

**UNITED STATES DISTRICT COURT
MIDDLE DISTRICT OF FLORIDA
JACKSONVILLE DIVISION**

PARKERVISION, INC.,

Plaintiff,

Case No.: 3:11-cv-719-RBD-JBT

v.

QUALCOMM INCORPORATED,

Defendant.

_____ /

**PARKERVISION'S MOTION AND MEMORANDUM TO DISMISS
QUALCOMM'S COUNTERCLAIMS FOR
INEQUITABLE CONDUCT, TORTIOUS INTERFERENCE,
AND AIDING AND ABETTING BREACH OF FIDUCIARY DUTY**

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Plaintiff ParkerVision, Inc. (“ParkerVision”) moves pursuant to Federal Rule of Civil Procedure 12(b)(6) to dismiss Counts One through Seven (patent unenforceability due to inequitable conduct), Count Eleven (aiding and abetting breach of fiduciary duty), and Count Thirteen (tortious interference) of Defendant Qualcomm Incorporated’s (“Qualcomm”) Counterclaims (Dkt.18).

I. INTRODUCTION

ParkerVision filed this patent infringement action against Qualcomm alleging infringement of seven patents¹ directed generally to technology for extracting data from radio signals. Complaint, Dkt. 1, ¶ 9. ParkerVision’s patented technology has numerous benefits, including enabling the use of smaller and less expensive integrated circuits in wireless devices, such as cell phones, without a decrease in performance. Qualcomm has made infringing use of ParkerVision’s patented technology in integrated circuits that Qualcomm markets for use in cell phones. *Id.* at ¶ 11. On September 16, 2011, Qualcomm responded to the Complaint, asserting that each of the seven Patents-in-Suit is somehow unenforceable due to inequitable conduct purportedly engaged in by unidentified individuals during the prosecution of the ‘551 Patent. Qualcomm’s Counterclaims, Dkt. 18, Counts One through Seven. Qualcomm also injected unrelated, and facially defective, claims that ParkerVision aided and abetted a purported breach of fiduciary duty by counsel for both Qualcomm and ParkerVision, and tortiously interfered with a contract to which both ParkerVision and Qualcomm are parties. *Id.* at Counts Eleven and Thirteen. As discussed below, Qualcomm’s

¹ The seven patents asserted (the “Patents-in-Suit”) are United States Patent Nos. 6,061,551 (“the ‘551 Patent”); 6,266,518 (“the ‘518 Patent”); 6,370,371 (“the ‘371 Patent”); 7,496,342 (“the ‘342 Patent”); 7,515,896 (“the ‘896 Patent”); 7,724,845 (“the ‘845 Patent”); and 7,822,401 (“the ‘401 Patent”). *See* Complaint, Dkt. 1, ¶ 9.

allegations of inequitable conduct, aiding and abetting, and tortious interference fall well short of the standards required to sustain these claims. In fact, Qualcomm fails to advance a legally cognizable theory of inequitable conduct or tortious interference that could be cured by further pleading.

II. LEGAL STANDARDS

To survive a Rule 12(b)(6) motion to dismiss, “a complaint must contain sufficient factual matter, accepted as true, to state a claim to relief that is plausible on its face.” *Ashcroft v. Iqbal*, 129 S.Ct. 1937, 1949 (2009) (quoting *Bell Atlantic Corp. v. Twombly*, 550 U.S. 544, 570 (2009)). The standard requires “more than an unadorned, the-defendant-unlawfully-harmed-me accusation.” *Id.* A pleading that “tenders naked assertions devoid of further factual enhancement,” or offers only “labels and conclusions” or a “formulaic recitation of a cause of action” fails to meet this standard and must be dismissed. *Id.* (quoting *Twombly*, 550 U.S. at 555-7). In *Iqbal*, the Supreme Court enunciated two working principles:

First, the tenet that a court must accept as true all of the allegations contained in a complaint is inapplicable to legal conclusions. Threadbare recitals of the elements of a cause of action, supported by mere conclusory statements, do not suffice.

...

Second, only a complaint that states a plausible claim for relief survives a motion to dismiss.

129 S. Ct. at 1949-50 (internal citations omitted). In addition to the requirements of Rule 8, Federal Rule of Civil Procedure 9(b) imposes a heightened pleading standard for claims that sound in fraud, such as claims based on inequitable conduct, requiring a party to “state with particularity the circumstances constituting fraud.”

III. QUALCOMM FAILS TO STATE A CLAIM FOR PATENT UNENFORCEABILITY DUE TO INEQUITABLE CONDUCT

Qualcomm asserts that each of the seven Patents-in-Suit is unenforceable because of inequitable conduct that purportedly occurred during the prosecution of ParkerVision's '551 Patent. Dkt. 18, Counts One through Seven. As detailed below, Qualcomm's theories of inequitable conduct are legally flawed, and its allegations fail to satisfy the rigorous pleading standards for such claims.

Count One of Qualcomm's Counterclaims seeks a declaration of unenforceability as to the '551 Patent based on two theories of inequitable conduct. First, Qualcomm asserts that five references,² which ParkerVision voluntarily submitted to the United States Patent and Trademark Office ("PTO"), were "mischaracterized" by attorney argument that the five references were distinguishable from the invention claimed in ParkerVision's patent application. *Id.* at ¶¶ 27-57. As a matter of law, such attorney arguments distinguishing references cannot give rise to a claim of inequitable conduct. *See Life Techs., Inc. v. Clontech Lab., Inc.*, 224 F.3d 1320, 1326 (Fed. Cir. 2000) ("an applicant is free to advocate its interpretation of its claims and the teachings of prior art."). Qualcomm's second attack on the prosecution of the '551 Patent maintains that ParkerVision was too forthcoming in its information disclosures to the PTO, thereby "burying" United States Patent 4,320,536 ("the '536 Reference"). Dkt. 18 at ¶¶ 23-25. Again, Qualcomm's allegations fail as a matter of law. "An applicant can not be guilty of inequitable conduct if the reference was cited to the examiner." *Fiskars, Inc. v. Hunt Mfg.*, 221 F.3d 1318, 1327 (Fed. Cir. 2000). The pleadings

² In patent law, a "reference" is a document, such as a patent or item of scientific literature, which can be used to show the state of knowledge at a given time, and thus potentially affect the patentability of a claimed invention.

and documents properly before this Court incontrovertibly reflect that the ‘536 Reference was cited to (and considered by) the examiner. No claim of inequitable conduct is possible on these facts. In addition to being founded on untenable legal theories, Qualcomm’s allegations do not come close to satisfying the standards for pleading inequitable conduct under Federal Rule of Civil Procedure 9(b) and the United States Court of Appeals for the Federal Circuit’s decision in *Exergen Corp. v. Wal-Mart Stores, Inc.*, 575 F.3d 1312, 1324-31 (Fed. Cir. 2009) (“the pleading must identify the specific who, what, when, where, and how of the material misrepresentation or omission committed before the PTO.”).

Counts Two through Seven of Qualcomm’s Counterclaims assert that the remaining six Patents-in-Suit are unenforceable only as a result of the alleged inequitable conduct during the prosecution of the ‘551 Patent. Because Count One is deficient, these ancillary Counts necessarily collapse as well. In addition, Qualcomm fails to offer any allegations, much less specific facts, to support a claim that inequitable conduct during the prosecution of the ‘551 Patent had a material effect on the prosecutions of the other Patents-in-Suit.

A. The Exacting Standards for Pleading Inequitable Conduct

To state a claim for inequitable conduct, a party must allege that “(1) an individual associated with the filing and prosecution of a patent application made an affirmative misrepresentation of a material fact, failed to disclose material information, or submitted false material information; and (2) the individual did so with a specific intent to deceive the PTO.” *Exergen*, 575 F.3d at 1327 n.3. Because claims of inequitable conduct are unique to patent disputes, the pleading requirements set forth by the Federal Circuit control. *Id.* at 1318. The Federal Circuit has repeatedly recognized:

[T]he habit of charging inequitable conduct in almost every major patent case has become an absolute plague. Reputable lawyers seem to feel compelled to make the charge against other reputable lawyers on the slenderest grounds, to represent their client's interests adequately, perhaps.

See Therasense, Inc. v. Becton, Dickinson & Co., 649 F.3d 1276, 1289 (Fed. Cir. 2011) (quoting *Burlington Industries, Inc. v. Dayco Corp.*, 849 F.2d 1418, 1422 (Fed. Cir. 1988)). In an effort to restrict this reckless practice, and to curb harmful consequences such as damage to reputation, use of inequitable conduct as a litigation tactic, and the increased complexity, duration and cost of patent litigation, the Federal Circuit addressed the standards for both pleading and proving inequitable conduct in *Exergen* and *Therasense*, respectively. *Exergen*, 575 F.3d at 1331; *Therasense*, 649 F.3d at 1288-90. In *Exergen*, the Federal Circuit made clear that inequitable conduct must be pleaded with particularity in accordance with Rule 9(b). In *Therasense*, the Federal Circuit heightened the standards for proving inequitable conduct, requiring “but-for” materiality and a “knowing and deliberate” intent. *Therasense*, 649 F.3d 1276.

Exergen provides a roadmap for analyzing Qualcomm's claims of inequitable conduct by setting forth the exacting particularity required to satisfy Rule 9(b). To plead the “circumstances” of inequitable conduct, Qualcomm “must identify the specific who, what, when, where, and how of the material misrepresentation or omission committed before the PTO.” *Exergen*, 575 F.3d at 1328; *see also Graphic Packaging Int'l, Inc. v. C.W. Zumbiel Co.*, 2011 U.S. Dist. LEXIS 121070, 7-8 (M.D. Fla. Sept. 12, 2011) (J. Dalton). *Exergen* also offers considerable instruction in applying the who, what, where, when, why and how requirements:

Who: To plead the “who” requirement, Qualcomm must identify the specific

individual associated with the filing or prosecution of the patent application in question “who both knew of the material information and deliberately withheld or misrepresented it.” *See id.* at 1329. In *Exergen*, the Federal Circuit rejected as insufficient the accused infringer’s allegation that “Exergen, its agents and/or attorneys” had committed inequitable conduct, because no specific individual was identified. *See id.*

What: To plead the “what” requirement, Qualcomm must specifically identify which claims of the Patents-in-Suit, and which limitations in those claims, the alleged inequitable conduct is relevant to. *See id.* It is not sufficient to generally reference the Patents-in-Suit. *See id.*

When: To plead the “when” requirement, Qualcomm must specifically allege when a misrepresentation occurred, or “when” knowledge of material information in an allegedly withheld reference was obtained. *Id.*

Where: To plead the “where” requirement, Qualcomm must identify the specific *material information* within each identified reference that makes up the fraud. *Id.* In other words, Qualcomm must specify where the material information unknown to the examiner may be found.

Why: To plead the “why” requirement, Qualcomm must allege why the withheld information is material and not cumulative of other art and information before the PTO. *Id.*

How: To plead the “how” requirement, Qualcomm must allege how an examiner would have used the material information to determine patentability. *Id.* at 1330.

Deceptive Intent: *Exergen* is also instructive on the standards for pleading the element of deceptive intent. *Id.* at 1328-29. Qualcomm must allege “sufficient allegations of

underlying facts from which this Court may reasonably infer that a specific individual (1) knew of the withheld material information or of the falsity of the material misrepresentation, and (2) withheld or misrepresented this information with a specific intent to deceive the PTO.” *Id.* A reasonable inference is one that is plausible and that flows logically from the facts alleged. *Id.* at 1329 n.5. A complete analysis requires this Court to also consider any objective indications of candor and good faith that are inconsistent with inequitable conduct. *Id.*

B. Prosecution History of the ‘551 Patent³

The ‘551 Patent is directed to a Method and System for Down-Converting Electromagnetic Signals, and issued on May 9, 2000 from an application filed on October 21, 1998. The ‘551 Patent cover page, Ex. A. The PTO assigned examiners, including Sam Bhattacharya, to examine the application. *Id.* On March 31, 1999, a Petition to Make Special (“Petition”) was entered seeking accelerated examination. *See* Petition, Ex. B. As part of the Petition process, ParkerVision consulted with four PTO examiners (including two supervisors) to obtain opinions on the appropriate field of search for identifying references to submit. *See id.* at pp. 2-9. The search criteria recommended by the PTO examiners was then employed to identify references related to the subject matter encompassed by the claims in the application. *Id.* at p. 9. Twenty-one references “were determined to appear to be most

³ The prosecution history is the record of the examination of a patent application, including the original application itself, office actions by the examiner, and arguments and amendments made by the applicant. Since Qualcomm’s Counterclaims specifically refer to these documents, and they are central to the claims of inequitable conduct, it is proper for the Court to consider the prosecution history documents attached as Exhibits A-H. *See Brooks v. Blue Cross & Blue Shield*, 116 F.3d 1364, 1369 (11th Cir. 1997); *see also Fischer v. Waite*, 2007 U.S. Dist. LEXIS 62892, 6 (M.D. Fla. August 22, 2007).

closely related.” *Id.* Copies of each of the twenty-one references were submitted to the PTO, and ParkerVision’s attorneys presented arguments as to why they were distinguishable from the pending claims. *Id.* at pp. 11-17. On June 24, 1999, the Petition was granted upon a finding by the PTO that ParkerVision had complied with applicable rules. Decision on Petition, Ex. C.

On August 1, 1999, Examiner Bhattacharya signed ParkerVision’s March 31, 1999 Information Disclosure Statement (“IDS”),⁴ and initialed that he had “considered” each of the twenty-one references submitted by ParkerVision. March 31, 1999 IDS, Ex. D. On August 3, 1999, the PTO issued an office action rejecting each of the pending claims, citing references located by both ParkerVision and the examiner. August 3, 1999 Office Action, Ex. E. On September 21, 1999, ParkerVision submitted an information disclosure statement identifying references that were located in searches employing the PTO examiners’ criteria. September 21, 1999 IDS (pages 6 and 29), Ex. F. Following an Examiner Interview on November 18, 1999, ParkerVision filed amendments to the claims and arguments for allowance of the amended claims. November 24, 2011 Applicant Remarks, Ex. G; *see also* Dkt. 18, ¶¶ 59-61. On December 28, 1999, Examiner Bhattacharya initialed the September 21, 1999 IDS, indicating that he had “considered” each of the references submitted by ParkerVision, including the ‘536 Reference that Qualcomm asserts was buried and the two Vilar References Qualcomm contends were irrelevant. *See* September 21, 1999 IDS, Ex. F. On December 30, 1999, the PTO issued a Notice of Allowability, finding that the claims

⁴ An IDS is a official form submitted to the PTO by patent applicants to disclose references for consideration by the PTO. *Graphic Packaging Int’l*, 2011 U.S. Dist. LEXIS 121070, 7-8. The instructions on the IDS form require an examiner to initial next to considered references and strike through any citation that is not in conformance and not considered. *See* Ex. D.

were “amended to include the indicated allowable subject matter.” Notice of Allowability, Ex. H. The ‘551 Patent officially issued on May 9, 2000. Ex. A.

C. Qualcomm’s Allegations of “Mischaracterizing” References Fail to State a Claim of Inequitable Conduct

Qualcomm’s first theory of inequitable conduct asserts that arguments made to the PTO, distinguishing five references⁵ submitted by ParkerVision from a then pending independent claim (“Pending Claim 8”), were false. Dkt. 18, ¶¶ 22, 27-57. In particular, Qualcomm attacks attorney argument that the five references fail to disclose the “combination of elements of Pending Claim 8.” *Id.* at ¶ 32. Unsurprisingly, Qualcomm’s litigation counsel disagrees with the arguments of ParkerVision’s patent counsel. Such disagreements over the teachings of references, however, are not the proper basis for claims of inequitable conduct. *See Life Techs.*, 224 F.3d at 1326. Qualcomm also fails to allege its theory with Rule 9(b) particularity.

1. Arguments regarding the interpretation of claims and the teachings of prior art are not a proper basis for inequitable conduct claims

As Qualcomm acknowledges, each of the five references was submitted by ParkerVision to the examiner, and highlighted in ParkerVision’s Petition as among the twenty-one references “determined to appear to be most closely related to the subject matter encompassed by the claims.” Dkt. 18, ¶ 31; *see also* Petition, Ex. B, pp. 9-11. The examiner acknowledged receipt of the five references, and initialed each one as having been “considered.” *See* Ex. D. In fact, one of the five references, Gordy 1982, was cited by the examiner as a basis for rejecting a pending claim. *See* Ex. E, p. 5. The examiner was given

⁵ The five references are Fisher 1981, Williams 1996, Schiltz 1994, Faulkner 1983, and Gordy 1982. Dkt. 18, ¶ 31.

the five references and was free to accept or reject the attorneys' distinguishing arguments. Such is the purpose of examination.

Attempts to manufacture inequitable conduct from attorney arguments regarding the interpretation of claims and the teachings of prior art have been soundly rejected. For example, in *Akzo N.V. v. U.S. International Trade Com.*, 808 F.2d 1471, 1481-1482 (Fed. Cir. 1986), Du Pont was similarly accused of misleading the PTO when it presented arguments to distinguish its claimed invention from two prior art references. The Federal Circuit found that Du Pont's attempt "to distinguish [its claimed invention] from the prior art does not constitute a material omission or misrepresentation." *Id.* The Federal Circuit reasoned that the examiner had both of the references at issue before him throughout the examination process, and was "free to reach his own conclusion regarding the [claimed invention] based on the art in front of him." *Id.* The court reasoned further that "advocating a particular interpretation" of the references, "albeit favorable to the Du Pont's position," did not evidence an intent to mislead the PTO. *Id.*; see also *Life Techs.*, 224 F.3d at 1325 (finding no misrepresentation and reasoning that "the inventors merely advocated a particular interpretation of the teachings of the [reference] and the level of skill in the art, which the Examiner was free to accept or reject.").

Likewise, in *Innogenetics, N.V. v. Abbott Labs.*, 512 F.3d 1363, 1378-1379 (Fed. Cir. 2008), the Federal Circuit upheld a district court finding that Innogenetics had not engaged in inequitable conduct. In that case, the alleged infringer asserted that Innogenetics' representations to the PTO concerning the relevance of a reference, known as the Cha PCT application, during prosecution of the asserted patent amounted to inequitable conduct. *Id.* at

1379. Innogenetics had submitted the Cha PCT application to the examiner, but argued in an accompanying prior art statement that “the references do not relate to the invention and, therefore, further discussion of the same is not necessary.” *Id.* The Federal Circuit found:

Innogenetics’ representation of the Cha PCT application amounted to mere attorney argument and our precedent has made clear that an applicant is free to advocate its interpretation of its claims and the teachings of prior art.

Id. (citing *Life Techs.*, 224 F.3d at 1326). The court reasoned that since “the Cha PCT application had been submitted for the patent examiner to examine herself, she was free to accept or reject the patentee’s arguments distinguishing its invention from the prior art.” *Id.* The Federal Circuit went on to affirm the district court’s award of attorney fees to Innogenetics based upon a finding that the theory of inequitable conduct advanced was exceptional under 35 U.S.C. § 285. *Id.*

Like the attorney argument distinguishing a reference in *Innogenetics*, the arguments made by ParkerVision’s counsel regarding the five references before the examiner of the ‘551 Patent were “mere attorney argument.” *See id.* ParkerVision’s counsel argued that each of the references fail to disclose the “combination of elements of Pending Claim 8.” Qualcomm’s Counterclaims, Dkt. 18, ¶ 32. Federal Circuit precedent is clear that ParkerVision was free to advocate its interpretation of its pending claims and the teachings of prior art. *Life Techs.*, 224 F.3d at 1326. ParkerVision submitted copies of the five references to the examiner, who was free to accept or reject the legal conclusion reached by ParkerVision’s counsel. Ex. D. In fact, the examiner subsequently rejected all the claims pending at the time, relying on one of those five references (Gordy 1982) to reject a pending claim. *See* Ex. E. Qualcomm’s attempt to turn disputed attorney argument into an inequitable

conduct claim is an example of the type of irresponsible claims rejected by the Federal Circuit in the cases above, and which ultimately motivated the court to tighten pleading standards in *Exergen*. Qualcomm's first theory of inequitable conduct is untenable and should be rejected, with prejudice, as no additional pleading can make the attorney arguments actionable.

2. Qualcomm has not satisfied the *Exergen* pleadings standards

Qualcomm's first theory of inequitable conduct is not only flawed conceptually, but it is also deficient in its execution.

Failure to Allege Who: Qualcomm has not identified any specific individual associated with the filing or prosecution of '551 Patent "who both knew of the material information and deliberately withheld or misrepresented it." See *Exergen*, 575 F.3d at 1329. In *Exergen*, the Federal Circuit rejected as insufficient the accused infringer's allegation that "Exergen, its agents and/or attorneys" had committed inequitable conduct, because no specific individual was identified. See *id.* Here, Qualcomm tracks the allegation rejected in *Exergen* by alleging that misrepresentations were made by the "Applicants," defined by Qualcomm as "individuals substantively involved in the prosecution of the '551 Patent," and including "prosecuting attorneys from Sterne Kessler." Dkt. 18, ¶¶ 22, 27-57. If Qualcomm wants to accuse reputable individuals and attorneys of engaging in fraud, it must stand up and point to specific individuals. See *Exergen*, 575 F.3d at 1329 n. 6 (stating that at least one purpose of Rule 9(b) is to protect the reputation of those being charged with fraud).

Failure to Allege What: To plead the "what" requirement, Qualcomm must specifically identify which claims of the Patent-in-Suit, and which limitations in those

claims, the alleged inequitable conduct is relevant to. *See id.* at 1329-30. It is not sufficient to generally reference the Patents-in-Suit. *See id.* Here, the alleged mischaracterization does not concern any claims of the '551 Patent. Instead, Qualcomm curiously focuses on Pending Claim 8, which was rejected by the examiner. Since Pending Claim 8 is not a claim of the Patents-in-Suit, Qualcomm has not satisfied the "what" requirement through its (disputed) discussion of whether Pending Claim 8 is patentable. This follows logically from the fact that inequitable conduct is applicable only "where the patentee's misconduct resulted in the unfair benefit of receiving an unwarranted claim." *Therasense*, 649 F.3d 1292 (emphasis added). Qualcomm offers a conclusory allegation that the differences between Pending Claim 8 and Claim 1 of the '551 Patent "would not have been sufficient to overcome" the five references. However, Qualcomm's leap in logic fails to allege any limitations of Claim 1 to which the five references would be relevant. *Exergen*, 575 F.3d at 1329. As such, Qualcomm's passing mention of Claim 1 does not satisfy the "what" requirement. *Graphic Packaging Int'l*, 2011 U.S. Dist. LEXIS 121070, 8 (dismissing inequitable conduct claim and identifying, among other pleading deficiencies, the failure to identify specific limitations of affected claims).

Failure to Allege Why and How: Qualcomm fails to allege why the five references were material and not cumulative of other art and information before the PTO, or how the examiner would have otherwise applied the references to determine patentability. *See Exergen*, 575 F.3d at 1330. According to Qualcomm, the alleged mischaracterizations were made in the Petition entered on March 31, 1999. *See* Petition, Ex. B. More than four months later, on August 3, 1999, the examiner rejected all of the pending claims based on a combination of references. *See* Office Action, Ex. E. Qualcomm fails to explain why the five

references it points to are more material than, and not cumulative of, the references the examiner used to reject the pending claims. The examiner was unquestionably aware of the five references, having “considered” each of them, and having relied on one to reject a pending claim. *See* Ex. D and Ex. E. Moreover, Qualcomm does not explain how the five references would have been used by the examiner to reject any of the allowed claims. Qualcomm is required to allege, with particularity, why the claims of the ‘551 Patent are not patentable over the five references. Qualcomm never addresses the limitations of the ‘551 Patent’s claims, nor does it show that the limitations are found in any of the five references.

Failure to Allege Deceptive Intent: Qualcomm’s allegations of intent are also inadequate under the scrutiny required by *Exergen*. *See Exergen*, 575 F.3d at 1328-29. There are no underlying facts alleged from which this Court might reasonably infer that a specific individual knew a representation made to the PTO was false, knew the information to be material, and deliberately misrepresented the information with a specific intent to deceive the PTO. *Id.*; *see also Graphic Packaging Int’l*, 2011 U.S. Dist. LEXIS 121070, 9-10. Rather, the only inference that flows logically from the allegations is the intent to distinguish the five references. *See Akzo*, 808 F.2d at 1481-1482 (finding no inequitable conduct, reasoning “Du Pont’s intent was not to mislead, but rather to distinguish prior art from the Blades process”). *Exergen* also requires the court to consider objective indications of candor and good faith that are inconsistent with inequitable conduct. *See Exergen*, 575 F.3d at 1328-29. Here, a lack of deceptive intent is objectively shown by in the Petition itself, which (i) highlights the references for the examiner to consider, and (ii) expressly states “[t]he Examiner is requested to conduct an independent and thorough review of the documents, and to form independent

opinions as to their significance.” Petition, Ex. B, p. 18. It was indisputably understood that the references were being submitted for consideration by the examiner, who was to make an independent determination of their effect on patentability. Qualcomm’s conclusory allegation that attorney argument “was made with specific intent to mislead and deceive the PTO” is wholly insufficient.

To the extent Qualcomm may rely on its “burying” theory, discussed below, to support an inference of specific intent to deceive (Dkt. 18, ¶ 66) with respect to attorney argument, this effort should also fail. There are no allegations to explain how the attorney argument at issue would in any way be furthered by subsequently producing more references. Qualcomm fails to understand that it must plead specific intent related to the alleged mischaracterization. Citing uncorrelated disclosures that occurred months after the Petition provides no basis from which the Court could infer specific intent as to the attorney arguments at issue.

D. Qualcomm’s Allegations of “Burying” the ‘536 Reference Fail to State a Claim of Inequitable Conduct

Qualcomm’s second theory of inequitable conduct asserts that ParkerVision buried the PTO with references to distract the examiner from the ‘536 Reference. Dkt. 18, ¶¶ 23-26. Qualcomm again relies on an unviable theory pleaded with insufficient allegations.

1. Qualcomm’s “burying” theory is insufficient as a matter of law

As a matter of law, inequitable conduct cannot be based on references that were submitted to the PTO. *Fiskars*, 221 F.3d at 1327 (“An applicant can not be guilty of inequitable conduct if the reference was cited to the examiner.”). As a result, “burying” cannot form a basis for inequitable conduct, because a “buried” reference by definition is one

that was submitted to the PTO. *Symbol Techs., Inc. v. Aruba Networks, Inc.*, 609 F. Supp. 2d 353, 358-59 (D. Del. 2009) (dismissing inequitable conduct counterclaim, based on alleged burying, as a matter of law); *Semiconductor Energy Lab. Co. v. Samsung Elecs. Co.*, 749 F. Supp. 2d 892, 902-903 (W.D. Wis. 2010).

In this case, Qualcomm identifies only the ‘536 Reference as buried. However, ParkerVision cited the ‘536 Reference to the examiner. On September 21, 1999, ParkerVision submitted an IDS as required by the PTO, specifically citing the ‘536 Reference. Ex. F. On December 28, 1999, Examiner Bhattacharya initialed the IDS, indicating that he had “considered” each of the references submitted by ParkerVision, including the ‘536 Reference Qualcomm claims was buried. *See id.* Accordingly, ParkerVision cannot be guilty of inequitable conduct, since the reference was cited to the examiner, who considered it. *See Fiskars*, 221 F.3d at 1327. Since further pleading cannot save this defective theory, ParkerVision requests the Court dismiss Qualcomm’s inequitable conduct claim with prejudice.

2. Qualcomm has not satisfied the *Exergen* pleadings standards

Notwithstanding the invalid premise of its burying theory, Qualcomm’s allegations fall woefully short of satisfying the standards for alleging inequitable conduct.

Failure to Allege Who: In making its “burying” allegations, Qualcomm relies on the same non-specific and broadly defined “Applicants” moniker shown above to be insufficient. Qualcomm must identify the specific individual it alleges “both knew of the material information and deliberately withheld or misrepresented it.” *See Exergen*, 575 F.3d at 1329. In contrast, the Qualcomm Counterclaims do not identify any individuals.

Failure to Allege What: To plead the “what” requirement, Qualcomm must specifically identify which claims of the Patent-in-Suit, and which limitations in those claims, the alleged inequitable conduct is relevant to. *See Exergen*, 575 F.3d at 1329. Qualcomm does not even describe the subject matter of the ‘536 Reference, much less identify any allowed claims, or limitations of those claims, to which it is relevant.

Failure to Allege When: To plead the “when” requirement, Qualcomm must specifically allege when a misrepresentation occurred, or when knowledge of material information in an allegedly withheld reference was obtained. *Id.* Qualcomm fails to allege when anyone associated with the prosecution of the ‘551 Patent became aware of the ‘536 Reference or when the prosecution conduct of such person encompassed inequitable conduct.

Failure to Allege Where: To plead the “where” requirement, Qualcomm must identify the specific *material information* within each identified reference. *Id.* Qualcomm alleges only that the ‘536 Reference was relevant. There are no allegations discussing the subject matter of the ‘536 Reference, or any material information found within the reference that would be relevant to patentability.

Failure to Allege Why and How: Qualcomm fails to allege why the ‘536 is material and not cumulative of other art and information before the PTO, or how an examiner would have used the material information to determine patentability. Qualcomm offers only that if the ‘536 Reference had been called to the examiner’s “full attention,” issuance of some (unidentified) claims would have been precluded. Dkt. 18, ¶ 23. Implicit in this allegation is the recognition that the examiner had the ‘536 Reference before him. Qualcomm suggests, however, that the examiner must not have given the reference sufficient attention. Similar

arguments were rejected by the Federal Circuit in *Fiskars*. See *Fiskars*, 221 F.3d at 1326-27. In that case, the patent examiner had not considered a prior art reference that the patentee had submitted to the PTO. *Id.* at 1327. The defendant argued that the plaintiff should have both identified the reference more explicitly, and emphasized its relevance as prior art. *Id.* However, the Federal Circuit found that because the examiner decided on his own accord not to consider the reference, the patentee had no obligation to tell the PTO about it twice. *Id.* Likewise, Qualcomm's apparent disagreement with the examiner's decision that the '536 Reference did not preclude patentability is not a basis for inequitable conduct. ParkerVision fulfilled its obligation by citing the '536 Reference to the PTO. Qualcomm fails to allege why or how the '536 Reference is relevant to patentability. Reliance on speculation that the examiners would have recognized some unidentified material information with closer attention does not satisfy Qualcomm's burden.

Failure to Allege Deceptive Intent: Qualcomm fails to allege any underlying facts from which this Court might reasonably infer that a specific individual knew of a specific material references he or she believed was material, also knew of a specific reference he or she believed to be immaterial, and deliberately disclosed the immaterial references with the specific intent of deceiving the examiners. Rather, the only inference that flows logically from the pleadings and documents before the Court is the intent of ParkerVision to comply with PTO obligations to cite any known references that are potentially relevant to the subject matter of the application.

As explained above, ParkerVision consulted with four PTO examiners to obtain opinions as to the appropriate field of search for references. See Petition, Ex. B., pp. 2-9. The

search criteria recommended by the PTO examiners was employed to identify references related to the subject matter encompassed by the claims in the application. *Id.* at p. 9. ParkerVision cited references discovered in searches as well as documents evidencing ParkerVision's commercial activity. Had ParkerVision not disclosed the references and materials it did, Qualcomm would most certainly be arguing that it was inequitable conduct to "withhold" them. This dilemma was recognized by the Federal Circuit in *Therasense* as a reason for tightening the standards for finding inequitable conduct. *Therasense*, 649 F.3d 1289-90 ("With inequitable conduct casting the shadow of a hangman's noose, it is unsurprising that patent prosecutors regularly bury PTO examiners with a deluge of prior art references, most of which have marginal value."). A finding of inequitable conduct requires that the specific intent to deceive must be "the single most reasonable inference able to be drawn from the evidence." *Id.* at 1290. Here, the most reasonable inference is that references were cited to comply with PTO guidelines or to avoid a charge of inequitable conduct – a standard protective measure the Federal Circuit found understandable.

It should also be noted that while not determinative in light of the pleading failures discussed above, Qualcomm's characterization of certain ParkerVision submissions to the PTO as 'irrelevant' is misguided. For instance, Qualcomm represents that two scientific articles by Dr. Vilar are not relevant to the subject matter of the applications. Dkt. 18, ¶25. What Qualcomm apparently failed to appreciate (from reviewing the abstracts alone) is that these references are predominantly mathematical treatments of principles that are indeed relevant to the subject matter of the '551 Patent. Qualcomm's suggestion that these are just articles about "rain" is an uninformed analysis. Moreover, the examiner initialed that he

considered these references, where he could have struck through the references and not considered them. Ex. F.

E. Qualcomm Fails to State a Claim for Inequitable Conduct Based on Infectious Unenforceability

Counts Two through Seven of Qualcomm's Counterclaims assert that the remaining six Patents-in-Suit are unenforceable as a result of the alleged inequitable conduct during the prosecution of the '551 Patent. In particular, Qualcomm makes the identical conclusory allegation that each of the '518 Patent, the '371 Patent, the '342 Patent, the '896 Patent, the '845 Patent, and the '401 Patent "is unenforceable as a result of ParkerVision's material misrepresentations made during the prosecution of the '551 Patent." Dkt. 18, ¶¶ 74, 81, 85, 92, 99, and 106. Because Qualcomm failed to plead inequitable conduct as to the '551 Patent, these claims must also be dismissed. The Court must "find inequitable conduct sufficient to hold at least one patent unenforceable before considering whether to hold an entire group of related patents unenforceable." *Speedplay, Inc. v. Bebop, Inc.*, 211 F.3d 1245, 1259 (Fed. Cir. 2000).

Even had Qualcomm sufficiently alleged inequitable conduct during the prosecution of the '551 Patent, Counts Two through Seven also fail to allege "infectious unenforceability," which requires particularized allegations showing that the inequitable conduct in the prosecution of one patent had an "immediate and necessary relation" to the procurement of related patents. *See Correct Craft IP Holdings, LLC v. Malibu Boats, LLC*, 2010 U.S. Dist. LEXIS 13577, 16 (M.D. Fla. Feb. 17, 2010) (dismissing counterclaim for patent unenforceability based on theory of infectious unenforceability). As explained in *Pharmacia Corp. v. Par Pharm.*, 417 F.3d 1369, 1375 (Fed. Cir. 2005), the Federal Circuit's

“inequitable conduct cases do not extend inequitable conduct in one patent to another patent that was not acquired through culpable conduct.” In *Pharmacia Corp.*, the court considered whether a finding of unenforceability due to inequitable conduct during the prosecution of one patent, required a finding that a simultaneously filed sibling patent (a continuation of the same parent application) was also unenforceable. *Pharmacia Corp.*, 417 F.3d at 1371, 1374. The Federal Circuit upheld the district court’s determination that the sibling patent could not be found unenforceable without a showing of inequitable conduct that affected the prosecution of the related patent, even where the related patents were the subject of a terminal disclaimer. *Id.* at 1374-5.

Failure to Allege Who: As discussed above, nowhere in Qualcomm’s Counterclaims is any alleged misconduct attributed to a specific individual.

Failure to Allege What: Qualcomm fails to satisfy the “what” requirement in neglecting to identify any claims of the six Patents-in-Suit challenged in Counts Two through Seven, or any limitations of those claims, that the ‘551 Patent prosecution is relevant to. *See Exergen*, 575 F.3d at 1329. It is not sufficient to generally reference the Patents-in-Suit as Qualcomm does. *See id.*

Failure to Allege Where: Qualcomm does not identify the specific *material information* from the prosecution of the ‘551 Patent that relates to the prosecution of the six other Patents-in-Suit.

Failure to Allege Why and How: Qualcomm does not offer any non-conclusory allegations that conduct during the prosecution of the ‘551 Patent had a material effect on the prosecutions of the six other Patents-in-Suit, nor does Qualcomm allege that conduct during

the prosecution of the ‘551 Patent was “necessary” to ParkerVision’s ability to obtain the six other Patents-in-Suit. To support Counts Two through Seven, Qualcomm must allege inequitable conduct in obtaining the ‘551 Patent that afforded ParkerVision the ability to obtain the six other patents, and under *Exergen*, Qualcomm would further need to identify that supposed advantage specifically. *See Therasense*, 649 F.3d 1292 (limiting the application of inequitable conduct to instances “where the patentee’s misconduct resulted in the unfair benefit of receiving an unwarranted claim.”).

IV. QUALCOMM FAILS TO STATE A CLAIM FOR AIDING AND ABETTING BREACH OF FIDUCIARY DUTY

Qualcomm asserts in Count Ten of its Counterclaims that the Sterne Kessler law firm breached its fiduciary duty to Qualcomm. Dkt. 18, ¶¶ 114-149. In Particular, Qualcomm alleges that Sterne Kessler breached a fiduciary duty of loyalty it owed to Qualcomm by: (1) providing legal counsel to ParkerVision in preparing to file this action;” and (ii) “when one of its partners, Robert Sterne, participated in and failed to recuse himself from ParkerVision board discussions concerning the initiation of the present litigation against Qualcomm.” *Id.* at 147-8. Though Qualcomm improperly incorporates all prior allegations of its Counterclaims into each new count, it does not appear that ParkerVision is accused under Count Ten. In Count Eleven, however, Qualcomm alleges that ParkerVision aided and abetted Sterne Kessler’s purported breach of fiduciary duty to Qualcomm. *Id.* at ¶¶ 150-155. As its necessary allegation of causation and injury, Qualcomm alleges in both the Tenth and Eleventh Counts that Qualcomm was “injured as a proximate result” of Sterne Kessler’s breach of fiduciary duty *by having to defend this action*:

Qualcomm has been injured as a proximate result of Sterne Kessler’s breaches

of its fiduciary duty of loyalty by, among other things, being required to defend against a lawsuit alleging the infringement of patents procured through affirmative misrepresentations to the PTO by ParkerVision and Sterne Kessler.

Dkt. 18, ¶ 149.

Qualcomm has been injured as a proximate result of ParkerVision's aiding and abetting of Sterne Kessler's breach of its fiduciary duty, by, among other things, being required to defend against a lawsuit alleging the infringement of patents procured through affirmative misrepresentations to the PTO by ParkerVision and Sterne Kessler.

Dkt. 18, ¶ 155. These allegations are facially defective in that they fail to allege proximate causation of any recognized damages. As one Florida Court explained:

The Florida courts, in accord with most other jurisdictions, have historically followed the so-called "but for" causation-in-fact test, that is, to constitute proximate cause there must be such natural, direct, and continuous sequence between the negligence act or omission and the plaintiff's injury that is can reasonably be said that *but for* the negligent act or omission the injury would not have occurred.

Stahl v. Metropolitan Dade County, 438 So. 2d 14, 17 (Fla. 3d DCA 1983).⁶ Qualcomm's allegations that it has to defend this action as a proximate result of - or that it would not have to defend this action but for - Sterne Kessler's breach of fiduciary duty is not (in *Iqbal's* words) plausible. Innumerable law firms could have brought this action on behalf of ParkerVision without any assistance from Sterne Kessler. Two did. Qualcomm does not allege that but for the alleged breach this lawsuit would not have been filed, or would not have been otherwise possible. Because the allegations of causation are not plausible, Qualcomm's Count Eleven against ParkerVision fails to state a claim upon which relief can

⁶ It is unclear which jurisdiction's law applies in this case; however, ParkerVision is unaware of any material difference between Florida or the District of Columbia (where Sterne Kessler is located) that would affect the analysis herein.

be granted. “Determining whether a complaint states a plausible claim for relief will...be a context-specific task that requires the reviewing court to draw on its judicial experience and common sense. But where the well-pleaded facts do not permit the court to infer more than the mere possibility of misconduct, the complaint has alleged-but it has not shown that the pleader is entitled to relief.” *Iqbal*, 129 S.Ct. at 1950. It is simply not plausible to suggest that the patent infringement claims asserted by ParkerVision – the only harm alleged – would not exist in the absence of the alleged breach. It follows that where no underlying claim for breach of fiduciary duty is plausible, there can be no claim for aiding and abetting. The Court should exercise its judicial experience and common sense to dismiss the implausible claim for aiding and abetting fiduciary duty in Count Eleven of Qualcomm’s Counterclaims.

V. QUALCOMM FAILS TO STATE A CLAIM FOR TORTIOUS INTERFERENCE

Qualcomm asserts in Count Thirteen that ParkerVision tortiously interfered with the “January 12, 1999 letter agreement among Sterne Kessler, Qualcomm and *ParkerVision*” Dkt 18, ¶ 161 (emphasis added). Because ParkerVision is alleged to be a party to the agreement underlying the tortious interference claim, ParkerVision cannot - as a matter of law - be liable for interfering with the agreement. *United of Omaha Life Insurance v. Nob Hill, Association*, 450 So. 2d 536, 539 (Fla. 3d DCA 1984). In *Nob Hill*, the court reversed a finding of tortious interference, reasoning:

Under Florida law, a cause of action for tortious interference does not exist against one who is himself a party to the contract allegedly interfered with.

Id.; see also *Ethyl Corporation v. Balter*, 386 So. 2d 1220, 1224 (Fla. 3d DCA 1980) (finding “a cause of action for interference does not exist against one who is himself a party to the

contract allegedly interfered with.”); *Salit v. Ruden, McClosky*, 742 So.2d 381, 386 (Fla. 4th DCA 1999) (“For the interference to be unjustified [a necessary element of tortious interference], the interfering defendant must be a third party, a stranger to the business relationship.”). Qualcomm’s claim for tortious interference with the letter agreement to which ParkerVision was allegedly a party does not - as a matter of law - state a claim upon which relief can be granted.

VI. CONCLUSION

For the foregoing reasons, ParkerVision respectfully requests that the Court dismiss Counts One through Seven, Eleven and Thirteen of Qualcomm’s Counterclaims. Moreover since Counts One through Seven and Thirteen are premised on legal theories that are not cognizable under any set of facts, ParkerVision requests these Counts be dismissed with prejudice.

Dated: November 7, 2011.

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CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing has been electronically filed with the Clerk of the Court utilizing the CM/ECF system this 7th day of November, 2011 and which will electronically transmit an electronic copy to:

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EXHIBIT A

US006061551A

United States Patent [19]
Sorrells et al.

[11] **Patent Number:** **6,061,551**
 [45] **Date of Patent:** **May 9, 2000**

- [54] **METHOD AND SYSTEM FOR DOWN-CONVERTING ELECTROMAGNETIC SIGNALS**
- [75] Inventors: **David F. Sorrells; Michael J. Bultman**, both of Jacksonville; **Robert W. Cook**, Switzerland; **Richard C. Looke; Charley D. Moses, Jr.**, both of Jacksonville, all of Fla.
- [73] Assignee: **Parkervision, Inc.**, Jacksonville, Fla.
- [21] Appl. No.: **09/176,022**
- [22] Filed: **Oct. 21, 1998**
- [51] **Int. Cl.⁷** **H01Q 11/12**
- [52] **U.S. Cl.** **455/118; 455/313; 455/323; 455/324**
- [58] **Field of Search** 455/131, 139, 455/142, 182.1, 202, 205, 313, 317, 318, 323, 118, 113, 324; 329/345, 347; 327/9, 91; 702/66, 70
- [56] **References Cited**

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Primary Examiner—Doris H. To
Assistant Examiner—Sam Bhattacharya
Attorney, Agent, or Firm—Sterne, Kessler, Goldstein & Fox P.L.L.C.

[57] **ABSTRACT**

Methods, systems, and apparatuses for down-converting an electromagnetic (EM) signal by aliasing the EM signal are described herein. Briefly stated, such methods, systems, and apparatuses operate by receiving an EM signal and an aliasing signal having an aliasing rate. The EM signal is aliased according to the aliasing signal to down-convert the EM signal. The term aliasing, as used herein, refers to both down-converting an EM signal by under-sampling the EM signal at an aliasing rate, and down-converting an EM signal by transferring energy from the EM signal at the aliasing rate. In an embodiment, the EM signal is down-converted to an intermediate frequency (IF) signal. In another embodiment, the EM signal is down-converted to a demodulated baseband information signal. In another embodiment, the EM signal is a frequency modulated (FM) signal, which is down-converted to a non-FM signal, such as a phase modulated (PM) signal or an amplitude modulated (AM) signal.

204 Claims, 126 Drawing Sheets

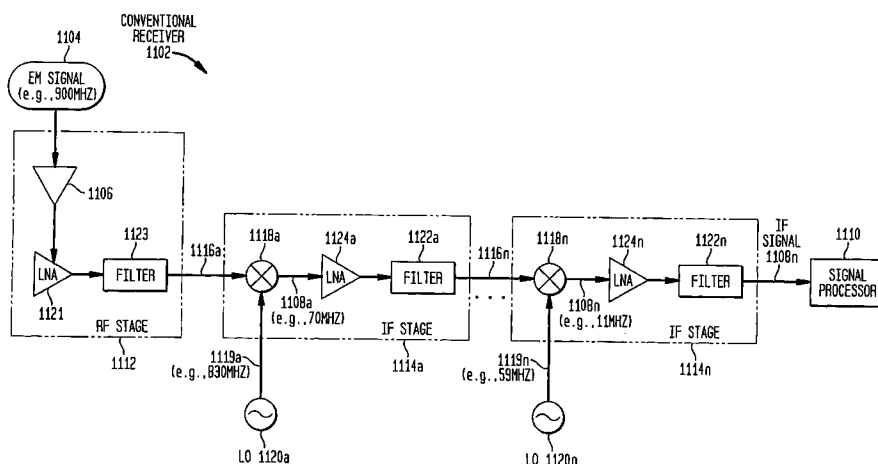


EXHIBIT B

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Sorrells *et al.*

Appl. No.: 09/176,022

Filed: October 21, 1998

For: **Method and System for Down-
Converting Electromagnetic Signals**

Art Unit: 2857

Examiner: (To Be Assigned)

Atty Docket: 1744.0010000

4

**Petition to Make Special under 37 C.F.R. § 1.102(d)
and Incorporated Information Disclosure Statement**

RECEIVED

Assistant Commissioner for Patents
Washington, D.C. 20231

MAR 31 1999

Sir:

Special Program Unit
Group 2700

This is a petition to the Commissioner to make special the above-identified patent application. The grounds and conditions for granting this application special status are found in M.P.E.P. § 708.02 VIII entitled "Special Examining Procedure for Certain New Applications-Accelerated Examination".

In accordance with the requirements of 37 C.F.R. § 1.102(d), Applicants submit herewith the Petition Fee of \$130.00 as required by 37 C.F.R. § 1.17. A check in that amount is enclosed.

As provided for in M.P.E.P. § 708.02 VIII, Applicants agree to the special examining procedure detailed therein. In support of this Petition, Applicants provide the following:

- I. A statement that the claims are directed to a single invention.
- II. A description of a pre-examination search performed in connection with this application.
- III. A copy of each of the documents identified by the pre-examination search and deemed most closely related to the subject matter encompassed by the claims.
- IV. A detailed discussion of these documents pointing out, with the particularity required by 37 C.F.R. §§ 1.111(b) and 1.111(c), how the claimed subject matter is distinguishable over the documents.

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Inventors: Sorrells *et al.*

Appl. No.: 09/176,022

I. Statement that the Claims Are Directed To a Single Invention

After entry of the Preliminary Amendment filed herewith, claims 8-39 are pending in the application. It is believed that all of the pending claims 8-39 are directed to a single invention.

II. Statement that a pre-examination search was made.

Pursuant to MPEP § 708.02 VIII, Applicants conducted a thorough pre-examination search for documents related to the claimed invention. This search included a U.S. patent search, a foreign patent search, and a literature search. These searches are described below.

U.S. Patent Search

Applicants conducted manual and computer based searches of patent records of the United States Patent and Trademark Office (USPTO). Four patent examiners were consulted for their opinions as to the appropriate field of search. They were:

Supervisory Patent Examiner Mr. Stephen Chin, AU 2734 (including class 375),
Supervisory Patent Examiner Mr. James Trimmel, AU 2764 (including class 702);
Primary Patent Examiner Mr. Terry Cunningham, AU 2816 (including class 327); and
Patent Examiner Ms. Doris To, AU 2745 (including class 455).

Based on their recommendations, and Applicants' review of the Patent Classifications Index maintained by the USPTO, Applicants manually searched the following classes and subclasses.

Class 455: Telecommunications

Sub-Classes

- 130 Receiver or Analog Modulated Signal Frequency Converter
- 142 Convertible to different type (e.g., AM to FM) [in reference to Sub-Class 130]
- 205 Frequency or Phase Modulation [in reference to Sub-Class 130]
- 313 Frequency modifying or conversion [in reference to Sub-Class 130]
- 318 With specified local oscillator structure or coupling [in reference to Sub-Class 313]
- 323 Particular frequency conversion structure or circuitry [in reference to Sub-Class 313]
- 333 Transmission or integrated circuitry [in reference to Sub-Class 323]

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Class 329: Demodulators

Sub-Classes

- 300 Frequency shift keying or minimum shift keying demodulator
- 301 Including discrete semiconductor device [in reference to Sub-Class 300]
- 315 Frequency modulation demodulator
- 341 Input signal converted to and processed in pulse form (e.g., pulse converter or digital type demodulator) [in reference to Sub-Class 315]
- 342 Including discrete semiconductor device [in reference to Sub-Class 341]
- 345 Phase modulation demodulator
- 347 Amplitude modulation demodulator
- 361 Including sampling, gating or switching [in reference to Sub-Class 358: *Input signal combined with local oscillator or carrier frequency signal (e.g., synchronous demodulator)*, which is in reference to Sub-Class 347]
- 362 With 3 or more terminal discrete semiconductor device [in reference to Sub-Class 361]

Class 327: Miscellaneous Active Electrical Nonlinear Devices, Circuits, and Systems

Sub-Classes:

- 9 With sampling [in reference to Sub-Class 7: *With reference signal*, which is in reference to Sub-Class 3: *Comparison between plural inputs (e.g., phase angle indication, lead-lag discriminator, etc.)*, which is in reference to Sub-Class 2: *By phase*, which is in reference to Sub-Class 1: *Specific signal discriminating (e.g., comparing, selecting, etc.) without subsequent control*]
- 91 Including details of sampling or holding [in reference to Sub-Class 50: *By amplitude*, which is in reference to Sub-Class 1]
- 92 With bridge circuit [in reference to Sub-Class 91]
- 94 Sample and hold [in reference to Sub-Class 91]
- 95 Having feedback [in reference to Sub-Class 94]
- 96 With differential amplifier [in reference to Sub-Class 94]

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- 174 Pulse broadening [in reference to Sub-Class 172: *Rectangular (e.g., clock, etc.) or pulse waveform width control*, which is in reference to Sub-Class 100: *Signal converting, shaping, or generating*]

Class 363: Electric Power Converters

Sub-Classes:

- 157 Frequency conversion (f1-f2) without intermediate conversion to DC
159 By semiconductor converter [in reference to Sub-Class 157]
163 Transistor type [in reference to Sub-Class 159]

Class 702: Data Processing: Measuring, Calibrating, or Testing

Sub-Classes:

- 57 Electrical signal parameter measurement system [in reference to Sub-Class 1: *Measurement system in a specific environment*]
66 Waveform analysis [in reference to Sub-Class 57]
70 Waveform extraction [in reference to Sub-Class 66]
79 Time-related parameter (e.g., pulse width, period, delay, etc.) [in reference to Sub-Class 57]

Applicants conducted keyword computer database searches using the USPTO's Automated Patent Search (APS) computer system, the USPTO's Patent Website, IBM's Patent Website, and U.S. Patent databases available through the Dialog service offered by Knight-Ridder Information, Inc. (libraries 652-654 related to U.S. Patents from 1971 to present).

The keyword search queries included combinations of the following keywords (and variations of these keywords):

sample (w) hold
energy
power
energy transfer

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power transfer
RF
downconvert?
down (w) convert?
under (w) sampl?
sub (w) sampl?
sub(w) sample.
sub(w)sampling
demodulate
sampl?
modulat?
sampl?
455/clas
327/clas
375/clas
329/clas
702/clas
zero IF
zero (w) IF
IF
oscilloscope
alias?
direct down conversion
subharmonic sampling
subharmonic (w) sampling

Foreign Patent Search

Applicants conducted manual and computer based searches for foreign patent documents. Applicants manually searched foreign patent documents that are stored in USPTO Examiner Search Rooms in shoes corresponding to the following class and sub-classes:

Class 329: Demodulators

Sub-Classes

- 300 Frequency shift keying or minimum shift keying demodulator
- 301 Including discrete semiconductor device [in reference to Sub-Class 300]
- 315 Frequency modulation demodulator
- 341 Input signal converted to and processed in pulse form (e.g., pulse converter or digital type demodulator) [in reference to Sub-Class 315]
- 342 Including discrete semiconductor device [in reference to Sub-Class 341]
- 345 Phase modulation demodulator
- 347 Amplitude modulation demodulator
- 361 Including sampling, gating or switching [in reference to Sub-Class 358: *Input signal combined with local oscillator or carrier frequency signal (e.g., synchronous demodulator)*, which is in reference to Sub-Class 347]
- 362 With 3 or more terminal discrete semiconductor device [in reference to Sub-Class 361]

Applicants conducted keyword computer database searches through the following foreign patent-related computer databases available through the Dialog service, offered by Knight-Ridder Information, Inc.: Chinese Patent Abstracts in English (Dialog database 344), Patent Abstracts of Japan (JAPIO), (Dialog database 347), European Patents Fulltext (Dialog database 348), and Derwent World Patents Index (Dialog database 351). These databases are briefly described below.

The Chinese Patent Abstracts in English is produced by the Patent Documentation Service of the People's Republic of China. It contains information on technologies patentable in China.

JAPIO contains abstracts of unexamined Japanese patent applications becoming available four months after original publication in the Japanese Patent Gazette as provided by the Japan Patent Information Organization.

European Patents Fulltext contains technologies patentable under European patent law, including European Patent applications and granted patents as well as bibliographic records for PCT applications transferred to the EPO.

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Derwent World Patent Index contains more than 14 million patent documents from 40 patent issuing authorities. The database is derived from Chemical Patents Index, General and Mechanical Patents Index, DWPI Gazette Service, Derwent World Patents Abstracts, and Electrical Patents Index.

Additional information pertaining to these databases is available via the Internet at <http://library.dialog.com/bluesheets>.

The keyword search queries included combinations of the following keywords (and variations of these keywords):

sub-sample
down-convert
demodulate
zero IF
sub (w)-sample
down (2n) convert?
zero (2n) IF
zero (1n) IF
zero (2n) IF
RF
sample (2n) hold
pulse (2n) width
under (w) sampl?
sub (w) sampl?
down (w) conver?
communication?
under (w) sampl?
sub (w) sampl?
down (w) conver?
Nyquist
alias

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frequency (w) conver?
radio
demodulat?
sample (2w) hold
pulse (4n) width
aperture
width

Literature Search

Applicants conducted keyword computer database searches in over one hundred twenty (120) Dialog databases which fall within one or more of the following Dialog categories:

BUSINESSNEWS, which includes the following categories;

ASIANEWS (26 libraries covering Asia/Pacific Business News),

CANADANEWS (22 libraries covering Canada Business News),

EUROPENEWS (31 libraries covering European Business News),

INTLNEWS (52 libraries covering International Business News),

JAPANNEWS (20 libraries covering Japanese Business News),

LATINNEWS (20 libraries covering Latin American Business News),

MIDEASTNEWS (21 libraries covering Middle East and African Business News),

UKNEWS (23 libraries covering United Kingdom Business News),

REGIONAL (13 libraries covering U.S. Regional Business Journals), and;

DEFBUS (19 libraries covering Defense and Aerospace Industry);

DEFTECH (12 libraries covering Defense and Aerospace Technology);

EECOMP (16 libraries related Electrical Engineering and Electronics);

ELECTRON (28 libraries covering Electronics and Computer Industries);

ENG (27 libraries covering Engineering);

MAGTEXT (14 libraries covering Magazines and Journals Full-Text);

SCITECH (29 libraries covering Science and Technology);

TELEBUS (23 libraries covering Telecommunications Business);

TELECOM (11 libraries covering Telecommunications Technology);

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PATLEGAL (2 libraries covering U.S. Patent Litigation).

The names and descriptions of the libraries covered by the categories above are available via the Internet at <http://library.dialog.com/bluesheets/html/blo.html>.

The keyword search queries included combinations of the following keywords (and variations of these keywords):

down (w) convert?

down (w) conver?

demodulat?

sample (3w) hold

pulse (3n) width

pulse (3n) aperture

sub (w) sampl?

under (w) sampl?

pulse

sampl?

III. Results of Pre-examination Search

The documents identified by the pre-examination search were carefully reviewed, and the following documents were determined to appear to be most closely related to the subject matter encompassed by the claims.

U.S. Patent Documents

1. U.S. Patent 4,253,066, titled, "Synchronous Detection with Sampling," issued February 24, 1981, to Fisher *et al.*
2. U.S. Patent 4,346,477, titled, "Phase Locked Sampling Radio Receiver," issued August 24, 1982 to Gordy.
3. U.S. Patent 4,811,362, titled, "Low Power Digital Receiver," issued March 7, 1989 to Yester, Jr. *et al.*
4. U.S. Patent 4,888,557, titled, "Digital Subharmonic Sampling Down-Converter," issued December 19, 1989 to Puckette, IV *et al.*

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5. U.S. Patent 4,893,341, titled, "Digital Receiver Operating at Sub-Nyquist Sampling Rate," issued January 9, 1990 to Gehring.
6. U.S. Patent 4,920,510, titled, "Sample Data Band-Pass Filter Device," issued April 24, 1990, to Senderowicz *et al.*
7. U.S. Patent 5,015,963, titled, "Synchronous Demodulator," issued May 14, 1991 to Sutton.
8. U.S. Patent 5,140,705, titled, "Center-Tapped Coil-Based RF Tank Circuit for a Balanced Mixer Circuit, issued August 18, 1992 to Kosuga.
9. U.S. Patent 5,339,459, titled, "High Speed Sample and Hold Circuit and Radio Constructed Therewith," issued August 16, 1994, to Schiltz *et al.*
10. U.S. Patent 5,557,642, titled, "Direct Conversion Receiver for Multiple Protocols," issued September 17, 1996 to Williams.
11. U.S. Patent 5,630,227, titled, "Satellite Receiver Having Analog-to-Digital Converter Demodulation, issued May 13, 1997 to Bella *et al.*
12. U.S. Patent 5,640,698, titled, "Radio Frequency Signal Reception Using Frequency Shifting by Discrete-Time Sub-Sampling Down-Conversion," issued June 17, 1997 to Shen *et al.*
13. U.S. Patent 5,742,189, titled, "Frequency Conversion Circuit and Radio Communication Apparatus with the Same," issued April 21, 1998 to Yoshida *et al.*

Foreign Patent Documents

14. PCT/US96/08233, WO 96/02977, titled, "Method and Apparatus for Alias-Driven Frequency Downconversion (Mixing), published February 1, 1996.

Other Documents

15. Akers, N.P., *et al.*, "RF Sampling Gates: a Brief Review," IEE Proceedings, Vol. 133, Part A, No. 1, January 1986, pp.45-49.
16. Faulkner and Vilar, Subharmonic Sampling for the Measurement of Short-Term Stability of Microwave Oscillators, IEEE Transactions on Instrumentation and Measurement, Vol. 1M-32, No. 1, March 1983, pp. 208-213.

17. Itakura, T., "Effects of the Sampling Pulse Width on the Frequency Characteristics of a Sample-and-Hold Circuit," IEE Proceedings-Circuits, Devices and Systems, Vol. 141, No. 4, August 1994, pp328-336.
18. Openheim, A.V. *et al.*, Signals and Systems, Prentice-Hall Signal Processing Series, U.S.A., © 1983, pp 527-531, 561-562.
19. Razavi, B., "RF Microelectronics," Prentice Hall, 1998, pp. 147-149.
20. Russell, R., *et al.*, "Millimeter Wave Phase Locked Oscillators," company bulletin, Marconi Space and Défense Systems Ltd., Stanmore, Middlesex, England, date unknown, pp. 238-242.
21. Volmer, A., "Complete GPS Receiver Fits on Two Chips," Electronics Design, July 6, 1998, pp50-56.

Copies of these documents are submitted herewith, along with a properly completed form PTO-1449. Their significance is discussed below.

Applicants reserve the right to further establish the patentability of the claimed invention over any of the listed documents should they be applied as references, and/or to prove that some of these documents may not be prior art, and/or to prove that some of these documents may not be enabling for the teachings they purport to offer.

IV. Detailed Discussion of the Documents

This section provides a detailed discussion of the above-listed documents. This discussion points out, with the particularity required by 37 C.F.R. §§ 1.111(b) and 1.111(c), how the claimed subject matter is distinguishable over the documents.

Reference 1 appears to be related to a synchronous detector that samples an amplitude modulated wave for short periods. Reference 1 does not teach or suggest directly down-converting a modulated carrier signal to a demodulated baseband signal, as recited in the claims. Considering claim 8, for example, reference 1 does not teach or suggest the combination of receiving a modulated carrier signal and transferring non-negligible amounts of energy from the modulated carrier signal, at a rate that is substantially equal to a sub-harmonic

of the modulated carrier signal, whereby the transferred non-negligible amounts of energy forms the demodulated baseband signal.

Reference 2 appears to be related to a phase locked sampling radio receiver in which a harmonic of an intermediate frequency is selected to control the frequency of a phase locked loop. Reference 2 does not teach or suggest directly down-converting a modulated carrier signal to a demodulated baseband signal, as recited in the claims. Considering claim 8, for example, reference 2 does not teach or suggest the combination of receiving a modulated carrier signal and transferring non-negligible amounts of energy from the modulated carrier signal, at a rate that is substantially equal to a sub-harmonic of the modulated carrier signal, whereby the transferred non-negligible amounts of energy forms the demodulated baseband signal.

Reference 3 appears to be related to a low power digital receiver that selects the lowest possible sampling frequency and received signal level to digitize and recover a desired signal. Reference 3 does not teach or suggest directly down-converting a modulated carrier signal to a demodulated baseband signal, as recited in the claims. Considering claim 8, for example, reference 3 does not teach or suggest the combination of receiving a modulated carrier signal and transferring non-negligible amounts of energy from the modulated carrier signal, at a rate that is substantially equal to a sub-harmonic of the modulated carrier signal, whereby the transferred non-negligible amounts of energy forms the demodulated baseband signal.

Reference 4 appears to be related to a digital subharmonic sampling down-converter that uses an analog-to-digital converter to convert an IF signal to a digital signal. Reference 4 does not teach or suggest directly down-converting a modulated carrier signal to a demodulated baseband signal, as recited in the claims. Considering claim 8, for example, reference 4 does not teach or suggest the combination of receiving a modulated carrier signal and transferring non-negligible amounts of energy from the modulated carrier signal, at a rate that is substantially equal to a sub-harmonic of the modulated carrier signal, whereby the transferred non-negligible amounts of energy forms the demodulated baseband signal.

Reference 5 appears to be related to a digital receiver that samples an AM signal at known points using a signal that is phased locked to and transmitted with the AM signal.

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Reference 5 does not teach or suggest directly down-converting a modulated carrier signal to a demodulated baseband signal, as recited in the claims. Considering claim 8, for example, reference 5 does not teach or suggest the combination of receiving a modulated carrier signal and transferring non-negligible amounts of energy from the modulated carrier signal, at a rate that is substantially equal to a sub-harmonic of the modulated carrier signal, whereby the transferred non-negligible amounts of energy forms the demodulated baseband signal.

Reference 6 appears to be related to a sampled-data band-pass filter device that performs band-pass filtering of a signal and shifts the signal to a lower frequency rate. Reference 6 does not teach or suggest directly down-converting a modulated carrier signal to a demodulated baseband signal, as recited in the claims. Considering claim 8, for example, reference 6 does not teach or suggest the combination of receiving a modulated carrier signal and transferring non-negligible amounts of energy from the modulated carrier signal, at a rate that is substantially equal to a sub-harmonic of the modulated carrier signal, whereby the transferred non-negligible amounts of energy forms the demodulated baseband signal.

Reference 7 appears to be related to a synchronous demodulator that includes a switch that operates in synchronism with an incoming periodic signal and both divides and applies that signal to two signal channels. Reference 7 does not teach or suggest directly down-converting a modulated carrier signal to a demodulated baseband signal, as recited in the claims. Considering claim 8, for example, reference 7 does not teach or suggest the combination of receiving a modulated carrier signal and transferring non-negligible amounts of energy from the modulated carrier signal, at a rate that is substantially equal to a sub-harmonic of the modulated carrier signal, whereby the transferred non-negligible amounts of energy forms the demodulated baseband signal.

Reference 8 appears to be related to a center-tapped coil-based RF tank circuit for a balanced mixer circuit. Reference 8 does not teach or suggest directly down-converting a modulated carrier signal to a demodulated baseband signal, as recited in the claims. Considering claim 8, for example, reference 8 does not teach or suggest the combination of receiving a modulated carrier signal and transferring non-negligible amounts of energy from the modulated carrier signal, at a rate that is substantially equal to a sub-harmonic of the

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modulated carrier signal, whereby the transferred non-negligible amounts of energy forms the demodulated baseband signal.

Reference 9 appears to be related to a sample and hold circuit, and to radios that use such circuit. Reference 9 does not teach or suggest directly down-converting a modulated carrier signal to a demodulated baseband signal, as recited in the claims. Considering claim 8, for example, reference 9 does not teach or suggest the combination of receiving a modulated carrier signal and transferring non-negligible amounts of energy from the modulated carrier signal, at a rate that is substantially equal to a sub-harmonic of the modulated carrier signal, whereby the transferred non-negligible amounts of energy forms the demodulated baseband signal.

Reference 10 appears to be related to a direct conversion receiver for multiple protocols including a sample and hold circuit, a sigma-delta loop and a decimator. Reference 10 does not teach or suggest directly down-converting a modulated carrier signal to a demodulated baseband signal, as recited in the claims. Considering claim 8, for example, reference 10 does not teach or suggest the combination of receiving a modulated carrier signal and transferring non-negligible amounts of energy from the modulated carrier signal, at a rate that is substantially equal to a sub-harmonic of the modulated carrier signal, whereby the transferred non-negligible amounts of energy forms the demodulated baseband signal.

Reference 11 appears to be related to a satellite receiver that down-converts to an intermediate frequency and converts the intermediate frequency to a digital baseband signal. Reference 11 does not teach or suggest directly down-converting a modulated carrier signal to a demodulated baseband signal, as recited in the claims. Considering claim 8, for example, reference 11 does not teach or suggest the combination of receiving a modulated carrier signal and transferring non-negligible amounts of energy from the modulated carrier signal, at a rate that is substantially equal to a sub-harmonic of the modulated carrier signal, whereby the transferred non-negligible amounts of energy forms the demodulated baseband signal.

Reference 12 appears to be related to a receiver that sub-samples an RF signal to down-convert the RF signal to a discrete-time image signal, followed by successive down-sampling, anti-alias filtering and amplification to yield a low-frequency discrete time signal. Reference 12 does not teach or suggest directly down-converting a modulated carrier signal to

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a demodulated baseband signal, as recited in the claims. Considering claim 8, for example, reference 12 does not teach or suggest the combination of receiving a modulated carrier signal and transferring non-negligible amounts of energy from the modulated carrier signal, at a rate that is substantially equal to a sub-harmonic of the modulated carrier signal, whereby the transferred non-negligible amounts of energy forms the demodulated baseband signal.

Reference 13 appears to be related to frequency conversion circuit for receiving a first intermediate signal and producing a second intermediate signal therefrom. Reference 13 does not teach or suggest directly down-converting a modulated carrier signal to a demodulated baseband signal, as recited in the claims. Considering claim 8, for example, reference 13 does not teach or suggest the combination of receiving a modulated carrier signal and transferring non-negligible amounts of energy from the modulated carrier signal, at a rate that is substantially equal to a sub-harmonic of the modulated carrier signal, whereby the transferred non-negligible amounts of energy forms the demodulated baseband signal.

Reference 14 appears to be related to frequency conversion by using sample and hold, and track and hold circuits. Reference 14 does not teach or suggest directly down-converting a modulated carrier signal to a demodulated baseband signal, as recited in the claims. Considering claim 8, for example, reference 14 does not teach or suggest the combination of receiving a modulated carrier signal and transferring non-negligible amounts of energy from the modulated carrier signal, at a rate that is substantially equal to a sub-harmonic of the modulated carrier signal, whereby the transferred non-negligible amounts of energy forms the demodulated baseband signal.

Reference 15 appears to be related to a review of RF sampling gates. Reference 15 does not teach or suggest directly down-converting a modulated carrier signal to a demodulated baseband signal, as recited in the claims. Considering claim 8, for example, reference 15 does not teach or suggest the combination of receiving a modulated carrier signal and transferring non-negligible amounts of energy from the modulated carrier signal, at a rate that is substantially equal to a sub-harmonic of the modulated carrier signal, whereby the transferred non-negligible amounts of energy forms the demodulated baseband signal.

Reference 16 appears to be related to a down-conversion system based on a sub-harmonic sampling technique. Reference 16 does not teach or suggest directly down-

converting a modulated carrier signal to a demodulated baseband signal, as recited in the claims. Considering claim 8, for example, reference 16 does not teach or suggest the combination of receiving a modulated carrier signal and transferring non-negligible amounts of energy from the modulated carrier signal, at a rate that is substantially equal to a sub-harmonic of the modulated carrier signal, whereby the transferred non-negligible amounts of energy forms the demodulated baseband signal.

Reference 17 appears to be related to considering the effects of sampling pulse width on frequency characteristics of a sample-and-hold circuit. Reference 17 does not teach or suggest directly down-converting a modulated carrier signal to a demodulated baseband signal, as recited in the claims. Considering claim 8, for example, reference 17 does not teach or suggest the combination of receiving a modulated carrier signal and transferring non-negligible amounts of energy from the modulated carrier signal, at a rate that is substantially equal to a sub-harmonic of the modulated carrier signal, whereby the transferred non-negligible amounts of energy forms the demodulated baseband signal.

Reference 18 appears to be related to under-sampling and aliasing. Reference 18 does not teach or suggest directly down-converting a modulated carrier signal to a demodulated baseband signal, as recited in the claims. Considering claim 8, for example, reference 18 does not teach or suggest the combination of receiving a modulated carrier signal and transferring non-negligible amounts of energy from the modulated carrier signal, at a rate that is substantially equal to a sub-harmonic of the modulated carrier signal, whereby the transferred non-negligible amounts of energy forms the demodulated baseband signal.

Reference 19 appears to be related to sub-sampling receivers. Reference 19 does not teach or suggest directly down-converting a modulated carrier signal to a demodulated baseband signal, as recited in the claims. Considering claim 8, for example, reference 19 does not teach or suggest the combination of receiving a modulated carrier signal and transferring non-negligible amounts of energy from the modulated carrier signal, at a rate that is substantially equal to a sub-harmonic of the modulated carrier signal, whereby the transferred non-negligible amounts of energy forms the demodulated baseband signal.

Reference 20 appears to be related to down-converting high frequency clock signals for input into a conventional phase locked loop. Reference 20 does not teach or suggest

directly down-converting a modulated carrier signal to a demodulated baseband signal, as recited in the claims. Considering claim 8, for example, reference 20 does not teach or suggest the combination of receiving a modulated carrier signal and transferring non-negligible amounts of energy from the modulated carrier signal, at a rate that is substantially equal to a sub-harmonic of the modulated carrier signal, whereby the transferred non-negligible amounts of energy forms the demodulated baseband signal.

Reference 21 appears to be related to a global positioning system (GPS) receiver designed to fit on two integrated circuit chips. Reference 21 does not teach or suggest directly down-converting a modulated carrier signal to a demodulated baseband signal, as recited in the claims. Considering claim 8, for example, reference 21 does not teach or suggest the combination of receiving a modulated carrier signal and transferring non-negligible amounts of energy from the modulated carrier signal, at a rate that is substantially equal to a sub-harmonic of the modulated carrier signal, whereby the transferred non-negligible amounts of energy forms the demodulated baseband signal.

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V. Conclusion

Applicants respectfully submit that the requirements of 37 C.F.R. § 1.102 and M.P.E.P. § 708.02 pertaining to special status have been satisfied. Accordingly, it is respectfully requested that this Petition be granted.

This statement should not be construed as a representation that an exhaustive search has been made, or that there does not exist information more material to the examination of the present patent application. The submission of this material is not intended to displace the Examiner's professional ability and duty to search. Indeed, the Examiner is specifically requested not to rely solely on the materials submitted herewith. The Examiner is requested to conduct an independent and thorough review of the documents, and to form independent opinions as to their significance.

Respectfully submitted,


STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.

Michael Q. Lee
Attorney for Applicants
Registration No. 35,239

Date: 3/2/99

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MQL:PEG:nlw
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EXHIBIT C



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
ASSISTANT SECRETARY AND COMMISSIONER OF
PATENTS AND TRADEMARKS
Washington, D.C. 20231

Paper No. 5

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GOLDSTEIN & FOX
1100 New York Avenue, NW
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Washington, DC 20005-3934

Mailed
JUN 24 1999
Director's Office
Group 2700

In re Application of :
David Sorrells, et al. :
Application No. 09/176,022 :
Filed: October 21, 1998 :
For: METHOD AND SYSTEM FOR DOWN- :
CONVERTING ELECTROMAGNETIC :
SIGNALS :

**DECISION ON PETITION
TO MAKE SPECIAL**

This is a decision on the renewed petition under 37 C.F.R. § 1.102, filed March 31, 1999 to make the above-identified application special.

The petition requests that the above-identified application be made special under the accelerated examination procedure set forth in M.P.E.P. § 708.02, Item VIII: Accelerated Examination.

The petition complies with M.P.E.P. § 708.02, Item VIII: Accelerated Examination, in that it is accompanied by (a) the required petition fee of \$130.00, (b) a statement that all claims are directed a single invention or an offer to make an oral election without traverse should the Patent and Trademark Office hold that the claims are not directed to a single invention, (c) a statement that a pre-examination search has been made by the inventor, attorney, agent, or professional searchers, etc., the field of search was also provided, (d) one copy of each of the references deemed most closely related to the subject matter encompassed by the claims, and (e) a detailed description of the submitted references and discussions pointing out how the claimed subject matter distinguishes over these references.

For the above stated reasons, the petition is **GRANTED**.

The application file is being forwarded to the examiner for expedited prosecution.

Application Serial No. 09/176,022
Decision on Petition

Page 2

If the examiner can make this application special without prejudice to any possible interfering applications, and he/she should make a rigid search for such, he/she is authorized to do so for the next action. Should the application be rejected, the application will not be considered special for the subsequent action unless the applicant promptly makes a bona fide effort to place the application in condition for allowance, even if it is necessary to have an interview with the examiner to accomplish this purpose.

If the examiner finds any interfering application for the same subject matter, he/she should consider such application simultaneously with this application and should state in the official letter of such application that he/she is taking it out of its turn because of possible interference.

Should an appeal be taken in this application or should this application becomes involved in an interference, consideration of the appeal and the interference will be expedited by all Patent and Trademark Office officials concerned, contingent likewise upon diligent prosecution by the applicant.

After allowance, this application will be given priority for printing. See M.P.E.P. § 1309.



Kenneth A. Wieder
Special Program Examiner
Technology Center 2700-
Communications and Information Processing

EXHIBIT D

COPY

Page 1 of 3

FORM PTO-1449 INFORMATION DISCLOSURE STATEMENT		ATTY. DOCKET NO. 1744.0010000		APPLICANT Sorrrells et al.		APPLICANT FILING NO. 09/176,022		RECEIVED MAR 31 1999 2745 Special Program Unit	
		FILING DATE October 21, 1998		GROUP 2897		Special Program Unit			
		U.S. PATENT DOCUMENTS Green 2700							
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE		
S3	AA1	4,253,066	02/1981	Fisher et al.	329	50			
	AB1	4,346,477	08/1982	Gordy	455	257			
	AC1	4,811,362	03/1989	Yester, Jr. et al.	375	75			
	AD1	4,888,557	12/1989	Puckette, IV et al.	329	341			
	AE1	4,893,341	01/1990	Gehring	381	7			
	AF1	4,920,510	04/1990	Senderowicz et al.	364	825			
	AG1	5,015,963	05/1991	Sutton	329	361			
	AH1	5,140,705	08/1992	Kosuga	455	318			
	AI1	5,339,459	08/1994	Schiltz et al.	455	333			
	AJ1	5,557,642	09/1996	Williams	375	316			
S3	AK1	5,630,227	05/1997	Bella et al.	455	324			
FOREIGN PATENT DOCUMENTS									
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION		
S3	AL1	WO 96/02977	02/1996	PCT	H04B	1/26	Yes No		
	AM1						Yes No		
	AN1						Yes No		
	AO1						Yes No		
	AP1						Yes No		
OTHER (Including Author, Title, Date, Pertinent Pages, etc.)									
S3	AR	1	Akers, W.P. et al., "RF sampling gates: a brief review," <i>IEE Proceedings-A</i> , Vol. 133, Part A, No. 1, January 1986, pp. 45-49.						
S3	AS	1	Faulkner, Neil D. and Mestre, Enric Vilar, "Subharmonic Sampling for the Measurement of Short-term Stability of Microwave Oscillators," <i>IEEE Transactions on Instrumentation and Measurement</i> , Vol. IM-32, No. 1, March 1983, pp. 208-213.						
S3	AT	1	Itakura, T., "Effects of the sampling pulse width on the frequency characteristics of a sample-and-hold circuit," <i>IEE Proceedings- Circuits, Devices and Systems</i> , August 1994, Vol. 141, No. 4, pp. 328-336.						
EXAMINER	S. Bhattacharya						DATE CONSIDERED	8/1/99	
EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.									

P:V685UJ 030817441001-0-144
SIGF Rev. 7/96

EXHIBIT D

FORM PTO-1449		ATTY. DOCKET NO. 1744.0010000		APPLICATION NO. 09/176,022			
<u>INFORMATION DISCLOSURE STATEMENT</u>				APPLICANT Sorrells et al.			
FILING DATE October 21, 1998				GROUP 2857 2745			
U.S. PATENT DOCUMENTS							
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
SB	AA2	5,640,698	06/1997	Shen et al.	455	323	
SB	AB2	5,742,189	04/1998	Yoshida et al.	327	113	
	AC2						
	AD2						
	AE2						
	AF2						
	AG2						
	AH2						
	AI2						
	AJ2						
	AK2						
FOREIGN PATENT DOCUMENTS							
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AL2						Yes No
	AM2						Yes No
	AN2						Yes No
	AO2						Yes No
	AP2						Yes No
OTHER (Including Author, Title, Date, Pertinent Pages, etc.)							
SB	AR	2		Oppenheim, Alan V. et al., <u>Signals and Systems</u> , Prentice-Hall, 1983, pp. 527-562.			
SB	AS	2		Razavi, B., <u>RF Microelectronics</u> , Prentice-Hall, 1998, pp. 147-149.			
SB	AT	2		Russell, R. and Hoare, L., "Millimeter Wave Phase Locked Oscillators," <u>Military Microwaves '78 Conference Proceedings</u> , 1978, pp. 238-242.			
EXAMINER S. Bhattacharya					DATE CONSIDERED 8/1/99		
EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.							

FORM PTO-1449 INFORMATION DISCLOSURE STATEMENT		ATTY. DOCKET NO. 1744.0010000	APPLICATION NO. 09/176,022				
		APPLICANT Sorrells et al.					
		FILING DATE October 21, 1998	GROUP 2857 2745				
U.S. PATENT DOCUMENTS							
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA3						
	AB3						
	AC3						
	AD3						
	AE3						
	AF3						
	AG3						
	AH3						
	AI3						
	AJ3						
	AK3						
FOREIGN PATENT DOCUMENTS							
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AL3						Yes No
	AM3						Yes No
	AN3						Yes No
	AO3						Yes No
	AP3						Yes No
OTHER (Including Author, Title, Date, Pertinent Pages, etc.)							
SB	AR	3	Vollmer, A., "Complete GPS Receiver Fits on Two Chips," <i>Electronic Design</i> , July 6, 1998, pp. 50, 52, 54 & 56.				
	AS	3					
	AT	3					
EXAMINER S. Bhattacharya					DATE CONSIDERED 8/1/99		
EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.							

EXHIBIT E



**UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

di

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/176,022	10/21/98	SORRELLS	D 1744.0010000

LM02/0803
 STERNE KESSLER GOLDSTEIN & FOX
 1100 NEW YORK AVENUE NW
 SUITE 600
 WASHINGTON DC 20005-3934

EXAMINER

BHATTACHARYA, S	
ART UNIT	PAPER NUMBER

2745 7
 DATE MAILED: 08/03/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Please see attached.

Office Action Summary	Application No. 09/176,022	Applicant(s) Sorrells et al.	
	Examiner Sam Bhattacharya	Group Art Unit 2745	

Responsive to communication(s) filed on _____

This action is FINAL.

Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

Claim(s) 8-39 is/are pending in the application.

(If the above, claim(s) _____ is/are withdrawn from consideration.

Claim(s) _____ is/are allowed.

Claim(s) 8-39 is/are rejected.

Claim(s) _____ is/are objected to.

Claims _____ are subject to restriction or election requirement.

Application Papers

See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

The drawing(s) filed on _____ is/are objected to by the Examiner.

The proposed drawing correction, filed on _____ is approved disapproved.

The specification is objected to by the Examiner.

The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

All Some* None of the CERTIFIED copies of the priority documents have been

received.

received in Application No. (Series Code/Serial Number) _____.

received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

Certified copies not received: _____

Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

Notice of References Cited, PTO-892

Information Disclosure Statement(s), PTO-1449, Paper No(s). 6

Interview Summary, PTO-413

Notice of Draftsperson's Patent Drawing Review, PTO-948

Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Application/Control Number: 09/176,022

Page 2

Art Unit: 2745

DETAILED ACTION

Drawings

1. The drawings are objected to because of the problems addressed in the attached PTO-948. Correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 8, 9 and 11-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Puckette, IV et al. (US 4,888,557) in view of Kennan et al. (US 5,903,827).

Regarding **claims 8, 9, 18, 21, 23, 24**, Puckette, IV et al. discloses a digital subharmonic downconverter (Fig.1) which receives a modulated carrier signal wherein digital mixer 12 converts sampled data to baseband and the sampling frequency is a subharmonic of the frequency of the input signal (col. 2, line 58 - col. 3, line 11). Puckette, IV et al. fail to specifically

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disclose the limitation of an energy or power transfer which forms the baseband signal.

However, Kennan et al. disclose a frequency downconverter (Fig. 1) wherein maximum power is transferred from a hybrid coupler to the inputs of active FET mixers 28 and 30 which in turn produce a spectrum of output frequencies and harmonics thereof (col. 5, lines 35-54). Furthermore, the power transfer signal can have a harmonic substantially equal to a modulated carrier signal as required by claim 9 by adjusting the frequency of the local oscillator signal. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the downconverter of Puckette, IV et al. by transferring power as taught by Kennan et al. for the purpose of minimizing energy loss and improving isolation of circuit components.

Regarding **claims 11, 12, 25-27 and 29**, Puckette, IV et al. already disclose the limitations of optimizing the phase, frequency and amplitude of baseband signal (col. 2, lines 5-19 and col. 4, line 56 - col. 5, line 2). Furthermore, it is not necessary to synchronize the energy transfer signal of Kennan et al. with the phase of the modulated carrier signal.

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Regarding **claims 13 and 14**, Official notice is taken that modulation techniques such as amplitude and phase modulation are well known in the art and therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the downconverter of Puckette, IV et al. in view of Kennan et al. by using an amplitude or phase modulation technique to modulate the signal so that it can carry information.

Regarding **claims 15 and 16**, Kennan et al. further disclose the use of frequencies of the received signal in the 10 MHz to 10 GHz range (col. 5, lines 21-34). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the downconverter of Puckette, IV et al. in view of Kennan et al. by using received frequencies of higher ranges as further taught by Kennan et al. for the purpose of facilitating the use of more compact circuit components and thereby improving the economy of size of the device.

Regarding **claims 17, 19, 20, 22, 28**, Kennan et al. further discloses the limitations of having low impedance path and impedance matched path (col. 5, lines 35-54) and therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the downconverter of Puckette, IV et al. in view of Kennan et al. by including those

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further limitations of Kennan et al. for the purpose of minimizing losses in the circuitry which become significant at higher frequencies.

4. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Puckette, IV et al. (US 4,888,557) in view of Kennan et al. (US 5,903,827) and Gordy (US 4,346,477).

Regarding **claim 10**, Puckette, IV et al. as modified by Kennan et al. fail to disclose the limitation of generating pulses having non-negligible apertures that tend away from zero time in duration.

However, Gordy discloses a phase locked sampling radio receiver wherein the received signal is sampled at a rate determined by pulses of a clock signal produced by a selectable-rate digital oscillator and harmonics are generated and distributed in a pattern determined by the sampling rate (col. 1, line 67 - col. 2, line 21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the downconverter of Puckette, IV et al. in view of Kennan et al. by including clock pulses during energy transfer as taught by Gordy for the purpose of optimizing the rate of sampling of the received signal, thereby improving the efficiency of the

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device and reducing the need for the manufacture of multiple circuit components.

5. Claims 30-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Puckette, IV et al. (US 4,888,557) in view of Kennan et al. (US 5,903,827) and Shen et al. (US 5,640,698).

Claims 30, 33, 34-36 are incorporated by the limitations of claim 1 above and further includes the limitation of a switch module controlled by an energy transfer signal generator, specific coupling the the switch module and a feedforward circuit in parallel with the switch module, which the combination of Puckette, IV et al. in view of Kennan et al. fail to disclose.

However, Shen et al. disclose an RF communications receiver (Fig. 4) wherein sample-and-hold circuit 81 includes switched capacitor circuits which inherently generate energy transfer (col. 4, lines 48-55). Switching capacitor circuits function as tank circuits as required by, and the specific coupling of the switch module and the limitation of a feedforward circuit vary and depend on the further desired characteristics of the device. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the downconverter of Puckette, IV et al. in view of Kennan et al. by including

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switched capacitor circuits in a sample-and-hold circuit as taught by Shen et al. and by further modifying the desired characteristics of the device for the purpose of providing greater integration of the circuitry on materials such as silicon chips and reducing the power consumption of the circuitry as well.

Claims 31 and 32 are incorporated by the limitations of claims 19 and 30 and are therefore analyzed as discussed with respect to claims 19 and 30.

Claim 37 is incorporated by the limitations of claims 15 and 30 and are therefore analyzed as discussed with respect to claims 15 and 30.

Claim 38 is incorporated by the limitations of claims 16 and 30 and are therefore analyzed as discussed with respect to claims 16 and 30.

Claim 39 is incorporated by the limitations of claims 27 and 30 and are therefore analyzed as discussed with respect to claims 27 and 30.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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Gehring (US 4,893,341) discloses a digital receiver operating at sub-nyquist sampling rate (Fig. 2).

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 305-9051, (for formal communications intended for entry)

Or:

(703) 305-9508, (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Application/Control Number: 09/176,022

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Art Unit: 2745

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Bhattacharya whose telephone number is (703) 305-4040. The examiner can normally be reached on Monday through Thursday from 8:30 a.m. to 6:00 p.m. The examiner can also be reached on alternate Fridays.

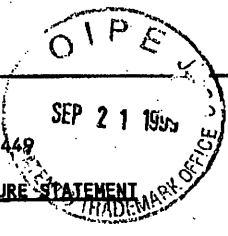
8. Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703) 305-3900.

SB:sb

August 1, 1999


8/2/99
NGUYEN VO
PRIMARY EXAMINER

EXHIBIT F



FORM PTO-1449

INFORMATION DISCLOSURE STATEMENT

ATTY. DOCKET NO. 1744.0010000	APPLICATION NO. 176,022
APPLICANT Sorrells et al.	
FILING DATE October 21, 1998	GROUP 2745

RECEIVED

U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	TRANSLATION
SA	AA17	4,210,872	07/1980	Gregorian	330	9
	AB17	4,253,069	02/1981	Nossek	330	107
	AC17	4,308,614	12/1981	Fisher et al.	370	119
	AD17	4,320,536	03/1982	Dietrich	455	325
	AE17	4,355,401	10/1982	Ikoma et al.	375	5
	AF17	4,356,558	10/1982	Owen et al.	364	724
	AG17	4,365,217	12/1982	Berger et al.	333	165
	AH17	4,370,572	01/1983	Cosand et al.	307	353
	AI17	4,389,579	06/1983	Stein	307	353

FOREIGN PATENT DOCUMENTS

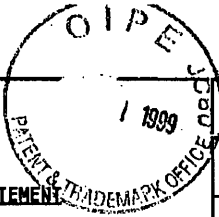
EXAMINER INITIAL	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
S/B	AJ17	0 486 095 B1	02/1997	EP	H03D	3/00
	AK17	0 782 275 A2	07/1997	EP	H04B	7/02
S/B	AL17	0 795 978 A2	09/1997	EP	H04L	5/06

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

S/B	AM	17	Dewey, R.J. and Collier, C.J., "Multi-Mode Radio Receiver," pp. 3/1-3/5.
	AN	17	"DSO takes sampling rate to 1 Ghz," <i>Electronic Engineering</i> , March 1987, pp. 77, 79.
	AO	17	Erdi, G. and Henneuse, P.R., "A Precision FET-Less Sample-and-Hold with High Charge-to-Droop Current Ratio," <i>IEEE Journal of Solid-State Circuits</i> , Vol. SC-13, No. 6, December 1978, pp. 864-873.
	AR	17	Faulkner, N.D. et al., "Sub-Harmonic Sampling for the Accurate Measurement of Frequency Stability of Microwave Oscillators," <i>CPEM 82 Digest: Conf. On Precision Electromagnetic Measurements</i> , 1982, pp. M-10 & M-11.
	AS	17	Faulkner, N.D. and Vilar, E., "Time Domain Analysis of Frequency Stability Using Non-Zero Dead-Time Counter Techniques," <i>CPEM 84 Digest Conf. On Precision Electromagnetic Measurements</i> , 1984, pp. 81-82.

EXAMINER S. Bhattacharya	DATE CONSIDERED 12/28/99
-----------------------------	-----------------------------

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.



FORM PTO-1449
INFORMATION DISCLOSURE STATEMENT

ATTY. DOCKET NO. 1744.0010000 APPLICATION NO. 09/176,022

APPLICANT Sorrells *et al.*

FILING DATE October 21, 1998 GROUP 2745

U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
AA						SEP 23 1999
AB						
AC						GROUP 2700
AD						
AE						
AF						
AG						
AH						
AI						

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
AJ						Yes No
AK						Yes No
AL						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

SB	AM	40	Vilar, E. and Matthews, P.A., "Importance of Amplitude Scintillations in Millimetric Radio Links," <i>Conf. Proc. 4th European Microwave Conference</i> , September 10-13, 1974, pp. 202-206.
	AN	40	Vilar, E. and Haddon, J., "Measurement and Modeling of Scintillation Intensity to Estimate Turbulence Parameters in an Earth-Space Path," <i>IEEE Transactions On Antennas and Propagation</i> , Vol. AP-32, No. 4, April 1984, pp. 340-346.
	AO	40	Vilar, E. and Matthew, P.A., "Measurement of Phase Fluctuations on Millimetric Radiowave Propagation," <i>Electronics Letters</i> , Vol. 7, No. 18, September 9, 1971, pp. 566-568.
	AR	40	Vilar, E. and Wan, K.W., "Narrow and Wide Band Estimates of Field Strength for Indoor Communications in the Millimetre Band," <i>Electronics Division Colloquium on Radiocommunications in the Range 30-60 Ghz</i> , January 17, 1991, pp. 5/1-5/8.
SB	AS	40	Vilar, E. and Faulkner, N.D., "Phase Noise and Frequency Stability Measurements. Numerical Techniques and Limitations," <i>Electronics Division Colloquium on Low Noise Oscillators and Synthesizer</i> , January 23, 1986, (5 Pages).

EXAMINER S. Bhattacharya DATE CONSIDERED 12/28/99

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

EXHIBIT G

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Sorrels *et al.*
Appl. No. 09/176,022

Remarks

Applicants and their Attorneys thank the Examiner for the Examiner Interview of November 18, 1999.

Upon entry of the foregoing Amendment, claims 8-211 are pending in the application, with claims 8 and 30 being the independent claims. Claims 8 - 30 are sought to be amended. New claims 40 - 211 are sought to be added. These changes are believed to introduce no new matter, and their entry is respectfully requested.

Amendments to the Specification and Drawings

The application was filed with drawing FIG. 43 intentionally left blank. In order to remove the intentionally left blank FIG. 43, FIGS. 31A, 31B and 31C are sought to be changed to FIGS. 31, 43A and 43B, respectively. Appropriate amendments are made to the Specification in amendment Group 1 above.

The application was filed with drawing FIG. 72 intentionally left blank. In order to remove the intentionally left blank FIG. 72, FIGS. 71A, 71B, and 71C are sought to be changed to FIGS. 71, 72A and 72B, respectively. Appropriate amendments are made to the Specification in amendment Group 2 above.

The application was filed with drawing FIGS. 1-95 and A1-A18. Drawing FIGS. A1-A18 are sought to be changed to FIGS. 96-113, respectively. In addition, elements illustrated in drawings A1-A18, which were originally referenced by alpha-numeric characters, are sought to be changed to numeric characters. Appropriate amendments are made to the Specification in amendment Group 3 above.

Originally filed FIG. A3 illustrated signals A through D. These signals are now illustrated in Figures 98A - 98D. Originally filed FIG. A7 was illustrated signals A through H. These signals are now illustrated in FIGS. 102A through 102G, with signals G and H illustrated in FIG. 102G. Appropriate amendments are made to the Specification in amendment Group 3 above.

These changes to the Specification and Drawings are made to correct various informalities. These changes introduce no new matter and their entry is respectfully requested.

In the Claims

In paragraph 3 of the Office Action the Examiner rejected claims 8, 9, and 11-29 under 35 U.S.C. § 103(a), as being unpatentable over Puckette, IV et al. (U.S. Pat. 4,888,557) in view of Kennan et al. (U.S. Pat. 5,903,827).

In paragraph 4 of the Office Action the Examiner rejected claim 10 under 35 U.S.C. § 103(a), as being unpatentable over Puckette in view of Kennan and Gordy (U.S. Patent 4,346,477).

In paragraph 5 of the Office Action the Examiner rejected claims 30, 33, and 34-36 under 35 U.S.C. § 103(a), as being unpatentable over Puckette in view of Kennan and Shen et al. (U.S. Patent 5,640,698). The Examiner rejected claims 31 and 32 for the same reasons as claims 19 and 30. The Examiner rejected claim 37 for the same reasons as claims 15 and 30. The Examiner rejected claim 38 for the same reasons as claims 16 and 30. The Examiner rejected claim 39 for the same reasons as claims 27 and 30.

Applicants respectfully disagree with the Examiner's rejections, and assert that claims 1-39 are patentable over the applied references, considered individually or in combination with one another.

During the Examiner interview of November 18, 1999, the Examiner agreed that method claim 8, as amended herein, distinguishes over the references of record. In the Examiner Interview Summary Record, the Examiner wrote, "Applicant has presented amended claim 8 which incorporates indicated allowable subject matter, and would be allowable as amended."

Apparatus claim 30 has been amended to recite features similar to those recited in amended claim 8. Thus claim 30, as amended, is patentable for at least the reasons as amended claim 8. Claims 9-29 and 31-210 depend from claim 8 or claim 30 and are thus believed to be patentable for at least the reasons above. Accordingly, all rejections have been overcome. Applicants respectfully request that claims 8 - 210 be allowed and passed to issuance.

- 35 -

Sorrels *et al.*
Appl. No. 09/176,022

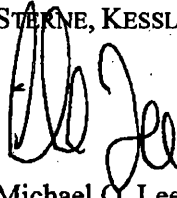
Conclusion

The amendments made herein introduce no new matter and their entry is respectfully requested. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, he is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment is respectfully requested.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Michael Q. Lee
Attorney for Applicants
Registration No. 35,239

Date: 11/24/99

1100 New York Avenue, N.W.
Suite 600
Washington, D.C. 20005-3934
(202) 371-2600

p94-20.wpd

EXHIBIT H

Notice of Allowability

Application No. 09/176,022	Applicant(s) Sorrells et al.
Examiner Sam Bhattacharya	Group Art Unit 2745

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance and Issue Fee Due or other appropriate communication will be mailed in due course.

- This communication is responsive to amendment filed on November 24, 1999
- The allowed claim(s) is/are 8-211
- The drawings filed on _____ are acceptable.
- Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
 - All Some* None of the CERTIFIED copies of the priority documents have been
 - received.
 - received in Application No. (Series Code/Serial Number) _____
 - received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- *Certified copies not received: _____
- Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

A SHORTENED STATUTORY PERIOD FOR RESPONSE to comply with the requirements noted below is set to EXPIRE THREE MONTHS FROM THE "DATE MAILED" of this Office action. Failure to timely comply will result in ABANDONMENT of this application. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

- Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION, PTO-152, which discloses that the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.
- Applicant MUST submit NEW FORMAL DRAWINGS
 - because the originally filed drawings were declared by applicant to be informal.
 - including changes required by the Notice of Draftsperson's Patent Drawing Review, PTO-948, attached hereto or to Paper No. 7.
 - including changes required by the proposed drawing correction filed on 12/7/99, which has been approved by the examiner.
 - including changes required by the attached Examiner's Amendment/Comment.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the reverse side of the drawings. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

- Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Any response to this letter should include, in the upper right hand corner, the APPLICATION NUMBER (SERIES CODE SERIAL NUMBER). If applicant has received a Notice of Allowance and Issue Fee Due, the ISSUE BATCH NUMBER and DATE of the NOTICE OF ALLOWANCE should also be included.

Attachment(s)

- Notice of References Cited, PTO-892
- Information Disclosure Statement(s), PTO-1449, Paper No(s). 8, 9 and 13
- Notice of Draftsperson's Patent Drawing Review, PTO-948
- Notice of Informal Patent Application, PTO-152
- Interview Summary, PTO-413
- Examiner's Amendment/Comment
- Examiner's Comment Regarding Requirement for Deposit of Biological Material
- Examiner's Statement of Reasons for Allowance

Application/Control Number: 09/176,022

Page 2

Art Unit: 2745

DETAILED ACTION

Drawings

1. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on 11/24/99 and 12/17/99 have been approved.

2. **Claims 8-211** are allowed.

3. The following is an examiner's statement of reasons for allowance: independent claims 8 and 30 have been amended to include the indicated allowable subject matter. Furthermore, claims 9-29 and 31-211 depend from claims 8 and 30.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."