

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF NEW YORK

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AMERICAN TECHNICAL CERAMICS CORP.
and AVX CORPORATION,

Plaintiffs,

MEMORANDUM & ORDER

-against-

14-CV-6544 (KAM) (GRB)

PRESIDIO COMPONENTS, INC.,

Defendant.

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MATSUMOTO, United States District Judge:

Plaintiffs American Technical Ceramics Corporation ("ATC") and AVX Corporation (collectively, "ATC" or "plaintiffs") commenced this action against defendant Presidio Components, Inc. ("defendant" or "Presidio") on November 6, 2014. (Complaint, ECF No. 1.) Plaintiffs allege that defendant makes and sell capacitors that infringe the following ATC patents: United States Patent No. 6,144,547 ("the '547 Patent"), United States Patent No. 6,337,791 ("the '791 Patent," and together with the '574 Patent, the "patents-in-suit").¹

Plaintiffs seek a finding that Presidio willfully infringed on the patents-in-suit, and injunctive relief

¹ As explained in the court's memorandum and order on the parties' cross-motions for summary judgment, plaintiffs initially also accused defendant of infringing on United States Patent No. 6,992,879 (the "'879 Patent"). Since the initiation of this action, however, the United States Patent and Trademark Office has cancelled the '879 Patent in its entirety, and the court has dismissed plaintiffs' claims for infringement of the '879 Patent. (See Summary Judgment Order, ECF No. 126, at 20-23.)

prohibiting Presidio from engaging in further infringement. Plaintiffs also seek damages from the alleged infringement, including attorneys' fees and costs. The court has previously construed various terms in the patents-in-suit (see generally Claim Construction Order ("Cl. Constr. Order"), ECF No. 79), and has also considered and ruled on cross-motions for summary judgment. (Summary Judgment Order ("MSJ Order"), ECF No. 126.) Presently before the court are the parties' submissions for claim construction of a single term, "terminations," as recited in the '547 Patent.

Background

Plaintiff ATC is a wholly owned subsidiary of plaintiff AVX, and all parties manufacture electrical devices, including capacitors. (MSJ Order at 3.) Capacitors are electronic components that store and release energy within a circuit. (*Id.*) They are used in a variety of electrical systems, including consumer electronics. (*Id.*) Capacitors generally consist of two parallel conductive (usually metal) plates separated by a non-conductive insulating material, called a "dielectric." (*Id.*)

This action relates to "multilayer ceramic capacitors" ("MLCCs"), which are created through the combination of multiple capacitors by stacking several layers of conductive and non-conductive/dielectric material. (*Id.* at 3-4.) All parties

manufacture and sell MLCCs. (*Id.*) Additionally, this action was briefly stayed while the patents-in-suit underwent *inter partes* review (“IPR”) proceedings, in which defendant unsuccessfully challenged the validity of Claims 1 and 12 of the ‘547 Patent. (*Id.* at 7-8.)

As noted above, earlier in this action, both parties filed, and the court ruled on, motions for summary judgment. As is relevant here, defendant sought summary judgment that their accused devices not infringe the ‘547 Patent. (*Id.* at 3, 46.) In seeking summary judgment of noninfringement as to the ‘547 Patent, defendant asserted that the accused products do not have “substantially L-shaped terminations,” as required by the ‘547 Patent. (*Id.* at 46-47.)

More specifically, defendant asserted that plaintiffs’ infringement theory is contingent on the accused products’ external electrodes, or surface pads, which are located on the bottom of the accused product, forming part of the termination structure and thereby constituting the lower, horizontal portion of the “L” shape. (*Id.*) According to defendant, the surface pads cannot be considered part of the termination structure, and therefore must be disregarded in determining whether the terminations are substantially L-shaped. (*Id.*) Plaintiffs countered that the surface pads are part of the termination

structure, and therefore that summary judgment should be denied. (*Id.* at 47.)

The court noted that determining which argument should prevail requires an operable definition of "terminations," and that the Claim Construction Order had not addressed this term because the parties had agreed that it, along with other terms not addressed in the parties' first claim construction submissions, should be "given [its] plain and ordinary meaning." (*Id.* at 47-49 (citation omitted).) The court also noted that no party had suggested a plain and ordinary meaning or directed the court to anything in the record that might aid in determining the plain meaning of "terminations." (*Id.* at 49.)

Based on Federal Circuit precedent regarding the relationship between claim construction and summary judgment, the court declined to supply and apply its own plain and ordinary meaning for "terminations" and denied summary judgment without prejudice pending further claim construction of "terminations." (*Id.* at 49-54.) The instant briefing followed.

Legal Standard

I. Claim Construction Generally

In order to protect effectively an inventor's rights, patents must describe the exact scope of an invention. See *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 373 (1996) ("[A] patent must describe the exact scope of an invention and

its manufacture to secure to [the patentee] all to which he is entitled, [and] to apprise the public of what is still open to them." (alterations in quoted material) (internal quotation marks and citation omitted)). "It is well established that determining infringement is a two-step process" whereby, the court must first construe a patent's claim limitations to define the meaning and scope of the invention, and second, must compare the accused device to the construed claims. See *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115-16 (Fed. Cir. 2004) (citations omitted).

"`[T]he construction of a patent, including terms of art within its claim,' is not for a jury but 'exclusively' for 'the court to determine.'" *Teva Pharmaceuticals USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 835 (2015) (quoting *Markman*, 517 U.S. at 390). In deciding matters of claim construction, district courts have discretion regarding the procedure by which to reach a final determination. See *Ballard Med. Prods. v. Allegiance Healthcare Corp.*, 268 F.3d 1352, 1358 (Fed. Cir. 2001) ("District courts have wide latitude in how they conduct the proceedings before them, and there is nothing unique about claim construction that requires the court to proceed according to any particular protocol. As long as the trial court construes the claims to the extent necessary to determine

whether the accused device infringes, the court may approach the task in any way that it deems best.”).

In addition, the court need only construe claims that are “in controversy” and only “to the extent necessary to resolve the controversy.” *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (citation omitted); *see also Ballard*, 268 F.3d at 1358 (“If the district court considers one issue to be dispositive, the court may cut to the heart of the matter and need not exhaustively discuss all the other issues presented by the parties.”). Further, the court is “not required to construe every limitation present in a patent’s asserted claims,” but rather, the focus is on “resolution of disputed meanings and technical scope . . . for use in determination of infringement. *See O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1362 (Fed. Cir. 2008) (emphasis omitted) (citations omitted).

II. Sources for Claim Construction

Courts must construe patent claims “objectively and without reference to the accused device.” *Vivid Techs.*, 200 F.3d at 803 (emphasis added). This means that courts must “seek[] to accord a claim the meaning it would have to a person of ordinary skill in the art at the time of the invention.” *Innova/Pure Water, Inc.*, 381 F.3d at 1116 (citations omitted). In doing so, a court considers three primary sources within the

intrinsic evidence of record: (i) the language of the claims, (ii) the specification, and (iii) the prosecution history. *Secure Web Conference Corp. v. Microsoft Corp.*, No. 13-CV-2642(JG), 2014 WL 4954644, at *1 (E.D.N.Y. Oct. 2, 2014) (citing *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)).

A. Claim Language

First, the court “look[s] to the words of the claims themselves, both asserted and non-asserted, to define the scope of the patented invention.” *HowLink Global LLC v. Network Commc’ns Int’l. Corp.*, 561 F. App’x 898, 905 (Fed. Cir. 2014) (quoting *Vitronics*, 90 F.3d at 1582). In making such a determination, “[t]he words of the claim are the controlling focus.” *Secure Web*, 2014 WL 4954644, at * 2 (citing *Digital Biometrics, Inc., v. Identix, Inc.*, 149 F.3d 1335, 1344 (Fed. Cir. 1998)).

In general, the language of a claim is given its ordinary and customary meaning unless a distinct definition is employed in the specification or prosecution history. See *Digital Biometrics*, 149 F.3d at 1344 (“The written description is considered, in particular to determine if the patentee acted as his own lexicographer, as our law permits, and ascribed a certain meaning to those claim terms. If not, the ordinary meaning, to one skilled in the art, of the claim language

controls.” (citing *York Prods., Inc. v. Central Tractor Farm & Family Ctr.*, 99 F.3d 1568, 1572 (Fed. Cir. 1996)).

The ordinary and customary meaning of a claim term is that which one of “skill in the art at the time of the invention” would understand. *Innova/Pure Water*, 381 F.3d at 1116 (citations omitted); see also *InTouch Techs, Inc. v. VGO Commc’ns Inc.*, 751 F.3d 1327, 1339 (Fed. Cir. 2014) (“Generally, a claim term is given the ordinary and customary meaning as understood by a person of ordinary skill in the art at the time of invention.” (citation omitted)); *Interactive Gift Exp., Inc. v. Compuserve Inc.*, 256 F.3d 1323, 1332 (Fed. Cir. 2001) (“Throughout the construction process, it is important to bear in mind that the viewing glass through which the claims are construed is that of a person skilled in the art.” (citations omitted)).

In interpreting claim terms, courts have applied the doctrine of “claim differentiation.” This doctrine “stems from the common sense notion that different words or phrases used in separate claims are presumed to indicate that the claims have different meanings and scope,” and creates a “presumption that two independent claims have different scope when different words or phrases are used in those claims.” *Seachange Int’l, Inc. v. C-COR, Inc.*, 413 F.3d 1361, 1368-69 (Fed. Cir. 2005) (internal quotation marks and citations omitted.) The Court of Federal

Claims has applied this doctrine in declining to “infer that two different words within a claim . . . have the same meaning.”

TDM Am., LLC v. United States, 85 Fed. Cl. 774, 794 (2009) (citing *Andersen Corp. v. Fiber Composites, LLC*, 474 F.3d 1361, 1369 (Fed. Cir. 2007)).

Claim differentiation, however, is “a guide, not a rigid rule.” *Laitram Corp. v. Rexnord, Inc.*, 939 F.2d 1533, 1538 (Fed. Cir. 1991) (quoting *Autogiro Co. of Am. v. United States*, 384 F.2d 391, 404 (Ct. Cl. 1967)); *accord Marine Polymer Techs., Inc. v. HemCon, Inc.*, 672 F.3d 1350, 1359 (Fed. Cir. 2012) (citations omitted). Accordingly, it “is not as strong across related patents as it would be if the different claim limitations appeared in the same patent.” *Clare v. Chrysler Grp. LLC*, 819 F.3d 1323, 1330 (Fed. Cir. 2016).

B. Specification

Next, the court looks at a patent’s specification, as “[c]laims must be read in view of the specification, of which they are a part.” *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995) (citations omitted), *aff’d*, 517 U.S. 370 (1996). “The specification contains a written description of the invention which must be clear and complete enough to enable those of ordinary skill in the art to make and use it.” *Vitronics*, 90 F.3d at 1582. Consequently, “the specification is always highly relevant to the claim

construction analysis," "is the single best guide to the meaning of a disputed term," and is "[u]sually . . . dispositive." *Id.*

In setting out a clear and complete written description, a patent's specification may also include a particular definition of a term that supersedes the term's "plain and ordinary meaning." See *Stryker Corp. v. Zimmer, Inc.*, 837 F.3d 1268, 1272 (Fed. Cir. 2016) (noting exception to the general rule that courts look to terms' plain and ordinary meanings "when a patentee sets out a definition and acts as her own lexicographer" (citations omitted)).

Therefore, the specification may assist in the court's determination of whether the inventor intentionally used any terms in the claims in a manner inconsistent with their ordinary meaning; however, this intention must be clear. See *Vitronics*, 90 F.3d at 1582 ("[A] patentee may choose to be his own lexicographer and use terms in a manner other than their ordinary meaning, as long as the special definition of the term is clearly stated in the patent specification or file history." (citations omitted)).

Additionally, where a specification discloses an embodiment, a claim construction that renders the embodiment outside the scope of the claim "is rarely, if ever, correct and would require highly persuasive evidentiary support." *Id.* at 1583 (citations omitted). Further, "it 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) (citations omitted).

C. Prosecution History

Third, the court may consider the prosecution history of the patent, if it is in evidence. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1317 (Fed. Cir. 2005) (citing *Markman*, 52 F.3d at 980); accord *Amhil Enterprises Ltd. v. Wawa, Inc.*, 81 F.3d 1554, 1559 (Fed. Cir. 1996) ("The prosecution history, in addition to being used while considering the factual issue of infringement and whether prosecution history estoppel places any limitations on what infringes a claim, should also be used when considering the legal issue of proper claim construction." (citations omitted)). The prosecution history contains a complete record of all the proceedings before the Patent and Trademark Office, including any express representations made by the applicant regarding the scope of the claims. As such, the record before the Patent and Trademark Office is often of critical significance in determining the meaning of the claims. See *Markman*, 52 F.3d at 980.

Importantly, “[t]he prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution.” *Southwall Tech., Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1576 (Fed. Cir. 1995) (citations omitted). However, “[a]bsent a clear disavowal or contrary definition in the specification or the prosecution history, the patentee is entitled to the full scope of its claim language.” *Home Diagnostics, Inc. v. LifeScan, Inc.*, 381 F.3d 1352, 1358 (Fed. Cir. 2004).

Accordingly, a party asserting prosecution history disclaimer has the “burden of proving the existence of a ‘clear and unmistakable’ disclaimer that would have been evident to one skilled in the art.” *Trivascular, Inc. v. Samuels*, 812 F.3d 1056, 1063-64 (Fed. Cir. 2016) (citation omitted).

D. Extrinsic Evidence

Finally, although it is well-settled that courts should look primarily to the intrinsic evidence of record in resolving a claim construction dispute, extrinsic evidence may be considered when ambiguity remains after consulting the intrinsic evidence. *Vitronics*, 90 F.3d at 1583. Extrinsic evidence has been defined to include evidence external to the patent and prosecution history, such as expert testimony, inventor testimony, dictionaries, and relevant treatises or articles. See *Secure Web*, 2014 WL 4954644, at *2 (citing

Phillips, 415 F.3d at 1317); accord *Vitronics*, 90 F.3d at 1584 (citations omitted).

"[E]xtrinsic evidence in general, and expert testimony in particular," however, "may be used only to help the court come to the proper understanding of the claims; it may not be used to vary or contradict the claim language." *Vitronics*, 90 F.3d at 1584 (citing *Markman*, 52 F.3d at 980). Further, "extrinsic evidence is 'less significant than the intrinsic record in determining the legally operative meaning of claim language.'" *Secure Web*, 2014 WL 4954644, at *2 (quoting *Phillips*, 415 F.3d at 1317). Consequently, in permitting consideration of extrinsic evidence, "[t]he Federal Circuit has cautioned courts not to place too much reliance on extrinsic evidence and too little reliance on intrinsic sources." *Id.* at *2 (citing *Phillips*, 415 F.3d at 1320).

Discussion

The court will construe the term "terminations" as recited in the '547 Patent after consideration of the parties' submissions at the court's request. No other terms are at issue at this time. Plaintiffs assert that "terminations" should be construed as "conductive structures arranged externally on the device body." (*E.g.*, Joint Disputed Claim Terms Chart, ECF No. 129, at 1.)

In briefing the instant construction dispute, defendant initially asserted that "terminations" should be construed as a "layer covering a portion of the device body for providing electrical and mechanical connection to the device's conductive patterns." (*Id.*) However, in response to plaintiffs' argument that a termination can include more than one layer, defendant has proposed that "terminations" be construed as "structures covering a portion of the device body for providing electrical and mechanical connection to the device's conductive patterns / electrodes." (Defendant's Claim Construction Brief ("Def. Mem."), ECF No. 131, at 4.)

Based on their proposed constructions, the parties agree that terminations are (i) structures that are (ii) conductive and (iii) external to the capacitor device body. Both parties' proposed constructions expressly refer to the terminations as structures, and clearly indicate that terminations are conductive. Further, although defendant does not expressly state that terminations are "external" to the capacitor body, defendant asserts that terminations "**cover**[] a portion of the device body," thus conceding that the terminations are external to the device body. (*Id.* (emphasis added).) Consequently, the court need only determine whether the additional purported characteristics of terminations set forth in defendant's proposed construction, *i.e.*, that

terminations are "for providing electrical and mechanical connection to the device's conductive patterns / electrodes," represent a proper construction of the '547 Patent. For the reasons set forth below, the court respectfully rejects defendant's proposed construction, and adopts plaintiffs' proposed construction.

I. Intrinsic Evidence

A. Claim Language

The court begins, as it must, with the language of the relevant claims. See *Vitronics*, 90 F.3d at 1582 (noting that claim construction inquiry begins with "the words of the claims themselves"). Here, the word "terminations" appears in the disputed claims 1 and 12 of the '547 Patent. Claim 1 claims, in relevant part:

A thin film capacitor device for mounting to a surface, said capacitor device comprising a device body having small dimensions in length, width and height, **and having substantially L-shaped terminations located thereon with portions of said terminations extending over a bottom surface of said device body and negligibly over a top surface of said device body**, said device body including:

an insulating substrate having a top surface and a bottom surface;

a first conductive pattern located above said top surface of said substrate and defining a first polarity capacitor plate;

a dielectric layer located on top of said first conductive pattern;

a second conductive pattern located on said dielectric layer, said second conductive pattern defining a second capacitor plate in registry with said first capacitor plate; and

a planar cover layer located above said second conductive pattern.

('547 Patent at 6:13-32 (emphasis added).)

Claim 12 of the '547 Patent claims

A capacitor device for mounting to a surface, said capacitor device comprising:

a device body of a small size no greater than 0402 and a nominal height of no greater than about 0.40 mm;

said device body having a capacitor structure located therein, said capacitor structure being formed of at least one first polarity electrode and at least one second polarity electrode separated by an interposing layer of dielectric; and

substantially L-shaped terminations located on opposite end surfaces of said device body, with portions of said terminations extending over a bottom surface of said device body and negligibly on a top surface of said device body.

('547 Patent at 6:62-7:8(emphasis added).)

Although the foregoing claim language establishes that terminations are external to the capacitor device body, neither claim 1 nor claim 12 expressly supports defendant's proposed construction, as neither claim indicates that terminations provide electrical and mechanical connection to the capacitor device's conductive patterns and/or electrodes.

Further, defendant's only argument in support of its proposed construction based on the language of the claims is unpersuasive. Defendant notes that the '547 Patent "claims 'terminations' and, separately, 'conductive' patterns." (Def. Mem. at 22; see also '547 Patent at 6:13-32 (Claim 1).) According to defendant, the separate references to "terminations" and "conductive" patterns make clear that terminations are distinct from other conductive structures in the capacitor device. (*Id.*)

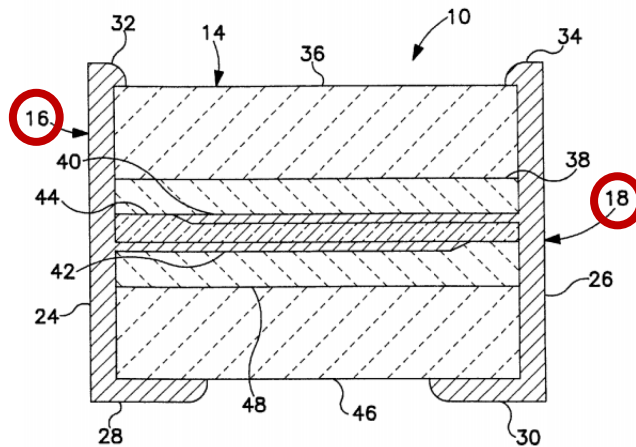
There is no dispute, however, that terminations are not the only conductive structures on or in the capacitor devices disclosed by the '547 Patent. As the court observed in the prior claim construction order, the patents-in-suit relate to "multilayer ceramic capacitors," which "are created . . . by stacking *several layers of conductive and non-conductive* (i.e., dielectric) material." (Cl. Constr. Order at 2 (emphasis added).) Thus, the court agrees that "terminations" are not the only conductive structures disclosed in the '547 Patent. From the conclusion that the '547 Patent discloses non-termination conductive structures, it cannot also be concluded that terminations are "for providing electrical and mechanical connection to the device's conductive patterns / electrodes," as defendant contends. Consequently, the court rejects defendant's

contention that the claim language supports this aspect of defendant's proposed construction.

B. Specification

The court next considers the patent's specification, upon which the parties rest the bulk of their arguments regarding the language of the '547 Patent. As is relevant here, the '547 Patent notes a typical manufacturing process by which "thin film" techniques are used to manufacture a "larger wafer" out of which "many" capacitors are made ('547 Patent at 4:10-16), and describes a "novel method of applying terminations to the individual capacitors of the wafers." (*Id.* at 4:38-40.)

The '547 Patent's specification contains the following diagram, in which the "substantially L-shaped terminations" are labeled 16 and 18:



(`547 Patent at 1 (circular markings added); see also `547 Patent Fig. 3 (same diagram).)²

Regarding the application of terminations to the device body, the `547 Patent's specification describes a process by which a "series of parallel cuts" are made in a completed wafer, producing a "series of capacitor array strips" with "channels" between them. (*Id.* at 4:47-51.) A "shadow mask," which "includes parallel masking members," is then "placed over the series of array strips," and the "main (principal) and bottom land portions of the terminations are applied in [a] single sputtering run." (*Id.* at 4:55-63.)

The `547 Patent further states that the sputtering will "[p]referably" involve the "deposition of two layers, such as Cr and Cu," *i.e.* chromium (Cr) and copper (Cu), and that "[a]n electroless nickel coating from NiB composition," *i.e.* nickel (Ni) and boron (B), "may then be applied to form a barrier layer before solder application." (*Id.* at 4:63-5:3).

Additionally,

[a]fter the terminations are applied, the array strips are diced in a second direction, perpendicular to the first direction, to yield the individual capacitors **10**. Referring to FIG.

² For additional context, in Figure 3 as explained in column 3, lines 3 through 42 of the `547 Patent, the capacitors' internal electrodes, which develop capacitance and thereby enable the capacitor to store and release energy, are labeled 40 and 42. The layer labeled 38 is a glaze layer, and the layer labeled 48 is a glue or epoxy layer. Finally, the layer labeled 44 is a dielectric, or non-conductive layer between the capacitor's internal electrodes.

5D, capacitors 10 are then removed from carrier 72 by dissolution or ungluing of the temporary glue. . . . A barrel plating or other soldering process of nickel and SnPb may then be employed.

(*Id.* at 5:4-11.)³

The '547 Patent's specification also contains the following table ("Table II"), which "sets forth various details of a preferred termination structure in an exemplary . . . capacitor:"

TABLE II

LAYER	FIGURE 3 INVENTION	FIGURE 4 PRIOR ART
Flash I	Not Applicable	Aluminum 0.01 μm
Flash II	Chromium 0.1-0.4 μm	Chromium 0.1 μm
Shaping Layer	Copper 1.0-4.0 μm	Copper 1.0 μm
Barrier I	Nickel-Boron 1.0-2.5 μm	Nickel-Boron 1.0 μm
Barrier II	Nickel 2.0-8.0 μm	Not Applicable
Solder	Tin-Lead 3.0-12.0 μm	Tin-Lead 10.0-50.0 μm

('547 Patent at 5:12-27.)

"Sn" is the chemical symbol for tin, and "Pb" is the chemical symbol for lead. Thus, the nickel "Barrier II" layer and tin-lead "Solder" layers in Table II correspond to the "barrel plating or other soldering process of nickel and SnPb"

³ Figures 5C and 5D, which illustrate portions of the process for creating array strips and dicing the strips into individual capacitors, are reproduced here for context:

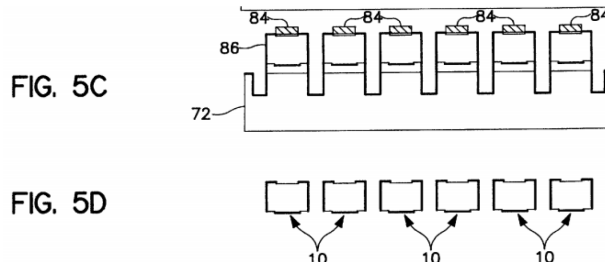


Figure 5C also depicts the shadow mask/masking member (84), and the parallel cuts are also depicted. ('547 Patent at 4:55-60.)

referenced at lines 10-11 of column 5 of the '547 Patent, which are excerpted above.

Defendant makes several arguments in support of its proposed construction of "terminations" based on the foregoing aspects of the specification, but none of defendant's arguments are convincing. Most notably, defendant asserts that the '547 Patent "expressly excludes external plating, one of many types of conductive structures arranged externally on the device body, from 'terminations.'" (Def. Mem. at 20.) According to defendant, the '547 Patent "defin[es] terminations (including the barrier layer and solder application described in T[able] II), and then explain[s] that after the terminations are applied, only then is plating employed." (*Id.* (emphasis in quoted material) (citing '547 Patent at 5:1-27 and Declaration of Dr. Michael Randall, Ph.D. in Support of Defendant's Brief ("Randall Decl." or the "Randall Declaration"), Def. Ex. CG, ECF No. 133-4, ECF pp. 70-137 of 260, ¶¶ 28, 61).) Consequently, according to defendant, because the '547 Patent discloses an external conductive structure other than terminations, plaintiffs' proposed construction cannot be correct.

Defendant, however, does not point to any language in the '547 Patent that expressly excludes plating from the termination structure, because no such language exists. Instead, defendant asserts that the '547 Patent "describes the

application of the terminations, after which a series of cuts are made to create individual chips.” (Def. Mem. at 20 (emphasis in quoted material) (citing ‘547 Patent at 1:65-2:2, 5:31-34).) According to defendant, “[b]arrel plating cannot be employed until after the individual chips are created” (*id.* (citing Randall Decl. ¶ 29)), and consequently, because the terminations are applied before individual chips are created, the plating cannot be part of the termination.

Further, according to defendant, the ‘547 Patent “distinguishes” the termination application process it discloses “from termination by dipping, and in doing so acknowledges that a termination can be dipped, but does not involve the external plating process.” (*Id.* at 20-21 (citing ‘547 Patent at 3:34-36 and Randall Decl. ¶ 30).) Defendant also submits that in light of the purported distinction between termination by dipping and external plating, “a person of skill in the art understands that the ‘547 [P]atent makes it repeatedly clear that external plating . . . is not part of the termination, but is employed after terminations are applied.” (*Id.* at 21 (citing Randall Decl. ¶¶ 29-30).)

Defendant’s contention that external plating is an external conductive structure that is not part of the termination structure does not withstand scrutiny. Most importantly, defendant acknowledges, but wholly fail to address,

the '547 Patent's statement that Table II sets forth the details of a "preferred termination structure in an exemplary capacitor," and Table II's inclusion of a nickel "Barrier II" layer and a tin-lead, or SnPb, "Solder" layer. (*Id.* at 23-24.) Thus, the '547 Patent's specification very clearly *includes* the plating layers that are applied after individual chips are created, and which defendant contends are not part of the termination, in a table that describes a "preferred termination structure in an exemplary capacitor."

Additionally, although defendant suggests that the '547 Patent indicates that the terminations it discloses are applied exclusively by sputtering, the specification makes clear that the sputtering process it describes results in the application of only "portions of the terminations." ('547 Patent at 4:55-63.) Thus, other portions of the terminations can presumably be applied by other processes, such as barrel plating.

Further, defendant does not explain the basis for its contention that plating layers are not part of the termination structure based on the '547 Patent's purported distinction between terminations applied by sputtering and terminations applied by dipping. As plaintiffs point out, although the '547 Patent describes a manufacturing process, it is "directed to 'a structurally complete invention.'" (Pl. Mem. at 3-4 (emphasis

omitted) (quoting Cl. Constr. Order at 15).) Moreover, in setting forth a structurally complete invention, the '547 Patent clearly contemplates that plating layers are part of the termination structure. In sum, defendant's reading of the '547 Patent as excluding plating layers from the termination structure is untenable in light of the clear language of the specification, including Table II.

Defendant also contends that the '547 Patent describes "orientation indicia," which are "another type of conductive structure arranged externally on the device body" but are not "terminations." (Def. Mem. at 21.) According to defendant, this also weighs against plaintiffs' contention that all external conductive structures are terminations.

Defendant does not explain what orientation indicia are,⁴ but at a deposition, defense counsel questioned plaintiffs' expert, Dr. Shanfield, regarding orientation indicia. (See generally Shanfield Dep., Def. Ex. CH, ECF No. 133-4, ECF pp. 138-89 of 260, at ECF pp. 155-56, Dep. pp:ll. 66:23-72:22.) Dr. Shanfield testified that he is "in general" familiar with

⁴ Defendant's brief cites to paragraph 31 of the Randall Declaration (Def. Mem. at 6-7, 21), but that and the following paragraph do not explain what orientation indicia are. (See Randall Decl. ¶¶ 31-32.) Instead, the relevant paragraphs contain only a conclusory assertion that orientation indicia are "conductive structures arranged externally on the device body," without further explanation. (*Id.*)

products that have orientation marks or indicators on them, and stated that

[i]n some types of capacitors, you have a positive or a negative terminal, because they're meant to function with a positive voltage on one terminal and a negative voltage on the other, so there would . . . be some kind of indication of that on the capacitor.

(*Id.* at 67:19-68:7.)

Nothing in Dr. Shanfield's testimony, or any other intrinsic or extrinsic evidence put before the court, indicates that orientation marks are a "conductive structure." Instead, Dr. Shanfield's testimony suggests that orientation indicia are not three-dimensional structures, but are instead merely markings that indicate the intended polarity associated with a capacitor's terminal. Further, nothing in Dr. Shanfield's testimony or in the record suggests that orientation indicia are conductive. Accordingly, defendant's premise, that orientation indicia are "another type of conductive structure" that are not terminations (Def. Mem. at 21), fails. Defendant's bare and unsupported assertions do not establish that that orientation indicia are non-termination external conductive structures, or that plaintiffs' proposed construction is consequently incorrect.

Finally, defendant asserts that the '547 Patent is "entirely silent regarding any other externally arranged

structures," that is, externally arranged structures other than plating and orientation indicia. (Def. Mem. at 21.) According to defendant, because the '547 Patent "does not describe any other externally arranged conductive structures, for example external electrodes, . . . a claim that includes those structures as 'terminations' is invalid for lack of a written description." (*Id.*)⁵

This argument does not make sense. The court finds that the '547 Patent includes as terminations all externally arranged conductive structures. Nothing in the '547 Patent's specification suggests that the '547 Patent discloses external conductive structures that are not terminations. Consequently, the '547 Patent's language does not indicate that plaintiffs' proposed construction of the term "terminations" is incomplete. Finally, it is unclear how a failure to exclude particular external conductive structures that are not otherwise discussed or identified in the '547 Patent from the definition of "terminations" could, in and of itself, render the '547 Patent invalid for lack of a written description.

⁵ The parties have submitted extensive argument to the court regarding whether the "external electrodes" on defendant's accused products constitute part of the termination structure. (See MSJ Order at 46-48 (discussing parties' arguments).) Thus, defendant's reference to "external electrodes" raises the possibility that defendant wishes to have the court consider the accused products in construing terminations, which would be improper. See *Vivid Techs.*, 200 F.3d at 803 ("[C]laims are construed objectively and without reference to the accused device.").

C. Prosecution History

Regarding the '547 Patent's prosecution history, the parties agree that U.S. Patent No. 5,569,880 (the "'880 Patent," also referred to as "Galvagni" in the parties' briefs), issued to Galvagni *et al.*, was addressed in the prosecution of the '547 Patent and during the IPR review process that took place during the pendency of this action. (See Pl. Mem. at 8; Def. Mem. at 22.) Defendant also notes that the '880 Patent "describes conductive pads or terminal pads located on the bottom surface, and as portions of the termination." (Def. Mem. at 22 (citing '880 Patent, Def. Ex. BZ, ECF No. 133-3, ECF pp. 340-45, at 2:64-65, 6:46-48; Randall Decl. ¶ 66.))⁶

Citing an "Examiner's Amendment" produced during the '547 Patent's initial prosecution, defendant asserts that "during the prosecution history of the '547 [P]atent, these 'bottom lands' and 'mounting lands' were eliminated from 'terminations.'" (*Id.* (citing Def. Ex. BW, ECF No. 133-3, ECF pp. 1-107, at ECF p. 86); see also *id.* at 24 (same, and asserting that "any reference to 'pads'" was also eliminated in the '547 Patent's prosecution).)

According to defendant, the Examiner's Amendment establishes that "bottom lands" and "mounting lands" cannot be

⁶ The '880 Patent is also annexed as Exhibit 4 to plaintiffs' opening claim construction brief, and is docketed at ECF No. 130-4.

part of the termination structure. (Def. Mem. at 24.) Defendant does not expressly argue "prosecution history disclaimer" in its memorandum of law. Nevertheless, the court will consider defendant as having made a prosecution history disclaimer argument. "[A] party seeking to invoke prosecution history disclaimer bears the burden of proving the existence of a 'clear and unmistakable' disclaimer that would have been evident to one skilled in the art." *Trivascular*, 812 F.3d at 1063-64 (citing *Elbex Video, Ltd. v. Sensormatic Elecs. Corp.*, 508 F.3d 1366, 1371 (Fed. Cir. 2007)). Here, defendant fails to meet its burden to show that plaintiffs clearly and unmistakably disclaimed "bottom lands" and "mounting lands" as falling within the meaning of "terminations."

As plaintiffs point out, the Examiner's Amendment replaced the term "mounting lands" with the term "portions." More specifically, the language in what is now claim 12 originally claimed "substantially L-shaped terminations located on opposite end surfaces of said device body, with **mounting lands** of said terminations **located on** a bottom surface of said device body and **with lands only** negligibly on a top surface of said device body." (Examiner's Amendment, Def. Ex. BW, ECF No. 133-3, at ECF p. 86 (the bold type added by the court indicates language subsequently deleted by the Examiner's Amendment).) Pursuant to the Examiner's Amendment, the relevant language was

rewritten as “substantially L-shaped terminations located on opposite end surfaces of said device body, with **portions** of said terminations **extending over** a bottom surface of said device body and negligibly on a top surface of said device body.” (*Id.* (emphasis added to indicate new language).)

The foregoing alterations make readily apparent that the Examiner’s Amendment actually broadened the scope of claim 12; thus, defendant’s disclaimer argument fails. Moreover, the Examiner’s Amendment indicates that the portions of the termination structure that extend over the bottom surface, and negligibly over the top surface, of the capacitor device are not limited to “lands” or “mounting lands.” Consequently, not only does defendant’s disclaimer argument find no support in the Examiner’s Amendment, the Examiner’s Amendment affirmatively weighs against defendant’s proposed construction by suggesting that defendant’s effort to limit the functions that a “termination” may serve is not consistent with the ‘547 Patent.

II. Extrinsic Evidence

Persuasive extrinsic evidence before the court weighs in favor of plaintiffs’ contention that the court need not construe “terminations” as structures that provide “electrical and mechanical connection” to the capacitor device’s “conductive patterns/electrodes.” Specifically, at his deposition,

defendant's expert, Dr. Randall, conceded that terminations need not connect to capacitors' internal electrodes.

Dr. Randall was presented with the below diagrams, which are taken from his declaration:

<p>Randall Decl., ECF No. 133-4, ECF pp. 70-137 of 260, ¶ 54</p>	<p>Randall Decl., ECF No. 133-4, ECF pp. 70-137 of 260, ¶ 56</p>

Dr. Randall admitted that the capacitor on the right, from paragraph 56 of his report, has two terminations, and also has two "floating" electrodes that do not electrically and mechanically connect to any termination. (Randall Dep., Pl. Ex. 33, ECF No. 135-2, at 593:14-594:2.) Dr. Randall's admission makes clear that terminations need not provide "electrical and mechanical connection" to internal electrodes in all capacitors. Instead, whether terminations provide electrical and/or mechanical connection to internal electrodes depends on the capacitor in question and, as discussed above, nothing in the intrinsic evidence suggests that the '547 Patent requires that terminations provide such connection.

Further, as the Federal Circuit has explained, extrinsic evidence "may not be used to vary or contradict the claim language[,] [n]or may it contradict the import of other parts of the specification." *Vitronics*, 90 F.3d at 1584 (citations omitted). As discussed above, the clear import of Table II is that plating constitutes part of the termination structure. Consequently, to the extent defendant seeks to rely on extrinsic evidence to establish that plating is not part of the termination structure, the court respectfully rejects defendant's arguments.

Moreover, defendant's extrinsic evidence is unconvincing. Defendant's claim construction brief refers and cites to numerous patents that defendant contends establish that capacitors may have a number of external conductive structures that are not terminations. (See Def. Mem. at 2-3, 16-17 (referring to, but not citing, the '791 Patent, and citing numerous other United States Patents).) For instance, defendant cites to patents that disclose external conductive structures including "resistors printed on the surface," "a conductive trace on the surface of the capacitor . . . between the third termination and the first termination," and a "top electrode." (Def. Mem. at 16-17 (citing, among others, U.S. Patent No. 9,779,874, Def. Ex. F, ECF No. 131-3, ECF pp. 38-50 of 117, at 9:67-10:56 (external printed resistors); U.S. Patent No.

9,287,844, Def. Ex. N, ECF No. 131-4, ECF pp. 1-17 of 133, Abstract and at 2:5-38, 4:38-6:37 (conductive trace on surface between first and third terminations); U.S. Patent 5,264,983, Def. Ex. P, ECF No. 131-4, ECF pp. 30-35 of 133, Abstract and at 1:60-66, 2:17-25 (top electrode).)

This line of argument ignores that the claim construction inquiry is as to the meaning of "terminations" as it is used in the '547 Patent, not as it is used in any other patent. As the Federal Circuit has explained, "[a] particular term used in one patent need not have the same meaning when used in an entirely separate patent." *Medrad, Inc. v. MRI Devices Corp.*, 401 F.3d 1313, 1318 (Fed. Cir. 2005); see *Maytag Corp. v. Whirlpool Corp.*, 95 F. Supp. 2d 888, 893 (N.D. Ill. 2000) (observing that "a patentee may choose to use the same word in different ways in different patents (part of the conventional wisdom that a patentee may be his or her own lexicographer)," but noting the use of a similar term in another patent by same patentee). Consequently, "the manner in which the term is used in the patent may dictate a definition that differs from the definition that would be given to the same term in a different patent with a different specification or prosecution history." *Medrad*, 401 F.3d at 1318 (citation omitted); see also *Young Dental Mfg. Co. v. Q3 Special Prods., Inc.*, 112 F.3d 1137, 1143 (Fed. Cir. 1997) ("The specification that is relevant to claim

construction is the specification of the patent in which the claims reside.”).

Here, as the court has discussed at length, nothing in the '547 Patent discloses the existence of any external conductive structures other than terminations. Thus, plaintiffs' proposed construction of "terminations" is not inconsistent with the '547 Patent's specification. The potential inconsistency of plaintiffs' proposed construction with other patents' specifications, which are not at issue in the instant action, does not alter this conclusion.

Defendant also cites various reference materials. These materials, however, do not indicate that the additional language that defendant proposes to include in the construction of "terminations" is necessary. None of the reference materials provides an authoritative definition of terminations. Instead, they address capacitors in a variety of contexts that are of limited relevance to the proper construction of the '547 Patent in light of its specification.

For instance, defendant asserts that its definition is drawn from a document titled *Basics of Ceramic Chip Capacitors*. (Def. Mem. at 8-9 (citing and quoting *Basics of Ceramic Chip Capacitors*, Def. Ex. AD, ECF No. 132, ECF pp. 28-42 of 377, at 4-5).) Although not expressly acknowledged by defendant, this document is a product of Johanson Dielectrics, Inc., a

California-based capacitor manufacturer, which attributes the document to "John Maxwell, Director of Product Development." (See *Basics of Ceramic Chip Capacitors* (Internet Version), available at <https://www.johansondielectrics.com/basics-of-ceramic-chip-capacitors> (last accessed Nov. 2, 2018) (containing identical information to Defense Exhibit AD and attribution to Mr. Maxwell).)

The Johanson Dielectrics document, however, is intended to provide a general overview of the capacitor manufacturing process, rather than authoritative definitions of capacitor components. (See Def. Ex. AD at 2 ("This presentation is a quick overview of ceramic chip capacitors").) Its definition of "testing," for example, includes no information about the process by which capacitors are tested, and instead states that "[t]he parts are tested and sorted to their correct capacitance tolerances. At this point the capacitor manufacturing is complete." (*Id.* at 5.) Moreover, its definition of "terminations" refers to capacitors as consisting of a single layer (*id.*), but as discussed above (and as defendant concedes), terminations can have multiple layers. Thus, even if the Johanson Dielectrics document were intended as an authoritative guide to capacitor components, the court would give its definition of "terminations" limited weight, if any,

because of its inconsistency with the terms of the '547 Patent's specification.

Defendant also cites to two articles in the American Ceramic Society Bulletin, which defendant characterizes as "[a]n industry accepted publication in the capacitor field." (Def. Mem. at 9.) The first article is David J. Malanga and B. Timothy Bassler, *Copper End Termination Materials for BME Capacitors*, The American Ceramic Society Bulletin, September 2000 ("Malanga & Bassler"), Def. Ex. AS, ECF No. 132-2, ECF pp. 14-19 of 163. The second article is Ahmet R. Selcuker and Michael A. Johnson, *Termination Sintering in Multilayer Ceramic Capacitors: Microstructural Interpretation*, The American Ceramic Society Bulletin, November 1993 ("Selcuker & Johnson"), Def. Ex. BT, ECF No. 133-1, ECF pp. 132-40 of 146.

Defendant notes that the Selcuker & Johnson article states, in relevant part, that "[t]he metal [in termination paste] is the electrically conductive material that connects the fired termination to the internal electrodes." (Def. Mem. at 9 (quoting Selcuker & Johnson at 88).) Selcuker & Johnson also state that "[t]he termination is of particular importance because it serves as a link between the internal electrodes and the circuit board; furthermore, it must hermetically seal the end of the chip." (Selcuker & Johnson at 88.) Defendant's expert, however, has conceded that terminations need not

actually connect internal electrodes to the circuit board. Thus, Selcuker & Johnson's statements about connectivity cannot be taken as categorical statements about all capacitors, and defendant provides no reason to conclude that Selcuker & Johnson's statements have any particular applicability to the '547 Capacitor.

Similarly, defendant asserts that, according to Malanga & Bassler, "the terminations are applied 'to connect to the internal electrodes.'" (Def. Mem. at 9.) In support of this assertion, defendant cites to page 75 of Malanga & Bassler, which does not exist. Even assuming for the sake of argument that Malanga & Bassler did make such a statement, however, defendant's expert has admitted that terminations need not connect to internal electrodes in all capacitors. Further, in light of Malanga & Bassler's references to "the alloying of the end termination to the electrode," and "the glass bonding of the termination to the capacitor dielectric," two processes not discussed in any way in the '547 Patent, Malanga & Bassler appear to be discussing a largely different type of termination structure. (Malanga & Bassler at 49.) Consequently, their article is of little relevance to the proper construction of terminations in the '547 Patent.

III. Summary

The court concludes that the record supports plaintiffs', and not defendant's, proposed construction of "terminations." The parties agree that "terminations" are external conductive structures; the court need only determine whether the additional requirements defendant seeks to impose are warranted. These additional requirements, however, find no support in the claim language, specification, or prosecution history. Further, defendant's own expert's deposition testimony indicates that defendant's proposed additional construction language is unwarranted, and defendant's citations to extrinsic evidence are unconvincing. Consequently, the court adopts plaintiffs' construction.

Conclusion

For the foregoing reasons, the disputed claim term "terminations," as it is recited in the '547 Patent, shall be construed as "conductive structures arranged externally on the device body." The parties are respectfully directed to confer and, within fourteen (14) days, submit a joint letter to the court stating how they intend to proceed in this action,

