United States District Court,
C.D. California.

WAVESTREAM CORPORATION, a Delaware corporation,
Plaintiff.
v.
CAP WIRELESS, INC., a California corporation,
Defendant.

No. CV 05-4254 SJO (MCx)

Nov. 13, 2006.

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ORDER GRANTING IN PART AND DENYING IN PART PLAINTIFF'S MOTION FOR SUMMARY JUDGMENT RE CLAIM CONSTRUCTION

S. JAMES OTERO**, District Judge.**

Plaintiff Wavestream Corporation ("Plaintiff" or "Wavestream") filed a Motion for Summary Judgment ("Motion") regarding claim construction, requesting the Court to define five terms in the claims. In its Opposition, Defendant CAP Wireless, Inc. ("Defendant" or "CAP Wireless") asks the Court to define four additional terms. A hearing on the Motion was held with counsel for both parties present on November 3, 2006.

The Court Clerk received a telephone call from the parties on November 9, 2006 requesting that the issuance of this Order be postponed until November 17, 2006 in order to continue settlement discussions. As the Court had already finished writing this Order, the Court DENIES this request. However, the Court will postpone issuance of its Order regarding Defendant's motion for summary judgment regarding non-infringement.

Plaintiff accuses Defendant of infringing claim 26 of U.S. Patent No. 5,736,908 (the "'908 patent") and claims 1, 3, 7, 9, 10 and 12-17 of U.S. Patent No. 5,920,240 (the "'240 patent"). These patents relate to solid-state broadband power amplifiers for amplifying microwave signals using power combining techniques. The inventors were Drs. York and Alexanian. The patents issued in 1998 and 1999 while Dr. Alexanian was a Ph.D. student studying under Dr. York at the University of California at Santa Barbara. Both patents were assigned to the Regents of the University who licensed the patent exclusively to Plaintiff.

I. *BACKGROUND*

For the benefit of readers who are not familiar with microwave power amplifier technology, an example of the technology will be briefly described.

The disputed power amplifiers are constructed with an input section, a set of slotline modules or finline modules in a middle section, and an output section. (Pl.'s Decl. Ex. A at 4.) The input and output sections are tapered. (Pl.'s Decl. Ex. D at 34.) Microwave energy enters the input section through a narrow connection and spreads out. The diffused microwave energy continues from the input section into the middle section, where it "illuminates" the slotline modules or finline modules. ('908 patent at col. 1 l.52.) The modules each simultaneously pick up a portion of the microwave energy from the air, converting the microwave energy into electrical form. ('908 patent at col. 1 ll.34-36.) The electrical energy is amplified with circuit elements located on each module, and then transmitted into the air of the middle section. ('908 patent at col. 1 ll.55-56, 60-61.) The output section gathers the amplified microwave energy, which then exits the power amplifier.

II. *LEGAL STANDARD*

A. *Motion for Summary Judgment*

The standard for granting a motion for summary judgment is set out in Rule 56(c) of the Federal Rules of Civil Procedure. It says that summary judgment will be granted if it is shown that there is no genuine issue as to any material fact, after considering the pleadings and any depositions, answers to interrogatories, admissions, or affidavits. This standard has been explained by the Supreme Court in several cases. Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 106 S.Ct. 2505, 91 L.Ed.2d 202 (1986), Matsushita Elec. Indus. Co. v. Zenith Radio, 475 U.S. 574, 106 S.Ct. 1348, 89 L.Ed.2d 538 (1986); Celotex Corp. v. Catrett, 477 U.S. 317, 106 S.Ct. 2548, 91 L.Ed.2d 265 (1986).

Whether a fact is "material" depends on the substantive law at issue in the case. If, under the governing substantive law, a fact is irrelevant or unnecessary to determining the outcome of the suit, summary judgment can be granted even if there is a genuine dispute about the fact. Anderson, 477 U.S. at 248.

A "genuine issue" of material fact means that there is sufficient evidence in favor of the non-moving party to allow a jury to return a verdict in its favor. *Id*. If the non-moving party fails to muster enough evidence to allow a jury to return a verdict in its favor, summary judgment will be granted against the non-moving party. *Id*. at 249. It is not enough for the non-moving party to produce a mere "scintilla" of evidence. *Id*. at 252. It is also not enough for the non-moving party to show that there is some "metaphysical doubt as to the material facts." Matsushita, 475 U.S. at 586. However, any inferences from the underlying facts must be viewed in light most favorable to the non-moving party. Id. at 587.

The burden is on the *non-moving party* to designate specific facts showing a genuine issue for trial. Cetotex, 477 U.S. at 322. It is not the job of the district court to "scour the record in search of a genuine issue of triable fact." Keenan v. Allan, 91 F.3d 1275, 1279 (9th Cir.1996). Neither is it the job of the moving party to prove the absence of a genuine issue of fact, even with respect to an issue on which the non-moving party bears the burden of proof. Celotex, 477 U.S. at 325. The moving party can win summary judgment simply by pointing out to the district court that there is an absence of evidence to support the non-moving party's case. *Id*. One of the principal purposes of the summary judgment rule is "to isolate and dispose of factually

unsupported claims or defenses." *Id*. at 323-24.

B. *Claim Construction*

The first step in a patent infringement analysis is for the Court to determine the meaning and scope of the patent claims at suit, a process known as "claim construction." Markman v. Westview Instruments, Inc., 52 F.3d 967, 976 (Fed.Cir.1995) (en banc), *aff'd,* 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996). Only after claim construction can the jury compare the allegedly infringing device against the claims. *Id*. This Order addresses only the first step, claim construction. A subsequent Order will address Defendant's motion for summary judgment regarding non-infringement.

The Federal Circuit recently clarified its jurisprudence on claim construction in an en banc case titled Phillips v. AWH Corp., 415 F.3d 1303, 1311-24 (Fed.Cir.2005) (en banc). The general rule is that the claims are of *primary importance* in ascertaining exactly what has been patented. Elements which are not actually in the claim should not be added to the claim through interpretation. Id. at 1312. The words in a claim are to be given their "ordinary and customary meaning." *Id*. The "ordinary and customary meaning" is the one which a person of ordinary skill in the art would have understood the words to mean at the time the patent application was filed. *Id*. at 1312-13.

The parties agreed at oral argument that Plaintiff's expert, Dr. Tatsuo Itoh, is skilled in the relevant art. Itoh is currently a professor of electrical engineering at the University of California at Los Angeles and previously was a professor of electrical engineering at other institutions. Itoh has a Ph.D. in electrical engineering from the University of Illinois at Urbana-Champaign. (Pl.'s Decl. Ex. A at 4.) Similarly, the inventors of Plaintiff's patent and the Chief Technology Officer of Defendant all have Ph.D.'s in electrical engineering. (Pl.'s Decl. Ex. D at 39.) The parties did not stipulate as to the ordinary level of skill relevant to this case, however, all of the key people in this case, for Plaintiff and Defendant, have doctorates.

A person of ordinary skill in the art-an electrical engineer in this case-could have had a well-established notion of what various words meant before reading the patent application. However, the words may have had more specific or slightly different meanings in the context of the patent application. The engineer of ordinary skill is assumed to have read the entire patent specification along with the patent claims. *Id*. Thus, the patent specification is the "primary basis" for the Court to construe the claims, *id*. at 1315, and it is entirely appropriate for a court to "rely heavily" on the specification for guidance during claim construction. *Id*. at 1317.

It is also possible that the inventors intentionally excluded some embodiments by what they wrote in the patent specification. For instance, the inventors may have said "the invention is *X*" or "the invention has *X*" or "the invention does *X*." In such a situation, the inventors will be held to their word and will not be permitted to retract what they said in the specification. Chimie v. PPG Indus., 402 F.3d 1371, 1379 (Fed.Cir.2005). That is, if the inventors have limited the scope of their invention in the specification, then what they said is "dispositive" during claim construction. Philips, 415 F.3d at 1316. Similarly, the claims should not be broadened beyond what is supported by the specification, as explained in detail below.

Philips also instructs that prosecution history, or the statements made by the inventors to the patent office, is crucial for the Court to consider in claim construction. *Id*. at 1317. At times the prosecution history may be less clear than the specification. *Id*. at 1317. Yet if the inventors made remarks to the examiner that limited the scope of their invention, the claims *must* be constructed in a narrower way which accords with their

remarks. *Id*. *See also* Amhil Enters. v. Wawa, Inc., 81 F.3d 1554, 1559-62 (Fed.Cir.1996). Indeed, the *very purpose* of consulting the prosecution history is to exclude *any* interpretation that the inventors disclaimed during prosecution. Philips, 415 F.3d at 1317.

Additionally, the Court can rely on extrinsic evidence, such as dictionaries and treatises, at any time to give context to the meaning of words. Id. at 1317-18, 1324. The Court will not rely on dictionaries or treatises for interpretations which are inconsistent with the claims, specification, or prosecution history because "there is a virtually unbounded universe of potential extrinsic evidence of some marginal relevance that can be brought to bear on any claim construction question. In the course of litigation, each party will naturally choose the pieces of extrinsic evidence most favorable to its cause." Id. at 1319-20.

III. *WORD DEFINITIONS*

The Court will define six terms: "slotline," "slotline module," "array of slotline modules," "slotline structures," "tapered slotline structures," and "plurality of devices." This last term was argued in the parties' Motion, Opposition, and Reply for Non-Infringement.

The remainder of the words are to have their ordinary English meaning. Defendant requested definitions for several other words, however, the Court will decline to define them because they are unnecessary to determine non-infringement or infringement.

A. *Slotline*

1. *Does the Word "Slotline" Embrace Finlines?*

At oral argument, Plaintiff phrased the dispute about "slotline" as a two-part question. The first question is whether the word "slotline" embraces finlines. Plaintiff asserts that a finline is essentially a slotline plus a waveguide, and therefore when a patent is infringed by a design with a slotline, necessarily the same patent is infringed by a similar design with a finline. Defendant argues that slotlines and finlines are different, therefore a mention of slotlines evinces an intent to exclude finlines from the scope of the invention. (Opp'n at 7-9.)

Plaintiff appears to have the better argument here. It is true that finlines and slotlines are different types of transmission lines. (Pl.'s Decl. Ex. H at 64.) Therefore, it is not correct to say that the words are "interchangeable." (*Cf*. Reply at 4.) However, it would also be incorrect to artificially structure the Court's definition of the term "slotline" in such a way that the definition excludes finlines. Merely because the inventors recognized that slotlines and finlines are different in the patent and prosecution history (CAP Genuine Fact 29, FN1 42 FN2) does not mean that the inventor intended to exclude finlines from the scope of the patent. It can be assumed that the inventors knew the law, and therefore knew that a patent which claims A also covers the combination A+B. Therefore, the inventors' intentional use of the term "slotline" does not show an intent to exclude finlines from the scope of the patent.

FN1. The patent examiner, in the prosecution history of the '908 patent, states that certain prior art, invented by Quine, uses finline transitions.

FN2. The background of the '240 patent also states that Quine uses finline transitions.

2. ***Is the Unqualified Word "Slotline" Limited to Unilateral Structures?***

The word "slotline" is used without qualification in the asserted claims. The second question about the meaning of the word "slotline" is whether, as Plaintiff urges, the lack of qualification means that the word is generic. For example, a claim which uses the generic word "truck" probably covers trucks of all colors, even if the exemplary embodiment described in the patent is a blue truck.

The Court, for reasons expressed below, finds that "slotline" is not used in a generic sense. The Court finds that the word "slotline," used alone without modifiers, has a conventional meaning of "unilateral slotline." The extrinsic evidence firmly supports this proposition, and there is no extrinsic evidence to the contrary. There is substantial evidence that Plaintiff acquiesced to this conventional meaning in the specification and the prosecution history. Additionally, the disclosure in the patent specification is too meager to support a definition which includes double-sided embodiments.

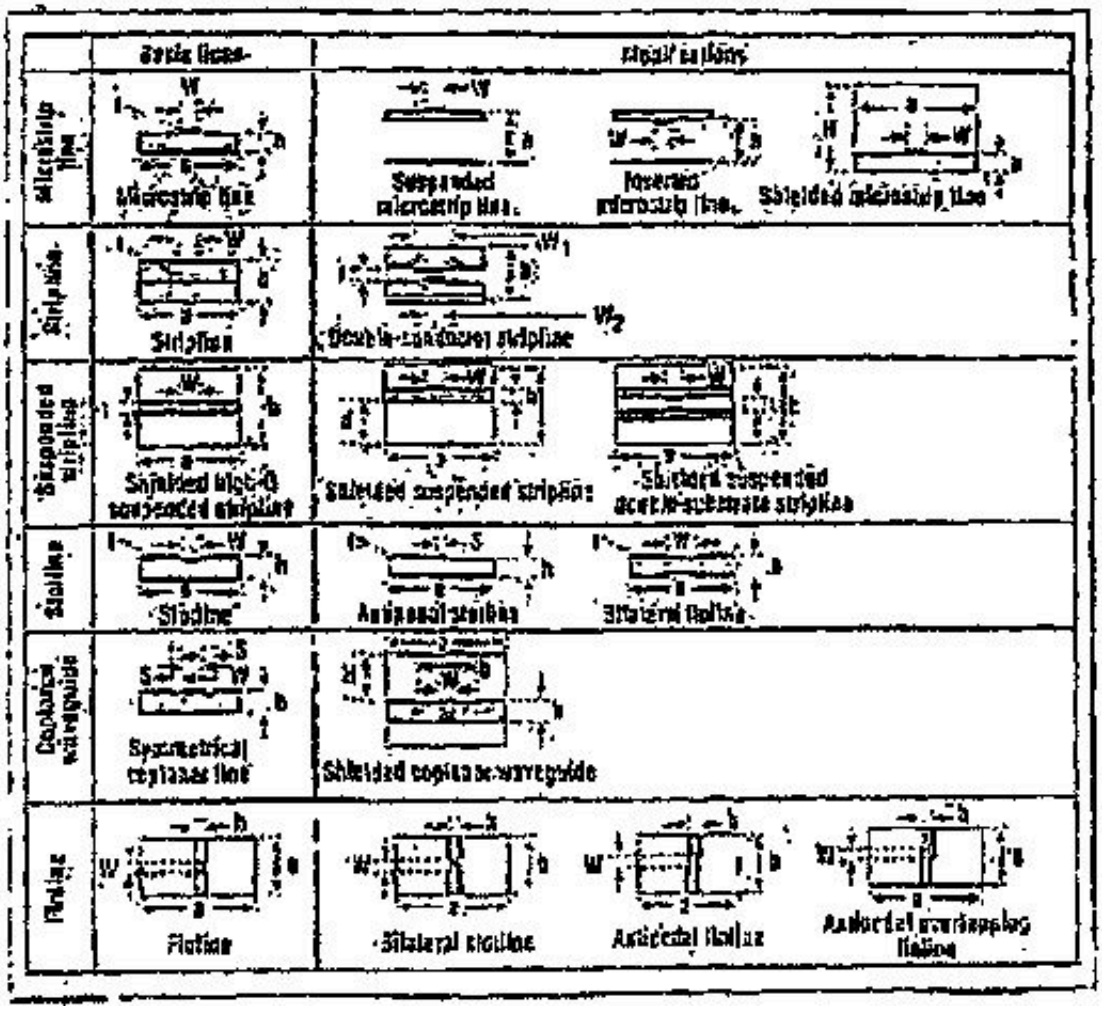
Essentially, the dispute about what "slotline" means comes down to whether the two metal conductors of a "slotline" (using the word without modifiers) can lie upon opposite sides of a substrate or if they must lie on the same side. This term appears in every asserted claim of the '908 and ' 240 patents, without modifiers. Therefore, if the term is construed in a way that excludes Defendant's products, as would appear to be the case if the Court limits "slotline" to single-sided embodiments, this case may be over. The parties recognize the importance of this term, spending a total of nineteen pages arguing the meaning of it, in addition to the arguments which spilled into Defendant's motion for summary judgment regarding non-infringement and this Motion's Statement of Genuine Issues.

First, some preliminary terminology. A "slotline" includes two, or possibly four, in the case of a bilateral slotline, electrical conductors located somewhere on an electrically non-conducting substrate (in layman's terms, a thin, flat board). (Where, exactly, on the substrate is the question to be answered by defining "slotline.") The conductors can be made of metal, as metal conducts electricity, while the substrate can be made of an electrical non-conductor like ceramic or Teflon. The '908 patent, column 4 lines 64-67, suggests a particular type of ceramic, aluminum nitride, because it conducts heat well, which facilitates cooling the device. Plaintiff's Exhibit C at page 31 recommends "microfiber-reinforced PTFE," or polytetrafluoroethylene, which is generally known to the public as Teflon.

If both conductors are on the same side of the substrate, this will be referred to in this Order as a "one-sided" structure. Because the substrate is flat, the conductors lie in the same plane, and thus a one-sided structure can also be called a "coplanar" or "planar" structure. If one conductor is on each side of the substrate, then this will be called a "two-sided" structure. A two-sided structure is not coplanar and not planar. "One-sided" and "two-sided" are not intended to be synonymous with "unilateral" and "bilateral," as the word "bilateral" excludes antipodal structures, as illustrated in the table below. There is an ambiguity with the term "coplanar," as at least one author uses the word with reference to a bilateral structure, which is two-sided. (Pl.'s Ex. F at col. 21.4.) Thus, the Court must use its own terminology "one-sided" and "two-sided" in this opinion for clarity.

The following illustration, from page 64 of Plaintiff's Exhibit H, shows cross sections of various types of slotlines and finlines. Examples of two-sided structures include "bilateral" slotlines and "antipodal" slotlines, and "bilateral" finlines,"antipodal" finlines, and "antipodal overlapping" finlines. (There appears to be a typographical error, in that the labels "bilateral finline" and "bilateral slotline" are switched in the

illustration.) The key point here is that the unilateral finline and unilateral slotline are simply labeled "finline" and "slotline" in the chart. As will be established by the extrinsic evidence, this is the standard usage of the terms "finline" and "slotline" by a person of ordinary skill in the art.



Plaintiff argues that a "slotline" is "a substantially planar transmission structure for transmitting electromagnetic waves, wherein the structure is comprised of two conducting fins separated by a spatial gap." If the "conducting fins" are on opposite sides of a substrate, then the structure is not planar, and if the "conducting fins" are on the same side of a substrate, then the structure is planar. In essence, Plaintiff contends that the term "substantially planar" embraces both planar structures and non-planar structures. Plaintiff offers this definition so that it can later argue that the two conductors, or "conducting fins," can either be on opposite sides of a substrate or on the same side of a substrate (Mot. at 11), so long as the fins are separated by "a spatial gap."

Defendant provides a very different definition for the word "slotline." Defendant argues that a "slotline" is "a specific type of planar transmission line formed between two metalizations on one side of a non-electrically conducting substrate, with the other side of the substrate bare." That is, Defendant offers a definition where the two "metalizations" must be on the same side of a substrate.

The first order of business is to determine whether the inventors have limited the scope of their invention to single-sided embodiments by what they wrote in and how they wrote the patent claims and specifications. To reformulate the proposition, the question is whether the inventors limited their invention to single-sided structures by using the word "slotline" without modifiers. For reasons articulated below, the Court concludes that they have.

a. ***Intrinsic Evidence: Claims, Specifications, Drawings***

Philips requires that the Court primarily rely on the intrinsic evidence (the claims, drawings, specifications, and prosecution history) in determining the meaning of the word "slotline." Even without any extrinsic evidence, the Court would conclude that "slotline," as used in the claims, includes only single-sided embodiments.

b. ***Claims Fail to Suggest What "Slotline" Means***

The claims themselves fail to suggest what the word "slotline" means. The word is never qualified or defined in the claims. No meaning for the word is indirectly suggested through the 28 doctrine of claim differentiation, as every single claim in the two patents uses the word "slotline." (Claim differentiation is the presumption that no two claims have the same scope. Therefore, if two claims were similar, but one used the term "slotline" and the other used a different term, it could be inferred that "slotline" and the other term had different meanings in the context of the patent.) Therefore, the Court relies on the drawings and specifications of the two patents.

c. ***Single-Sided Embodiments, and Only Single-Sided Embodiments, Are Described in the Patents as the "Invention."***

Plaintiff concedes that the drawings of both patents illustrate only one-sided slotlines. (Mot. at 9.) Even the alternative embodiments depicted in figures 7 and 8 of the '908 patent show only single-sided slotlines. Courts as a general rule are forbidden to add limitations based on the illustrated embodiments. However, in the '908 and '240 patents, the inventors specifically refer to the "invention."

Although Plaintiff asserts that the inventors never limited the term "slotline" to single-sided slotlines, the Court finds that they have at least suggested the limitation expressly and they may be held to have excluded two-sided embodiments by what they wrote in the specification. In both patents' Brief Description of the Drawings, the inventors several times use the word "invention" in reference to the drawings, i.e., saying that the embodiments in the drawings *are* the invention and not merely exemplary embodiments of the invention. The law is that inventors who say what the invention is will be held to their word and they will not be permitted to retract what they said in the specification. Chimie v. PPG Indus., 402 F.3d 1371, 1379 (Fed.Cir.2005); SciMed Life Sys. Inc. v. Adv. Cardiovascular Sys. Inc., 242 F.3d 1337, 1343 (Fed.Cir.2001). If the inventors narrowed the scope of the invention, that is "dispositive" during claim construction. Philips, 415 F.3d at 1316.

At the end of the specifications, the inventors include boilerplate which says:

Many alterations and modifications may be made by those having ordinary skill in the art without departing from the spirit and scope of the invention. Therefore, it must be understood that the illustrated embodiment has been set forth only for the purposes of example and that it should not be taken as limiting the invention

as defined by the following claims.

('908 patent at col. 6 ll.38-44; '240 patent at col. 7 ll.1-7.) This boilerplate is merely a statement of the law of claim construction. It is certainly true, as the boilerplate states, that claims are not to be limited to illustrated embodiments. That said, if the inventors expressly say in the specification what the invention is, they will be held to their word.

The specifications of the two patents describe single-sided slotlines in several instances, (Mot. at 9; FN3 CAP Genuine Fact 51,FN4 56 FN5) but never any other kind of transmission line. This was confirmed at oral argument and can be demonstrated by an electronic search of the patents.

FN3. As stated above, Plaintiff acknowledges that none of the patent illustrations show a two-sided slotline.

FN4. No. 51 refers to figure 3 of the '240 patent which depicts a single-sided slotline.

FN5. No. 56 refers to the '240 patent, column 5, lines 41-42 which describes an embodiment where metalizations are formed on *one side* of a substrate.

d. "*Slotline*" *Used Consistently in Single-Sided Sense of Word in Specification*

Plaintiff relies on Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1186-87 (Fed.Cir.1998) to argue that snippets of language describing the preferred embodiment should not be read into the claims. But it is not picking snippets from descriptions of the preferred embodiment when the Court recognizes that the inventors consistently use the unadorned word "slotline" to describe single-sided slotlines rather than other kinds of structures. Rather, it is reading the language of the patents, as written by the inventors, in a consistent fashion. The Court's inference that the meaning of "slotline" is a one-sided structure is not extrapolated from a set of illustrations, but rather is deduced from all the intrinsic evidence including distinctions made by the inventors in their choice of language. *See* Nystrom v. TREX Co., 424 F.3d 1136, 1144 (Fed.Cir.2005) (consistency of language in specification is basis for claim construction).

The facts of *Nystrom* are very similar to those of this case. *Nystrom* concerned a patent on boards used for outdoor decking. The boards were designed to fit together to form a comfortable surface for walking upon and to effectively shed rainwater. *Id*. at 1140. The issue in *Nystrom* was whether the term "board" was limited to conventional wood boards cut from a log. *Id*. at 1142. (The alternative would be some sort of manufactured board, e.g., pressed together from plastic and wood fiber. *Id*. at 1140. Such manufactured boards were well known to anyone in the decking business.) As in the present case, the patentee in *Nystrom* argued that it was error for the district court to rely on statements in the specification and prosecution history to limit the claim because there was no clear avowal of claim scope. *Id*. at 1142. Unfortunately for the patentee in *Nystrom,* and similarly to the present case, the specification and prosecution history were entirely consistent with the notion that the patent was limited to boards cut from a log. *Id*. at 1144-45. Because there was no notice in the intrinsic record to support a broader meaning of "board," the patentee was not entitled to the broader meaning. *Id*. at 1145.

There is an additional fact about *Nystrom* which is notable for this case. The Federal Circuit issued a

different opinion coming to the opposite conclusion in *Nystrom* before *Philips* came down, which was subsequently withdrawn in favor of the opinion cited above. Nystrom v. Trex Co., 374 F.3d 1105, 1110-11 (Fed.Cir.2004). In this earlier opinion, the Federal Circuit had no trouble finding a broad definition for "board" given that there was no clear disavowal of claim scope in the patent or prosecution history. Thus, one lesson for district courts is that after *Philips,* it is not necessary to find clear disavowal of claim scope in order to define the claims' words narrowly. (However, as stated above, it appears that the inventors did limit the scope of the patent by describing the single-sided embodiments as the "Invention.") A comparison of the two *Nystrom* opinions shows that Plaintiff's argument, which relies heavily on extrinsic evidence to support a broader definition of "slotline," is simply not viable after *Phillips*. (The Court finds, moreover, that the extrinsic evidence offered by Plaintiff cuts against Plaintiff's position, not for it, as explained below.)

The patents have boilerplate "that the illustrated embodiment has been set forth only for the purposes of example and that it should not be taken as limiting the invention." ('908 patent at col. 6 ll.41-43; '240 patent at col. 7 ll.4-6.) It is unavailing. This statement adds nothing to what has been set out in the specifications. The law is that the claim terms must be used as they would be understood by a person of ordinary skill in the art reading the patent application. This boilerplate does not describe variations of slotlines or transmission structures or otherwise give any information to a person of skill in the art which would change the person's understanding.

e. ***Sinqle-Sidedness Is the One Characteristic Which the Inventors Did Not Describe with Flexibility.***

At oral argument, counsel for Plaintiff urged that "there's no reason to pick out the one characteristic that CAP Wireless wants the Court to pick out-which is the characteristic of whether in this particular embodiment, the metalization is on one side or the other. There's no reason to pick that out over any other characteristic that's described in the preferred embodiment." (Hearing at 50 ll.15-20.)

There are several reasons to focus on sidedness. One is that sidedness is essentially the one characteristic which the inventors did not describe in a flexible manner. As counsel for Plaintiff said at oral argument:

And in the paragraph that first described the specific embodiment in Column 3 beginning at line 4 of the '240 patent, it's clear there are a number of variations even to this embodiment: The number of cards can vary; the angle at which they can be disposed with respect to one another can vary; the size of the combiner can vary; the size of the cards themselves can vary. That's what the patent says.

(Hearing at 48 ll.13-20) Another is explained below in reference to the extrinsic evidence: The standard meaning of "slotline" implies a single-sided embodiment, while the standard meaning of "slotline" does not have any implication as to the size of the card, etc.

f. ***The Claims Should Be Interpreted to Preserve Validity.***

Regardless, there is a long established rule that claims should be interpreted in a way that preserves their validity, if it is possible to do so consistently with the language chosen by the inventors. Klein v. Russell, 19 Wall. 433, 86 U.S. 433, 466, 22 L.Ed. 116 (1873). If the term "slotline" were to encompass double-sided structures, then the claims would be invalid for lack of written description and lack of enablement. Therefore, the term "slotline" does not encompass double-sided structures. Although this issue was not briefed, it was discussed by counsel for both parties at oral argument.

The seminal case for the written description requirement is Gentry Gallery, Inc. v. Berkline Corp., 134 F.3d

1473, 1479 (Fed.Cir.1998). The written description requirement mandates that inventors provide enough detail in their patent applications to show at the time of filing the patent applications, they actually had in mind what is later purported to be their invention. In the '908 and '240 patents, there is simply no evidence that, at the time of filing, the inventors considered double-sided structures to be within the scope of the invention. Plaintiff itself admits that not one of the drawings shows a double-sided embodiment, and nowhere in the written description did the inventors even acknowledge the possibility that a double-sided embodiment would work. Therefore, the term "slotline," standing alone, cannot be read broadly to encompass double-sided structures.

Plaintiff's argument with respect to written description is that the term "slotline" is used without qualification in the patent, and therefore a person of ordinary skill in the art who reads the patent would understand that the term "slotline" is used genetically to include all kinds of slotlines. (Hearing at 55 l.20 to 56 l.7.)

As explained below, however, the extrinsic evidence shows that the term "slotline" has an implied meaning of being a one-sided structure, which means that a person of ordinary skill would not understand that the term "slotline" is used generically in the patent. Nowhere did the inventors use the term "slotline" in an explicitly generic sense, saying for instance that any kind of slotline would work.

Lastly, even if the inventors did use the term slotline generically, the various types of slotlines are not freely interchangeable like Legos. The extrinsic evidence shows that the various types of transmission lines all have different characteristics, for example as said on page 65 of Plaintiff's Exhibit H. As counsel for Defendant pointed out at oral argument, the inventors of the patents at issue were unable to build a working embodiment, and it was only due to the Ph.D. thesis work of Pengcheng Jia, the Chief Technology Officer of Defendant, that a working implementation resulted. (Hearing at 63 ll.3-24.) That the successful reduction to practice required a variation on what was disclosed in the patent tends to show that the variation was not disclosed by the written description of the patent.

The extrinsic evidence, described in detail below, shows that there is no standard list of slotline variations. Because there is no standard list of slotline variations, a person of ordinary skill in the art who reads the patents at issue cannot be certain that the inventors had in mind any particular slotline variation, let alone every variation on the basic slotline. Plaintiff's Exhibit H at page 64 lists two variations on the basic slotline: the antipodal slotline and the bilateral slotline. Plaintiff's Exhibit F at column 1, line 65 to column 2, line 6 lists five: sandwiched coplanar slotlines, coplanar thick metal slotlines, bilateral slotlines, antipodal stotlines, and sandwiched antipodal slotlines.

Beyond that, the inventors did not describe *how* a double-sided embodiment would work. Inventors are required to show "the manner and process of making and using [the invention], in such full, clear, concise, and exact terms as to enable any person skilled in the art ... to make and use the [the invention]." 35 U.S.C. s. 112. This enablement requirement is logically distinct from the written description requirement. Cynthia M. Lambert, *Gentry Gallery and the Written Description Requirement,* 7 B.U.J. SCI. & TECH. L. 109, 131 (2001). The evidence shows that the disclosure in the two patents would be insufficient to analyze double-sided embodiments, and in particular antipodal double-sided embodiments. For example, the equation for the shape of the metalizations in the patents does not account for double-sided embodiments. ('908 patent at col. 5 l.22.) This deficiency may be material. From what Plaintiff has submitted to the Court, it appears that techniques for analyzing single-sided embodiments do not necessarily work for analyzing double-sided embodiments, including antipodal finlines. Plaintiff's Exhibit C is an excerpt from a textbook, titled

Analysis, Design, and Application of Finlines, which states that the method of Conn, the inventor of the slotline, for analyzing the basic slotline can be extended to analyze several types of finlines but *not* antipodal finlines, which is the technology of the accused infringer. (Pl.'s Decl. Ex. C at 33.)

Plaintiff's argument with respect to enablement is that the various types of transmission lines were well-known to one of skill in the art at the time the patent applications were filed. Counsel asserted at oral argument that the structures could be interchanged. "In fact, that's essentially what CAP Wireless's product is. It's essentially taking this invention and putting the antipodal slotline or finline structure in where, in the patent, it simply calls for a slotline, and in the embodiment, it does depict a one-sided slotline ." (Hearing at 55 ll.12-17.) At oral argument, counsel cited to references which describe the use of an antipodal finline in situations similar to those of the patents at issue.

However, the complexity of the technology cannot be waved away. The patents say nothing about how an appropriate antipodal finline would be designed to operate with the invention. The references state that a unilateral slotline and an antipodal finline have vastly different characteristics, for example on page 65 of Plaintiff's Exhibit H. Therefore, the mere fact that a reference might suggest that an antipodal finline works in situations similar to those of the patent at issue does not overcome the problem that nowhere in the patent does it explain how to make and use a variation of the invention which uses an antipodal finline. There are infinite 10 variations on the various types of transmission lines. As stated above, the types of transmission lines cannot be interchanged like Legos. The Court notes that all of the personnel in this infringement action have doctorates in electrical engineering: the two professors listed as the inventors on the patent, the experts for the respective parties, and Pengcheng Jia, the Chief Technology Officer of Defendant. The fact, mentioned by counsel for Defendant (Hearing at 63 ll.3-24), that the highly skilled original inventors were unable to reduce their invention to practice suggests that the information disclosed in the patent is insufficient to make and use a variation of the invention using antipodal finlines. (It could also mean that the information is insufficient to practice the invention itself, rendering the patents invalid, but the validity of the patent is not an issue before the Court at this time.)

Plaintiff also distinguishes Wang Laboratories, Inc. v. America Online, Inc., 197 F.3d 1377, 1380 (Fed.Cir.1999), but the Court has not relied on this case in any respect.

g. ***The Prosecution History Supports the Conclusion that the Term "Slotline," Used Alone Without Modifiers, Exclusively Means Single-Sided Structures.***

The prosecution history also supports the conclusion that the term "slotline," used alone without modifiers, as used in the '908 and '240 patents, exclusively means single-sided structures. The examiner rejected claims 1-3, 5, 6, 9, 11, 13-16, and 18-25 of the '908 patent, asserting that the "slotline modules" and "tapered slot transitions" were anticipated, being found in Figure 15 of an older patent by Toshiyuki Saito, U.S. Patent No. 4,588,962 (the "'962 patent"). (Def.'s Decl. Ex. I at 110.) Figure 15 of Saito's '962 patent shows only one-sided embodiments. (Def.'s Decl. Ex. Q at 184.) In the response to the rejection, the inventors did not contest the examiner's characterization of the one-sided embodiment depicted in Figure 15 as a "slotline." Rather, the inventors confirmed that "slotline" is the appropriate word to use. (Def.'s Decl. Ex. I at 128-29.)

h. ***Defendant's "Upon" Argument Not Relied upon by the Court***

The Defendant points to several instances of the word "upon" in the patents, suggesting that the word "upon" should be read in its older sense of "atop" rather than "on." (Opp'n at 3.) *See also Oxford English Dictionary,* 2d ed., definition of "upon" (1989). If the word "upon" meant "atop" (e.g., "the bunny lay upon

(atop) the table," not "writing was upon (on) both sides of the foolscap"), then the structure would necessarily lie entirely on one side of the substrate. The Court, however, does not have to decide this patent suit based on the meaning of a preposition. *Compare* Athletic Alternatives, inc. v. Prince Mfg., Inc., 73 F.3d 1573, 1579-82 (Fed.Cir.1996) (determining the meaning of "between"). The remainder of the intrinsic evidence is sufficient to rule on the meaning of "slotline."

i. ***Extrinsic Evidence: Scholarly Articles and Treatises***

Plaintiff relies entirely on extrinsic evidence to show that the word "slotline" embraces double-sided embodiments. This extrinsic evidence is not favorable for Plaintiff, aside from Exhibit A which the Court finds unpersuasive. The Court finds that the remainder of the extrinsic evidence, though supplied by the Plaintiff, supports the conclusion that the word "slotline," when it appears by itself, means a one-sided structure.

The Court is not persuaded by Plaintiff's Exhibit A, the expert report of Tatsuo Itoh. In this report, Itoh provides an expansive definition of "slotline" which includes all types of finlines. However, the main issue is not whether the term "slotline" in some philosophical sense embraces all types of finlines. Rather, the main issue is whether a person of ordinary skill in the art would understand the word "slotline," *as used in the patent,* to embrace double-sided embodiments. Itoh is silent on this issue. Moreover, the Court uses expert reports during claim construction only to 28 ensure that the Court has properly understood the technology at suit. Philips, 415 F.3d at 1318.

The next exhibit is an excerpt from a textbook, titled *Microstrip Lines and Slotlines*. Plaintiff's Exhibit B is very careful to distinguish between slotlines and finlines, listing numerous advantages of finlines over slotlines. (Pl.'s Decl. Ex. B at 23.) While Exhibit B describes a relationship between slotline technology and finline technology, Exhibit B does not use the terms interchangeably. The chapter on slotlines states that the "basic slotline configuration ... consists of a dielectric substrate with a narrow slot etched in the metalization on *one side of the substrate*." (Pl.'s Decl. Ex. B at 21.) That is, Exhibit B implies that the term "slotline," unless qualified by words like "antipodal" or "bilateral," means a one-sided structure.

Plaintiff asserts that Exhibit B subsumes finlines within slotlines, in order to argue that the word "slotline" standing alone includes all types of finlines. But this is not correct. As all of the exhibits show, the word "slotline" standing alone has a specific meaning of a one-sided structure. Moreover, the Court is not persuaded that the author of Exhibit B sweeps finlines into the term I "slotlines." The chapter on finlines mentions slotlines once, saying, "The basic finline can be considered as a shielded slotline, with the slotline mounted in the E-plane of a rectangular waveguide." (Pl.'s Decl. Ex. B at 23.) The author of Exhibit B offers this explanation to assist the reader in conceptualizing finlines, but does not suggest the terms are interchangeable. Two sentences later, Exhibit B also says, "The structures shown may also be regarded as printed versions of a ridged waveguide." *Id*. That is, Exhibit B says that a finline is something like a hybrid between a slotline (in layman's terms, a board) and a waveguide (in layman's terms, a tube). Exhibit B does not say that a slotline is a special case of a finline or vice-versa. This point is academic, however, because the Court has already determined that it will not artificially limit the term "slotline" to prevent infringement by a finline.

Exhibit C is another textbook, titled *Analysis, Design, and Applications of Finlines*. Exhibit C is similarly careful to distinguish between slotlines and finlines. It appears that the only time Exhibit C uses the word "slotline" is in reference to Cohn's original work. (Pl.'s Decl. Ex. C at 33.) Exhibit C notes that Cohn's work

can be extended to apply to some basic kinds of finlines but not to antipodal finlines, which are the alleged infringer's technology. *Id.*

Plaintiff's Exhibit D is a student paper, submitted for publication in 2000 and printed in 2002, co-authored by Pengcheng Jia, who is now CAP Wireless's Chief Technology Officer. Notably, Exhibit D was also co-authored by another student, Lee-Yin Chen, as well as the two inventors of the '908 and '240 patents, Angelos Alexanian and Robert A. York. The two student authors were Ph.D. candidates at the time of publication. (Pl.'s Decl. Ex. D at 39.) Angelos Alexanian had previously completed his Ph.D. and it is unclear whether he was actively involved with the writing of the paper. Id. The last author, Robert A. York, was the supervising professor at the time of the publication, and so it is reasonable to conclude that he had the final word on how the paper was written. Id. Thus, it was one or both of the inventors of the '908 and ' 240 patents who had the final word on how the paper was written, not Defendant's Chief Technology Officer.

Plaintiff alleges that Jia used the words "slotline" and "finline" interchangeably in the paper. As far as the Court can determine, the co-authors and Jia used the word "slotline" in a loose sense to refer to one component of a finline, and contrary to what Plaintiff asserts, did not use the words interchangeably. (*Cf.* Pl.'s Decl. Ex. B at 23.) As stated above, this argument is moot because the Court has already determined that it will not artificially limit the term "slotline" to prevent infringement by a finline.

Moreover, Exhibit D only discusses slot transmission lines on a single side of a substrate. (Pl.'s Decl. Ex. D at 34-36, figs.1-2, 6.) Thus, the paper is perfectly consistent with the proposition that the term "slotline," when not prefixed by a modifying adjective, means a coplanar structure.

In any event, one student paper is of minimal relevance in determining how an engineer of ordinary skill would have understood the word "slotline" in the patent application at the time of filing. It is likewise of minimal relevance what the alleged infringer may have believed at the time of filing. If Exhibit D were offered as an admission, it would be disingenuous to do so, as it was not Defendant's Chief Technology Officer who had the final word in how the paper was written, but Plaintiff's inventors.

Plaintiff's Exhibit E is U.S. Patent No. 4,661,997 (the "'997 patent"), issued in 1987, which 28 claims a device which mixes microwave signals. It uses a finline construction. (Pl.'s Decl. Ex. E at 40.) Defendant is incorrect in asserting that Exhibit E does not use the word "slotline" at all, however the author of Exhibit E is careful not to use "slotline" in an unqualified way to refer to double-sided embodiments, having non-coplanar metalizations. (*See* Pl.'s Decl. Ex. E at fig. 2A, col. 6 ll.18-19, col. 6 ll.32-35, col. 6 ll.48-54.) Plaintiff is correct in pointing out that the author of Exhibit E uses the term "coplanar" to refer to single-sided slotlines, e.g., at column 6, line 18. (Hearing at 61 ll.6-16.) Plaintiff urges that no inference can be drawn from the fact that in Exhibit E, the terms "slot" and "slotline" are always qualified by "coplanar" or "non-coplanar" unless otherwise clear from the context. (Hearing at 6 ll.14-16.) The Court draws the inference, however, that the author of Exhibit E believes that if the term "slotline" is to refer to both single-sided and double-sided embodiments within the same writing, the word must be qualified to avoid confusing the reader.

Plaintiff's Exhibit F is U.S. Patent No. 5,949,382, issued in 1999, which describes an antipodal notch radiator element for use in radar systems. (Pl.'s Decl. Ex. F at col. 1 ll.9-11, col. 3 ll.15-17 .) What is notable about Exhibit F is that while the word "slotline" appears frequently, it is always qualified to explain to the reader precisely what sort of slotline is meant. In particular, the invention is directed to an "antipodal

slotline," and this is the phrase that always appears when describing embodiments of the invention. More importantly, Exhibit F actually states that slotlines are conventionally coplanar. (Pl.'s Decl. Ex. F at col. 1, ll.66-67.)

Plaintiff believes that the list of slotline variations disclosed in Exhibit F shows that a person of ordinary skill in the art would recognize conventional slotlines, sandwiched coplanar slotlines, coplanar thick metal slotlines, bilateral slotlines, antipodal slotlines, and sandwiched antipodal slotlines all as being types of slotlines. (Hearing at 61 l.24 to 62 l.7.) The Court disagrees. Because this list substantially differs from other lists of slotline variations, such as that on page 64 of Exhibit H, Exhibit F actually shows that the person of ordinary skill in the art would *not* recognize any particular list of slotline variations as being applicable in any situation where the word "slotline" appears. This point is elaborated upon in the part of the Order above discussing the "written description" of the patents at issue.

Plaintiff's Exhibit G is a 1992 paper, titled "Spectral Domain Analysis of Dispersion in Antipodal Slotline," written by authors at the University of Queensland and presented at a conference in Australia. This exhibit exemplifies the Federal Circuit's concern that "there is a virtually unbounded universe of potential extrinsic evidence of some marginal relevance that can be brought to bear on any claim construction question." Philips, 415 F.3d at 1319-20. It is not at all clear what relevance this three-page paper from an Australian conference has to the litigation. Moreover, Defendant's characterization of the paper appears to be totally correct. (Opp'n at 13.) Insofar as the Court can determine, this paper uses the word "slotline" three times, but never without the modifier "antipodal." Thus, this paper supports the claim made in Exhibit F that 10 slotlines are conventionally single-sided, and thus the word "slotline" standing alone does not include within its scope an antipodal structure.

Plaintiff's Exhibit H is an article published in 2000, titled "Reviewing the Basics of Microstrip Lines." This exhibit is yet another piece of evidence which shows that the term "slotline," standing alone, means "one-sided slotline." (Pl.'s Decl. Ex. H at fig. 1.) Exhibit H has a table listing all the various printed transmission lines (microstrip lines, striplines, suspended striplines, slotlines, coplanar waveguides, and finlines), and what those terms mean standing alone. This table also shows variations of the terms. *This table clearly shows that the term "slotline" must be prefixed with "antipodal" to refer to an antipodal structure.*

Thus, the exhibits supplied by the Plaintiff also confirm that an engineer of ordinary skill who read the patents at suit would understand the word "slotline" to mean a coplanar structure. In the patents at suit, the word "slotline" is never modified by "bilateral" or "antipodal," either in the claims or in the specification. The patents also fail to describe bilateral or antipodal structures in other ways, such as in prose. Thus, an engineer of ordinary skill would read the word "slotline" in the patents to mean a one-sided structure.

3. *Complete Definition*

Regarding the remainder of the definition, the Court determines that the slotline, in the scope of these two patents, has "metalizations," not "fins." The two patents are consistent in referring to "metalizations," not "fins." In fact, the inventors only refer to "fins" in one place, and that is in the background section, characterizing the Quine and Saito prior art. ('240 patent, cols. 1-2.)

The Court is hesitant to adopt Defendant's definition, because while the evidence shows that the term "slotline," when used without a modifier, means a one-sided embodiment, there has been tittle evidence to show that the other side of the substrate is necessarily bare, other than the very old quotation in Plaintiff's

Exhibit L. This exhibit is an article published in 1969 by the inventor of slotlines, Seymour B. Conn, describing slotlines for the first time. It is titled, "Slot Line on a Dielectric Surface." The first sentence of the abstract states, "Slot line consists of a narrow gap in a conductive coating on one side of a dielectric substrate, the other side of the substrate being bare." (Pl.'s Decl. Ex. L at 127.) This article, authored thirty years prior to the subject inventions by an engineer of extraordinary skill, is of little relevance to determining how a person of ordinary skill in the art would have interpreted the word "slotline" at the time the patents at suit were applied for. The Plaintiff did not directly offer Exhibit L for the meaning of the word "slotline."

Thus, the Court construes the meaning of the word "slotline," in the context of the patents at suit, as: "a planar transmission structure formed between exactly two metalizations on one side of a non-electrically conducting substrate."

B. ***Slotline Module***

If the inventors made remarks to the examiner that limited the scope of their invention, the claims *must* be constructed in a narrower way which accords with their remarks. Philips, 415 F.3d at 1317. *See also* Amhil Enters. v. Wawa, Inc., 81 F.3d 1554, 1559-62 (Fed.Cir.1996). Indeed, the *very purpose* of consulting the prosecution history is to exclude any interpretation that the inventors disclaimed during prosecution. Philips, 415 F.3d at 1317.

During patent prosecution, the inventors described what a "slotline module" is, in their successful efforts at overcoming the Saito prior art:

The claims as originally filed did not clearly delineate the fact that the claimed 'array' is actually two-dimensional, that is an array of arrays. The instant amendments have corrected this oversight. The invention is now described as a two-dimensional array comprised of a row of slotline modules each of which forms a column of at least two circuit elements.

(Def.'s Decl. Ex. I at 129.) The inventors then amended the independent claims of the '908 patent, with one exception, to now explicitly say that each slotline module forms a column of at least two circuit elements. The exception is claim 26, the only claim from the '908 patent which has been asserted in this suit. Claim 26, which had been allowed before the office action response quoted above, does not say that each slotline module forms a column of at least two circuit elements. However, every word of what the inventors said to the examiner will be held against them. As Defendant points out, "arguments made during prosecution regarding the meaning of a claim term are relevant to the interpretation of that term in every claim of the patent absent a clear indication to the contrary." Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1579 (Fed.Cir.1995). Here, rather than giving a "clear indication to the contrary," the inventors actually said that the original formulation of the claim was an "oversight." Additionally, the inventors referred to "the invention," meaning all the claims," having a two dimensional array, rather than enumerating specific claims.

A limitation that the elements are mounted on the same side of the substrate is inherent in the word "column." The word "column" implies that one circuit element lies above another. If two circuit elements were on opposite sides of the substrate, then one element would not lie above another, but would be somewhat off to the side of the other, and thus not form a column.

The language of claim 26 will be interpreted to match the quote above. To this end, the Court adopts Defendant's definition, which is that a "slotline module" is "a component in which the primary type of transmission path is a slotline and any additional elements in the module are mounted on the same side of the substrate as the slotline and where each slotline module forms a column of at least two circuit elements."

The claim language is consistent with this interpretation. Although the claim language frequently uses the drafting device "at least one circuit element," as the inventor stated, this language was an "oversight." The inventors told the examiner that "the invention" has at least two circuit elements on each slotline module, and two is "at least one." It would be like drafting a claim for a barbell as "a structure comprising a rod and at least one weight, the rod having two ends, and each end of the rod being joined to a corresponding weight." Although the barbell claim states that the structure has "at least one weight," the remainder of the claim makes clear that any claimed embodiment would have at least two weights. Because two is "at least one," there Is no inconsistency with the claim language.

In fact, however, the language of claim 26 suggests that there are at least two circuit elements on each slotline module. Although the disclaimer to the patent office is dispositive, Philips, 415 F.3d at 1317, it is not necessary to rely wholly on the prosecution history. The third paragraph reads as follows:

an output disposed in said output illumination field wherein a plurality of outputs from said array of slotline modules are combined, wherein each said slotline module of said array comprises a pair of tapered slot transitions arranged and configured for signal matching between said source, each said slotline module, and said output, and coupling at least one circuit element to said source and at least one circuit element to said output.

('908 patent at claim 26 para. 3.) This third paragraph of claim 26 first recites "an output disposed in said output illumination field" and states that the outputs from several slotline modules are combined to produce one larger output. The remainder of the paragraph, having discussed the output, returns to discussing the slotline modules, which had been the topic of the second paragraph of claim 26.

The latter part of the third paragraph first states that each slotline module "comprises" a pair of tapered slot transitions having certain characteristics. Among them, the pair of tapered slot transitions is "configured for ... coupling at least one circuit element to said source and at least one circuit element to said output." The claim does *not* say that the pair is configured to couple a circuit element to the source and the *same* element to the output. A second way to read this language is that it recites that the pair couples one circuit element to the source and an entirely different circuit element to the output. That is, the claim can be read so that there is at least two circuit elements on each slotline module. This interpretation is consistent with the preferred embodiment. *See* Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583 (Fed.Cir.1996) (interpretations which are inconsistent with the preferred embodiment are generally incorrect).

Thus, although the second paragraph recites "at least one circuit element," by no means does the claim necessarily cover embodiments having only one circuit element on a slotline module. The phrase "at least one circuit element," as in the barbell example above, does not mean that the meaning of "slotline module" must necessarily encompass implementations having only one circuit element.

C. *Array of Slotline Modules*

Unlike the previous terms at issue, "array" is a term which the Court has encountered before. The plain

English meaning of "array" is an arrangement into rows and columns, *Oxford English Dictionary,* 2d ed., definition of "array" (1989). More generally, an array can be one-dimensional (i.e., a row or a column), as in mathematics and computer science, where an array can have any number of dimensions.

There is a certain amount of elasticity in the word "array," but not so much that the Court can adopt Plaintiff's offered definition of "array" meaning nothing more than "a plurality." Plaintiff's definition is offered with the barest support. Plaintiff offers a definition from the on-line version of *Merriam-Webster's Third New international Dictionary,* which was last revised in 1961, has since then had a slower and slower rate of additions to the Addenda section, and thus seems of limited relevance to patents issued 37 years later. From this dictionary. Plaintiff presents to the Court only one definition, the sixth and last one for the word "array": "a group of elements forming a complete unit <an antenna *array* >." This definition does not explain why an antenna array is called an array. (After all, a full class of kindergartners is not called an "array of children"-unless, of course, their desks are pushed into rows and columns.) The Court's limited research has determined that an antenna array is a "group of antennas in which the relative phases of the respective signals feeding the antennas are varied in such a way that the effective radiation pattern of the array is reinforced in a desired direction and suppressed in undesired directions." *Wikipedia,* entry on "antenna array" (accessed Sept. 26, 2006). Neither party has contended that this describes the technology at issue, and thus the Court cannot use the "antenna array" definition. Similes make for bad definitions. Janny Scott, *That All-English Dictionary Adds an Ail-American Coach,* N.Y. Times, Aug, 19, 2000, at A1. Having produced this old, vague definition, Plaintiff then reduces it to "plurality," without offering any support at all. Plaintiff's offered definition defies the very essence of the word "array," for such an "array" could never fall into "disarray."

The Court can neither adopt Defendant's definition of "two or more modules arranged in a rectangular, deck-like arrangement." Beyond the problem that the term "deck-like" occurs neither in the intrinsic evidence nor in any extrinsic evidence which has been offered to the Court, "deck-like" is a simile. As stated above, similes make for bad definitions, and specifically here, it is not clear what kind of "deck" is being referred to. If the Defendant is referring to the arrangement of wooden boards in a ship's deck or in a deck attached to the back of a suburban house, these boards are normally nailed down at varying offsets, not with the ends lined up together in an even row. If the claim required that the slotline modules be at varying offsets, then the claim would not encompass the preferred embodiment. The preferred embodiment shows the slotline modules spaced apart in a row. Thus, such a definition would be erroneous. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583 (Fed.Cir.1996). A similar problem arises if "deck" means a deck of playing cards because a deck of cards is normally kept stacked face-to-back. The preferred embodiment shows that the slotline modules are spaced apart.

In the quotation regarding "slotline modules," the inventors make clear that they mean a one-dimensional array of slotline modules, and more specifically a "row of slotline modules." Each slotline module "forms a column of at least two circuit elements," and all together there is a two-dimensional array of circuit elements. Thus, the Court finds that the meaning of an "array of slotline modules" is a "row of slotline modules."

D. *Slotline Structures*

As previously stated, the Court finds that the term "slotline," not prefixed by a modifier, as it is used in the patents, is limited to one-sided embodiments. Thus, a slotline structure means "a component in which the primary type of transmission path is a slotline." The above one-sided definition of "slotline" is incorporated

by reference.

The parties offer additional phrases for the definition (e.g., Defendant offers a phrase requiring all the slotlines to be on the same side of the structure), but without support. Thus the Court will not include these additional phrases.

E. ***Tapered Slotline Structures***

The Court has already determined the meaning of "slotline structure." Defendant's offered definition of "tapered slotline structures" seems to be limited to the meaning of the modifier "tapered." Plaintiff does not disagree with the meaning of the word "tapered," as Plaintiff's disagreement is limited to whether embodiments can be two-sided, which the Court has already answered in the negative. (Mot. at 13.) Therefore, Defendant's definition is adopted: "a slotline structure that has a varying gap or opening between the two metalized surfaces on one side of the substrate for purposes of varying the slotline impedance."

F. ***Plurality of Devices***

Claim construction issues spilled over into Defendant's motion for summary judgment regarding non-infringement ("N.I.Mot.") and the respective opposition ("N.I.Opp'n"). The Court addresses the meaning of "plurality of devices" in this Order. The jury cannot be asked to parse the grammar of legal documents. Markman v. Westview Instruments, 517 U.S. 370, 388-89, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996). Thus, claim grammar parsing is not a part of determining infringement or non-infringement, but rather is a part of claim construction. It is necessary for the Court to determine in this Order what two claim snippets purportedly including the phrase "plurality of devices" mean.

Defendant asserts that the phrase "plurality of devices" occurs in claims 1 and 14 of the '240 patent. Paragraph five of claim 1 indeed recites "a corresponding plurality of devices disposed on each of said plurality of tapered slotline cards." The phrase "plurality of devices" does not, in fact, occur in claim 14, but claim 14 has a similar grammatical construction which recites "a subplurality of said plurality of slotline structures lying in each of a plurality of radial planes."

Plaintiff urges that the meaning of claim 1's quoted grammatical construction is "a number of devices greater than one to be disposed on each of a corresponding number of tapered slotline cards ." Plaintiff then argues that this meaning can be interpreted so that there can be two devices disposed on two cards, so that each card has one device. (N.I. Opp'n at 18.) Plaintiff writes, "the two devices disposed on a set of two slotline cards is a *corresponding* plurality." Id. But the claim does not say that the pluralities are in correspondence to each other, and the claim does not say that the number of devices corresponds to the number of tapered slotline cards. Furthermore, if the claim were interpreted to be limited to one device on each slotline card, such an interpretation would be inconsistent with the preferred embodiment, which shows two devices on one card ('240 patent at fig.4, col. 6 l.38), and therefore erroneous. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583 (Fed.Cir.1996).

What the claim says is "a corresponding plurality of devices disposed on each of said plurality of tapered slotline cards," which means that "each of said plurality of tapered slotline cards" has "disposed on" it "a corresponding plurality of devices." Put another way, any one tapered slotline card has mounted to it a plurality of devices.

The word "corresponding" means that the slotline cards do not all share the same plurality of devices.

Although it might seem silly to read the claim to allow the slotline cards to share the same plurality of devices because as a practical matter any one device can only be mounted to one slotline card, such a distinction can be important in other contexts. For example, if the claim recited that serial numbers were etched onto the slotline cards, it might be important to distinguish whether the slotline cards each had unique, corresponding numbers or whether all the slotline cards in a particular power amplifier shared the same serial number.

Claim 14's snippet states "a subplurality of said plurality of slotline structures lying in each of a plurality of radial planes." Here the word "corresponding" is missing, which means that the snippet could either mean that the same subplurality lies in all of the radial planes, or that each of the plurality of radial planes has its own distinct subplurality of slotline structures. The Court finds that the inventors intended the latter interpretation, as only the latter interpretation makes sense and is consistent with the rest of the '240 patent.

IV. *CONCLUSION*

The terms "slotline," "slotline module," "array of slotline modules," "slotline structures," "tapered slotline structures," and "plurality of devices" are defined as above. Plaintiff Wavestream Corporation's Motion for Summary Judgment regarding claim construction is DENIED IN PART and GRANTED IN PART.

IT IS SO ORDERED.

C.D.Cal.,2006.
Wavestream Corp. v. CAP Wireless, Inc.