UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

RUCKUS WIRELESS, INC.,

Plaintiff,

v.

NETGEAR, INC.,

Defendant.

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No. C 08-2310 PJH

CLAIM CONSTRUCTION ORDER

On August 28, 2013, the parties' claim construction hearing to construe the disputed terms of U.S. Patent Nos. 7,193,562 ("the '562 patent") and 7,525,486 ("the '486 patent) (together, the "patents-in-suit") pursuant to Markman v. Westview Instruments, Inc., 517 U.S. 370 (1996), came before this court. Plaintiff Ruckus Wireless, Inc. ("plaintiff" or "Ruckus") appeared through its counsel, Colby Springer. Defendant Netgear, Inc. ("defendant" or "Netgear") appeared through its counsel, Nina Wang, Mary Sooter, and Ryan Clough. Having read the parties' papers and carefully considered their arguments and the relevant legal authority, the court hereby rules as follows.

BACKGROUND

The '562 patent is entitled "Circuit Board Having a Peripheral Antenna Apparatus with Selectable Antenna Elements," and the '486 patent is entitled "Increased Wireless Coverage Patterns." The '486 patent (filed March 5, 2007) is a continuation of the '562 patent (filed December 23, 2004). The two patents appear to share the same specification, other than the "summary of the invention" section, and both relate to technology for sending and receiving radio frequency (RF) signals at a wireless internet access point (or router) used in wireless Internet networks.

A wireless access point (or router) has antennas embedded in its circuit board which send data to/from any computer connected to the wireless network. In general, antennas can be either omnidirectional or directional. Omnidirectional antennas transmit radio waves roughly equally in all directions, whereas directional antennas transmit radio waves mostly in one direction. Wireless access points can be prone to interference from other wave-transmitting devices (microwaves, cordless phones, etc.), so it is advantageous for the access point to have multiple, switchable antennas – that way, if one antenna is being interfered with, the access point can switch to a different antenna. In the prior art, wireless access points had multiple omnidirectional antennas. But because omnidirectional antennas emit waves in a circle-type shape, the wave patterns of the multiple antennas substantially overlapped, so there was little advantage to switching antennas. The claimed invention attempts to solve that problem using multiple directional antennas – that way, when one antenna is prone to interference, the access point switches to a different antenna, so the pattern of emitted radio waves covers a different area, making it easier to avoid any interference. The claimed invention also allows for multiple directional antennas to be used at once, which can have the effect of creating a combined omnidirectional wave pattern. As another way of minimizing interference, the claimed invention uses horizontally polarized waves, rather than vertically polarized waves.

Defendant is a company that designs, develops, and markets wireless network products, including wireless access points. Plaintiff alleges that defendant infringes the patents-in-suit by "making, using, importing for sale, selling, and offering for sale" its WPN824v3 wireless router. See Amended Complaint (Dkt. 97), ¶¶ 61, 65.

The parties originally sought construction of seven terms (or term groups). However, at the claim construction hearing, the parties indicated that they had reached agreement as to one of the terms ("means for coupling the feed line distribution point to the first means for radiating the RF signal and the second means for radiating the RF signal"), and the parties subsequently submitted a stipulation reflecting that agreement. See Dkt. 133. Thus, six terms (or term groups) are construed herein.

DISCUSSION

A. Legal Standard

In construing claims, the court must begin with an examination of the claim language itself. The terms used in the claims are generally given their "ordinary and customary meaning." See Phillips v. AWH Corp., 415 F.3d 1303, 1312-13 (Fed. Cir. 2005); see also Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1248 (Fed. Cir. 1998) ("The claims define the scope of the right to exclude; the claim construction inquiry, therefore, begins and ends in all cases with the actual words of the claim."). This ordinary and customary meaning "is the meaning that the terms would have to a person of ordinary skill in the art in question at the time of the invention...". Phillips, 415 F.3d at 1313. A patentee is presumed to have intended the ordinary meaning of a claim term in the absence of an express intent to the contrary. York Products, Inc. v. Central Tractor Farm & Family Ctr., 99 F.3d 1568, 1572 (Fed. Cir. 1996).

Generally speaking, the words in a claim are to be interpreted "in light of the intrinsic evidence of record, including the written description, the drawings, and the prosecution history, if in evidence." Teleflex, Inc. v. Ficosa North Am. Corp., 299 F.3d 1313, 1324-25 (Fed. Cir. 2002) (citations omitted); see also Medrad, Inc. v. MRI Devices Corp., 401 F.3d 1313, 1319 (Fed. Cir. 2005) (court looks at "the ordinary meaning in the context of the written description and the prosecution history"). "Such intrinsic evidence is the most significant source of the legally operative meaning of disputed claim language." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996).

With regard to the intrinsic evidence, the court's examination begins, first, with the claim language. See id. Specifically, "the context in which a claim is used in the asserted claim can be highly instructive." Phillips, 415 F.3d at 1314. As part of that context, the court may also consider the other patent claims, both asserted and unasserted. Id. For example, as claim terms are normally used consistently throughout a patent, the usage of a term in one claim may illuminate the meaning of the same term in other claims. Id. The court may also consider differences between claims to guide in understanding the meaning

of particular claim terms.

Second, the claims "must [also] be read in view of the specification, of which they are a part." Id. at 1315. When the specification reveals a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess, the inventor's lexicography governs. Id. at 1316. Indeed, the specification is to be viewed as the "best source" for understanding a technical term, informed as needed by the prosecution history. Id. at 1315. As the Federal Circuit stated in Phillips, the specification is "the single best guide to the meaning of a disputed term," and "acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication." 415 F.3d at 1321.

Limitations from the specification, such as from the preferred embodiment, cannot be read into the claims absent an express intention to do so. Teleflex, 299 F.3d at 1326 ("The claims must be read in view of the specification, but limitations from the specification are not to be read into the claims.") (citations omitted); CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366 (Fed. Cir. 2002) ("a patentee need not describe in the specification every conceivable and possible future embodiment of his invention."); Altiris v. Symantec Corp., 318 F.3d 1363, 1372 (Fed. Cir. 2003) ("resort to the rest of the specification to define a claim term is only appropriate in limited circumstances"). To protect against this, the court should not consult the intrinsic evidence until after reviewing the claims in light of the ordinary meaning of the words themselves. Texas Digital Systems, Inc. v. Telegenix, Inc., 308 F.3d 1193, 1204-05 (Fed. Cir. 2002) (to act otherwise "invites a violation of our precedent counseling against importing limitations into the claims") (citations omitted).

Finally, as part of the intrinsic evidence analysis, the court "should also consider the patent's prosecution history, if it is in evidence." Phillips, 415 F.3d at 1317. The court should take into account, however, that the prosecution history "often lacks the clarity of the specification" and thus is of limited use for claim construction purposes. Id.

In most cases, claims can be resolved based on intrinsic evidence. See Vitronics,

90 F.3d at 1583. Only if an analysis of the intrinsic evidence fails to resolve any ambiguity in the claim language may the court then rely on extrinsic evidence, such as expert and inventor testimony, dictionaries, and learned treatises. See Vitronics, 90 F.3d at 1583 ("In those cases where the public record unambiguously describes the scope of the patented invention, reliance on any extrinsic evidence is improper"). However, the court generally views extrinsic evidence as less reliable than the patent and its prosecution history in determining how to read claim terms, and its consideration is within the court's sound discretion. See Phillips, 415 F.3d at 1318-19.

B. Construction of Disputed Terms and Phrases

The parties dispute construction of six terms (or term groups) contained within the claims of the patents-in-suit, which are addressed in turn below.

1. "substantially omnidirectional and horizontally polarized radiation coverage that is substantially in the plane of the circuit board"

The term "substantially omnidirectional and horizontally polarized radiation coverage that is substantially in the plane of the circuit board" is found in claims 1, 18, 27, and 30 of the '562 patent. Plaintiff proposes that the term should be construed to mean "radiation patterns that are oriented substantially parallel to the earth's surface and that substantially propagate in the plane of the circuit board in almost all directions." Defendant proposes that the component parts of the term be construed separately. Specifically, defendant contends that "omnidirectional" should be construed to mean "radiating power equally in all directions in a plane," that "horizontally polarized" be construed to mean "having electric field vectors that are oriented parallel to the earth's surface," that "substantially in the plane of the circuit board" be construed to mean "having substantially more gain in the plane of the circuit board than in other directions," and that "substantially omnidirectional" be found to be indefinite.

As an initial matter, the court agrees with defendant that construing the phrase as separate component parts is preferable to construing the phrase as a whole, as an omnibus construction would be more confusing to a jury. However, the court disagrees

with defendant that "omnidirectional" needs to be construed separately from "substantially omnidirectional." The term "omnidirectional" does not appear as a standalone term in the claims, and instead appears only as part of the term "substantially omnidirectional." Thus, the court will construe the terms "substantially omnidirectional," "horizontally polarized," and "substantially in the plane of the circuit board."

As stated above, defendant contends that "substantially omnidirectional" should be found to be indefinite. While plaintiff did not originally offer a separate construction of "substantially omnidirectional," its reply brief states that "substantially omnidirectional" means that the radiation "propagate[s] in almost all directions," which is consistent with the relevant portions of its proposed omnibus construction. Compare Dkt. 121 at 4 with Dkt. Dkt. 115 at 8.

While defendant argues that "substantially omnidirectional" should be found to be indefinite, defendant also makes clear that it "is not arguing that the word 'substantially' is always or inherently indefinite." Instead, defendant argues only that "substantially" is indefinite in the context of this term. Defendant goes on to explain that "substantially" generally has two meanings when used in a claim term – it can either be used as a term of magnitude (similar to "significantly"), or as a term of approximation (similar to "essentially"). Defendant argues that "substantially" in the context of this claim term is used as a term of approximation. However, it asks "just how much can a radiation deviate from a perfectly omnidirectional pattern before it no longer meets the claim term?" Defendant explains that indefiniteness is determined by whether a person having ordinary skill in the art can discern the scope of the invention, and argues that the lead inventor himself could not provide any objective criteria for determining what constitutes a "substantially omnidirectional" radiation pattern, thus making it clear that a person having ordinary skill in the art would not be able to discern the invention's scope.

The court agrees with defendant that "substantially" is used in the patents-in-suit as a term of approximation. However, the court notes that, in a number of the cases cited by defendant, the Federal Circuit approved the use of the term "substantially" when "warranted

by the nature of the invention, in order to accommodate the minor variations that may be appropriate to secure the invention." Verve, LLC v. Crane Cams., Inc., 311 F.3d 1116, 1120 (Fed. Cir. 2002); see also Deering Precision Instruments, LLC v. Vector Distribution Systems, Inc., 347 F.3d 1314, 1323-24 (Fed. Cir. 2003); Biotec Biologische Naturverpackungen GmbH v. Biocorp., Inc., 249 F.3d 1341, 1346-47 (Fed. Cir. 2001). The Verve court further held that, "like the term 'about,' the term 'substantially' is a descriptive tem commonly used in patent claims to 'avoid a strict numerical boundary to the specified parameter.'" Verve, 311 F.3d at 1120 (internal citations omitted). Thus, the Federal Circuit has recognized that, in certain contexts, exact precision need not be required in order to describe the invention.

In the context of antenna technology, even defendant admitted (in its presentation at the claim construction hearing) that "real antennas are never perfectly omnidirectional," as the physical structure of the antenna itself creates some minor interference that prevents a perfectly circular radiation pattern. Thus, the court finds that the word "substantially" is "warranted by the nature of the invention," and declines to find that the term "substantially omnidirectional" is indefinite. Instead, the court construes the term "**substantially omnidirectional**" as "**radiating power approximately equally in all directions**." This construction reflects the use of the term "substantially" as a term of approximation (rather than as a term of magnitude), and also reflects the inventor's own definition of an "omnidirectional antenna" as one where "when you walk 360 degrees around it, you would get the exact same signal. It has to be exactly the same." Dkt. 120, Ex. A at 87:6-9.

For the term "horizontally polarized," plaintiff's proposed construction would construe that component term as "radiation patterns that are oriented substantially parallel to the earth's surface," while defendant contends that the term should be construed as "having electric field vectors that are oriented parallel to the earth's surface." The parties appear to agree on the "parallel to the earth's surface" portion of the construction, thus leaving two areas of disagreement: (1) plaintiff's inclusion of the word "substantially," and (2) defendant's inclusion of the term "electric field vectors" (in contrast to plaintiff's use of

"radiation patterns").

As to (1), the court finds that plaintiff has failed to provide support for the inclusion of the word "substantially." While the claim term itself uses "substantially" to modify "omnidirectional" and "in the plane of the circuit board," the term "horizontally polarized" is not so modified.

As to (2), the court finds that both parties' proposed constructions attempt to include new nouns that are modified by the term "horizontally polarized," when the claims themselves already include a noun. Specifically, claims 1, 27, and 30 recite "horizontally polarized radiation coverage," and claim 18 recites a "horizontally polarized radiation pattern." Defendant offers only a very brief argument in support of its substitution of "radiation coverage/pattern" with "electric field vectors," asserting that "the uniformly adopted definition of polarization relates to the orientation of the electric field vector associated with a radio wave, not the radiation pattern, which depicts the power of the radiation." Defendant further argues that these are "fundamental engineering concepts which would be known to any person of ordinary skill in the art." However, the patentee chose to use the term "horizontally polarized" to refer to the "radiation coverage" or "radiation pattern," and the court finds no reason to rewrite the claim language. Defendant may be right that the claim language is "technically incorrect," but the court does not reach that issue here, and instead decides only that the term "**horizontally polarized**" shall be construed as "**oriented parallel to the earth's surface**."

Finally, for the term "substantially in the plane of the circuit board," plaintiff's proposed construction repeats the claim language, while defendant argues that the term should be construed as "having substantially more gain in the plane of the circuit board than in other directions." The court notes that neither party's briefs meaningfully address the introduction of the term "gain," and for that reason, the court declines to construe the term "**substantially in the plane of the circuit board**," and instead lets plain and ordinary meaning govern.

2. "directional radiation pattern"

The term "directional radiation pattern" is found in claims 1, 18, and 27 of the '562 patent, and in claims 1, 12, and 15 of the '486 patent. Plaintiff argues that this term should be given its plain and ordinary meaning, and in the alternative, argues that it should be construed as "a radiation pattern emitted from an antenna element that is directional rather than omnidirectional." Defendant argues that the term should be construed as "radiating significantly better in a given direction than in all other directions."

Plaintiff argues that the claim language "speaks for itself," and further argues that defendant's proposed construction "introduces limiting concepts not found in the claim language such as 'radiating significantly better' and the requirement of 'a given direction.'" However, if the court does construe the claim, plaintiff argues that the claim term "merely calls for a directional radiation pattern," which is "a pattern that is not omnidirectional."

Defendant points to an "Antenna Essentials White Paper" published by plaintiff, which defines a "directional" signal as one that "sends more (most) energy in one direction rather than another," and which explains that "[d]irectional antennas are used when signal is desired in a certain or specific direction." See Dkt. 120, Ex. D. While this white paper is extrinsic evidence, and thus carries less weight than intrinsic evidence, the court disagrees with plaintiff that it is "irrelevant." The intrinsic record, like plaintiff's proposed construction, defines "directional" only in opposition to "omnidirectional," so the court will consider this extrinsic evidence, especially since the extrinsic evidence comes from plaintiff itself.

Defendant also identifies a disclosure in the specification stating that "[e]ach of the antenna elements 240 produces a directional radiation pattern with gain (as compared to an omnidirectional antenna)." See '562 patent, 5:3-7; '486 patent, 5:6-10. Given that the patentee himself used the concept of gain to distinguish a directional antenna from an omnidirectional antenna, the court finds it appropriate to include that concept in the construction of the term "directional antenna," and further finds that it would be more useful to the factfinder than simply defining "directional" as "not omnidirectional." Thus, the court construes "**directional radiation pattern**" as "**radiating more gain in a given direction**

than in all other directions."

3. "substantially 360-degree coverage pattern"

The term "substantially 360-degree coverage pattern" is found in claims 1, 15, and 16 of the '486 patent. Plaintiff contends that the term should be construed to mean "radiation patterns that collectively include electromagnetic waves extending in almost all directions with respect to the center." Defendant contends that the term should be construed as two separate terms: "360-degree coverage pattern" and "substantially 360-degree coverage pattern." Defendant argues that "360-degree coverage pattern" should be construed as "radiating power equally in all directions in the plane of the circuit board," and that "substantially 360-degree coverage pattern" should be found to be indefinite.

The court finds that defendant's argument for construing the terms separately is the same as its argument for construing "omnidirectional" separately from "substantially omnidirectional," and rejects it for the same reason. The term "360-degree coverage pattern" does not appear as a standalone term in the claims, and instead appears only as part of the phrase "substantially 360-degree coverage pattern." Thus, the court will construe only the term "substantially 360-degree coverage pattern."

Defendant's indefiniteness argument is also the same as its indefiniteness argument with respect to the term "substantially omnidirectional," and the court also rejects that argument for the same reason. The term "substantially" is used as a term of approximation, and the court finds it warranted by the nature of antenna technology.

The court further notes that the term "substantially 360-degree coverage pattern" is used in the '486 patent to mean the same thing as the term "substantially omnidirectional" was used to mean in the '562 patent. The court also notes that, during prosecution of the '486 patent, the examiner found that the term "360-degree coverage pattern" lacked support in the written description of the patent, and the patentee responded by pointing to the disclosure of "an omnidirectional radiation pattern" that is formed when multiple directional antennas are switched on. See Dkt. 120, Ex. C at 9, 11.

Plaintiff now resists any likening of "substantially 360-degree coverage pattern" to "substantially omnidirectional," arguing that the same construction would only apply if "dealing with the same invention between two common specifications," which "is not the case with respect to the '562 and '486 patents." Dkt. 121 at 10. To support its point, plaintiff includes a chart comparing claim 1 of the '562 patent with claim 1 of the '486 patent. Id. However, the relevant comparison is not between the claims of the two patents, it is, as plaintiff admits, between the specifications of the two patents. See St. Clair Intellectual Prop. Consultants, Inc. v. Canon, Inc., 412 Fed. Appx. 270, 275 (Fed. Cir. 2011). And a comparison of the two patents' specifications shows that the "detailed description" of the invention in both patents is the same, which is consistent with the '486 patent having been filed as a continuation of the '562 patent. Thus, the court finds that "substantially 360-degree coverage pattern" should be construed the same way as "substantially omnidirectional," and thus construes "**substantially 360-degree coverage pattern**" as "**radiating power approximately equally in all directions**."

4. "substantially surround" and "substantially surrounding"

The term "substantially surround" or "substantially surrounding" is found in claims 1, 8, 27, and 30 of the '562 patent. Plaintiff argues that the term should be construed to mean "spaced apart and located on two or more sides of." Defendant argues that it should be construed to mean "substantially enclose/enclosing on all sides."

The court first notes that the term "substantially surround" (or "substantially surrounding") is used to describe antenna elements (or "means for radiating the RF signal," as used in claim 27) which "substantially surround the communication circuitry." The dispute between the parties thus boils down to whether the antenna elements (or means for radiating the RF signal) must "substantially enclose" the communication circuitry "on all sides" (as advocated by defendant), or whether they must simply be "located on two or more sides of" the communication circuitry (as advocated by plaintiff).

The court notes claim 1 originally recited "a first antenna element located near a first periphery of the circuit board" and "a second antenna element located near a second

periphery of the circuit board," but did not require the antenna elements to "substantially surround" the circuit board. Dkt. 120, Ex. S at 3. But after an initial rejection, the patentee added the "substantially surround" limitation. Dkt. 120, Ex. T at 3. The court notes that the relevant amendment actually added a number of new limitations to overcome the prior art, so it is unclear whether "substantially surrounds" was the validity-dispositive addition. However, the court finds that plaintiff's proposed construction bears little difference to claim 1 as originally drafted, as it merely requires the antenna elements to be on two different sides of the circuit board.

While plaintiff's proposed construction sweeps too broadly, the court finds that defendant's construction is too narrow. The claim recites only two antenna elements, and two antenna elements cannot literally surround a circuit board on all sides. To account for that scenario, the court includes a reference to the number of required antenna elements in its construction, and construes "**substantially surround**" and "**substantially surrounding**" as "**substantially enclose/enclosing on all sides, with two or more antenna elements**."

5. "configured to form a radiation pattern"

The term "configured to form a radiation pattern" is found in claim 18 of the '486 patent. Plaintiff argues that the term should be given its plain and ordinary meaning, and in the alternative, argues that it should be construed to mean "having functional components arranged in such a way that a pattern of electromagnetic waves is emitted." Defendant argues that it should be construed to mean "designed to form a directional radiation pattern (as 'directional' is defined above)."

Essentially, the dispute here is whether the term "directional" should be read into the claims. Plaintiff argues that the adoption of defendant's proposal "would be in error because the phrase 'directional' is not found in the claim," and that the "present claim language is agnostic as to whether the pattern is directional, omnidirectional, or otherwise."

Defendant admits that "the term 'directional' does not appear in the language of the claims," but argues that "it must be inferred by the inventors' description of the prior art and the distinguishing characteristics of the invention." Defendant argues that the specifications

of the patents-in-suit explain the drawbacks of omnidirectional antennas in detail, and do not discuss the use of any radiation pattern other than a directional pattern.

The court agrees with defendant that, in the context of the written descriptions of the patents-in-suit, the radiation pattern emitted by each individual antenna must be a directional one. The "background" section of the '486 patent points out multiple limitations of omnidirectional antennas, and the "detailed description" of the invention states that "[e]ach of the antenna elements provides a directional radiation pattern," which "may form an omnidirectional radiation pattern" if multiple antenna elements are switched on. '486 Patent, 1:54-2:12, 3:41-46. As defendant points out, "[n]othing in the specification discusses any radiation pattern for the individual antenna elements other than a directional pattern," and while defendant does not expressly raise an invalidity argument based on lack of support in the written description, the court does note that claim terms are to be construed in a way to preserve their validity. Wang Labs., Inc. v. America Online, 197 F.3d 1377, 1383 (Fed. Cir. 1999). Any construction which allowed a single antenna to emit an omnidirectional radiation pattern would appear to go beyond the scope of the disclosed invention, and would leave claim 18 open to an invalidity challenge. While the antennas may be combined with each other to emit a collective omnidirectional signal, the language of claim 18 refers to "each of the one or more of the plurality of antenna elements configured to form a radiation pattern," and thus refers to the pattern emitted by individual antennas. Thus, the court construes the term "**configured to form a radiation pattern**" as "**designed to form a directional radiation pattern**."

6. "means for radiating the RF signal in a first [second] directional radiation pattern"

The term "means for radiating the RF signal in a first [second] directional radiation pattern" is found in claim 27 of the '562 patent. The parties agree that this is a means-plus-function term, and is thus governed by 35 U.S.C. § 112(f). The parties also agree that the relevant function is "radiating an RF signal in a directional radiation pattern." However, the parties disagree as to the relevant structure. Plaintiff argues that it should be construed as

"an antenna element," while defendant argues that it should be construed as "a modified dipole with a reflective element, both on a printed circuit board."

As the parties point out, construction of a means-plus-function claim involves two steps: (1) defining the particular function of the claim limitation, and (2) identifying the corresponding structure for that function. See, e.g., In re Aoyama, 656 F.3d 1293, 1296-97 (Fed. Cir. 2011). Because the parties agree as to the function, the court need only perform step (2). Under that second step, "structure disclosed in the specification is corresponding structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim." Id. at 1297.

Plaintiff argues that the abstract of the '562 patent makes eight references to "antenna elements" that emit radiation patterns, but zero references to the "modified dipole" structure that appears in defendant's proposed construction. Plaintiff further argues that the term "modified dipole" appears only in the context of alternative embodiments of the invention, and thus should not be read into the claim language.

Defendant points to numerous instances where the term "modified dipole" is used. See '562 patent, 3:1-3, 5:40-42 (describing Fig. 3A); 3:4-6 (describing Fig. 3B); 3:7-9 (describing Fig. 3C); 3:10-13, 6:48-50 (describing Fig. 3D). However, a number of defendant's citations mention only a "dipole" antenna, rather than a "modified dipole" See, e.g., '562 patent, 5:54-55 ("the dipole component 310 and/or the dipole component 311"); 6:24-26 ("a first dipole component 315 incorporating a meander, a second dipole component 316 incorporating a corresponding meander"). Further, plaintiff is correct that the term "modified dipole" is used only in the context of certain embodiments, and is not used to refer to the invention as a whole.

However, plaintiff does not identify any type of structure disclosed in the '562 patent other than a dipole antenna. In that sense, defendant is correct when it argues that plaintiff "could have drafted claim 27 to simply require a generic antenna element," but "[i]t did not." Plaintiff chose to draft claim 27 as a means-plus-function claim, and is thus limited to the

structures disclosed in the specification, all of which refer to a dipole antenna (whether modified or not).

The court further finds that defendant has not provided adequate support for its remaining two structural limitations (a "reflective element," and the requirement that the antenna and reflective element both be "on a printed circuit board"). In fact, the patent specifically states that the "antenna element 240A may optionally include one or more reflectors." '562 patent, 5:63-64. Defendant does not provide any support for its "on a printed circuit board" limitation. Thus, the court construes the structure of a **"means for radiating the RF signal in a first [second] directional radiation pattern**" as **"a dipole or modified dipole antenna**."

C. Conclusion

In accordance with the foregoing, and for the reasons discussed above, the court construes the parties' disputed terms as follows:

1. "substantially omnidirectional" means "radiating power approximately equally in all directions," "horizontally polarized" means "oriented parallel to the earth's surface," and "substantially in the plane of the circuit board" is given its plain and ordinary meaning.
2. "directional radiation pattern" means "radiating more gain in a given direction than in all other directions."
3. "substantially 360-degree coverage pattern" means "radiating power approximately equally in all directions."
4. "substantially surround" and "substantially surrounding" mean "substantially enclose/enclosing on all sides, with two or more antenna elements."
5. "configured to form a radiation pattern" means "designed to form a directional radiation pattern."
6. for the term "means for radiating the RF signal in a first [second] directional radiation pattern," the function is construed as "radiating an RF signal in a

directional radiation pattern," and the structure is construed as "a dipole or modified dipole antenna."

The parties shall meet and confer and submit a stipulation, after consulting the court's calendar, as to a date for a case management conference. The stipulation shall be filed by **December 30, 2013**.

IT IS SO ORDERED.

Dated: December 16, 2013

PHYLLIS J. HAMILTON
United States District Judge