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

MAXELL, LTD.,	§	
	§	
Plaintiff,	§	
	§	
v.	§	
	§	
TCL Electronics Holdings Ltd. (f/k/a TCL Multimedia Technology Holdings, Ltd.); TCL Industries Holdings Co., Ltd.; T.C.L. Industry Holdings (H.K.) Limited; TTE Corporation; TCL Moka International Limited; TCL Moka Manufacturing S.A. de C.V.; TCL King Electrical Appliances (Huizhou) Co. Ltd.; Manufacturas Avanzadas S.A. de C.V.; TCL Smart Device (Vietnam) Co., Ltd.; Shenzhen TCL New Technology Co., Ltd.; TCL Optoelectronics Technology (Huizhou) Co., Ltd.; TCL Overseas Marketing Ltd.; and TCL Technology Group Corporation (f/k/a TCL Corp.),	§	NO. 5:23-CV-00108-RWS-JBB
	§	
Defendants.	§	

CLAIM CONSTRUCTION MEMORANDUM OPINION AND ORDER

Maxell, Ltd. ("Maxell") alleges infringement by TCL Electronics Holdings Ltd. (f/k/a TCL Multimedia Technology Holdings, Ltd.), TCL Industries Holdings Co., Ltd., T.C.L. Industries Holdings (H.K.) Limited, TTE Corporation, TCL Moka International Limited, TCL Moka Manufacturing S.A. de C.V., TCL King Electrical Appliances (Huizhou) Co. Ltd., Manufacturas Avanzadas S.A. de C.V., TCL Smart Device (Vietnam) Co., Ltd., Shenzhen TCL New Technology Co., Ltd., TCL Optoelectronics Technology (Huizhou) Co., Ltd., TCL Overseas Marketing Ltd., and TCL Technology Group Corporation (f/k/a TCL Corp.) (together, "TCL") of claims from six

patents: U.S. Patent Nos. 7,924,366, 10,219,020, 10,321,206, 10,375,341, 10,650,780, and 10,015,558. The patents-in-suit generally fall into the following areas of television technology: slim structure displays ("the '366 Patent"), dual LAN and USB connectivity for slide shows ("the '780 Patent"), multiple wireless terminal cooperation ("the '341 Patent"), casting and mobile device remote control ("the '020 Patent), and an intermediate interface for an audio/video (AV) application switching ("the '206 Patent").

The parties dispute the scope of nine terms and phrases from five of the six patents-in-suit ('341, '780, '206, '020, and '366 Patents),[1] with TCL challenging several of the terms as indefinite. Having considered the arguments and evidence presented by the parties at the October 17, 2024 hearing and in their claim construction briefing, the Court issues this Claim Construction Order.

I. LEGAL STANDARDS

A. Generally

"[T]he 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). As such, if the parties dispute the scope of the claims, the court must determine their meaning. *See*, *e.g., Verizon Servs. Corp. v. Vonage Holdings Corp.*, 503 F.3d 1295, 1317 (Fed. Cir. 2007) (Gajarsa, J., concurring in part); *see also Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 390 (1996), *aff'g*, 52 F.3d 967, 976 (Fed. Cir. 1995) (en banc).

Claim construction, however, "is not an obligatory exercise in redundancy." *U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997). Rather, "[c]laim construction is a

[1] The sixth asserted patent relates to a "method and a device for adjusting television notification display durations," '558 Patent at 1:16–18, but is not at issue here.

matter of [resolving] disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims . . . ." *Id.* A court need not "repeat or restate every claim term in order to comply with the ruling that claim construction is for the court." *Id.*

When construing claims, "[t]here is a heavy presumption that claim terms are to be given their ordinary and customary meaning." *Aventis Pharm. Inc. v. Amino Chems. Ltd.*, 715 F.3d 1363, 1373 (Fed. Cir. 2013) (citing *Phillips*, 415 F.3d at 1312–13). Courts must therefore "look to the words of the claims themselves . . . to define the scope of the patented invention." *Id.* (citations omitted). The "ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application." *Phillips*, 415 F.3d at 1313. This "person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification." *Id.*

Intrinsic evidence is the primary resource for claim construction. *See Power-One*, *Inc. v. Artesyn Techs., Inc.*, 599 F.3d 1343, 1348 (Fed. Cir. 2010) (citing *Phillips*, 415 F.3d at 1312). For certain claim terms, "the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words." *Phillips*, 415 F.3d at 1314; *see also Medrad*, *Inc. v. MRI Devices Corp*., 401 F.3d 1313, 1319 (Fed. Cir. 2005) ("We cannot look at the ordinary meaning of the term . . . in a vacuum. Rather, we must look at the ordinary meaning in the context of the written description and the prosecution history."). But for claim terms with less-apparent meanings, courts consider "those sources available to the public that show what a person of skill in the art would have understood disputed claim language

to mean . . . [including] the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art." *Phillips*, 415 F.3d at 1314.

B. Definiteness under 35 U.S.C. § 112 ¶ 2[2]

"[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); *Sonix Tech. Co. v. Publ'ns Int'l*, *Ltd.*, 844 F.3d 1370, 1377 (Fed. Cir. 2017). Patent claims must identify with specificity and claim distinctly the subject matter regarded as the invention. *CDN Innovations*, *L.L.C. v. Grande Commc'ns Networks*, *L.L.C.*, No. 4:20-CV-653-SDJ, 2021 WL 3615908, at *6 (E.D. Tex. Aug. 13, 2021) (citing 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." *Id.* (quoting *Nautilus Inc. v. Biosig Instruments*, *Inc.*, 572 U.S. 898, 910 (2014)). If it does not, the claim fails § 112 ¶ 2 and is therefore invalid as indefinite. *Id.* (quoting *Nautilus*, 572 U.S. at 901). Whether a claim is indefinite is determined as of the time the application for the patent was filed. *Id.* (citing *Nautilus*, 572 U.S. at 911). As it is a challenge to the validity of a patent, the failure of any claim to comply with § 112 must be shown by clear and convincing evidence. *Id.* (citing *Nautilus*, 572 U.S. at 912 n.10).

[2] Three of the five patents at issue have an effective filing date before the effective date of the Leahy-Smith America Invents Act, Pub. L. No. 112-29, § 3, 125 Stat. 284, 285-93 (2011). *See Zeroclick*, *L.L.C. v. Apple Inc.*, 891 F.3d 1003, 1006 n.2 (Fed. Cir. 2018). For simplicity, the Court generally refers to the pre-AIA version of the statute in this section.

C. Functional Claiming Under 35 U.S.C. § 112 ¶ 6[3]

A patent claim may be expressed using functional language. *SitePro*, *Inc. v. Waterbridge Res. L.L.C.*, No. 6:23-CV-115-ADA-DTG, 2024 WL 760923, at *4 (W.D. Tex. Feb. 23, 2024) (citing 35 U.S.C. § 112(f) (post-AIA); also citing *Williamson v. Citrix Online*, *L.L.C.*, 792 F.3d 1339, 1347–49 & n.3 (Fed. Cir. 2015) (en banc in relevant portion)). Section 112(f) provides that a patent applicant may express "[a]n element in a claim" as "a means or step for performing a specified function without the recital of structure, material or acts in support thereof." *Id*. But the claim will be construed to cover only "the corresponding structure, material, or acts described in the specification and equivalents thereof." *Id.*

A § 112 ¶ 6 analysis consists of two steps. *Id.* (citing *Dyfan*, *L.L.C. v. Target Corp*., 28 F.4th 1360, 1365 (Fed. Cir. 2022)). The first step is to determine whether a claim limitation is drafted in means-plus-function format such that § 112 ¶ 6 applies to the claim limitation. *See id*. In making that determination, the Federal Circuit has "long recognized the importance of the presence or absence of the word 'means.'" *Id*. (quoting *Williamson*, 792 F.3d at 1348). In the absence of the word "means," it is presumed that a claim limitation is not subject to § 112 ¶ 6. *Id.* The presumption stands or falls according to whether one of ordinary skill in the art would understand the claim with the functional language, in the context of the entire specification, to denote sufficiently definite structure or acts for performing the function. *Id.* (citing *Media Rights Techs.*, *Inc. v. Capital One Fin. Corp*., 800 F.3d 1366, 1372 (Fed. Cir. 2015) (stating § 112 ¶ 6 does not apply when "the

[3] Only the '341 Patent concerns the construction of a means-plus-function term. That patent has a priority date of December 7, 2012, which is after the redesignation of § 112 ¶ 6 to § 112(f). *See Zeroclick, L.L.C. v. Apple Inc.*, 891 F.3d at 1006 n.2 (Fed. Cir. 2018). Regardless, given the extensive case law referring to § 112 ¶ 6 on which the Court relies, for simplicity the Court refers to pre-AIA version of the statute.

claim language, read in light of the specification, recites sufficiently definite structure" (quotation marks omitted) (citing *Williamson*, 792 F.3d at 1349; *Robert Bosch*, *L.L.C. v. Snap-On Inc.*, 769 F.3d 1094, 1099 (Fed. Cir. 2014)))).

Intrinsic evidence, such as the claims themselves and the prosecution history, can be informative in determining whether the disputed claim language recites sufficiently definite structure or was intended to invoke § 112 ¶ 6. *Id.* at *5 (citing *Apple Inc. v. Motorola*, *Inc.*, 757 F.3d 1286, 1299 (Fed. Cir. 2014), and *Phillips*, 415 F.3d at 1317 (The prosecution history "often inform[s] the meaning of the claim language by demonstrating how the inventor understood the invention.")). In addition, because this inquiry turns on the understanding of a person of ordinary skill in the art, the court may look to extrinsic evidence when determining whether a disputed limitation would have connoted structure to a person of ordinary skill. *Id.* (citing *Linear Tech. Corp. v. Impala Linear Corp.*, 379 F.3d 1311, 1320 (Fed. Cir. 2004) (noting expert witness testimony and technical dictionaries "help determine whether a claim term" would have had an "understood meaning in the art") (quoting *CCS Fitness*, *Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1369 (Fed. Cir. 2002))). In cases where it is clear that a claim term itself connotes some structure to a person of ordinary skill in the art, "the presumption that § 112 ¶ 6 does not apply is determinative" in the absence of "more compelling evidence of the understanding of one of ordinary skill in the art." *Id.* (quoting *Apex Inc. v. Raritan Comput.*, *Inc.*, 325 F.3d 1364, 1373 (Fed. Cir. 2003)).

If the limitation fails to recite sufficiently definite structure or acts, then § 112 ¶ 6 applies and the court moves to step two of the analysis. *Id.* At step two, the court determines whether the specification discloses structure or acts that "corresponds to the claimed function." *Id.* (quoting *Williamson*, 792 F.3d at 1351). A "structure disclosed in the specification is 'corresponding' structure only if the specification or prosecution history clearly links or associates that structure to the

function recited in the claim." *Id.* (quoting *Medtronic*, *Inc. v. Advanced Cardiovascular Sys.*, *Inc.*, 248 F.3d 1303, 1311 (Fed. Cir. 2001)). If there is no identifiable "corresponding structure, material, or acts described in the specification," the claim term is indefinite. *Id.* (citing *Noah Sys.*, *Inc. v. Intuit Inc.*, 675 F.3d 1302, 1312 (Fed. Cir. 2012) ("[A] means-plus-function clause is indefinite if a person 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.") (citations omitted in *SitePro*)).

For § 112 ¶ 6 limitations implemented by a programmed general purpose computer or microprocessor, the corresponding structure described in the patent specification must include an algorithm for performing the function. *Id.* (citing *WMS Gaming Inc. v. Int'l Game Tech*., 184 F.3d 1339, 1349 (Fed. Cir. 1999)). The corresponding structure is not a general purpose computer but rather the special purpose computer programmed to perform the disclosed algorithm. *Id.* (citing *Aristocrat Techs. Austl. Pty Ltd. v. Int'l Game Tech*., 521 F.3d 1328, 1333 (Fed. Cir. 2008)).

II. THE LEVEL OF ORDINARY SKILL IN THE ART

The level of ordinary skill in the art is the skill level of a hypothetical person who is presumed to have known the relevant art at the time of the invention. *In re GPAC*, 57 F.3d 1573, 1579 (Fed. Cir. 1995). In resolving the appropriate level of ordinary skill, courts consider the types of and solutions to problems encountered in the art, the speed of innovation, the sophistication of the technology, and the education of workers active in the field. *Id.* Importantly, "[a] person of ordinary skill in the art is also a person of ordinary creativity, not an automaton." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007).

Here, the parties present their proposed levels of skill in the art through their experts' declarations. According to Maxell, a person of ordinary skill in the art ("POSITA") in the relevant field of the '341, '020, and '206 Patents would have at least a Bachelor's degree in Electrical

Engineering, or a related field, with at least two years of experience in the field of applications and user interfaces with display units. Saber Decl., Dkt. No. 105-7 ¶ 52. Similarly, for the '780 and '366 Patents, a POSITA would have at least a Bachelor of Science in Electrical Engineering or a related field with at least two years of practical experience in the field of manufacturing hardware structures of the display units. Bohannon Decl., Dkt. No. 105-11 ¶ 37. More education (*e.g.*, a Master's degree) or relevant practical experience may compensate for a deficiency in one of the relevant qualifications. TCL's expert proffers similar levels of skill. Houh Decl., Dkt. No. 105-12 at 11–32, ¶¶ 34, 50, 94. Neither party contends that resolving any differences in proposed levels of skill is outcome determinative for the disputed terms.

III. THE DISPUTED TERM FROM U.S. PATENT 10,372,341

A. Background

The '341 Patent relates to a user-friendly video display and terminal, with the terminal acting as a remote control for the display. '341 Patent at [57]. The prior art provides such a display and apparatus, but viewers are limited to seeing the same content. *Id.* at 2:19–23. Nor is the prior-art terminal particularly user-friendly. *See id.* at 3:11–13 (suggesting the improvement relative to the prior art is a "user-friendly video display apparatus and terminal apparatus").

As shown in Figure 1 (below), which is the first of thirteen described embodiments, a video display apparatus (3) receives signals from a broadcast station and transmits and receives signals from a wireless router (6). An infrared remote controller (2) operates the display apparatus (3). Alternatively, any one of three terminal apparatuses (1a, 1b, 1c), which look like smartphones, can be used to control the display apparatus through a wireless router (6). *See generally* '341 Patent at 4:37–5:16.

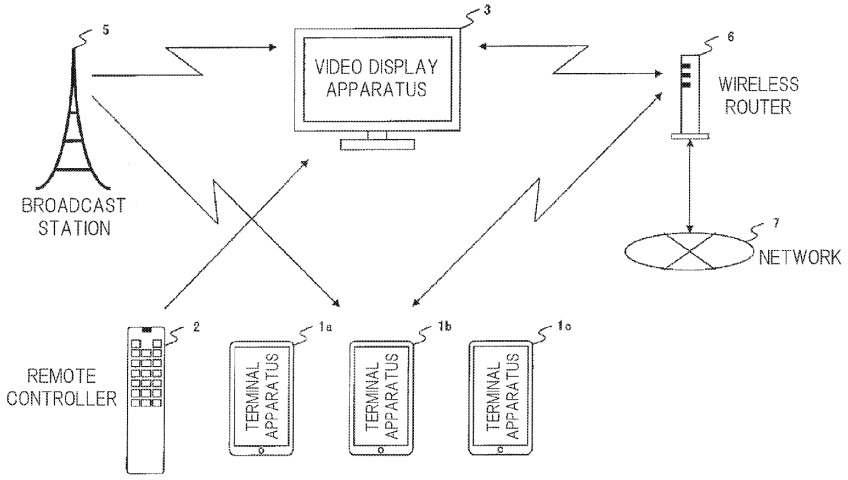

FIG. 1 of the '341 Patent

The block diagrams of the terminal apparatuses (1) and display apparatus (3) are identical. Figure 2 (below) is a block diagram of a terminal apparatus, which includes a "LAN communication unit" (26) shown communicating with the terminal devices indirectly through the wireless router. Figure 3 (below) is block diagram of the video display apparatus (3), which also includes a "LAN communication unit" (36). The specification describes the LAN communication unit (26) of the terminal as

> transmit[ting] various types of commands to the video display apparatus 3 via the wireless router 6 or the like by using, for example, Wi-Fi. Further, the LAN communication unit 26 receives status information or the like from the video display apparatus 3. . . . Alternatively, the LAN communication unit 26 may *directly* transmit and receive the command and the status information to and from the video display apparatus 3 without the wireless router 6 and the like by using, for example, infrared rays, Wi-Fi Direct, or Bluetooth (registered trademark).

'341 Patent at 5:45–62 (emphasis added). Similarly, the specification describes the LAN communication unit (36) of the video display as

> connected to the wireless router 6 by wire or by wireless, and can receive a video content or the like from the Internet network or the like. Also, the LAN communication unit 36 receives various types of commands from the terminal apparatus

1 via the wireless router 6 or the like by using, for example, Wi-Fi. Also, the LAN communication unit 36 transmits status information to the terminal apparatus 1. The LAN communication unit 36 may *directly* transit and receive the command and the status information to and from the terminal apparatus 1 without the wireless router 6 or the like by using, for example, infrared rays, Wi-Fi Direct, or Bluetooth.

Id. at 6:40–52 (emphasis added).

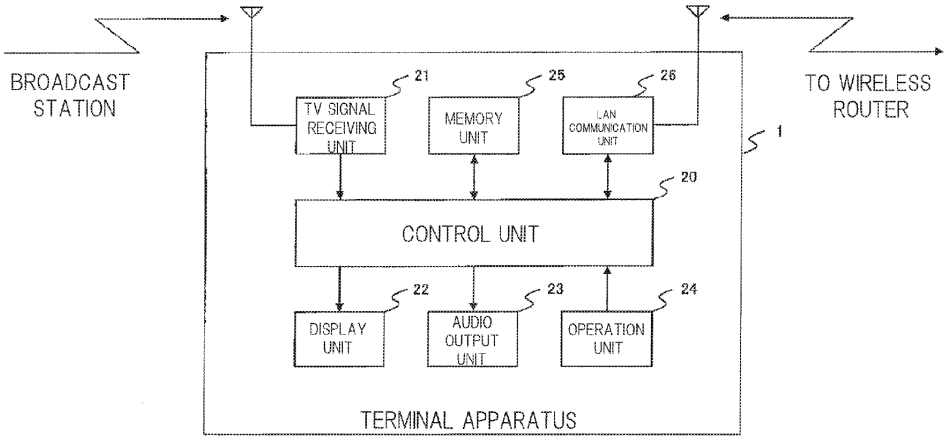

FIG. 2 of the '341 Patent

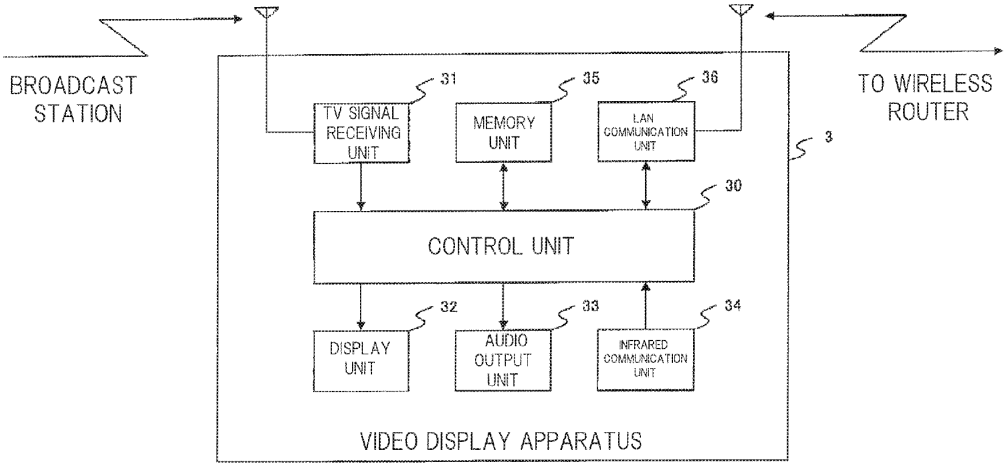

FIG. 3 of the '341 Patent

From this patent, the parties only dispute the scope of "communication unit" in Claim 3.

That claim, which is directed to a video display apparatus, recites:

> 3. A video display apparatus comprising:
>
> a display unit that displays a video content from a broadcast station or from a video content delivery source;
>
> a communication unit that executes two types of bi-directional wireless communication including first bi-directional wireless communication with a first wireless control device without going via a router and second bi-directional wireless communication via a router with a second wireless control device that is different from the first wireless control device;
>
> an infrared receiver unit that receives infrared rays from a third wireless control device; and
>
> a controller that controls the display unit, the communication unit and the infrared receiver unit . . . .

Id. at 26:29–43. Specifically, the parties dispute whether "communication unit" is a means-plus-function term and, if it is, whether the specification discloses corresponding structure.

B. "communication unit" ('341 Patent, Claim 3)

Maxell's Construction	TCL's Construction
MPF - § 112 ¶ 6 **Function:** transmits or receives information or commands to or from wireless control devices with or without a wireless router **Structure:** a LAN communication device that is connected to a wireless router by wire or wireless and arranged to transmit or receive information to or from wireless control devices according to communication protocols, such as infrared rays, Wi-Fi Direct, Bluetooth or Wi-Fi	Plain and ordinary, does not require 112 ¶ 6 treatment. But if it does require 112 ¶ 6: **Function:** (1) "executes two types of bi-directional wireless communication including first bi-directional wireless communication with a first wireless control device without going via a router and second bi-directional wireless communication via a router with a second wireless control device that is different from the first wireless control device;" and (2) "if a [first command/second command] for changing a video content on the display unit from a [first/second] video content selected by the first wireless control device to another video content is transmitted from the [second/third] wireless control device to the [communication unit via the router/

	infrared receiver unit by infrared rays] during the first video content is displayed on the display unit, . . . send[] [first/second] information for informing termination of the displaying of the [first/second] video content [to the first wireless control device without going via a router/via the router to the second wireless control device]" **Structure:** indefinite for failure to recite sufficient structure for performing the functions

Claim 3 recites "[a] video display apparatus comprising . . . a communication unit that executes two types of bi-directional wireless communication including first bi-directional wireless communication with a first wireless control device without going via a router and second bi-directional wireless communication via a router with a second wireless control device that is different from the first wireless control device." '341 Patent at 27:39–28:19. Maxell argues "communication unit" is a means-plus-function limitation because "unit" is a nonce term equivalent to "means." Dkt. No. 105 at 4. TCL responds that "communication unit" is not a § 112 ¶ 6 term and instead should be given its plain and ordinary meaning of "a unit that communicates." Dkt. No. 110 at 3. And if "communication unit" is a means-plus-function limitation, TCL argues the claim is indefinite because there is insufficient structure disclosed as associated with the recited function. *Id.* at 4–6 ("Therefore, to the extent '*communication unit*' is construed under 112(f), the '341 patent is indefinite for failing to recite corresponding structure for performing the second function.").

1. Whether "communication unit" is a means-plus-function limitation

Because the claims do not recite the word "means," the Court starts with the rebuttable presumption that § 112 ¶ 6 does not apply. *Canon*, *Inc. v. TCL Elecs. Holdings Ltd.*, No. 2:18-CV-546-JRG, 2020 WL 2098197, at *25 (E.D. Tex. May 1, 2020) (citing *Williamson v. Citrix Online*, *L.L.C.*, 792 F.3d 1339, 1349 (Fed. Cir. 2015)). But that presumption falls if a skilled artisan would

not understand the claim term with the functional language to denote sufficiently definite structure or acts for performing the function. *Id.* (citing *Media Rights Techs.*, *Inc. v. Capital One Fin. Corp.*, 800 F.3d 1366, 1372 (Fed. Cir. 2015) (citing *Williamson*, 792 F.3d at 1349; *Robert Bosch*, *L.L.C. v. Snap-On Inc.*, 769 F.3d 1094, 1099 (Fed. Cir. 2014))).

In addition to relying on its expert opinion, Maxell cites various cases that find similar claim language, from other patents, to be "nonce term[s]" to argue that "communication unit" should be subject to § 112 ¶ 6. Dkt. No. 105 at 3–5. Maxell specifically focuses on an Eastern District case construing "communication unit" as a means-plus-function term. *Id.* at 4 (citing *Canon, Inc. v. TCL Elecs. Holdings Ltd.*, No. 2:18-CV-546-JRG, 2020 WL 2098197, at *25 (E.D. Tex. May 1, 2020) (partly relying on TCL's expert in that case to find that "'communication unit' . . . do[es] not connote sufficiently definite structure to one of skill in the art")). TCL responds, without evidence, "the communication unit is a generic communication unit that includes well-understood, routine, and conventional hardware for communication." Dkt. No. 110 at 3; *see also* Hr'g Tr., Dkt. No. 123 at 21:13–15 ("It's something that communicates.").

Based on the cited case law, and the fact that neither side's expert provided a plain and ordinary meaning of this term, Maxell's construction is more persuasive. TCL's position does not include any evidence of how a skilled artisan would understand the term and could read on anything from a rotary telephone to a satellite. While surrounding claim language could possibly cabin the scope of the term, TCL does not provide any analysis of that language and how it would affect a skilled artisan's understanding of "communication unit." Accordingly, the Court finds "communication unit" does not denote sufficiently definite structure, even considering the rest of the claim language.

2. Whether the specification discloses "corresponding structure"

Once a court determines a term is a means-plus-function limitation, construing the limitation involves multiple steps. "The first step . . . is a determination of the function of the means-plus-function limitation." *Medtronic*, *Inc. v. Advanced Cardiovascular Sys., Inc*., 248 F.3d 1303, 1311 (Fed. Cir. 2001). Here, Maxell generally agrees with the first part of TCL's proposed function, but contests the second. That second part comes from the last two limitations of Claim 3, which require the "communication unit" to have the capability to send information to wireless control devices both with and without a router, depending on the type of command received by the display unit's infrared receiver. *See* '341 Patent at 27:54–28:19. Notably, however, unlike the language in the "communication unit" limitation, these "wherein" clauses refer to operation of the device as a whole, also incorporating requirements for the "display unit" and the "infrared receiver." These limitations don't suggest decision making by the "communication unit," and the recitation of what the "communication unit" actually must do is simply a repeat of what is in the "communication unit" limitation—sending information either with or without a router. Thus, it would be improper to include the if-then structure of the "wherein" clauses in the function of the "communication unit," as a skilled artisan would understand that decision making as within the purview of the controller. *See* '341 Patent at 27:53–54 (reciting, just before the "wherein" clauses, "a controller that controls the display unit, the communication unit and the infrared receiver unit"). Accordingly, the Court adopts the agreed-to portion of TCL's proposed function, which is "executes two types of bi-directional wireless communication including first bi-directional wireless communication with a first wireless control device without going via a router and second bi-directional wireless communication via a router with a second wireless control device that is different from the first wireless control device."

Having determined the function of the disputed limitation, "the next step is to determine the corresponding structure disclosed in the specification and equivalents thereof." *Medtronic*, 248 F.3d at 1311 (citation omitted). Here, the specification's disclosure of a "LAN communication unit" associates the necessary structure with the function of the claimed "communication unit." Specifically, the '341 Patent provides:

> A LAN communication unit 36 is connected to the wireless router 6 by wire or by wireless, and can receive a video content or the like from the Internet network or the like. Also, the LAN communication unit 36 receives various types of commands from the terminal apparatus 1 via the wireless router 6 or the like by using, for example, Wi-Fi. Also, the LAN communication unit 36 transmits status information to the terminal apparatus 1. The LAN communication unit 36 may *directly* transit and receive the command and the status information to and from the terminal apparatus 1 without the wireless router 6 or the like by using, for example, infrared rays, Wi-Fi Direct, or Bluetooth.

'341 Patent at 6:41–51 (emphasis added). Based on this excerpt and the figures, a skilled artisan would understand the "communication unit" to be a wireless transceiver. In particular, a skilled artisan would recognize the specification's disclosure of "WiFi," "infrared rays, Wi-Fi Direct, or Bluetooth" as requiring such a transceiver. The figures, too, only show the "communication unit" as a wireless device. *Id.* at fig.1–3 (showing the LAN communication unit connected to an antenna and in communication with the wireless router). And while the paragraph says the "LAN communication unit" may be *wired* to the router, that would incorporate structure beyond that necessary to perform the recited function, which relates only to *wireless* communication. *See Micro Chem., Inc. v. Great Plains Chem. Co.*, 194 F.3d 1250, 1258 (Fed. Cir. 1999) (noting § 112 ¶ 6 does not permit "incorporation of structure from the written description beyond that necessary to perform the claimed function").

Interestingly, the specification doesn't refer to a wireless transceiver or wireless

transmitters or receivers, but it doesn't need to. Rather, "because of the specific facts in this case, the structure underlying the function recited in [the limitation] is adequate . . . to hold that the requirements of § 112 P 2, that the invention be particularly pointed out and distinctly claimed, are satisfied." *In re Kullmann*, 115 F.3d 942, 946–47 (Fed. Cir. 1997) (holding the corresponding structure was a computer despite that "[n]either the written description nor the claims uses the magic word 'computer,' nor do they quote computer code that may be used in the invention. Nevertheless, when the written description is combined with [the claims], the disclosure satisfies the requirements of § 112 P 2."); *see also Atmel Corp. v. Info. Storage Devices*, 198 F.3d 1374, 1378 (Fed. Cir. 1999) ("For purposes of § 112 P 2, it is the disclosure in the specification itself, not the technical form of the disclosure that counts.").

Neither side contests the proper corresponding structure relates somehow to wireless transceivers. Maxell's main complaint at the hearing was that the Court's preliminary construction for this term required *two* transceivers—one for indirect communication using the router and one for direct communication to another device. *See* Hr'g Tr., Dkt. No. 123 at 8:18–22, 9:19–10:1. Despite its focus in the briefing on the lack of an algorithm required by *Williamson*, TCL used that apparent uncertainty—whether the corresponding structure requires one or two transceivers—to bolster its indefiniteness position. It reasoned that if the Court thought two transceivers might be required, but Maxell says there only needs to be one, there's uncertainty and therefore indefiniteness. *See id.* at 14:24–15:17.

Considering the parties' arguments further, the Court remains convinced the term is not indefinite. The figures and related text convey to a skilled artisan all the indicia of a wireless transceiver. Moreover, it is clear from the recited function that the transceiver must be able to communicate with other end devices both with and without a wireless router, such as by using both

Wi-Fi Direct and Wi-Fi protocols called out in the specification. The passage to which the parties cite call this "direct" and (by implication) "indirect" transmission and reception, *see* '341 Patent at 6:47–50 (noting "[t]he LAN communication unit 36 may directly transmit and receive . . . to and from the terminal apparatus 1 without the wireless router 6"), and the existence of such transceivers would be known to a skilled artisan. Accordingly, the Court holds the corresponding structure is "wireless transceiver that can communicate with wireless control devices either directly or indirectly," and equivalents thereof.

IV. THE DISPUTED TERMS FROM U.S. PATENT 10,650,780

A. Background

The '780 Patent "relates to a technique for displaying picture information from an image apparatus connected to a display apparatus through an interface in the display apparatus." '780 Patent at 1:26–29. The underlying problem relates to the amount of information in high-definition pictures and using IEEE standard 1394 to transfer those pictures. *Id.* at 1:38–45. According to the patent, "the IEEE 1394 standard has a problem that the baseband signal must be compressed to reduce the transmission rate [of the picture] and be transmitted." *Id.* at 1:62–65.

For claim construction, only Claim 1 is at issue, which describes the solution to the problem. The structure of Claim 1 is straightforward:

> 1. An image display apparatus, comprising:
>
> Universal Serial Bus (USB) interface circuitry configured to receive compressed first image information from a digital camera over a USB cable;
>
> wireless LAN interface circuitry configured to wirelessly receive compressed second image information from the digital camera over a network;
>
> a decoder configured to decode the compressed first image information received by the USB interface circuitry or the

> compressed second image information received by the wireless LAN interface circuitry; and
>
> a display screen configured to display at least one of first images based on decoded the first image information and second images decoded the second information obtained by the decoder . . . .

Id. at 24:33–47. After reciting that structure, Claim 1 limits what that structure does depending on whether it is displaying the first or second images:

> [I]f displaying the first images on the display screen, based on an operation on the input device of the image display apparatus for conducting a slide show,
>
> the USB interface circuitry transmits, over the USB cable, a first signal to the digital camera for causing the digital camera to output compressed first image information corresponding to first still pictures, and receives, over the cable, the compressed first image information corresponding to first still pictures output from the digital camera,
>
> the decoder decodes the compressed first image information corresponding to first still pictures received by the USB interface circuitry, and
>
> the display screen displays a slide show at predetermined time intervals with the first still pictures, as the first images, based on the decoded first image information obtained by the decoder, and
>
> wherein if displaying the second images on the display screen, based on an operation on the input device of the image display apparatus for conducting a slide show,
>
> the wireless LAN interface circuitry wirelessly transmits, over the network, a second signal to the digital camera for causing the digital camera to output compressed second image information corresponding to second still pictures, and wirelessly receives, over the network, the compressed second image information corresponding to second still pictures output from the digital camera,

> the decoder decodes the compressed second image information corresponding to second still pictures received by the wireless LAN interface circuitry, and
>
> the display screen displays a slide show at predetermined time intervals with the second still pictures, as the second images, based on the decoded second image information obtained by the decoder.

Id. at 24:48–25:15.

TCL challenges two terms from Claim 1 as indefinite: "image information" and "the display screen displays a slide show at predetermined time intervals with the [first/second] still pictures, as the [first/second] images, based on the decoded [first/second] image information obtained by the decoder."

B. "image information" ('780 Patent, Claims 1, 4)

Maxell's Construction	TCL's Construction
Plain and ordinary meaning *e.g.*, pictures and corresponding information transmitted from the image apparatus to the display apparatus	Indefinite

Claim 1 refers to "image information" extensively. For example, the first limitation recites "interface circuitry configured to receive compressed first image information from a digital camera over a USB cable." '780 Patent at 24:34–36. The claim also recites "a decoder configured to decode the compressed first image information." Claim 4, which depends from Claim 1, requires the image information to be "compressed in JPEG format." *Id.* at 24:40–43.

TCL says "image information," which appears only in the claims, is indefinite because "it is not clear whether 'image information' is simply the encoded images themselves, *e.g.*, information describing the pixels that make up the image including the data needed to reconstruct the image, or whether the image information amounts to something more. Dkt. No. 110 at 7 (citing

Houh Decl., Dkt. No. 105-12 ¶¶ 38–39). TCL's position hinges on the claims' recitation of, in addition to "image information," "still pictures" and "images." *Id.* (citing Houh Decl., Dkt. No. Dkt. No. 105-12 ¶ 38 ("The use of 'image information' in the claims, in association with other terms such as 'still pictures' and 'images,' creates a confusion of scope that renders image information unbounded in what it may include.")).

A skilled artisan would be at least reasonably certain of this term's scope. As TCL's expert recognizes, "[t]o a POSITA, intuitively, image information would include the information describing the pixels that make up the image, such that image information would include the data needed to reconstruct a graphical representation on a display screen." Houh Decl., Dkt. No. 105-12 ¶ 39. The specification supports that understanding by repeatedly referring to transmitting still pictures as compressed "picture information." *See*, *e.g.*, '780 Patent at 15:29–34 (describing a USB interface "for transmitting still picture[s] as compressed picture information. The compressed picture information transmitted by USB is supposed to be compressed in JPEG format"); *id.* at 19:53–56 ("[T]he image apparatus 1020 outputs still picture data of compressed picture information stored in the memory 1018 through the USB mass storage interface circuit . . . ."). Moreover, the claims tie "image information" to a camera and the still pictures, and Claim 4 requires the image information to be compressed in a format specific to images. *Id.* at 25:26–31.

Finally, resisting the notion the "picture information" of the specification and the "image information" of the claims might be synonymous, TCL says "[t]here is no indication from the specification that the display screen displays a slide show at predetermined time intervals based on 'picture information' or 'picture data,' as required by the claims." Dkt. No. 110 at 8. But TCL manufactures that requirement, presuming "based on the decoded [first/second] image information" modifies "displaying" rather than "still pictures." *See* Part IV.C. *infra*. Accordingly, the

Court construes "image information" as "information describing the pixels that make up an image."[4]

C. "the display screen displays a slide show at predetermined time intervals with the [first/second] still pictures, as the [first/second] images, based on the decoded [first/second] image information obtained by the decoder" ('780 Patent, Claim 1)

Maxell's Construction	TCL's Construction
Plain and ordinary meaning	Indefinite

This dispute somewhat relates to the dispute over "image information." TCL says "[t]here are several possible alternatives to the meaning of [the phrase], each leading to different results." Dkt. No. 110 at 8. Specifically, TCL says Maxell's expert testified the image information includes the timing data for displaying the slide show, but that he also testified "that it is the repeating of the processing at predetermined intervals that controls the timing of the slide show." *Id.* at 9.

This dispute reduces to whether "based on the decoded [first/second] image information" modifies "displays a slide show" or "[first/second] still pictures," and the intrinsic evidence shows the latter. For example, Claim 1 earlier recites "display[ing] at least one of [the] first images *based on* decoded [] first image information and second images decoded [] second information," '780 Patent at 24:44–47 (emphasis added), which tracks language of the disputed term. Moreover, the Court has already concluded "image information" does not concern timing information, which by itself resolves any uncertainty. *See* Part IV.B. *supra*. Put simply, if there is no timing information in the image information, the slide show time intervals would not be based on the "image information." Accordingly, the Court construes these phrases as "the display screen displays a slide

[4] At the hearing, Maxell agreed to this construction. *See* Hr'g Tr., Dkt No. 123 at 56:6–10. Reserving its right to later argue indefiniteness, TCL also agreed to this construction. *Id.* at 56:14–17.

show at predetermined time intervals with the [first/second] still pictures, as the [first/second] images, the [first/second] images based on the decoded [first/second] image information obtained by the decoder."[5]

V. THE DISPUTED TERMS FROM U.S. PATENT 10,321,206

A. Background

The '206 Patent concerns "a method for switching an audio/video (AV) application, an apparatus, and a smart TV" in a way that ensures the A/V decoder of the smart TV is not occupied by more than one application at any time. '206 Patent at 1:20–22. The patent explains how multiple applications—for example, applications A, B, and C of Figures 1 and 2—might share the A/V decoder of a smart TV. Typically, when switching from one application to another, the interface of the switched-to application is started before the interface of the switched-from application is stopped. *Id.* at 2:34–46. But if both applications try to use the same A/V decoder during the switching process, smooth operation might be interrupted. *See id.* at 8:1–14 (noting two applications sharing the same A/V decoder might result in frozen, blank, or blurred screens, sound without images, and the like).

The patent solves this problem by using a "preset intermediate interface." As described with reference to Figure 3, when the device receives an instruction to switch A/V applications, the device starts the "preset intermediate interface" in the background. The "present intermediate interface" is "lighter" than the interface of the target application, so it loads more quickly. After the intermediate interface has been "completely loaded," the interface instructs the source application

[5] This was the Court's preliminary construction at the hearing. Maxell agreed with the construction. Hr'g Tr., Dkt. No. 123 at 66:3–7. TCL also agreed that this construction is proper if the term is not indefinite. *Id.* at 68:1–6.

to release the A/V decoder. '206 Patent at [57].

The parties dispute three terms from Claim 1, which recites:

> 1. A method for switching an audio/video (AV) application, comprising:
>
> receiving an instruction for switching to a target AV application;
>
> starting a preset intermediate interface and setting an AV application currently in use to be a background program, wherein a resource occupied by the intermediate interface is less than a resource occupied by the target AV application;
>
> triggering, in response to the intermediate interface has been completely loaded, the AV application, which has been set to be the background program, to release an AV decoder; and
>
> instructing the target AV application to send a playback instruction to the AV decoder if the AV decoder is in an unoccupied state;
>
> wherein the resource occupied by the intermediate interface being less than the resource occupied by the target AV application comprises:
>
> the intermediate interface does not utilize the AV decoder, and/or the intermediate interface contains less interface content than the target AV application.

Id. at 10:2–23. Specifically, TCL challenges "interface," "preset intermediate interface," and "completely loaded" as indefinite.

B. "interface" ('206 Patent, Claims 1–4, 6, 9–12, 14)

Maxell's Construction	TCL's Construction
Plain and ordinary meaning	Indefinite

The Court will address this term with its discussion of "preset intermediate interface" *infra*.

C. "preset intermediate interface" ('206 Patent, Claims 1, 9)

Maxell's Construction	TCL's Construction

Plain and ordinary meaning *e.g.*, an intermediate interface created prior for a particular target AV application	Indefinite

These claims recite (1) "starting a preset intermediate interface and setting an AV application currently in use to be a background program, wherein a resource occupied by the intermediate interface is less than a resource occupied by the target AV application;" and (2) "triggering, in response to the intermediate interface [being] completely loaded, the AV application . . . to release an AV decoder[.]" '206 Patent at 10:6–14. In addition to asserting "interface" is indefinite, TCL focuses on the word "preset"—in particular, "[a] POSITA is left to wonder whether 'preset' means something akin to 'at the time of manufacture,' or does it mean a 'standard' pre-selected interface that must always be used." Dkt. No. 110 at 17.

Because this is not a term of art, the Court looks to the specification to see if the term's meaning can be fairly inferred. See *Bancorp Servs., L.L.C. v. Hartford Life Ins. Co.*, 359 F.3d 1367, 1373 (Fed. Cir. 2004) ("The failure to define the term is, of course, not fatal, for if the meaning of the term is fairly inferable from the patent, an express definition is not necessary . . . ."). To start, the meaning of "intermediate" is clear from the context of the specification—it's the interface used between the target and source interfaces. The "intermediate interface" exists from the time after an instruction to switch from an application currently in use to a target application until when it stops operating as an interface. *See* '206 Patent at 7:21–27 (noting "the intermediate interface E will enter into an . . . onStart life cycle (a period for starting")), 7:54–57 (noting the target application "enters the foreground while entering into the onStart life cycle, at the same time the intermediate interface E is triggered to go into the onPause life cycle"). The same interface loaded at some other time would not be "intermediate" as that term is used in the patent.

Regarding "preset," the context of the specification suggests that means a specific intermediate interface with some logical association to the interface of the target application. This makes sense in light of the specification's description of loading a "light" interface, a relative term that requires a comparison with the interface of the target application. Thus, the interface is associated with the target application interface, but doesn't have an application of its own.

Finally, the parties dispute whether the "interface" must be a "user interface." TCL's expert proffered two examples of interfaces—user interfaces (UIs) and application programming interfaces (APIs). Specifically, he explains:

> Interfaces are common in software applications and systems. One well known interface is an "application programming interface" (API), which generally refers to a set of functions or protocols, that enables software applications to communicate with each other to exchange data, features, and functionality. APIs are often a set of function calls that are exposed to other programs and thereby enable an interaction. Another well-known interface is a user interface (UI), which is what enables a human to interact with the software system (e.g., by providing inputs to the system).

Houh Decl., Dkt. No. 105-12 ¶ 65. He later concludes the '206 Patent "does not use 'interface' consistently with either of those examples, nor any other definition [he is] aware of." *Id.* ¶ 68. In fact, this is the basis for TCL's argument that "interface" is indefinite. Maxell latches on to this part of Dr. Houh's declaration and concludes the recited interface could be either a UI or an API, *see* Dkt. No. 105 at 12–13, although it does not cite its own expert for that position. TCL agrees an API is a type of interface, but asserts that "in the confines of the patent" only a user interface makes sense. Hr'g Tr., Dkt. No. 123 at 48:10–49:5.

The Court disagrees with TCL that "interface" is indefinite because only an interface that is at least visually observable, such as a "user interface," is consistent with the patent's disclosures. Most obviously, the claims require the "preset intermediate interface" to be loaded, whereas with

an API, which is simply a set of a function calls waiting to be used, there's nothing to load. Moreover, if "interface" referred to an API, there would be no need for the frame and content, because the API call could be done invisibly to the user. Moreover, that the interface is a "user interface" makes sense in the context of the invention, which is switching between two A/V applications on a smart TV, which each have their own user interface. That strongly suggests the intermediate interface would also be a visually observable interface, rather than an API in the background.

Based on the foregoing, the Court construes "preset intermediate interface" as "a user interface associated with, but not part of, an application, and that is (1) started after an instruction to switch from an application currently in use to a target application, and (2) paused at the same time the target application enters the foreground." Additionally, the Court notes both sides agree with the high-level concept that there needs to be some form of user interaction with the interface. *See* Hr'g Tr., Dkt. No. 123 at 41:5–8 (noting, by Maxell, "[t]here's some user interaction, but there's also interactions between the programs"); *see also id.* at 43:20–23 ("[T]here is visual interaction that the user perceives by watching the screen . . . ."). The specifics of such user interaction are infringement questions.

D. "completely loaded" ('206 Patent, Claims 1–4, 6, 9–12, 14)

Maxell's Construction	TCL's Construction
Plain and ordinary meaning *e.g.*, when the frame and content are completely loaded	Indefinite

Claim 1 recites "triggering, in response to the intermediate interface [being] *completely loaded*, the AV application . . . to release an AV decoder." '206 Patent at 10:11–14 (emphasis added); *see also id.* at 11:17–20 (reciting, in Claim 9, an apparatus that "in response to the intermediate interface ha[ving] been completely loaded, trigger[s] the AV application . . . , which has

been set to be a background program, to release an AV decoder"). TCL argues "completely loaded" is indefinite because "the specification provides only a circular definition of the term that is inconsistent with the claims and the preferred embodiment of a blank interface." Dkt. No. 110 at 18–19 (referencing '206 Patent at 4:43–46 ("[T]he completely loading of the interface refers to both the frame and the content of the intermediate interface have been completely loaded.")). TCL criticizes Maxell's interpretation of "completely loaded" as excluding a preferred embodiment, and therefore wrong. *Id.* at 21.

TCL's challenge relates to the scope of "interface." Specifically, TCL questions what would be loaded in the case of a "blank interface," which the specification contemplates and Claim 4 recites. For example, "the intermediate interface [may be] a blank interface that includes *no more than a layout control*, with no interface content to be added." '206 Patent at 7:28–30 (emphasis added). Elsewhere the patent explains the "layout control" is "interface content." In fact, "*preferably*, the intermediate interface may include no interface content *except for one layout control*. That is, the intermediate interface may be a blank interface to further improve the loading speed." *Id.* at 4:16–19 (emphasis added). Thus, even a "blank interface" has some interface content of at least a layout control.[6]

There is not much dispute about the scope of the term, when viewed in isolation. At the hearing, the parties agreed that an interface is completely loaded when the frame and content are completely loaded. Hr'g Tr., Dkt. No. 123 at 52:22–53:7. That's supported by the specification, which describes the "complete[] loading of a[n] interface in the foreground." '206 Patent at 4:39–

[6] To the extent one considers these two passages as inconsistent with one another, the last clause of the first passage is understood to mean "with no *additional* interface content."

40. Because even a blank interface includes at least *some* interface content, there is nothing indefinite about this term, and the Court adopts the construction conditionally agreed to by the parties at the hearing: "when the frame and content are completely loaded."[7]

VI. THE DISPUTED TERM FROM U.S. PATENT 10,219,020

A. Background

The '020 Patent teaches passing content being viewed on a portable terminal to a video playback device. '020 Patent at 2:37–44. The patent identifies several prior-art references that provide this functionality but notes deficiencies with each. For example, the prior-art solutions might require a high number of operational steps. *Id.* at 2:49–51. The patent aims for "smoother cooperative operation when the viewing of a content just being conducted on the portable terminal is to be relayed or passed to the video playback device." *Id.* at 3:9–11.

The structure of the claimed invention is straightforward, with Claim 1 directed to a "display apparatus" that includes a digital broadcast receiver, a video processor, a network communication module, a radio receiver, an infra-red (IR) receiver, and a display panel. *Id.* at 20:29–46. The display apparatus also includes

> a system controller configured to control the display apparatus to:
>
> receive a first video content via the received broadcast signal;
>
> display the first video content on the display panel;
>
> receive an identifier for identifying a second video content from the external mobile terminal;
>
> acquire the second video content via the interne[t] using said identifier;

[7] Here, too, TCL's agreement was subject to its right to later advance its indefiniteness position on objection or appeal.

> display the second video content on the display panel;
>
> terminate display of the first video content prior to display of the second video content;
>
> execute operation instructions received from the external mobile terminal via the radio receiver while the second video content is being displayed; and
>
> execute commands received from the remote controller, wherein said remote controller is a different device than the external mobile terminal.

Id. at 20:47–64. The sole dispute concerns what it means to "execute operation instructions" as recited in the second-to-last limitation.

B. "operation instructions" ('020 Patent, Claim 1)

Maxell's Construction	TCL's Construction
"information for changing the display of the second video content such as move or select operations"	"commands and instructions used to operate a computer"

Claim 1 requires a system controller configured to "execute *operation instructions* received from the external mobile terminal via the radio receiver while the second video content is being displayed . . . ." '020 Patent at 20:59–61 (emphasis added). The parties dispute whether "operation instructions" must relate to the second video content, or whether they could be *any* instructions.

Maxell focuses on the description of Figure 5, where the specification explains:

> In this state in which the TV set can be operated [sic] the user presses a desired key of the input unit 102, ***data which indicates an operation for the TV set . . .*** is sent to the TV set. Therefore, ***in a situation wherein it is desired to move a selection item of an internet site being displayed on the TV set or to determine a selection item***, if the user operates the input unit 102 of the cellular phone to press a key corresponding to an operation information item shown in the screen display 404, ***the cellular phone sends an information item and a signal indicating an***

> ***indication of the operation to the TV set (step 506)***. As a result of this step, the cellular phone serves as a remote control device of the TV set.

Dkt. No. 105 at 22 (quoting '020 Patent at 11:6–20). In Maxell's view, this shows "[t]he specification repeatedly and consistently explains 'operation instructions' through all three embodiments" refers to the second video content, which justifies adopting its construction. *Id.* at 23.

TCL argues the claim language supports its construction. It contends Maxell's construction is incorrect because, "by the time 'operation instructions' are executed, the changing the display of the second video has already happened." Dkt. No. 110 at 24. TCC further contends Maxell's citations confirm TCL's construction.

TCL's argument goes too far. To start, even assuming the "steps" of the system controller are executed in the order recited, the second video content is merely "displayed" after the first video content, not "changed." *See* '020 Patent at 20:57–58 ("terminating display of the first video content prior to display of the second video content"). At best, any "change" referenced by the claims is the change from the first video content to the second video content, but the operation instructions could change the second video content after it has been displayed, such as by moving or selecting the content. *See*, *e.g.*, *id.* at 21:6–8 (limiting, in Claim 5, the "operation instructions" of Claim 1 to include "move" and "select" operations). The Court thus agrees with this aspect of Maxell's construction, especially in light of the rest of the limitation, which recites "while the second video content is being displayed." That strongly suggests the "operation instructions" relate to that "second video content." Accordingly, the Court incorporates that aspect of Maxell's proposed construction into TCL's proposal and construes this term as "commands and instructions used to operate second video content."

VII. THE DISPUTED TERMS FROM U.S. PATENT 7,924,366

A. Background

The ’366 Patent “relates to a large-size image displaying apparatus . . . such as, a liquid crystal display (LCD) or a plasma display (PDL) . . . and it relates, in particular, to supporting structures” of the apparatus. ’366 Patent at 1:12–16. The patent describes the invention as generally positioning a signal board and a power-source board horizontally relative to a display panel and “not being connected with a member [opposite] a mounting side of the circuit element.” *Id.* at [57].

The parties dispute two terms from Claims 5 and 9: “member” and “provided on.” Claim 5, which is representative of Claim 9, recites:

> 5. A display apparatus, comprising:
>
> a display panel;
>
> a signal board configured to process an image signal used in an image display;
>
> a power source board configured to supply power to said signal board and said display panel; and
>
> a projection portion configured to be **provided on** a mounting surface of said power source board where a circuit element of said power source board is mounted;
>
> wherein said signal board and said power source board are disposed in a horizontal direction of said display panel, and
>
> said projection portion is configured to be higher above said mounting surface of said power source board than said circuit element of said power source board and not to be connected with a **member** facing to said mounting surface of said power source board.

Id. at 9:1–26 (emphasis added).

B. “member” (’366 Patent, Claims 5, 9)

Maxell's Construction	TCL's Construction
Plain and ordinary meaning *e.g.*, a component or definable part	"a structural component of a frame"

The relevant portions of the claims at issue require "a projection portion . . . provided on a mounting surface of [a] power source board . . . where a circuit element of said power source board is mounted . . . and not to be connected with a member facing to said mounting surface of said power source board." '366 Patent at 9:7–9 (Claim 5); *see also id.* at 10:10–12 (reciting, in Claim 9, "a projection portion which is provided on a mounting surface of said power source board where a circuit element of said power board is mounted"). Maxell stresses "member" is used according to its plain and ordinary meaning, but fails to articulate what that meaning is. Challenged with TCL's assertion that Maxell's position means a "member" can be "anything," it replies a member "cannot be anything" because it must meet the claimed relationship to the other components. Dkt. No. 113 at 10.

TCL responds that the '366 Patent consistently refers to "member" as a structural component of a frame. Dkt. No. 110 at 26–28 (citing '366 Patent at 7:34–43). TCL also submits two dictionary definitions suggesting "member" has some relationship to a structure. *Id.* (citing *member*, Chambers Dict. of Sci. & Tech., Dkt. No. 110-14 at 752 ("a constituent part of a structural framework"); *member*, Dict. of Mechanical Eng'g, Dkt. No. 110-15 at 246 ("When considering the design of a mechanism or structure, a member is taken to be a single definable part, such as beam, plate or column, which can be easily analysed and stressed.")).

The Court agrees with TCL. Maxell essentially asserts "member" can mean *anything* that satisfies the claimed relationships to the other claimed components but provides no support for such a broad understanding. TCL, on the other hand, submits evidence that "member" normally

has some structural purpose, which is consistent with the very general description of the technical field. *See* '366 Patent at 1:15–16 (noting the present invention "relates, in particular, *to supporting structures* of a panel module for building up [a] large-size image displaying apparatus" (emphasis added)). Accordingly, the Court rejects Maxell's overly broad position and construes "member" as "a structural component of a frame."

C. "provided on" ('366 Patent, Claims 5, 9)

Maxell's Construction	TCL's Construction
Plain and ordinary meaning *e.g.*, attached or driven through	"affixed to the surface"

Claim 5 recites "a projection portion configured to be provided on a mounting surface of said power source board where a circuit element of said power source board is mounted," '366 Patent at 9:7–9, and the parties dispute the meaning of "provided on." The focus of the dispute centers on "driven through" in Maxell's construction. TCL stresses the patent provides only one example of the meaning of "provided on," which is circuit elements "affixed to the power source board['s] surface, not driven through it." Dkt. No. 110 at 29–30 (citing '366 Patent at fig.5(c)).

The Court nonetheless agrees with Maxell. TCL's position recognizes "provided on" does not have an ordinary meaning to a skilled artisan. As TCL notes, "all that can be discerned [from the claims] is that the projection portion is 'configured to be provided on a mounting surface of said power source board' and that the 'projection portion prevents said circuit element of said power source board from contacting the member.'" Dkt. No. 110 at 29. However, the specification discloses flat head pins "driven through" the board, and the Court sees no reason why the scope of "provided on" should exclude that embodiment given the pins are projecting *from the surface* of the board toward the member. Accordingly, the Court construes this term as "attached to or driven

through the surface."

VIII. CONCLUSION

In their October 3, 2024 Joint Claim Construction Chart, Dkt. No. 115, the parties submitted the following agreed construction, which the Court now adopts:

Term/Patent/Claim(s)	Court's Construction
"triggering, in response to the intermediate interface has been completely loaded, the AV application, . . . , to release the AV decoder"/ "in response to the intermediate interface has been completely loaded, trigger the AV application, . . . , to release an AV decoder" ('206 Patent: Claims 1, 9)	"causing the current AV application occupying the decoder to release the decoder when the intermediate interface is completely loaded"

For the disputed terms, the Court adopts the following constructions as set forth in this opinion:

U.S. Patent 10,372,341	
"communication unit" (Claim 3)	Governed by 35 U.S.C. § 112 ¶ 6 **Function:** "executing two types of bi-directional wireless communication including first bi-directional wireless communication with a first wireless control device without going via a router and second bi-directional wireless communication via a router with a second wireless control device that is different from the first wireless control device" **Structure:** "wireless transceiver that can communicate with wireless control devices either directly or indirectly," and equivalents thereof
U.S. Patent 10,650,780	
"image information" (Claims 1, 4)	"information describing the pixels that make up an image"

"the display screen displays a slide show at predetermined time intervals with the [first/second] still pictures, as the [first/second] images, based on the decoded [first/second] image information obtained by the decoder" (Claim 1)	"the display screen displays a slide show at predetermined time intervals with the [first/second] still pictures, as the [first/second] images, the [first/second] images based on the decoded [first/second] image information obtained by the decoder"
U.S. Patent 10,321,206	
"interface" (Claims 1–4, 6, 9–12, 14)	No construction necessary beyond that for "preset intermediate interface"
"preset intermediate interface" (Claims 1, 9)	"a user interface associated with, but not part of, an application, and that is (1) started after an instruction to switch from an application currently in use to a target application, and (2) paused at the same time the target application enters the foreground"
"completely loaded" (Claims 1–4, 6, 9–12, 14)	Plain and ordinary meaning, which is "when the frame and content are completely loaded"
U.S. Patent 10,219,020	
"operation instructions" (Claim 1)	"commands and instructions used to operate second video content"
U.S. Patent 7,924,366	
"member" (Claims 5, 9)	"a structural component of a frame"
"provided on" (Claims 5, 9)	"attached to or driven through the surface"

The Court **ORDERS** each party not to refer, directly or indirectly, to its own or any other party's claim-construction positions in the presence of the jury. Likewise, the Court **ORDERS** the parties to refrain from mentioning any part of this opinion, other than the actual positions adopted by the Court, in the presence of the jury. Neither party may take a position before the jury that

contradicts the Court's reasoning in this opinion. Any reference to claim construction proceedings is limited to informing the jury of the position.

SIGNED this the 10th day of January, 2025.

J. Boone Baxter
UNITED STATES MAGISTRATE JUDGE