment could invoke a given function at all stations without first being processed at selected stations to render its information to correspond to the station specific preprogrammed invoking information of said stations).

Id. at 143:66-144:10. PMC further points to dictionary definitions of “invoke” as indicating a meaning of “to put into effect or operation” and “to activate a procedure in one of its entry points.” (Dkt. No. 148 at 26.)

Defendants note that the term is not found in the specification and contends that PMC relies on the description of other phrases, e.g., “control invoking instructions” and “controlled-function invoking information” to support its construction. Defendants contend the intrinsic evidence, for other phrases, does not clarify the meaning of “stored function invoking data.” (Dkt. No. 161 at 26.) Defendants contend that the phrase is indefinite because one of ordinary skill in the art cannot be reasonably certain of whether “stored function invoking data” requires: (1) data for invoking a stored function; (2) stored data for invoking a function; or (3) stored data for invoking a stored function (as PMC’s construction suggests). (*Id.*) Defendants contend that, in contrast, inventor Harvey testified that “stored” modifies the term “data” and not the term “function.” (*Id.* (citing Dkt. No. 161 Ex. 18, Harvey Tr. at 438:23-439:5).) Defendants contend that PMC advocates for a construction requiring both stored “data” and stored “functions.” Defendants contend that, therefore, claims 39, 54, and 62 are invalid for indefiniteness, because the claims fail to inform, with reasonable certainty, the scope of the invention. (*Id.* (citing *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2124 (2014)).)

Analysis

Defendants propose three alternative readings of the claim term. However, Defendants view the claim term in isolation without consulting the surrounding claim language. The surrounding claim language provides guidance as to the meaning of the claim term. For example, in ’2,649 claim 39 control information is provided to a register memory. The claim then calls out “comparing stored function invoking data to the contents of said at least one

register memory.” In this context, it is clear that the “data” is compared to the register memory. This also conforms to the specification. ’091 Patent 143:66-144:10.¹¹ As it is the data that is compared, the claim language is, thus, indicative that the intervening “stored function invoking” language modifies the claimed “data” that is compared. This again conforms to the specification. The data is stored and invokes a function. Again, this matches the specification which describes a station being “preprogrammed with station specific controlled-function-invoking information” and “preprogrammed invoking information of said stations.” *Id.* In this context, the preprogrammed information is the stored data. In context of the claim language and corresponding specification disclosure, the term is reasonable certainty. *See Nautilus*, 134 S. Ct. at 2129–30.

The Court construes “stored function invoking data” to mean “stored data that invokes a function.”

22. digital television signals (’2,649 Claims 39, 54, 67)

PMC’s Construction	Apple’s Construction	Vizio’s Construction
television programming that includes digital audio and digital video signals	television signals that include digital information	television programming in which the audio, video, and data components are digitally encoded and transmitted as a mass medium

At the hearing, the Court proposed a construction of: “television programming in which the video and audio are transmitted as digital video signals and digital audio signals, at least a portion designed for multiple recipients.” PMC and Vizio acknowledged that the Court’s proposal was correct. (Dkt. No. 194 at 117-118.) The remaining dispute is whether the signals

¹¹ Similarly, ’2,649 claim 54 recites “compare said control information to a stored function invoking datum,...” and ’2,649 claim 62 recites “comparing stored function invoking data to the contents of said at least one register memory.”

include digital audio signals and digital video signals (PMC and Vizio) or only include some digital information (Apple).

Positions of the Parties

PMC points to the specification: “the program originating studio that originates that ‘Wall Street Week’ transmission transmits a television signal that consists of so-called ‘digital video’ and ‘digital audio,’ well known in the art” (’091 Patent 148:13-16) and “said program originating studio ceases transmitting a television signal of digital video and digital audio” (*id.* at 154:4-6). PMC also points to the claim language in claim 1 of the related U.S. Patent No. 7,752,650 Patent (“the ’2,650 Patent”): “processing said selected plurality of said digital television signals to communicate video and audio signals to a television monitor.” PMC contends that Apple’s construction is overly broad and could encompass analog television signals that simply include merely some digital information and is inconsistent with the patent specification and the understanding of a POSITA reviewing the specification. (Dkt. No. 148 at 28 (citing Weaver Dec., ¶ 75).)

Apple contends that PMC seeks to rewrite the terms “digital television signals” to recite a completely digital signal. Apple contends that PMC had no trouble clearly identifying those signals which are meant to be entirely digital, as it did in Claims 18, 20, 32, and 33 of the ’635 Patent, each of which refers to “digital information transmission ... unaccompanied by any non-digital information transmission.” Apple contends that the asserted claims of the ’2,649 Patent contain no such limitation. (Dkt. No. 161 at 27.)

Apple states that PMC’s construction relies heavily on the specification’s description of a studio that “transmits a television signal that consists of so-called ‘digital video’ and ‘digital audio,’ well known in the art.” (Dkt. No. 161 at 27 (citing Dkt. No. 148 at 27-28 (citing ’091 at

148:13-16, 154:4-6)).) Apple contends that the use of “digital video” and “digital audio” in this quote comports with the remainder of the specification explaining “digital video” and “digital television” includes conventional analog transmissions with some embedded digital information. (*Id.* (citing ’091 Patent 7:50-62 (“The present invention employs signals embedded in programming” and that “the embedded signals contain digital information.”), 10:52-55 (“TV signal decoder, 203 . . . has capacity for receiving a composite video transmission [and] detecting digital information embedded therein”), 43:53-44:2 (for video, a digital signal can be embedded “in each frame on one line such as line 20 of the vertical interval.”), 47:55-58, 12:1-10, 13:60-14:17).) Apple asserts that PMC fails to cite any intrinsic support showing an *all-digital* video or television signal.

Apple also points to PMC’s statements during prosecution:

Since the television programming transmission is disclosed to be comprised of a video portion, an audio portion and embedded encoded digital signals, the separately defined transmission is at least some of the television programming transmission that contains the encoded digital signals. Thus, it is disclosed that the audio portion, video portion and signal portion of the television programming transmission may be entirely or partially encoded in digital format, separately defined from analog format, thereby comprising “digital television.”

(Dkt. No. 161 Ex. 26, 10/2/98 Amendment at 35.)

Apple also notes that in a recent decision invalidating claims of a related PMC patent, the PTAB found that a prior art reference disclosed decryption of digital television where it disclosed decryption of transmissions containing analog television and digital signals. (Dkt. No. 161 at 28 (citing Dkt. No. 161 Ex. 2 at 29-30 (PTAB. Mar 29, 2016)).) Apple also contends that any references to digital transmissions “well known in the art” in 1987 would *not* have been fully digital, as PMC’s own expert and inventor admit. (*Id.* (citing Dkt. No. 161 Ex. 9, Weaver Tr. at 43:6-11 (agreeing that “in the 1980s digital television would have been experimental”); Dkt. No.

161 Ex. 25, Cuddihy Tr. at 271:1-18 (in 1987, “any video that was entirely digital in its format was of an experimental nature.”).)

Vizio contends that the constituent components must be digitally encoded (as opposed to a signal that merely includes some digital audio and video). Vizio contends that in prosecution, the Examiner asked for a definition of “digital television” and that PMC responded: “‘digital television’ transmissions include the constituent digital video and digital audio.” (Dkt. No. 160 Ex. C, U.S. Patent No. 7,752,649 File History, Jan. 27, 1997 Amendment, at 22.) Vizio contends that this means that all of the video and audio that make up the television transmission must be digital. (Dkt. No. 160 at 3.) Vizio objects to Apple’s construction as encompassing an analog television signal with embedded digital data. Vizio contends that PMC overcame multiple references during prosecution that disclosed digital information embedded in an analog TV signal by arguing that the references did not disclose “digital television.” (Dkt. No. 160 at 3-4 (citing to prosecution of the ’2,650 Patent, in which the Examiner rejected asserted claim 1 over Cheung, which disclosed a standard analog television signal with digital data embedded in the vertical blanking interval).) Vizio contends that PMC argued, *inter alia*, that Cheung was not directed to digital television. (*Id.*)

Vizio contends that the single example of digital television in the specification that arguably purports to disclose a digital television discloses a transmission that “*consists of so-called ‘digital video’ and ‘digital audio’*” ’091 Patent 148:13-16 (emphasis added). Vizio contends that nothing in the specification suggests that digital television is anything but a completely digital transmission.

In reply, PMC contends that Apple has not cited intrinsic evidence to support the inclusion of “at least partially digital” signals. (Dkt. No. 163 at 9.) PMC contends that Apple’s

citation to '091 Patent 7:50-62 as purportedly supporting Apple's claim that "digital video" and "digital television" include conventional analog transmissions with some embedded digital information mischaracterizes the passage. PMC contends that nowhere does that passage refer to conventional analog transmissions. (*Id.*) As to the prosecution statement, PMC contends that PMC was distinguishing the "separately defined" transmission from conventional analog and digital television, rather than distinguishing between full digital encoding versus partial digital encoding. (*Id.* at 9, n.12.) As to the cited PTAB decision, PMC contends this involved the meaning of "unit of digital television or computer programming" in a different patent and did not relate to whether "digital television signals" can be a mixture of analog and digital signals. (*Id.*)

As to Apple's claim differentiation argument, PMC states that while "digital television signals" and "digital video signals" appear only in the asserted '2,649 claims, Apple attempts to contrast them with "digital information transmission," a different term in the '635 Patent. (*Id.* at 9.)

As to Apple's suggestion that fully-digital television and video signals were not known in 1981, PMC contends Apple's position is belied by the intrinsic evidence, PMC contends that there are numerous references disclosing fully-digital television and video that pre-date November, 1981 that were considered by the PTO and cited on the patent face. (*Id.*)

Analysis

Apple would have any television signal that includes at least some digital information (such as control information) be a "digital television signal." Thus, Apple cites to passages which may reference traditional analog television signals merely having some digital information embedded. '091 Patent 10:52-55 (composite video transmission having digital signal embedded therein). 7:50-62, 43:53-44:2. However, the passages cited by Apple do not describe merely

embedding digital information as being “digital television.” Apple further points to an amendment filed during the prosecution of the ’2,649 Patent:

Since the television programming transmission is disclosed to be comprised of a video portion, an audio portion and embedded encoded digital signals, the separately defined transmission is at least some of the television programming transmission that contains the encoded digital signals. Thus, it is disclosed that the audio portion, video portion and signal portion of the television programming transmission may be entirely or partially encoded in digital format, separately defined from analog format, thereby comprising ‘digital television.’

(Dkt. No. 161 Ex. 26, 10/2/98 Amendment at 35.) But this statement also undercuts Apple’s position as this statement makes clear that to be “digital television” not just data or control information needs to be included in digital formats but “the audio portion, video portion and signal portion of the television programming transmission may be entirely or partially encoded in digital format, separately defined from analog format, thereby comprising ‘digital television.’” (*Id.*) This conforms to the passages in the specification. ’091 Patent 143:27-28 (referring to digital television in the context of the video and audio by referencing “digital video and audio television transmissions”), 148:13-16 (“a television signal that consists of so-called ‘digital video’ and ‘digital audio,’ well known in the art”), 154:5-6 (“Then said program originating studio ceases transmitting a television signal of digital video and digital audio”), 154:60-62 (“receiving and decrypting the television information of said cable channel 13 as digital video and audio” in contrast to “convention analog television”), 234:22-25 (“which in digital television transmissions can include frames of transmitted video that are “frozen” after reception in fashions well known in the art”). It is clear that in context of the specification, “digital television” references the use of digital formats for the audio and video signals, not just the inclusion of some digital data in an analog video or audio signal. As to the PTAB ruling, PMC is correct that the term in question was not just “digital television” but “unit of digital television **or**

computer programming,” thus, not directly applicable to just the “digital television” signal alone. (Dkt. No. 161 Ex. 2 at 29-30 (emphasis added).)

The Court construes “digital television signals” to mean “television programming in which the video and audio are transmitted as digital video signals and digital audio signals, at least a portion designed for multiple recipients.”

23. digital video signals (’2,649 Claims 54, 62)

PMC’s Construction	Apple’s Construction	Vizio’s Construction
video signals encoded as discrete numerical values instead of an analog representation	video signals that include digital information	video signals encoded as discrete numerical values instead of an analog representation

PMC and Vizio agree that the video signal must be digital while Apple contends that the video signal need only include some digital information, such as an analog video signal having digital information.

Positions of the Parties

The parties generally rely on the arguments presented for the term “digital television signal” as discussed above. PMC further contends that Apple’s construction improperly broadens the claim term to encompass analog video signals that simply include some digital information. PMC contends that Apple’s construction is improper because it is clear from the intrinsic record that the inventors, when using the terms “digital television signals,” “digital video signals” and “digital audio signals,” intended that the word “digital” modify the words “television signals,” “video signals” and “audio signals” and intended that the signals be “digital”— not analog. (Dkt. No. 148 at 29 (citing the arguments presented for “digital television signal).)

Analysis

The analysis discussed above, with reference to the “digital television” term, is applicable to the “digital video term.” The specification and prosecution history do not support Apple’s construction of the inclusion of only some digital information in an analog video signal. Rather, the video signal itself is digital.

The Court construes “digital video signals” to mean “video signals encoded as discrete numerical values instead of an analog representation.”

24. television receiver (’2,649 Claims 39, 54, 67)

PMC’s Construction	Apple’s/Vizio’s Construction
This term does not require construction beyond its plain and ordinary meaning	A receiver (Apple) / device (Vizio) that can be tuned to a television frequency
To the extent, however, that the Court believes such term requires construction:	
an electronic device that receives television programming	

The parties dispute whether or not the receiver/device must tune to a television frequency.

Positions of the Parties

PMC contends the term has an obvious and plain meaning. PMC objects to requiring the term to include the capability to tune to a specific frequency. PMC contends that the claims do not limit reception of television programming to broadcast transmissions and do not specify that a TV receiver must be able to tune to specific frequencies. ’2,649 Patent claims 39, 54 and 67. PMC contends the specification makes clear that TV tuners are different structures in the disclosed signal processing apparatus than TV receivers. (Dkt. No. 148 at 29-30 (comparing ’091 Patent FIGS. 1 and 3, 10:41-43 (“Via conventional antenna, the station receives a

conventional television broadcast transmission at television tuner, 215.”), and 12:23-27 (“Tuner, 215, receives this television transmission, converts the received television information into audio and composite video transmissions, and transmits the audio to monitor, 202M, and the video via divider, 4, to microcomputer, 205, and decoder, 203.”) with FIG. 6A, 166:25-45 (“The means and methods for transmitting conventional programming are well known in the art. The station receives programming from many sources. Transmissions are received from a satellite by satellite antenna, 50, low noise amplifiers, 51 and 52, and TV receivers, 53, 54, 55, and 56. . . . Programming can also be manually delivered to said station on prerecorded videotapes and video-discs.”)).) PMC contends that a TV receiver is not required to “tune[] to a specific television frequency” in order to receive television programming—that is merely one embodiment.

Apple¹² notes that PMC previously agreed, in an ITC investigation, that a “television receiver” refers to “the receiver portion of a television set,” and the ALJ construed the term in a related PMC patent to mean “a tuner that outputs conventional audio and composite video transmissions, such as the receiver portion of a commercially available television set.” (Dkt. No. 161 Ex. 28, *In re Certain Digital Satellite System (DSS) Receivers and Components Thereof*, Inv. No. 337-TA-392, I.D. at 113 (I.T.C. Oct. 20, 1997).)

Apple contends that now PMC expands its construction but does not and cannot point to any evidence that even suggests disclosure of anything but transmission of conventional analog television signals, which are received by a conventional television receiver that can be tuned to a television frequency. (Dkt. No. 161 at 29.) Apple contends that the plain meaning of a “television receiver” is a receiver that can be tuned to a television frequency, as both the 1981 and 1987 specifications describe television receivers as tuning to particular frequencies. ’490 at

¹² Vizio adopts Apple’s response.

2:35-41 (“television receivers tune to and either permitting or preventing the tuners to tune to given frequencies satisfactorily”); ’091 at 6:51-55 (“a subscriber can cause his own information to be processed in highly complex ways by merely turning his television receiver on and tuning to a particular channel.”). In addition, Apple contends that the specification repeatedly describes receivers that accept a standard broadcast input and tune to a frequency for a particular channel. ’091 at 15:61-67, 127:46-63, 130:15-23, 132:22-27, 134:15-23, 149:10-15, 265:56-62, 273:55-59.

Apple also contends that the inventors’ understanding of “television receiver” comports with Defendants’ construction. Apple states that Mr. Harvey stated that a “television receiver” is a device that receives a television signal and is tunable to a television frequency. (Dkt. No. 161 Ex. 18, Harvey Tr. at 433:14-434:4.) Apple states that Mr. Cuddihy also stated that the “television receiver” envisioned by him and Mr. Harvey was “[s]tandard NTSC receiver circuitry.” (Dkt. No. 161 Ex. 21, Cuddihy Tr. at 196:13-21.)

In reply, PMC contends that the specifications do not limit “channels” to particular frequency bands. (Dkt. No. 163 at 10 (citing ’490 Patent 19:31-41 and ’091 Patent 215:9-14, 215:56-65).) PMC further contends that both digital and analog television and video signals are disclosed and that receivers are not tuned to a particular frequency for digital transmissions. (*Id.*)

Analysis

As discussed above, in addition to traditional analog television signals, the specification references digital television. The parties do not contest that the specification includes television receivers that include tuners for traditional frequency tuning reception of analog television signals. However, the claims in question specifically reference digital television. Apple has not identified intrinsic evidence that would limit the reception of television signals, particularly

digital television signals, to traditional analog television frequency tuning techniques. Moreover, as noted by PMC, the specifications include specific references to “television tuners” and “television receivers” (compare ’091 Patent FIG. 3 verse FIG. 6, and the associated text for each). This use of differing terms implies that television receivers and television tuners are not one in the same. *See Bancorp Servs., LLC v. Hartford Life Ins. Co.*, 359 F.3d 1367, 1373 (Fed.Cir.2004); *Ethicon Endo-Surgery v. United States Surgical Corp.*, 93 F.3d 1572, 1579 (Fed.Cir.1996). This is further reflected in claim 9 of U.S. Patent No. 7,856,649 (a related Phase 2 patent) which recites “said receiver station having a television receiver, a tuner, a tuner controller, ... and a television monitor.” ’6,649 Patent claim 9. Further, the “television receivers” of Figure 6 receive satellite or microwave transmissions as part of an intermediate transmission station such as a cable system headend. *Id.* 9:11-13, 166:22-25. The functionality of the receivers is described more broadly than tuning to a television frequency, including receiving satellite and microwave transmissions:

Transmissions are received from a satellite by satellite antenna, 50, low noise amplifiers, 51 and 52, and TV receivers, 53, 54, 55, and 56. Microwave transmissions are received by microwave antenna, 57, and television video and audio receivers, 58 and 59. Conventional TV broadcast transmissions are received by antenna, 60, and TV demodulator, 61.

’091 Patent 166:28-34. The functionality is, thus, different from the television tuner 215 that is coupled to a TV monitor as shown in Figure 3, further indicating a different meaning to the receiver term, not limited to tuning to a particular television frequency. Finally, as to the ITC action, the claim in that case did not recite digital television signals, rather merely referenced broadcast or cablecast programming that included digital information and the 1997 ALJ determination specifically referenced conventional transmissions. (Dkt. No. 161 Ex. 28 at 113); U.S. Patent No. 5,335,277 claim 44. Having rejected Defendants position that the television

receivers are not limited to receivers that tune to a particular television frequency, the Court finds that no further construction is necessary.

The Court finds that the term “television receiver” has its plain and ordinary meaning.

CONCLUSION

The Court adopts the constructions above for the disputed and agreed terms of the Asserted Patents. Furthermore, the parties should ensure that all testimony that relates to the terms addressed in this Order is constrained by the Court’s reasoning. However, in the presence of the jury the parties should not expressly or implicitly refer to each other’s claim construction positions and should not expressly refer to any portion of this Order that is not an actual construction adopted by the Court. The references to the claim construction process should be limited to informing the jury of the constructions adopted by the Court.

SIGNED this 25th day of October, 2016.


ROY S. PAYNE
UNITED STATES MAGISTRATE JUDGE