

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

NETGEAR, INC.,)	
)	
Plaintiff,)	
)	
v.)	Civ. No. 10-999-SLR
)	
RUCKUS WIRELESS, INC,)	
)	
Defendant.)	

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MEMORANDUM OPINION

Dated: September 30, 2013
Wilmington, Delaware


ROBINSON, District Judge

I. INTRODUCTION

Plaintiff Netgear Inc. (“plaintiff”) filed a complaint alleging patent infringement against Ruckus Wireless Inc. (“defendant”) on November 19, 2010. (D .I. 1) Plaintiff filed an amended complaint on July 29, 2011, alleging infringement of four patents: U.S. Patent Nos. 5,812,531 (“the ‘531 patent”), 6,621,454 (“the ‘454 patent”), 7,263,143 (“the ‘143 patent”), and 5,507,035 (“the ‘035 patent”). (D.I. 28) Defendant answered the amended complaint and counterclaimed for invalidity and non-infringement, on April 12, 2012. (D.I. 38) Plaintiff answered the counterclaims on May 7, 2012. (D.I. 42) On August 2, 2012, plaintiff filed a second amended complaint adding allegations of infringement of U.S. Patent No. 6,512,480 (“the ‘480 patent) (collectively with the ‘531, ‘454, ‘143, ‘035 patents, the “patents-in-suit”). (D.I. 61) On March, 28, 2013, defendant answered the second amended complaint and counterclaimed for invalidity and non-infringement. (D.I. 116) On April 15, 2013, plaintiff answered the counterclaims. (D.I. 118)

Presently before the court are several motions for summary judgment: plaintiff’s summary judgment motion of infringement (D.I. 136) and for validity of the patents-in-suit (D.I. 150), as well as defendant’s motion for summary judgment of invalidity (D.I. 131) and non-infringement of the patents-in-suit. (D.I. 148) Defendant also filed a motion to exclude plaintiff’s expert testimony. (D.I. 121) The court has jurisdiction over this matter pursuant to 28 U.S.C. §§ 1331 and 1338(a).

II. BACKGROUND

A. The Parties

Plaintiff is a Delaware corporation with a principal place of business in San Jose, California. (D.I. 61 at ¶ 2) Plaintiff owns the patents-in-suit, including the rights to sue and recover for infringement. (*Id.* at ¶¶ 9, 17, 25, 32, 41) Defendant is a Delaware corporation with a principal place of business in Sunnyvale, California. (D.I. 116 at ¶ 8) Defendant designs, manufactures, and markets wireless local area network (WLAN) systems and products throughout the United States and the world. (*Id.* at 9)

B. Technology Overview

The patents-in-suit are directed to wireless communications systems, which use radio waves to communicate. Information is encoded into the radio wave by varying the frequency, amplitude and/or phase of the wave. Waves of the same frequency may be distinguished by the direction of propagation (direction in which energy and information travel) and polarization (direction of oscillation of the electric field component of the wave). The radio wave is transmitted and received by antennas.

Antennas have a wide range of designs and differ in their radiation patterns (the relative power of waves which they launch or accept versus the angle of radiation), gain (the maximum power of wave in any direction relative to a reference antenna), and polarization (the polarization of the waves which the antenna launches or receives in a given direction). Once an antenna has launched a wave, it may encounter a number of propagation mechanisms which may vary its properties, such as spreading, reflection, diffraction, refraction and attenuation. These mechanisms can affect the power, direction, polarization and phase of the waves and can also cause multipath

interference if multiple versions of the transmitted wave arrive simultaneously. (D.I. 137, ex. 4 at 7-12)

III. STANDARDS OF REVIEW

A. Summary Judgment

“The court shall grant summary judgment if the movant shows that there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law.” Fed. R. Civ. P. 56(a). The moving party bears the burden of demonstrating the absence of a genuine issue of material fact. *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 415 U.S. 574, 586 n.10 (1986). A party asserting that a fact cannot be—or, alternatively, is—genuinely disputed must support the assertion either by citing to “particular parts of materials in the record, including depositions, documents, electronically stored information, affidavits or declarations, stipulations (including those made for the purposes of the motions only), admissions, interrogatory answers, or other materials,” or by “showing that the materials cited do not establish the absence or presence of a genuine dispute, or that an adverse party cannot produce admissible evidence to support the fact.” Fed. R. Civ. P. 56(c)(1)(A) & (B). If the moving party has carried its burden, the nonmovant must then “come forward with specific facts showing that there is a genuine issue for trial.” *Matsushita*, 415 U.S. at 587 (internal quotation marks omitted). The court will “draw all reasonable inferences in favor of the nonmoving party, and it may not make credibility determinations or weigh the evidence.” *Reeves v. Sanderson Plumbing Prods., Inc.*, 530 U.S. 133, 150 (2000).

To defeat a motion for summary judgment, the non-moving party must “do more

than simply show that there is some metaphysical doubt as to the material facts.” *Matsushita*, 475 U.S. at 586-87; see also *Podohnik v. U.S. Postal Service*, 409 F.3d 584, 594 (3d Cir. 2005) (stating party opposing summary judgment “must present more than just bare assertions, conclusory allegations or suspicions to show the existence of a genuine issue”) (internal quotation marks omitted). Although the “mere existence of some alleged factual dispute between the parties will not defeat an otherwise properly supported motion for summary judgment,” a factual dispute is genuine where “the evidence is such that a reasonable jury could return a verdict for the nonmoving party.” *Anderson v. Liberty Lobby, Inc.*, 411 U.S. 242, 247-48 (1986). “If the evidence is merely colorable, or is not significantly probative, summary judgment may be granted.” *Id.* at 249-50 (internal citations omitted); see also *Celotex Corp. v. Catrett*, 411 U.S. 317, 322 (1986) (stating entry of summary judgment is mandated “against a party who fails to make a showing sufficient to establish the existence of an element essential to that party’s case, and on which that party will bear the burden of proof at trial”).

B. Claim Construction

Claim construction is a matter of law. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1330 (Fed. Cir. 2005) (en banc). Claim construction focuses on intrinsic evidence - the claims, specification and prosecution history - because intrinsic evidence is “the most significant source of the legally operative meaning of disputed claim language.” *Vitronics Corp. v. Conceptoronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996); *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc), *aff’d*, 517 U.S. 370 (1996). Claims must be interpreted from the perspective of one of ordinary skill in

the relevant art at the time of the invention. *Phillips*, 415 F.3d at 1313.

Claim construction starts with the claims, *id.* at 1312, and remains centered on the words of the claims throughout. *Interactive Gift Express, Inc. v. CompuServe, Inc.*, 256 F.3d 1323, 1331 (Fed. Cir. 2001). In the absence of an express intent to impart different meaning to claim terms, the terms are presumed to have their ordinary meaning. *Id.* Claims, however, must be read in view of the specification and prosecution history. Indeed, the specification is often “the single best guide to the meaning of a disputed term.” *Phillips*, 415 F.3d at 1315.

“In construing a means-plus-function claim, the district court must first determine the claimed function and then identify the corresponding structure in the written description of the patent that performs that function.” *Baran v. Med. Device Techs., Inc.*, 616 F.3d 1309, 1316 (Fed. Cir. 2010) (citing *Applied Med. Res. Corp. v. U.S. Surgical Corp.*, 448 F.3d 1324, 1332 (Fed. Cir. 2006)).

C. Infringement

A patent is infringed when a person “without authority makes, uses or sells any patented invention, within the United States . . . during the term of the patent.” 35 U.S.C. § 271(a). A two-step analysis is employed in making an infringement determination. See *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976 (Fed. Cir. 1995). First, the court must construe the asserted claims to ascertain their meaning and scope. See *id.* Construction of the claims is a question of law subject to de novo review. See *Cybor Corp. v. FAS Techs.*, 138 F.3d 1448, 1454 (Fed. Cir. 1998). The trier of fact must then compare the properly construed claims with the accused

infringing product. See *Markman*, 52 F.3d at 976. This second step is a question of fact. See *Bai v. L & L Wings, Inc.*, 160 F.3d 1350, 1353 (Fed. Cir. 1998).

“Direct infringement requires a party to perform each and every step or element of a claimed method or product.” *BMC Res., Inc. v. Paymentech, L.P.*, 498 F.3d 1373, 1378 (Fed. Cir. 2007), *overruled on other grounds by* 692 F.3d 1301 (Fed. Cir. 2012). “If any claim limitation is absent from the accused device, there is no literal infringement as a matter of law.” *Bayer AG v. Elan Pharm. Research Corp.*, 212 F.3d 1241, 1247 (Fed. Cir. 2000). If an accused product does not infringe an independent claim, it also does not infringe any claim depending thereon. See *Wahpeton Canvas Co. v. Frontier, Inc.*, 870 F.2d 1546, 1553 (Fed. Cir. 1989). However, “[o]ne may infringe an independent claim and not infringe a claim dependent on that claim.” *Monsanto Co. v. Syngenta Seeds, Inc.*, 503 F.3d 1352, 1359 (Fed. Cir. 2007) (quoting *Wahpeton Canvas*, 870 F.2d at 1552) (internal quotations omitted). A product that does not literally infringe a patent claim may still infringe under the doctrine of equivalents if the differences between an individual limitation of the claimed invention and an element of the accused product are insubstantial. See *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 24 (1997). The patent owner has the burden of proving infringement and must meet its burden by a preponderance of the evidence. See *SmithKline Diagnostics, Inc. v. Helena Lab. Corp.*, 859 F.2d 878, 889 (Fed. Cir. 1988) (citations omitted).

When an accused infringer moves for summary judgment of non-infringement, such relief may be granted only if one or more limitations of the claim in question does

not read on an element of the accused product, either literally or under the doctrine of equivalents. See *Chimie v. PPG Indus., Inc.*, 402 F.3d 1371, 1376 (Fed. Cir. 2005); see also *TechSearch, L.L.C. v. Intel Corp.*, 286 F.3d 1360, 1369 (Fed. Cir. 2002) (“Summary judgment of noninfringement is ... appropriate where the patent owner’s proof is deficient in meeting an essential part of the legal standard for infringement, because such failure will render all other facts immaterial.”). Thus, summary judgment of non-infringement can only be granted if, after viewing the facts in the light most favorable to the non-movant, there is no genuine issue as to whether the accused product is covered by the claims (as construed by the court). See *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1304 (Fed. Cir. 1999).

To establish indirect infringement, a patent owner has available two theories: active inducement of infringement and contributory infringement. See 35 U.S.C. § 271(b) & (c). To establish active inducement of infringement, a patent owner must show that an accused infringer “knew or should have known [their] actions would induce actual infringements.” *DSU Med. Corp. v. JMS Co., Ltd.*, 471 F.3d 1293, 1306 (Fed. Cir. 2006). To establish contributory infringement, a patent owner must show that an accused infringer sells “a component of a patented machine ... knowing the same to be especially made or especially adapted for use in an infringement of such patent, and not a staple article or commodity of commerce suitable for substantial noninfringing use.” *Golden Blount, Inc. v. Robert H. Peterson Co.*, 365 F.3d 1054, 1061 (Fed. Cir. 2004) (quoting 35 U.S.C. § 271(c)). Liability under either theory, however, depends on the patent owner having first shown direct infringement. *Joy Technologies, Inc. v. Flakt*,

Inc., 6 F.3d 770, 774 (Fed. Cir. 1993).

D. Invalidity

1. Indefiniteness

The definiteness requirement is rooted in § 112, ¶ 2, which provides that “the specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.” “A determination of claim indefiniteness is a legal conclusion that is drawn from the court’s performance of its duty as the construer of patent claims.” *Personalized Media Comm., LLC v. Int’l Trade Com’n*, 161 F.3d 696, 705 (Fed. Cir. 1998).

Determining whether a claim is definite requires an analysis of whether one skilled in the art would understand the bounds of the claim when read in light of the specification If the claims read in light of the specification reasonably apprise those skilled in the art of the scope of the invention, § 112 demands no more.

Id. (citing *Miles Lab., Inc. v. Shandon, Inc.*, 997 F.2d 870, 875 (Fed. Cir. 1993)).

Under 35 U.S.C. § 112 ¶ 6, “[a]n element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure ... in support thereof, and such claim shall be construed to cover the corresponding structure ... described in the specification and equivalents thereof.” This allows “the use of means expressions in patent claims without requiring the patentee to recite in the claims all possible structures that could be used as means in the claimed apparatus.” *Medical Instrumentation and Diagnostics Corp. v. Elekta AB*, 344 F.3d 1205, 1211 (Fed. Cir. 2003) (citing *O.I. Corp. v. Tekmar Co.*, 115 F.3d 1576, 1583 (Fed. Cir. 1997)). The quid pro quo is the “duty [of the patentee] to clearly link or associate

structure to the claimed function.” *Budde v. Harley-Davidson, Inc.*, 250 F.3d 1369, 1377 (Fed. Cir. 2001) (citations omitted). “The price that must be paid for use of that convenience is limitation of the claim to the means specified in the written description and equivalents thereof.” *O.I. Corp.*, 115 F.3d at 1583.

Whether the written description adequately sets forth the structure corresponding to the claimed function must be considered from the perspective of a person skilled in the art. *Telcordia Techs., Inc. v. Cisco Sys.*, 612 F.3d 1365, 1376 (Fed. Cir. 2010) (citing *Intel Corp. v. VIA Techs., Inc.*, 319 F.3d 1357, 1365–66 (Fed. Cir. 2003)). “The question is not whether one of skill in the art would be capable of implementing a structure to perform the function, but whether that person would understand the written description itself to disclose such a structure.” *Id.* (citing *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1338 (Fed. Cir. 2008)). Ultimately, if no corresponding structure is disclosed in the specification, the claim term must be construed as indefinite. *See Biomedino, LLC v. Waters Techs. Corp.*, 490 F.3d 946, 950 (Fed. Cir. 2007) (“If there is no structure in the specification corresponding to the means-plus-function limitation in the claims, the claim will be found invalid as indefinite.”).

2. Enablement and written description

The statutory basis for the enablement and written description requirements, 35 U.S.C. § 112 ¶1, provides in relevant part:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or

with which it is most nearly connected, to make and use the same

“The enablement requirement is met where one skilled in the art, having read the specification, could practice the invention without ‘undue experimentation.’” *Streck, Inc. v. Research & Diagnostic Systems, Inc.*, 665 F.3d 1269, 1288 (Fed. Cir. 2012) (citation omitted). “While every aspect of a generic claim certainly need not have been carried out by the inventor, or exemplified in the specification, reasonable detail must be provided in order to enable members of the public to understand and carry out the invention.” *Genentech, Inc. v. Novo Nordisk A/S*, 108 F.3d 1361, 1366 (Fed. Cir. 1997). The specification need not teach what is well known in the art. *Id.* (citing *Hybritech v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1384 (Fed. Cir. 1986)). A reasonable amount of experimentation may be required, so long as such experimentation is not “undue.” *ALZA Corp. v. Andrx Pharms., Inc.*, 603 F.3d 935, 940 (Fed. Cir. 2010).

“Whether undue experimentation is needed is not a single, simple factual determination, but rather is a conclusion reached by weighing many factual considerations.” *Martek Biosciences Corp. v. Nutrinova, Inc.*, 579 F.3d 1363, 1378 (Fed. Cir. 2009) (citing *In re Wands*, 858 F.2d 731, 737 (Fed. Cir. 1988)). The Federal Circuit has provided several factors that may be utilized in determining whether a disclosure would require undue experimentation: (1) the quantity of experimentation necessary; (2) the amount of direction or guidance disclosed in the patent; (3) the presence or absence of working examples in the patent; (4) the nature of the invention; (5) the state of the prior art; (6) the relative skill of those in the art; (7) the predictability of the art; and (8) the breadth of the claims. *In re Wands*, 858 F.2d at 737. These

factors are sometimes referred to as the “*Wands* factors.” A court need not consider every one of the *Wands* factors in its analysis, rather, a court is only required to consider those factors relevant to the facts of the case. See *Streck, Inc.*, 655 F.3d at 1288 (citing *Amgen, Inc. v. Chugai Pharm. Co., Ltd.*, 927 F.2d 1200, 1213 (Fed. Cir. 1991)).

The enablement requirement is a question of law based on underlying factual inquiries. See *Green Edge Enters., LLC v. Rubber Mulch Etc., LLC*, 620 F.3d 1287, 1298-99 (Fed. Cir. 2010) (citation omitted); *Wands*, 858 F.2d at 737. Enablement is determined as of the filing date of the patent application. *In re ‘318 Patent Infringement Litigation*, 583 F.3d 1317, 1323 (Fed. Cir. 2009) (citation omitted). The burden is on one challenging validity to show, by clear and convincing evidence, that the specification is not enabling. See *Streck, Inc.*, 665 F.3d at 1288 (citation omitted).

A patent must also contain a written description of the invention. 35 U.S.C. § 112, ¶ 1. The written description requirement is separate and distinct from the enablement requirement. See *Ariad Pharms., Inc. v. Eli Lilly and Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2011). It ensures that “the patentee had possession of the claimed invention at the time of the application, i.e., that the patentee invented what is claimed.” *LizardTech, Inc. v. Earth Resource Mapping, Inc.*, 424 F.3d 1336, 1344-45 (Fed. Cir. 2005). The Federal Circuit has stated that the relevant inquiry – “possession as shown in the disclosure” – is an “objective inquiry into the four corners of the specification from the perspective of a person of ordinary skill in the art. Based on that inquiry, the

specification must describe an invention understandable to that skilled artisan and show that the inventor actually invented the invention claimed.” *Ariad*, 598 F.3d at 1351.

This inquiry is a question of fact: “the level of detail required to satisfy the written description requirement varies depending on the nature and scope of the claims and on the complexity and predictability of the relevant technology.” *Id.* (citation omitted).

While compliance with the written description requirement is a question of fact, the issue is “amenable to summary judgment in cases where no reasonable fact finder could return a verdict for the non-moving party.” *Id.* at 1307 (citing *Invitrogen Corp. v. Clontech Labs., Inc.*, 429 F.3d 1052, 1072-73 (Fed. Cir. 2005)).

3. Statutory subject matter

The standard of proof to establish the invalidity of a patent is “clear and convincing evidence.” *Golden Blount, Inc. v. Robert H. Peterson Co.*, 365 F.3d 1054, 1058 (Fed. Cir. 2004). Whether a claim is drawn to patent-eligible subject matter under 35 U.S.C. § 101 is a threshold inquiry to be determined as a matter of law in establishing the validity of the patent. *CLS Bank Int’l v. Alice Corp. Pty. Ltd.*, 717 F.3d 1269, 1277 (Fed. Cir. 2013); *In re Bilski*, 545 F.3d 943, 950 (Fed. Cir. 2008) (citing *In re Comiskey*, 499 F.3d 1365, 1371 (Fed. Cir. 2007)) (“*Bilski I*”). Section 101 provides that patentable subject matter extends to four broad categories, including: “new and useful process[es], machine[s], manufacture, or composition[s] of matter.” 35 U.S.C. § 101; see also *Bilski v. Kappos*, — U.S. —, 130 S.Ct. 3218, 3225 (2010) (“*Bilski II*”); *Diamond v. Chakrabarty*, 447 U.S. 303, 308 (1980). A “process” is statutorily defined as a “process, art or method, and includes a new use of a known process, machine

manufacture, composition of matter, or material.” 35 U.S.C. § 100(b). The Supreme Court has explained:

A process is a mode of treatment of certain materials to produce a given result. It is an act, or a series of acts, performed upon the subject-matter to be transformed and reduced to a different state or thing. If new and useful, it is just as patentable as is a piece of machinery. In the language of the patent law, it is an art. The machinery pointed out as suitable to perform the process may or may not be new or patentable; whilst the process itself may be altogether new, and produce an entirely new result. The process requires that certain things should be done with certain substances, and in a certain order; but the tools to be used in doing this may be of secondary consequence.

Diamond v. Diehr, 450 U.S. 175, 182–83 (1981) (internal quotations omitted).

The Supreme Court recognizes three “fundamental principle” exceptions to the Patent Act’s subject matter eligibility requirements: “laws of nature, physical phenomena, and abstract ideas.” *Bilski II*, 130 S.Ct. at 3225. The Supreme Court has held that “[t]he concepts covered by these exceptions are ‘part of the storehouse of knowledge of all men ... free to all men and reserved exclusively to none.’” *Bilski I*, 545 F.3d at 952 (quoting *Funk Bros. Seed Co. v. Kalo Inoculant Co.*, 333 U.S. 127, 130 (1948)). “The motivation for the exceptions to eligibility is to prevent the ‘monopolization’ of the ‘basic tools of scientific and technological work,’ which ‘might tend to impede innovation more than it would tend to promote it.’” *CLS Bank*, 717 F.3d at 1299 (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, — U.S. —, 132 S.Ct. 1289, 1293 (2012)).

Although a fundamental principle cannot be patented, the Supreme Court has held that “an application of a law of nature or mathematical formula to a known

structure or process may well be deserving of patent protection,” so long as that application would not preempt substantially all uses of the fundamental principle. *Bilski II*, 130 S.Ct. at 3230 (quoting *Diehr*, 450 U.S. at 187) (internal quotations omitted); *Bilski I*, 545 F.3d at 954. According to the Federal Circuit’s most recent analysis of § 101, “[t]he inquiry is a practical one to determine whether the claim, as a whole with all of its limitations, in effect covers a patent ineligible abstract idea or a patent eligible application of that idea.” *CLS Bank*, 717 F.3d at 1298. To that end, the court must determine “whether a claim includes **meaningful** limitations restricting it to an application, rather than merely an abstract idea.” *Id.* at 1299. “A claim is not meaningfully limited if its purported limitations provide no real direction, cover all possible ways to achieve the provided result, or are overly-generalized.” *Id.* at 1301 (citing *Prometheus*, 132 S. Ct. at 1300)). “A claim is meaningfully limited if it requires a particular machine implementing a process or a particular transformation of matter.” *CLS Bank*, 717 F.3d at 1301 (citing *Bilski II*, 130 S. Ct. at 3227)).

A claim also will be limited meaningfully when, in addition to the abstract idea, the claim recites added limitations which are essential to the invention. In those instances, the added limitations do more than recite pre- or post-solution activity, they are central to the solution itself. And, in such circumstances, the abstract idea is not wholly preempted when practiced in conjunction with the other necessary elements of the claimed invention.

CLS Bank, 717 F.3d at 1301 (citing *Diehr*, 450 U.S. at 187)).

“When assessing computer implemented claims, while the mere reference to a general purpose computer will not save a method claim from being deemed too abstract to be patent eligible, the fact that a claim is limited by a tie to a computer is an

important indication of patent eligibility.” *CLS Bank*, 717 F.3d at 1302 (citing *Bilski II*, 130 S. Ct. at 3227)).

The key to this inquiry is whether the claims tie the otherwise abstract idea to a **specific way** of doing something with a computer, or a **specific computer** for doing something; if so, they likely will be patent eligible, unlike claims directed **nothing more than the idea** of doing that thing on a computer. While no particular type of limitation is necessary, meaningful limitations may include the computer being part of the solution, being integral to the performance of the method, or containing an improvement in computer technology.

CLS Bank, 717 F.3d at 1302 (citing *SiRF Tech., Inc. v. Int’l Trade Comm’n*, 601 F.3d 1319, 1332-33 (Fed. Cir. 2010)).

“[A] claim is meaningfully limited if it requires a particular machine implementing a process or a particular transformation of matter. *CLS Bank*, 717 F.3d at 1301 (citing *Bilski II*, 130 S.Ct. at 3227. “[A] machine is a concrete thing, consisting of parts, or of certain devices and combination of devices. This includes every mechanical device or combination of mechanical powers and devices to perform some function and produce a certain effect or result.” *In re Ferguson*, 558 F.3d 1359, 1364 (Fed. Cir. 2009) (citations and quotations omitted). The court finds the comparison of *Bancorp Servs., LLC v. Sun Life Assurance Co. of Canada*, 687 F.3d 1266 (Fed. Cir. 2012) to *SiRF Tech., Inc. v. Int’l Trade Comm’n*, 601 F.3d 1319 (Fed. Cir. 2010) instructive. In this regard, in *Bancorp*, where the asserted patents disclosed “specific formulae for determining the values required to manage a stable value protected life insurance policy,” the district court granted summary judgment of invalidity under § 101. *Bancorp*, 687 F.3d at 1272. Under the machine prong of the machine or transformation test, the

district court found that “the specified computer components are no more than objects on which the claimed methods operate, and that the central processor is nothing more than a general purpose computer programmed in an unspecified manner.” *Id.* In affirming the district court’s findings, the Federal Circuit explained that

the use of a computer in an otherwise patent ineligible process for no more than its most basic function - making calculations or computations - fails to circumvent the prohibition against patenting abstract ideas and mental processes. As we have explained, “[s]imply adding a ‘computer aided’ limitation to a claim covering an abstract concept, without more, is insufficient to render the claim patent eligible.” *Dealertrack, Inc. v. Huber*, 674 F.3d 1315, 1333 (Fed. Cir. 2012). To salvage an otherwise patent-ineligible process, a computer must be integral to the claimed invention, facilitating the process in a way that a person making calculations or computations could not.

Id. at 1278. Ultimately, the Federal Circuit concluded that “[t]he computer required by some of Bancorp’s claims is employed only for its most basic function, the performance of repetitive calculations, and as such does not impose meaningful limits on the scope of those claims.” *Id.* at 1278.

In contrast to *Bancorp*, the Federal Circuit in *SiRF* found that a GPS receiver was “integral” to the claims at issue and, therefore, the machine or transformation test was satisfied. *SiRF*, 601 F.3d at 1332. As in *Bancorp*, the *SiRF* Court also emphasized that a machine will only “impose a meaningful limit on the scope of a claim [when it plays] a significant part in permitting the claimed method to be performed, rather than function solely as an obvious mechanism for permitting a solution to be achieved more quickly, i.e., through the utilization of a computer for performing calculations.” *Id.* at 1333. After noting how the GPS receiver was specifically involved

in each step of the method, the Court concluded that “the use of the GPS receiver is essential to the operation of the claimed methods.” *Id.*

It is apparent, when comparing *Bancorp* and *SiRF*, that a spectrum exists with respect to computer-based implementation limitations. At one end of the spectrum is *Bancorp* and a general purpose computer that is generically performing calculations; at the other end is *SiRF* and a GPS receiver that performs specific operations essential to the claimed methods.

IV. DISCUSSION

For each of the five patents-in-suit, the court will discuss the background technology, any necessary claim construction on summary judgment, and any infringement and invalidity issues on summary judgment.

A. The ‘480 Patent

The ‘480 patent, “System and Method for Narrow Beam Antenna Diversity in an RF Data Transmission System,” issued January 28, 2003. (*Id.* at ex. E) The ‘480 patent discloses an RF data transmission system that uses antenna diversity techniques (including polarization, angular and/or spacial diversity) to enhance wireless communications. (2:57-3:3) It discloses a multibeam antenna capable of generating multiple beams. (2:39-43, 3:32-49) The system monitors RF data transmission frequencies for optimal transmission conditions and selects antenna beams in response. (2:50-56)

Independent claim 1 recites:

A method for providing antenna diversity for an RF data transmission system, said method comprising the steps of:

monitoring frequencies, having a plurality of polarizations, used for RF data transmissions for optimal conditions for said RF data transmissions from a subscriber station transmitter; and directing, in response to said conditions, said subscriber station transmitter to change a polarization of said transmissions.

(7:34-43) Independent claim 12 recites:

A diversity system for RF data transmissions, said system comprising:
a multibeam antenna generating a first plurality of antenna beams, pairs of said first antenna beams having orthogonal polarization, each of said pairs being angularly diverse from others of said pairs;
a first receiver having a plurality of inputs receiving signals from at least two of said antenna beams;
a first transmitter having at least one output transmitting signals over at least one of said antenna beams;
means for monitoring RF data transmission frequencies, having a plurality of polarizations, for optimal conditions for said RF data transmissions; and
means, responsive to said conditions, for selecting at least one of said beams having one of said orthogonal polarizations for data transmissions from said first transmitter.

(8:21-38)

1. Claim Limitations

a. “[O]ptimal conditions”

The claims and specification of a patent serve an important public notice function, apprising others of what is available to them. *See, e.g., Johnson & Johnston Associates Inc. v. R.E. Service Co., Inc.*, 285 F.3d 1046, 1052 (Fed. Cir. 2002) (citing *Mahn v. Harwood*, 112 U.S. 354, 361 (1884)) (claims give notice to the public of the scope of the patent); *Superior Fireplace Co. v. Majestic Prods. Co.*, 270 F.3d 1358,

1371 (Fed. Cir. 2001). “Because claims delineate the patentee's right to exclude, the patent statute requires that the scope of the claims be sufficiently definite to inform the public of the bounds of the protected invention, i.e., what subject matter is covered by the exclusive rights of the patent. Otherwise, competitors cannot avoid infringement, defeating the public notice function of patent claims.” *Halliburton Energy Svcs. v. M-ILLC*, 514 F.3d 1244, 1249 (Fed. Cir. 2008) (citing *Athletic Alternatives, Inc. v. Prince Mfg., Inc.*, 73 F.3d 1573, 1581 (Fed. Cir. 1996)).

The above limitation, found in claims 1 and 12, recites monitoring RF data transmission frequencies “for optimal conditions for said RF data transmissions.” (7:39-40, 8:33-34) Plaintiff proffers the construction “most desirable conditions available for a subscriber station to transmit data wirelessly.” Plaintiff’s expert explains that, “for a wireless communication system, optimal conditions are the most desirable transmission conditions (conditions supporting the most desirable quality/reliability and/or speed of data delivery) available for wireless data transmissions.” (D.I. 113, ex. A at ¶ 34) That plaintiff is able to provide a definition of “optimal,” however, does not end the claim construction inquiry. *See Halliburton Energy Svcs*, 514 F.3d at 1251 (“Even if a claim term's definition can be reduced to words, the claim is still indefinite if a person of ordinary skill in the art cannot translate the definition into meaningfully precise claim scope.”).

The patent specification refers to determining “the optimal beam, frequency and polarization for transmissions from the subscriber” (2:53-55), as well as conditions such as “optimal frequency and polarization” (6:52-53), “optimal polarization for transmission to the hub” (5:31-36; 6:35-36), and monitoring the BER and changing “the

transmissions to the hub to a different beam and/or polarity” (6:65-7:4). In order to determine the best signal attributes, the specification discloses “using criteria such as bit error rate (BER), modulation level, signal strength **or the like.**” (6:18-32) (emphasis added) The specification also states that “[t]he optimal subscriber transmission polarity **may or may not be the same** polarity as the optimal subscriber receive polarity.” (6:41-43) (emphasis added) The specification does not teach a person of ordinary skill whether the identified parameters are those used to determine “optimal conditions” or what the limits of the identified parameters are for “optimal conditions.” *Cf. Emcore Corp. v. Optium Corp.*, No. 6-1202, 2008 WL 3271553, *7 -8 (W.D. Pa. Aug. 5, 2008) (finding that the term “optimum SBS suppression . . . was readily understood in light of the claims and specification,” as “the patentees . . . describe a method of mathematically determining optimum operating points, and disclose relatively ‘finer’ tuners capable of adjusting to those points.”)

Plaintiff’s definition and explanation of the limitation does not allow one of skill in the art to discern what the “optimal conditions” are, which parameters would allow one to achieve such conditions, or how to adjust said parameters. For these reasons, the court concludes that the limitation “optimal conditions” is indefinite.

b. “[M]eans for monitoring RF data transmission frequencies, having a plurality of polarizations, for optimal conditions for said RF data transmissions”

Generally, “in a means-plus-function claim ‘in which the disclosed structure is a computer, or microprocessor, programmed to carry out an algorithm, the disclosed

structure is not the general purpose computer, but rather the special purpose computer programmed to perform the disclosed algorithm.” *Aristocrat Techs. Australia Pty Ltd. v. Int’l Game Tech.*, 521 F.3d 1328, 1333 (Fed. Cir. 2008) (quoting *WMS Gaming, Inc. v. Int’l Game Tech.*, 184 F.3d 1339, 1349 (Fed. Cir. 1999)). The specification can express the algorithm “in any understandable terms including as a mathematical formula, in prose, or as a flow chart, or in any other manner that provides sufficient structure.” *Finisar Corp. v. DirecTV Grp., Inc.*, 523 F.3d 1323, 1340 (Fed. Cir. 2008) (internal citation omitted). The description of the algorithm must do more than describe the function to be performed, it must describe how the function is to be performed. *Blackboard, Inc. v. Desire2Learn, Inc.*, 574 F.3d 1371, 1382-83 (Fed. Cir. 2009) (finding “[t]he specification contains no description of the structure or the process that the access control manager uses to perform the “assigning” function.”). It is insufficient to aver that a disclosure has enough structure for a person of ordinary skill to devise some method or write some software to perform the desired function. *Function Media, L.L.C. v. Google, Inc.*, 708 F.3d 1310, 1319 (Fed. Cir. 2013) (citing *Blackboard, Inc. v. Desire2Learn, Inc.*, 574 F.3d 1371, 1385 (Fed. Cir. 2009)).

Plaintiff contends that the structure for this means-plus-function limitation is “one or more wireless transceivers and equivalents thereof.” (D.I. 112 at 2-3) Plaintiff argues that a transceiver is not a computer and, therefore, no algorithm is needed. The specification illustrates this structure in figure 4 with boxes labeled “hub transceiver,” which “monitor[s] BER of RF data transmissions and/or signal levels on available frequencies and/or polarizations.” (‘480 patent, fig.4) Plaintiff’s expert opined that

“‘[t]ransceiver’ is a term that has been used in the field to refer [to] devices that transmit and receive wirelessly and associated components that are used for monitoring transmission including bit error rates, signal strength and other quantitative measures.” (D.I. 113, ex. A at ¶ 38) In the alternative, plaintiff argues that the specification provides an algorithm, describing “detecting a BER of subscriber transmissions to the hub or a similar quality measure” and using “signal levels or other quantitative [sic] measurements at the hub on different polarizations and/or frequencies.” (6:33-57)

While a transceiver may be known in the art, the specification does not disclose how the transceiver performs the desired function.¹ Plaintiff’s expert opines that transceivers may include associated components for monitoring. Plaintiff does not address whether such associated components are disclosed by the specification, relegating the choice of components and how to use them to “monitor” to one of skill in the art. As discussed above, plaintiff may not rely on one of skill in the art to devise how to perform the function. Figure 4 does not disclose an algorithm, rather, it repeats the necessary function of “monitoring.” The alleged algorithm does no more than suggest potential parameters for monitoring. The disclosure of a transceiver is insufficient to meet the requirements of § 112 ¶ 6, and the court concludes that this means-plus-function limitation is indefinite.

c. “[M]eans, responsive to said conditions, for selecting at

¹Plaintiff relies on *Levine v. Samsung Telecomm. Am., LLC*, No. 2:09-CV-372, 2012 WL 383647 (E.D. Tex. Feb. 3, 2012), to argue that the transceiver does not require an algorithm. However, the transmitter in *Levine* did not have to perform a “determining” step, as required at bar; rather, it performed the less complex function of “generating a plurality of video maps covering different geographic zones of an extended area.” *Id.* at *32.

least one of said beams having one of said orthogonal polarizations for data transmissions from said first transmitter”

Plaintiff argues that “switches perform the function of selecting beams for transmission responsive to the monitored conditions.” (D.I. 151 at 27) The specification discloses that a switch “directs a transmitted signal from subscriber radio . . . to either duplexer . . ., depending on which polarization is optimal for transmission to the hub as determined by the hub and communicated to the subscriber station as described below.” (5:30-35) Figure 4 depicts a box containing the description “direct changes in frequency, polarization or beam in response to increases in BER or decreases in signal levels.” The specification also discloses that the “[s]ubscriber system . . . has increased flexibility due to an ability to connect any set of antennas to a receive path via twelve-way switches.” (6:1-4)

Plaintiff argues that the function is simply “selecting,” and the “switch” structure does not require an algorithm. Contrary to this argument, the specification contemplates some directing or determining in response to certain conditions that precedes the function of “selecting.” The claim language “responsive to said conditions” and the “directing” description of figure 4 support this interpretation. The specification does not disclose an algorithm or other explanation to describe how the “switch” would perform all of these functions. For these reasons, this means-plus-function limitation is indefinite.

2. Infringement

As the court finds certain claim limitations indefinite, plaintiff’s motion for

summary judgment of infringement of claim 1 is denied and defendant's cross-motion for summary judgment of non-infringement of the asserted claims is granted.^{2,3}

3. Indefiniteness

As discussed above, the limitation “optimal conditions” in independent claims 1 and 12, is indefinite. Further, the means-plus-function limitations in claim 12 are indefinite, because neither provides structure for the disclosed functions of “monitoring” or “selecting.” The court concludes, therefore, that claims 1 and 12 are invalid for indefiniteness.

B. The ‘531 Patent

The ‘531 patent, “Method and Apparatus for Bridging Wireless LAN to a Wired LAN,” issued September 22, 1998. (D.I. 61, ex. A) The ‘531 patent relates to nodes that can implement a wireless networking topology by using topology broadcast messages and topology tables to make informed registration decisions (forming wireless associations).

Independent claim 6 recites:

An internetworking node for use in a network including a plurality of wireless nodes including:

²As the court finds certain claim limitations indefinite, the court cannot complete a meaningful infringement analysis. See *Markman*, 52 F.3d at 976. Additionally, the claims are invalid and, therefore, not infringed. *Exergen Corp. v. Wal-Mart Stores, Inc.*, 575 F.3d 1312, 1320 (Fed. Cir. 2009) (“invalid claim[s] cannot give rise to liability for infringement”) (citation omitted); *Wahpeton Canvas Co. v. Frontier, Inc.*, 870 F.2d 1546, 1553 (Fed. Cir. 1989) (if an independent claim is not infringed, any claim depending thereon is not infringed).

³As there is no direct infringement, plaintiff's motion for summary judgment of indirect infringement is moot. See *Joy Techs.*, 6 F.3d at 774 (liability for indirect infringement depends on the patent owner having first shown direct infringement).

means to send messages to the wireless nodes and to receive messages from the wireless nodes;
a memory for storing a topology table, said topology table including a first tier column in which network addresses of wireless nodes transmitting topology broadcast messages received by said at least one internetworking node are being stored, a second tier column for storing network addresses of other wireless nodes contained in said topology broadcast messages and an indicia column indicating if the network address of a wireless node is registered to said internetworking nodes;
means to analyze the topology broadcast messages and enter in said topology table the network addresses of the wireless node transmitting the topology broadcast message and network addresses of other nodes contained in the topology broadcast messages; and
means for analyzing the topology table or broadcast messages received at said internetworking node to determine if a sending wireless node is to be registered or not registered to said internetworking node.

(14:48-15:4)

1. Limitations of the '531 Patent

a. “[M]eans to analyze the topology broadcast messages and enter in said topology table the network addresses of the wireless node transmitting the topology broadcast message and network addresses of other nodes contained in the topology broadcast messages; and”

The claim language requires that the central processing unit (“CPU”) “analyze” the topology broadcast messages. Contrary to plaintiff’s argument, this is a more complex function than “the functions of ‘processing,’ ‘receiving,’ and ‘storing,’” which could be performed by a general computer without special programming. *In re Katz*, 639 F.3d 1303, 1316 (Fed. Cir. 2011) (finding that “the functions of ‘processing,’ ‘receiving,’ and ‘storing’ are coextensive with the structure disclosed, i.e., a general

purpose processor,” and do not require disclosure of an algorithm). The court concludes that an algorithm is necessary for this means-plus-function limitation.

In this regard, the specification describes that a network node “extracts the network address of the network node that sent the broadcast message and add[s] that address to its node address list.”⁴ (7:15-17) Describing the analyzing and entering steps, the specification discloses that the access point (“AP”)

searches its topology table for the first tier entry for that node. If the node is already listed, the AP replaces the second tier network addresses contained in that entry with the network addresses contained in the node's Topology Broadcast (ie, the node address list for the sending wireless node). If it is not listed, it adds the entry.

(8:28-35) *Typhoon Touch Techs., Inc. v. Dell, Inc.*, 659 F.3d 1376, 1385-86 (Fed. Cir. 2011) (finding sufficient algorithmic structure in the specification’s step-by-step description of the means term). The “analyzing” function finds corresponding structure in the CPU and algorithm described in the specification.

b. “[M]eans for analyzing the topology table or broadcast messages received at said internetworking node to determine if a sending wireless node is to be registered or not registered to said internetworking node”

An algorithm is also required for this means-plus-function limitation. However, the specification does not describe the required algorithm. The specification again discloses that a CPU executes various software routines to register wireless nodes. (12:24-43) For example, the software routine includes “a registration routine . . . for

⁴Under either party’s proposed construction of “topology broadcast messages,” the limitation includes network addresses. This understanding is sufficient to resolve the indefiniteness issue presented here.

determining whether the internetworking node should register an overheard wireless node according to a hierarchy (eg. which AP has a lower address), and for registering wireless nodes” (12:37-41; 8:66-9:11) The specification also discloses that “[o]ther mechanisms can be used for determining which of a plurality of APs within range of a wireless node would register the node. For example, one based on signal strength could be used.” The description of these routines do not provide a step-by-step method for the programming of the CPU, nor do they advise one of skill in the art of the bounds of the claim. Instead, the routines simply disclose criteria that **may** be used to make the registration decision; they do not provide how the criteria should be used to determine whether to register a node. The court concludes that this limitation is indefinite.

2. Infringement

As the court finds one of the mean-plus-function claim limitations indefinite, plaintiff's motion for summary judgment of infringement of claim 6 is denied and defendant's cross-motion for summary judgment of non-infringement of claim 6 is granted.⁵

3. Indefiniteness

As discussed above, the means-plus-function limitation in claim 6 for “analyzing the topology table . . . to determine” is indefinite, therefore, the court concludes that

⁵As the court finds certain claim limitations indefinite, the court cannot complete a meaningful infringement analysis. See *Markman*, 52 F.3d at 976. Additionally, the claims are invalid and, therefore, not infringed. *Exergen Corp. v. Wal-Mart Stores, Inc.*, 575 F.3d 1312, 1320 (Fed. Cir. 2009) (“invalid claim[s] cannot give rise to liability for infringement”) (citation omitted).

claim 6 is invalid for indefiniteness.

C. The '454 Patent

The '454 patent, "Adaptive Beam Pattern Antennas System and Method for Interference Mitigation in Point to Multipoint RF Data Transmissions," issued September 16, 2003. (D.I. 61, ex. B) The '454 patent describes a system that uses adaptive antenna beam patterns to mitigate effects of interference in wireless LANs that use the unlicensed RF spectrum. Because the Federal Communications Commission does not regulate use of unlicensed RF spectrum, wireless LANs using that spectrum can be disrupted by sources that periodically interfere with wireless transmissions.

Independent claim 1 recites:

A method for mitigating the effects of interference in an RF band data transmission system wherein transmitter and receiver are in fixed relationship to each other, said method comprising the steps of:
discerning a relative transmission rate to and from at least one subscriber of said data transmissions;
locating any interference with transmission to and from said subscriber;
ascertaining a type of said interference;
determining if said interference is periodic; and
generating a data transmission antenna pattern with a null in the direction of said interference during said interference.

(8:58-9:4) Independent claim 14 recites:

A system for mitigating the effects of interference in an unlicensed RF band for point to multipoint data transmissions, said system comprising:
at least one multibeam antenna locating interference with transmission to and from at least one subscriber of said data transmissions; and
at least one scanner determining, a frequency, bandwidth and any periodicity of said interference;
wherein a data transmission antenna pattern with a null in

the direction of said interference is generated during a period of said interference.

(10:7-19)

1. Claim Limitations

a. “[R]elative transmission rate”

The parties agree that the limitation “relative transmission rate” found in claim 1 has its plain and ordinary meaning. (D.I. 112, ex. A at 19) Plaintiff defines this limitation as “an available transmission rate.” Plaintiff’s expert, Dr. Saunders, explains in his report that “this step means to determine an available transmission rate from the possible choices for transmission rate” and “the transmission rate that is available for communicating with each subscriber is monitored against other possible transmission rates.” (D.I. 137, ex. 4 at 50-51) Further, Dr. Saunders testified that “claim 1 means to determine an available transmission rate from the choices that are available, from potential or possible choices for the transmission rate.” Dr. Saunders explained that the patent specification’s “reference to ‘optimal’ makes clear that it is discerning one rate relative to another, discerning the – optimum rate relative to other rates.” (D.I. 151, ex. 8 at 382:5-383:1)

Defendant argues that the plain meaning is nevertheless insufficient to confer meaningful precise claim scope. *See Halliburton Energy Svcs.*, 514 F.3d at 1251 (“Even if a claim term's definition can be reduced to words, the claim is still indefinite if a person of ordinary skill in the art cannot translate the definition into meaningfully precise claim scope.”). The plain meaning of “relative” is “compared to someone or something

else or to each other.”⁶ Using the plain meaning, the claim contemplates comparing the transmission rate to another transmission rate. Indeed, although Dr. Saunders contemplates the “comparison” step of the term “relative,” he does not provide, by reference to the patent specification or from the standpoint of one of ordinary skill in the art, a definition of which transmission rates are being compared. Dr. Saunders refers to “potential or possible” choices for transmission rate and “optimum” rates compared to other rates. This range of choices does not confer an objective way to determine what the “relative transmission rate” entails.

The specification does not provide further clarification. The term “relative” does not appear outside of claim 1. The patent discloses evaluating a “maximum transmission rate.” (8:3-5) It also discloses monitoring the transmission rate available from a subscriber and then looking to see if the transmission rate is “optimal.” (7:45-50, 8:10-18) The specification provides no explanation of what makes a transmission rate “optimal,”⁷ nor does it provide clarification of how this “optimal rate” might be used in the comparison to determine a “relative transmission rate.” Therefore, the court concludes that this limitation is indefinite.

b. “[N]arrow antenna beams”

Dependent claims 2 and 16 add the limitation “creating a plurality of narrow

⁶Merriam-Webster online dictionary, <http://www.merriam-webster.com/dictionary/relative>

⁷That the specification describes that in the art “a lower modulation shift . . . significantly reduces the data rate” does not provide one of skill in the art a definition of optimal. (2:47-49)

antenna beams” to the independent claims 1 and 14.⁸ The question posed by defendant is, “how narrow is narrow?” Plaintiff decries defendant’s suggestion that a narrow antenna beam should be defined by an angle and, instead, proposes the following definition: “antenna beams focused in directions for communicating with particular receiving devices.” The specification discloses

a system employ[ing] multiple narrow beams covering a sector. A sector may be, by way of example, 60 degrees to 120 degrees, or a full 360 degree area. Since **narrow beams cover less area** than a wide beam system, a reduced amount of interference is built into the network.

(4:12-21) (emphasis added) The specification incorporates by reference U.S. Patent No. 5,563,610 (the ‘610 patent), which describes using narrow multiple beams instead of wide single beams to achieve substantial improvement in performance. (‘610 patent, 6:29-31) Plaintiff’s expert, Dr. Saunders, describes that a narrow antenna beam should be considered in light of the environment in which it is used. Further, the antenna beam could “[i]n some systems . . . be one degree, in others it could be 180 degrees or even more.” A narrow antenna is “defined in terms of being effective in focusing the signal in a particular direction of a particular user relative to the directions to other users.”⁹ (D.I.

⁸Claim 2 recites: “The method of claim 1 wherein said generating step further comprises the step of creating a plurality of narrow antenna beams.” (9:5-7) Claim 16 recites: “The system of claim 15 wherein said multibeam antenna generates a plurality of narrow antenna beams.” (10:23-25)

⁹Dr. Saunders testified as follows:

Q. How narrow is narrow?

A. **It depends.**

Q. Okay.

A. And **it depends on the environment and the system that you are working in**, similar to the point you made

151, ex. 8 at 293:4-294:2)

While plaintiff argues that “[w]hether an antenna beam is focused in the direction of a particular user is objectively verifiable in the art,” this does not define the scope of the claim for potential infringers. The specification (and even plaintiff’s expert) fails to give objective boundaries to the claim limitation. The “narrowness” has been defined by “substantial improvement in performance,” its “effective[ness] in focusing the signal,” and as “depend[ent] on the environment and the system that [one is] working in.” All of these definitions serve only to add more ambiguity to the claim. Nowhere in the record is the amount of improvement or effectiveness described. There is no indication that a person of ordinary skill in the art would be able to distinguish what the patent means by “narrow antenna beams.” For these reasons, the court finds that this limitation is indefinite.

c. “[M]ultibeam antenna”

previously. There are a number of different environments.

For an antenna beam to be considered narrow in a particular environment or range of environments that a system is intended to be effective in operation within, it would need to be focused in a direction, the antenna beam would need to be focused in a direction for communicating with particular receiving devices.

That -- that suggests as in my report that that beam would preferentially focus on one desired user to a lesser degree than to other users.

So a narrow antenna beam isn't defined in terms of a particular angle, so many degrees, for example, it's defined in terms of being **effective** in focusing the signal in a particular direction of a particular user relative to the directions to other users. In some systems that could be one degree, in others it could be 180 degrees or even more.

(D.I. 151, ex. 8 at 293:11-294:2) (emphasis added)

The court adopts plaintiff's construction "antenna having elements capable of generating different antenna beams for transmitting or receiving RF data transmissions." While the only reference to "multibeam antenna" in the '454 patent is in the abstract and the claims, figure 3 illustrates such an antenna and describes it as using "multiple narrow beams." (Fig. 3, 7:1-14) Further, the '610 patent incorporated by reference discloses, for example, "a multibeam antenna providing a plurality of reception beams" and an "N-beam multibeam antenna." (3:18-19, 4:57-65)

d. "[S]canner"

The court construes this term in claim 14 as a "RF receiver used to determine a frequency, bandwidth, and any periodicity of said interference."¹⁰ This construction finds support in the specification which discusses a "scanning receiver . . . capable of scanning all of the frequencies in the band of interest." (7:8-10)

e. "[P]eriodicity"

The court construes this limitation to mean "having the characteristic of occurring recurring at regular intervals." This is consistent with the plain meaning of the limitation.

f. "[A] data transmission antenna pattern with a null in the direction of said interference"

The court construes this limitation to mean "generating a data transmission antenna pattern with a sharp minimum in the direction of said interference." This is consistent with plaintiff's reference to the IEEE standard definition of "directional-null"

¹⁰Defendant's argument that this limitation is a means-plus-function limitation written without the means language does not find support in the specification. As the court construes this term, defendant's motion for summary judgment of invalidity for indefiniteness of claim 14 is denied.

as “a sharp minimum in a radiation pattern that has been produced for the purpose of direction-finding or the suppression of unwanted radiation in a specified direction.” (D.I. 113, ex. D)

2. Invalidity

a. Indefiniteness

As discussed above, the limitations “relative transmission rate” found in claim 1 and “narrow antenna beams” found in dependent claims 2 and 16 are indefinite. Without an objective measure of these claim limitations, potential infringers are left to guess whether their activities infringe. The court concludes, therefore, that independent claim 1 and dependent claims 2 and 16 are invalid for indefiniteness.

b. Enablement

Defendant argues that the '454 patent does not enable one of ordinary skill in the art to “ascertain a type of interference,” as it does not discuss what types of interference might be ascertained, or how the types would be ascertained. (D.I. 132 at 28-29; D.I. 132, ex. B at ¶¶ 214-15) Plaintiff responds that the types of interference are known in the art, e.g., periodic interference, and Dr. Saunders explains that the patent examples describe “a receiver that can be used with the smart antenna to identify interfering sources and their characteristics such as identifying “pulses.” (D.I. 151, ex. 15 at 52) While defendant may succeed in showing that this limitation is not enabled, viewing all facts in favor of plaintiff, defendant has not met the clear and convincing standard for invalidity. Plaintiff has offered some evidence of support for this limitation and defendant has not provided evidence of what type of experimentation, if any, would be

needed to identify the types of interference. As there remain genuine disputes of material fact, both defendant's motion for summary judgment of invalidity for enablement and plaintiff's cross-motion for summary judgment of validity are denied.

c. Obviousness and Anticipation

Plaintiff asserts that U.S. Patent Application No. US 2002/0155811 ("Prismantas I"), U.S. Patent No. 7,369,484 ("Prismantas II"), and the '143 patent (collectively "the Vectrad references") may not be used in combination to render the '454 patent claims obvious under 35 U.S.C. § 103(c), as the Vectrad references (along with the '454 patent) were invented by and assigned to the same company, Vectrad Networks Corporation ("Vectrad"). Defendant does not substantively respond to this assertion.¹¹ The court concludes that the Vectrad references may not be used to render the '454 patent obvious. 35 U.S.C. § 103(c).¹²

Defendant concedes its expert did not opine on whether the '143 patent anticipates the '454 patent. Defendant avers that there are numerous factual disputes as to the Vectrad references, and specifically as to whether the Vectrad references are each missing the claim limitation of claims 1 and 14, "generating a data transmission pattern with a null in the direction of said interference." (D.I. 159 at 26-27) The report

¹¹The court will not address defendant's argument that § 103(c) does not implicate § 102(a)-(d), as it is raised for the first time on summary judgment. (D.I. 163 at 14)

¹²Subject matter developed by another person, which qualifies as prior art only under one or more of subsections (e), (f), and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the claimed invention was made, owned by the same person or subject to an obligation of assignment to the same person.

provided by plaintiff's expert also reveals numerous disagreements between the parties' experts on this issue. (D.I. 151 at 55, ex.15 at ¶¶ 33, 38) In view of this genuine dispute of material fact, plaintiff's motion for summary judgment of no anticipation is denied.¹³

D. The '143 Patent

The '143 patent, "System and Method for Statistically Directing Automatic Gain Control," issued August 28, 2007. (D.I. 61, ex. C) The '143 patent discloses an automatic gain control ("AGC") circuit for a wireless receiver, controlled in part based on statistically determining when regularly occurring interference events of a predictable duration will occur. (3:34-50) According to the specification, a "statistics gathering engine" monitors the statistics of incoming data signals and the AGC "stores all such information in tables and uses this information to predict future events." (5:15-46) The gain control circuit adjusts gain levels of a receiver to ensure that incoming signals do not overload the receiver and prevent delivery of a usable data stream. (3:34-50)

Independent claim 13 recites:

A method for operating a gain control circuit, said method comprising the steps of:
gathering statistical information about periodicity and duration of RF interference; and
directing receiver gain of said gain control circuit under at

¹³As the Vectrad references may not be used to show obviousness pursuant to the narrow exception in § 103(c), by an analogous analysis, these references should not be invalidating prior art under § 102. However, as plaintiff only provides limited briefing on the issue and defendant did not respond to the argument, the court will allow limited briefing to resolve the issue prior to trial as necessary. The court will not allow defendant's arguments on double-patenting raised for the first time on summary judgment.

least partial control of said gathered statistical information to mitigate effects of said interference.

(7:25-31)

1. Claim Limitations

a. “[G]ain control circuit”

The specification discloses that an AGC circuit “is used in virtually all radio receivers” (1:15-18) Consistent with the plain meaning of the limitation, the court construes this limitation to be “a circuit that controls the gain of a receiver.”

b. “[P]eriodicity”

The court construes this limitation to mean “having the characteristic of occurring recurring at regular intervals.” This is consistent with the plain meaning of the limitation.

c. “[R]eceiver gain”

The court adopts defendant’s construction of this limitation, “gain at a receiver.” This is consistent with the plain meaning of gain¹⁴ and the specification, which discloses that gain levels may be adjusted. (3:44-47)

d. “[D]uration of RF interference”

The parties agree that this limitation means “length of time RF interference lasts.”

2. Infringement

Defendant’s Atheros wireless chipsets have AGC circuits, which operate using software. The chipsets include a functionality called Adaptive Noise Immunity (“ANI”),

¹⁴ “[T]he increase (as of voltage or signal intensity) caused by an amplifier; especially: the ratio of output over input.” Merriam-Webster online dictionary, <http://www.merriam-webster.com/dictionary/relative>.

which adjusts various receiver parameters dynamically to minimize interference and noise effect on the signal quality. (See D.I. 137 at 20, ex. 12 at 2-3; D.I. 149 at 32, ex. E at 237:9-13) Particularly, orthogonal frequency-division multiplexing (OFDM) is a method used to encode digital data, which uses pilot signals (preambles). OFDM weak signal detect allows for the detection of weak OFDM signals. Spurious signals can cause false detection of OFDM weak signals. When this occurs, the weak signal detect may be turned off. (D.I. 149 at 32)

Defendant's expert, Dr. Sabharwal, avers that "OFDM weak signal detect and the activation and/or deactivation of the same, however, has nothing to do with gain control." (D.I. 149, ex. A at 140) Defendant further argues that measuring a receiver's false detects (or PHY errors) is not the same as gathering statistics for periodicity and duration of interference. (D.I. 149 at 36-37) Plaintiff's expert disagrees and avers that defendant's "products gather statistical information about periodicity and duration of RF interference by tracking the number of PHY errors that occur within a polling period and determining whether those errors exceed certain thresholds that have been programmed by [defendant]." (D.I. 137, ex 4. at 72) This genuine disagreement over whether defendant's products practice the limitations of claim 13 constitutes an issue of material fact. The competing motions for summary judgment are denied.¹⁵

3. Invalidity

a. Lack of Statutory Subject Matter

¹⁵As plaintiff has not shown direct infringement, plaintiff's motion for summary judgment of indirect infringement is moot. See *Joy Techs.*, 6 F.3d at 774 (liability for indirect infringement depends on the patent owner having first shown direct infringement).

Claim 13 recites a system to mitigate interference, by gathering statistical information about the duration and timing of the interference, and using these statistics to direct a gain control circuit in the receiver to adjust (or hold) the gain.¹⁶ Figure 1 references a “processor/statistics gathering engine,” which “determines and tabulates duration and timing information for the interference.” (Fig.1, 4:54-56) Gathering statistical information is akin to gathering and storing data and does not meet the machine prong. See *Fuzzysharp Technologies Inc. v. 3DLabs Inc., Ltd.*, 447 F. App'x 182, 185 (Fed. Cir. 2011) (“[computing and storing data] are essentially synonymous with the term ‘computer’ and thus add little or nothing to simply claiming the use of a general purpose computer”).

The system then uses the statistics to direct the gain control circuit in the receiver to adjust the gain. A receiver with a gain control circuit is a specific machine and the directing step cannot occur in the absence of it. Defendant argues that the reference to “receiver” merely specifies the location of the gain and the gain control circuit is merely the recipient of the direction regarding gain. However, the receiver plays an integral part in permitting the system of claim 13 to be performed.

The court next considers whether the claim is drawn to an abstract idea. *CLS Bank*, 717 F.3d at 1277. The claims at bar describe more than gathering information about signal interference (which is a well known concept); the claims describe gathering information about specific parameters, periodicity and duration, and directing a gain control circuit to adjust the gain, resulting in mitigating the interference. Defendant has

¹⁶Defendant claims 18 and 19 specifically recite holding the gain levels. (7:41-8:5)

not met its burden of identifying clear and convincing evidence to invalidate the patent. Claim 13 is tied to a particular machine, the receiver with a gain control circuit, sufficient to survive the § 101 threshold inquiry and is patentable subject matter.

b. Lack of Written Description

Defendant argues that the '143 patent lacks written description for “receiver gain,” as the patent is directed at data transmission. However, defendant’s expert concedes that “a person having ordinary skill in the art would understand that ‘most antennas are reciprocal devices and behave the same on transmit as on receive.’” (D.I. 133, ex. I at 102) “[T]he specification must describe an invention understandable to that skilled artisan and show that the inventor actually invented the invention claimed.” See *Ariad*, 598 F.3d at 1351. Apart from the use of “receiver” in the claims, the specification contains three references to “receivers:” AGC “is used in all radio receivers” (1:15-28), “AGC “is part of a radio receiver” (5:2-3), “the receiver making communications with the transmitter” (6:15-16). “[T]he level of detail required to satisfy the written description requirement varies depending on the nature and scope of the claims and on the complexity and predictability of the relevant technology.” See *Ariad*, 598 F.3d at 1351. There is a genuine issue of material fact as to whether the detail provided in the specification is sufficient for a person of skill in the art to conclude that the specification adequately disclosed “receiver gain.” Therefore, the competing summary judgment motions are denied.

c. Indefiniteness

As noted above, claim 13 recites a limitation, “directing receiver gain of said gain

control circuit . . . to mitigate effects of said interference.” Dependent claims 18 and 19 each allows “directing said gain levels to hold, ignoring said interference.” (7:29-58) The parties agreed that the claim limitation “mitigate” found in independent claim 13 should be accorded its plain and ordinary meaning. (D.I. 112 at 20) Defendant argues that holding the gain constant would allow the effects of interference to remain unaffected, which is incompatible with “mitigat[ing].” Plaintiff’s expert explains that holding the gain levels still results in mitigating interference by reducing data loss. (D.I. 151, ex. 15 at 298) There is a genuine issue of material fact regarding whether “holding the gain” results in mitigation. Therefore, the court denies defendant’s motion for summary judgment in this regard.

Defendant next argues that claim 19¹⁷ is insolubly ambiguous as it recites a

¹⁷ The method of claim 13 wherein said directing step further includes at least one step from a group of steps consisting of:
directing said gain to hold gain levels, ignoring said interference;
directing said gain to raise gain level prior to onset of said interference;
directing said gain to lower gain level prior to onset of said interference;
directing said gain to raise gain levels at cessation of said interference;
directing said gain to lower gain levels at cessation of said interference;
scheduling RF transmissions to avoid said interference;
changing an RF frequency of transmissions;
changing antenna polarity of RF transmissions;
performing waveform subtraction of said interference;
equalizing multipath events of an RF transmission; and
increasing forward error correction of a transmission.

(7:54-8:5)

group of steps for the directing limitation of claim 13, of which the last six steps have nothing to do with “receiver gain.” Plaintiff argues that these last six steps are “additional steps that may be taken in addition to statistically directing the gain control circuit and receiver gain.” The specification attempts to separate out ways of directing the gain from other system responses which may be undertaken to mitigate interference, i.e., “changing to a different frequency or antenna polarization.” (6:22-7:19, fig.3) The plain language of the claim does not support plaintiff’s argument. *Allen Eng’g Corp. v. Bartell Indus.*, 299 F.3d 1336, 1349 (Fed. Cir. 2002) (holding that the court will not rewrite claims to preserve their validity, when plaintiff argued “that one of skill in the art would understand that the term ‘perpendicular’ in the claim should be read to mean ‘parallel’”); *In re Hammack*, 427 F.2d 1384, 1388 n.5, (C.C.P.A. 1970) (semantic indefiniteness of claims “is not rendered unobjectionable merely because it could have been corrected”). Based on the claim language, all of the recited steps are included in the “directing receiver gain of said gain control circuit” of claim 13. As the last six steps are responses to be taken in addition to, or instead of, directing the gain, the claim as written is insolubly ambiguous. The court concludes that claim 19 is indefinite and thus invalid.

E. The ‘035 Patent

The ‘035 patent, “Diversity Transmission Strategy in Mobile/Indoor Cellula [sic] Radio Communications,” issued April 9, 1996. (D.I. 61, ex. D) The ‘035 patent pertains to the adaptive antenna field and discloses a data transmission system where devices, both at the base station and mobile station, use antenna diversity for data

transmissions to address issues like multipath fading. (2:9-45) Interference and multipath fading effects can degrade communication performance by reducing signal quality. (D.I. 137, ex. 4 at 11-12)

Independent claim 1 recites:

In a diversity transmission system for wireless radio communications between a base station and at least one mobile station, the combination:

multiple antennas at said base station and said at least one mobile station for transmission of data between the respective stations;

means in the base station for determining which one of said multiple antennas received data most successfully, during a last reception by said base station with this antenna being referred to as a preferred antenna of said base station;

means in said at least one mobile station for selecting one of said multiple antennas in such mobile station as a preferred antenna for said mobile station based on its use to successfully receive data during the last reception by that mobile station;

a preferred antenna storage means in the base station and in at least one mobile station in which is stored indicia indicative of which antenna at such station is determined to be the preferred antenna;

a controller at said base station and said at least one mobile station which is responsive to said indicia stored in the preferred antenna storage means for controlling the transmission of data between the respective stations by selecting the preferred antenna at the respective stations;

means in the base station and at least one mobile station to select one of the multiple antennas of that station as the preferred antenna in absence of said stored indicia; means in said base station for repeating a transmission until an acknowledgement of such transmission from said at least one mobile station is received or until a predetermined number of such repeated transmissions are performed; and means for changing the preferred base station antenna for each such repeated transmission.

(9:26-64)

1. Claim Limitations¹⁸

a. “[M]ost successfully”

Claim 1 seeks to determine “which one of said multiple antennas received data most successfully, . . . with this antenna being referred to as a preferred antenna of said base station.” Plaintiff proffers the construction, “a preferred antenna determined based on higher received signal energy and/or successful error checking and/or receipt (or lack of receipt) of acknowledgement packets.” The specification discloses that “[i]f both [receptions] are successful, the antenna with higher received signal energy becomes the preferred antenna.” (5:4-15) “[T]he only indication of whether a packet has been more successfully [sic] received is determined at the end of packet reception. The preferred means for this indication is the success or failure of the computation of an error-detecting code, or checksum.” (5:25-29)

Plaintiff’s construction offers alternatives for determining which antenna was “most successful” and, thus, the “preferred antenna.” These alternatives do not apprise one of skill in the art how to determine the preferred antenna, as which antenna is most successful would depend on which parameters were used to evaluate the success. The court concludes that this term is insolubly ambiguous and, therefore indefinite.

b. “[M]eans in the base station for determining which one of said multiple antennas received data most successfully, during a last reception by said base station with this antenna being referred to as a preferred antenna of said base station”

¹⁸The court only provides claim construction analyses herein for the claim limitations relevant to the issue of summary judgment.

This means-plus-function limitation provides for a means of determining the “preferred antenna,” i.e., the antenna that received the data most successfully. As discussed in the previous limitation, the specification discloses at least two alternative ways to determine which is the “preferred antenna,” making an algorithm necessary for this means-plus-function limitation. While plaintiff argues that “[t]he controller will make the claimed determination of the preferred antenna in light of signal energy, error checking, and/or receipt or lack of receipt of acknowledgement packets,” the specification provides no detail on how a controller would determine which of the alternative ways to apply. The court concludes that this limitation is indefinite.

c. “[M]eans in said at least one mobile station for selecting one of said multiple antennas in such mobile station as a preferred antenna for said mobile station based on its use to successfully receive data during the last reception by that mobile station”

This limitation calls for the selecting of a preferred antenna at a mobile station. Plaintiff makes the same arguments as in the previous limitation. The specification again provides no detail on how a controller would determine which of the alternative ways to select a “preferred antenna” to apply. This limitation is also indefinite.

d. “[M]eans for measuring received signal strength”

Dependent claim 4 adds “a means for measuring received signal strength” to the means for determining step in claim 1. (10:11-15) The specification discloses that “[r]eceived signal strength is measured at each antenna/transceiver branch” (2:20-22) Plaintiff’s expert opined that “[t]ransceiver’ is a term that has been used in the field

to refer [to] devices that transmit and receive wirelessly and associated components that are used for monitoring transmission including bit error rates, signal strength and other quantitative measures.” (D.I. 113, ex. A at ¶ 38) The specification, however, does not disclose any additional components to a transceiver or that the transceiver is used as the measuring means. Instead, it discloses that the “transceiver . . . signals the controller . . . at the completion of each packet reception,” to indicate if the packet was successfully received. The court concludes that the specification does not disclose a structure for this means-plus-function limitation. Therefore, the limitation is indefinite.

e. “[E]rror correction means”

Dependent claim 5 adds an “error correction means” to the means for determining step in claim 1. (10:15-19) Plaintiff argues that the corresponding structure is the routine components of error detection, i.e., “the success or failure of **the computation** of an error-detecting code, or checksum” employed for “determining packet reception success.” (5:24-30) (emphasis added) The step of “error detection” or “determining packet reception success” is a more complex function than “the functions of ‘processing,’ ‘receiving,’ and ‘storing.’” See *In re Katz*, 639 F.3d at 1316. While error-detecting codes and checksums may be known in the art, the specification fails to provide any detail on the computation and application thereof. Consequently, this limitation lacks the required structure and is indefinite.

2. Infringement

As the court finds several claim limitations indefinite, defendant's cross-motion for summary judgment of non-infringement of the asserted claims is granted.¹⁹

3. Invalidity

a. Indefiniteness

As discussed above, several limitations found in independent claim 1 and the means limitations found in dependent claims 4 and 5 are indefinite. Without an objective measure of these claim limitations, potential infringers are left to guess whether their activities infringe. The court concludes that independent claim 1 and dependent claims 4 and 5 are invalid for indefiniteness.

b. Lack of Patentable Subject Matter

Neither party argued that its claim construction would alter an analysis under § 101. Therefore, the court concludes that it may proceed on this alternative invalidity argument. *CLS Bank Int'l*, 717 F.3d at 1286 (claim should be evaluated as a whole); *Bancorp Servs.*, 687 F.3d at 1273–74 (“claim construction is not an inviolable prerequisite to a validity determination under § 101.”). Defendant argued during claim construction that “base station” and “mobile station” in claim 1 were directed to a “cellular telephone network.” For purposes of this analysis only, the court will not limit the claim to cellular networks.

¹⁹As the court finds certain claim limitations indefinite, the court cannot complete a meaningful infringement analysis. See *Markman*, 52 F.3d at 976. Additionally, the claims are invalid and, therefore, not infringed. *Exergen Corp. v. Wal-Mart Stores, Inc.*, 575 F.3d 1312, 1320 (Fed. Cir. 2009) (“invalid claim[s] cannot give rise to liability for infringement”) (citation omitted); *Wahpeton Canvas Co. v. Frontier, Inc.*, 870 F.2d 1546, 1553 (Fed. Cir. 1989) (if an independent claim is not infringed, any claim depending thereon is not infringed).

Claim 1 describes a system for wireless radio communication between a base station and a mobile station, with multiple antennas at each station. The system provides for a “controller,” as well as means to determine, select, control, store and change. The patent, by its title, “Diversity Transmission **Strategy** in Mobile/Indoor Cellula [sic] Radio Communications” recites a “strategy.” Indeed, “the invention is **directed to a strategy** for combining the use of a selection antenna diversity technique at a stationary unit such as a base station, and a selection or switching antenna diversity technique at a remote station efficiently, for data packet transmission in a wireless radio communications system.” (2:1-6) (emphasis added) In distinguishing the prior art during prosecution, plaintiff argued that claim 1 required “the use of a storage element storing preferred antenna information in combination with random selection of antennas and retransmissions of unsuccessfully transmitted data with different antennas to provide a simplified antenna diversity system.” (D.I. 114 at A-249)

The '035 patent is an abstract idea, a strategy which consists of making random selections over multiple attempts, determining whether the attempt is successful and, if not, trying again. That the strategy is limited to the field of antenna diversity does not transform the abstract subject matter into patent eligible subject matter. *Bilski II*, 130 S. Ct. at 3230 (“prohibition against patenting abstract ideas cannot be circumvented by attempting to limit the use of [a] formula to a particular technological environment”) (internal quotation omitted).

Moreover, the reference in the patent to a “controller” and means to accomplish certain functions does not “supply an ‘inventive concept’ that represents a nontrivial,

nonconventional human contribution or materially narrows the claims relative to the abstract idea they embrace”. *CLS Bank Int'l*, 717 F.3d at 1286. The recited means are processors performing ubiquitous functions, such as storing or algorithmic functions such as controlling, determining and selecting. Dependant claim 4 adds a “means for measuring” and dependent claim 5 adds “error correction means” to the “means for determining” limitation of claim 1. Neither of these additions confer any non-abstract concepts to claim 1. A “means for measuring” and “error correction means” are additional algorithmic functions that processors may perform. These means do not “tie the otherwise abstract idea to a specific way of” of performing it, or link the abstract idea to a particular machine implementing a process.” *CLS Bank Int'l*, 717 F.3d at 1301-02. The recited means are also not indispensable to the claimed strategy. See also *Bancorp*, 687 F.3d at 1272. The court concludes that the asserted claims do not recite patent eligible subject matter and, therefore, are invalid.

V. Excluding Expert Testimony

Rule 702 of the Federal Rules of Civil Procedure allows a qualified witness to testify in the form of an opinion if the witness’ “scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue” and if his/her testimony is the product of reliable principles and methods which have been reliably applied to the facts of the case.

Defendant moves to exclude Dr. Saunders testimony regarding the source code related to the patents-in-suit, because he did not review the entirety of the source code; rather, he reviewed the selections of source code provided to him by counsel. Plaintiff

responds that Dr. Saunders reviewed numerous source code files and that their selection was made based on testimony relating to the source code and defendant's discovery responses.

Defendant also avers that Dr. Saunders did not test any accused infringing products. "A patentee may prove . . . infringement by either direct or circumstantial evidence. There is no requirement that direct evidence be introduced." *Liquid Dynamics Corp. v. Vaughan Co.*, 449 F.3d 1209, 1219 (Fed. Cir. 2006) (citing *Moleculon Research Corp. v. CBS, Inc.*, 793 F.2d 1261, 1272 (Fed. Cir. 1986) (abrogated on other grounds)). Dr. Saunders was not required to test the accused products. Defendant has not shown that Dr. Saunders testimony is based on unreliable sources, indeed, it is based on defendant's source code and the testimony of defendant's witnesses. Defendant's concerns go to the weight of the testimony and may properly be addressed on cross-examination.

VI. Conclusion

For the foregoing reasons, the court denies plaintiff's summary judgment motion of infringement (D.I. 136) and for validity of the patents-in-suit (D.I. 150). The court grants in part and denies in part defendant's motion for summary judgment of invalidity (D.I. 131) and non-infringement of the patents-in-suit. (D.I. 148) The court also denies defendant's motion to exclude the expert testimony of Dr. Saunders. (D.I. 121) An appropriate order shall issue.