United States District Court,
E.D. Pennsylvania.

David FIORI, Jr,
Plaintiff.
v.
ROCKFORD CORPORATION,
Defendant.

June 21, 2006.

Gary M. Samms, Obermayer Rebbmann Maxwell & Hippell LLP, Philadelphia, PA, Scott J. Fields, Blue Bell, PA, for Plaintiff.

Michael Lieberman, Paul R. Cohen, Shanon Levin Lehman, Hangley, Aronchick, Segal and Pudlin, Philadelphia, PA, Scott D. Watkins, Steven J. Barber, Stuart T.F. Huang, Steptor & Johnson LLP, Washington, DC, for Defendant.

MEMORANDUM AND ORDER

TUCKER**, J.**

This is a patent case. This suit concerns two patents for noise cancellation circuits and methods for use of the same within automobile stereo systems, filed by Plaintiff David Fiori, Jr. ("Fiori") on March 1, 2001. The patents at issue, both entitled "Signal Conditioning Apparatus," are United States Patent No. 5,386,148 ("the '148 Patent") and United States Reissued Patent RE37,130 E ("the Reissue Patent"). FN1 Defendant Rockford Corporation ("Rockford") has denied infringement, asserted that Plaintiff's patents are invalid, and alleged that the patents are not enforceable because, *inter alia,* Plaintiff procured the patents fraudulently from the U.S. Patent Office. A three-day *Markman* hearing was conducted in this case in October 2003. The task before the Court in this *Markman* process is to interpret terms in claims 1 and 17 of the ' 148 Patent and claims 28, 36 and 38 of the Reissue Patent.

FN1. The '148 Patent was filed on May 8, 1992 and issued on January 31, 1995. The Reissue Patent, a Reissue of United States Patent No. 5,694,081 ("the '081 Patent"), was also filed on May 8, 1992 and issued on April 10, 2001. Thus, the two patents-in-suit, the '148 Patent and the Reissue Patent, each track a prosecution history which dates from May 8, 1992.

I. BACKGROUND

Plaintiff Fiori is an electrical engineer and electronics designer who works in the area of noise abatement and elimination in electronic circuits for particular use in audio amplifiers. Defendant Rockford is a publicly traded corporation having its principle place of business in Tempe, Arizona. The products at issue in this

lawsuit are Rockford's car audio amplification system and the circuitry included in a noise control system referred to as TOPAZ. FN2 Fiori alleges that Rockford's TOPAZ system infringes five (5) claims of the patents-in-suit.FN3

FN2. TOPAZ is an acronym for Tracking Operation Pre-Amplifier Zone. Rockford has its own patent on the TOPAZ circuitry.

FN3. Pursuant to a stipulation and order entered by Magistrate Judge Rapoport (Doc. 29), Plaintiff agreed to limit his causes of action against Defendant to five (5) claims of the patents-in-suit. The allegations of infringement have been limited to sixteen (16) Rockford products that allegedly infringe claims 1 and 17 of the '148 Patent, and claims 28, 36, and 38 of the Reissue Patent.

The scope of protection provided by a patent is determined by the language of the claims and the brief sentences or paragraphs which "particularly point [ ] out and distinctly claim[ ] the subject matter which the applicant regards as his invention." 35 U.S.C. s. 112. The first step in determining the infringement of a patent is an interpretation of the scope and meaning of the patent claims alleged to be infringed, and construction of those patent claims is a matter of law to be decided by the Court. *See* Markman v. Westview Instruments Inc., 52 F.3d 967, 976, 979 (Fed.Cir.1995) (en banc), *aff'd* 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996). In order to aid the Court in this determination, the parties submitted written briefs and made presentations at a *Markman* hearing.

The parties have presented competing descriptions of the proper standard for construction of the five (5) patent claims. Plaintiff Fiori, who holds the interest in the '148 and the Reissue Patents, argues that this Court must construe the claims according to well established rules of claim construction by relying solely on the intrinsic record and the doctrine of claim differentiation.FN4 (Pl.'s Markman Br. at 2.) Defendant Rockford counters that because ambiguity remains after considering the specification and prosecution history, the Court must implement extrinsic evidence of expert testimony to understand the patents and testimony by the inventor to verify the scope and meaning of the claims. (Def.'s Markman Br. at 9.) After a review of the legal standards for claim construction, the Court will discuss the parties' arguments regarding claims 1 and 17 from the ' 148 Patent and claims 28, 36 and 38 from the Reissue Patent, and will conclude with the proper construction of these claims.

FN4. The doctrine of claim differentiation presumes "a difference in meaning and scope when different words or phrases are used in separate [patent] claims. To the extent that the absence of such [a] difference in meaning and scope would make a claim superfluous, the doctrine of claim differentiation states the presumption that the difference between claims is significant." Tandon Corp. v. U.S. Int'l Trade Comm'n, 831 F.2d 1017, 1023 (Fed.Cir.1987); Beachcombers v. Wilde Wood Creative Prod., Inc., 31 F.3d 1154, 1162 (Fed.Cir.1987) (interpretation that renders dependent claim superfluous is "presumptively unreasonable" under the doctrine of claim differentiation).

II. LEGAL STANDARD

A patent describes the scope and limits of an invention so as to alert the public to that for which the patentee holds the exclusive rights, and all that which remains open to the public. Markman, 52 F.3d 967. A

patent consists of the specification, which "should describe the invention in clear terms so that a person in the art of the patent may make and use the invention," as well as the claims, which "should 'particularly point[ ] out and distinctly claim[ ] the subject matter which the applicant regards as his invention.' " Katz v. AT & T Corp., 63 F.Supp.2d 583, 589 (E.D.Pa.1999) (quoting 35 U.S.C. s. 112). The public record of the patent before the Patent and Trademark Office ("PTO"), upon which the public is entitled to rely, also includes the prosecution history, which is the written record of the submissions of the patentee and the comments of the PTO. Together, the claims, specification, and prosecution history constitute the intrinsic evidence of the meaning of the claim terms. *See* Phillips v. AWH Corp., 415 F.3d 1303, 1312 (Fed.Cir.2005) (en banc); Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582-83 (Fed.Cir.1996).

The Federal Circuit has most recently held that intrinsic evidence is the key initial component toward claim construction. "[W]e have emphasized the importance of intrinsic evidence in claim construction. Phillips, 415 F.3d at 1317. "The intrinsic record in a patent case is the primary tool to supply the context for interpretation of disputed claim terms." V-Formation, Inc. v. Benetton Group SpA, 401 F.3d 1307, 1310 (Fed.Cir.2005) (citing Vitronics, 90 F.3d at 1582). Accordingly, "it is well-settled that, in interpreting an asserted claim, the court should first examine the intrinsic record, i.e., the patent itself, including the claims, the specification, and, if in evidence, the prosecution history." Vitronics, 90 F.3d at 1582 (citing Markman, 52 F.3d at 979).

"It is a 'bedrock principle' of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude." Phillips, 415 F.3d at 1312. Claim construction "begins and ends in all cases with the actual words of the claim," which, absent a special definition spelled out in the specification or prosecution history by the patent applicant, are given their "ordinary and accustomed meaning." Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1248, 1249 (Fed.Cir.1998). The "ordinary" meaning is determined according to an objective standard: "The focus is on the objective test of what one of ordinary skill in the art at the time of the invention would have understood the term to mean." Markman, 52 F.3d at 986. "In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words." Phillips, 415 F.3d at 1314 (citing Brown v. 3M, 265 F.3d 1349,1352 (Fed.Cir.2001)). If the claim terms are ambiguous, courts look to the specification and prosecution history to resolve the ambiguities. Markman, 52 F.3d at 986.

Once the court has determined the ordinary meaning of the claim terms, it must also consider the specification and, if it is in evidence, the prosecution history to determine whether the patentee provided a distinct definition for a term, or used any terms in a manner inconsistent with their ordinary meaning. *See* Vitronics, 90 F.3d at 1582. Claims can never be read in isolation, but rather "must be read in view of the specification, of which they are a part." Markman, 52 F.3d at 979. Nevertheless, while courts can look to the written descriptions in the specification to define a term already in a claim limitation, courts cannot read a limitation into a claim from the written description. *See* Renishaw, 158 F.3d at 1248. Courts should not narrow the meaning of the claim terms on the basis of the contents of the specification, by assigning a meaning to the claim terms other than their ordinary meaning, unless either the patentee has explicitly set forth a special, novel definition for a term, or else the "terms chosen by the patentee so deprive the claim of clarity that there is no means by which the scope of the claim may be ascertained from the language used." Johnson Worldwide Assoc., Inc. v. Zebco Corp., 175 F.3d 985, 990 (Fed.Cir.1999).

Courts should also consider the prosecution history, the record of correspondence and communications

between the inventor and the PTO, which is kept on file at the PTO and made available for public inspection. "Although the prosecution history can and should be used to understand the language used in the claims, it too cannot 'enlarge, diminish, or vary' the limitations in the claims." Markman, 52 F.3d at 980 (citation omitted). "If a patentee takes a position before the PTO, such that a 'competitor would reasonably believe that the applicant had surrendered the relevant subject matter,' the patentee maybe barred from asserting an inconsistent position on claim construction." Katz v. AT & T Corp., 63 F.Supp.2d 583, 591 (E.D.Pa.1999) (citing Cyber Corp. v. FAS Technologies, Inc., 138 F.3d 1448, 1457 (Fed.Cir.1998)); *see also* Cole v. Kimberly-Clark Corp., 102 F.3d 524, 531 (Fed.Cir.1996). It is well established, however, that " 'unless altering claim language to escape an examiner rejection, a patent applicant only limits claims during prosecution by clearly disavowing claim coverage,' that is, by making a statement that concedes or disclaims coverage of the claims at issue based on a piece of prior art." Katz, 63 F.Supp.2d at 591 (citing *YorkProds*., Inc. v. Cent. Tractor Farm & Family Ctr., 99 F.3d 1568,1572 (Fed.Cir.1996)).

A court may consider evidence that is extrinsic to the public record of the patent as well, but it is entitled to very little weight. In most respects, the patent stands alone, and should be interpreted according to its own public record. The testimony and the intent of the inventor offers extremely little probative value in determining the scope of the claims, except to the extent that it is documented in the prosecution history. *See* Engel Industries, Inc. v. Lockformer Co., 96 F.3d 1398, 1405 (Fed.Cir.1996) (citing Markman, 52 F.3d at 985). Other expert testimony, likewise, may not be used to vary or contradict claim language, and when patent documents are unambiguous, expert testimony regarding the construction of claim terms is entitled to no weight at all. *See* Vitronics, 90 F.3d at 1584. The Federal Circuit has emphasized that while district courts may rely on expert testimony for guidance in understanding the underlying technology, expert testimony "on the proper construction of a disputed claim term ... may only be relied upon if the patent documents, taken as a whole, are insufficient to enable the court to construe disputed claim terms. Such instances will rarely, if ever, occur." Id. at 1585. The chief reason for these limitations on the weight of extrinsic evidence is that the public is entitled to review the public record, apply the standard rules of claim construction, ascertain the scope of the claimed invention and then design around it, *see* Markman, 52 F.3d at 978-79, and "allowing the public record to be altered or changed by extrinsic evidence introduced at trial ... would make this right meaningless." Vitronics, 90 F.3d at 1583 (citation omitted).

The Federal Circuit has noted that technical treatises and dictionaries, even though technically forms of extrinsic evidence, are worthy of special note. Id. at 1584 n. 6. Unlike expert testimony offered after the fact, such standard reference works are equally available to the public as the prosecution history to assist in understanding the claim terms and the scope of the claimed invention. Thus, "[j]udges are free to consult such resources at any time ... and may also rely on dictionary definitions when construing claim terms, so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents." *Id*.

III. CLAIM CONSTRUCTION

The parties generally disagree about the proper construction of certain phrases in claims of the patents-in-suit.FN5 Plaintiff argues that Rockford has effectively placed virtually every individual word (approximately 96 in all) in all five claims "in dispute," and has proposed definitions and numerical values, coined exclusively for this suit, which have no relation to the specifications of the patents-in-suit.FN6 (Pl.'s Markman Br. at 3.) In its *Markman* Brief, Rockford expresses key issues and varying interpretations for the terms: (a) "input portion" and "output portion" of claims 1 & 17 of the ' 148 Patent; (b) "second stage" and "power supply circuit" of claim 28 of the Reissue Patent; and (c) "power supply circuit" of claim 36 & 38 of

the Reissue Patent.

FN5. The claims subject to this *Markman* proceeding are reproduced below:
1. A signal conditional apparatus, which comprises:

an input portion configured to receive an electrical signal from a single conductor and a corresponding reference signal from a single conductor and for generating an intermediate electrical signal proportional to the potential difference between said received electrical signal and said reference signal; and

an output portion operatively connected to said input portion to receive said intermediate electrical signal and said reference signal, and having means for generating a destination signal and providing a corresponding destination reference signal such that said destination signal is the resultant of said intermediate electrical signal minus said received reference signal plus said destination reference signal, said output portion having an output connection to facilitate transmission of said destination signal.
17. A signal communication system including a source device, a destination device and a signal conditioning device, said signal conditioning device comprising:

an input portion configured to receive an electrical signal from a single conductor and a corresponding reference signal from a single conductor wherein said conductors are connected to said source device and for generating an intermediate electrical signal proportional to the potential difference between said received electrical signal and said reference signal; and

an output portion operatively connected to said input portion to receive said intermediate electrical signal and said reference signal, and having means for generating a destination signal and providing a corresponding destination reference signal such that said destination signal is the resultant of said intermediate electrical signal minus said received reference signal plus said destination return potential signal, said output portion having an output connection to facilitate transmission of said destination signal to said destination device.
28. A circuit for conditioning signals in a system, comprising:

a first stage having a buffer amplifier for receiving at least one input signal and generating therefrom at least one intermediate signal which is proportional to a potential difference between the at least one input signal and at least one return reference signal corresponding to the at least one input signal;

a power supply circuit coupled to said first stage for providing a constant current with a high impedance to increase electrical isolation between the first stage and the at least one return reference signal; and

a second stage, operatively coupled to the first stage, for generating an output signal which is a sum of the at least one intermediate signal generated in the first stage minus a potential of the at least one return reference signal plus an output return reference signal.

36. A circuit for conditioning signals in a system having a power supply and a power supply reference potential, said circuit comprising:

a first stage having an amplifier circuit for receiving, from an input source, an input signal and an input source reference potential different from the power supply reference potential, said first stage generating an intermediate signal which represents the sum of the input source reference potential and a proportion of the input signal;

a first power supply circuit coupled to said first stage, said first power supply circuit isolating the power supply from said first stage by drawing a constant current from the power supply with respect to changes in the input source reference potential; and

a second stage coupled to said first stage, and responsive to said intermediate signal, for generating an output signal which is proportional to the input signal.
38. A circuit for conditioning signals in a system, comprising:

a first stage having an amplifier circuit for receiving, from an input source, an input signal and an input source reference potential and generating an intermediate signal which represents the sum of the input source reference potential and a proportion of the input signal;

a first power supply circuit coupled to said first stage, said first power supply circuit comprising voltage regulation means for drawing a constant current from the power supply with respect to changes in the input source reference potential to isolate the power supply from said first stage; and

a second stage coupled to said first stage, and responsive to said intermediate signal, for generating an output signal which is proportional to the input signal.
FN6. Fiori asserts that because the claims are unambiguous and broad, Rockford seeks to erroneously read in numerical limitations into the claims which are not recited or required. For example, Fiori asserts that critical claim terminology such as "constant current with a high impedance" recited in claim 28 of the Reissue Patent, which Rockford believes require numerical definitions, are described in the specification of the Reissue Patent and have no meaning independent of the interpretational context of the specification of the Reissue Patent. (Pl.'s Markman Br. at 3-4.)

A. The '148 Patent

Plaintiff contends that, in its preferred embodiment, the '148 Patent discloses a signal conditioning circuit having an input stage that receives input from at least one pair of conductors and processes the input signal through an input filter and buffer amplifier.FN7 The outputs of the buffer amplifiers, the power return reference potentials, and the power return reference potential of the conditioning circuit output are all appropriately added or subtracted in an output stage.FN8 The output stage further includes a filter that is

designed to maintain stability and reject external influences on the output of the output amplifier buffer. The invention also includes means that connect the reference potential of the destination signal of the output conductors to the system power ground potential. The independent power source must be isolated in order for the system to work.

FN7. Each input filter and buffer amplifier is powered by independent power sources whose power return reference potentials are independently determined by the potential of the corresponding input signal potential reference conductor.

FN8. The output stage comprises an amplifier buffer having low output impedance which is powered by a separate independent power source whose power return references potential is independently determined by the potential of the output signal reference conductor.

1. "Input Portion"

Claims 1 and 17 of the '148 Patent recite a signal conditioning apparatus containing two broad elements, an input portion and an output portion. Fiori asserts that the input portion of claims 1 and 17 are identical and clearly defined in the specification as an operational amplifier such as operational amplifier 63, which functions as a preamplifier.FN9 (Pl.'s Markman Br. at 20.) The operational amplifier is configured to receive an electrical signal from a signal conductor.FN10 The operational amplifier generates an intermediate signal which is proportional to the potential difference between the received electrical signal and the reference signal. Id. Fiori claims that this is illustrated and described in the specification as the output of the operational amplifier (e.g., 63) and the ground reference potential signal 18. Id.

FN9. The preamble to claim 17 recites a signal communication system including a source device, destination device and a signal conditioning device identical to claim 1 of the '148 Patent. The '148 Patent, column 9.

FN10. This process is exemplified as the wire leading from element 16 and a correspondence reference signal from a signal conductor. This is shown as the ground reference potential signal conductor at point 18.

Defendant Rockford disagrees. Rockford argues: (a) that the phrase "input portion" of claims 1 and 17 of the '148 Patent is a "means-plus-function" limitation under 35 U.S.C. s. 112(6), whose structure includes a power supply transformer because isolation is required to perform the recited function, and the transformer provides isolation; FN11 (b) the term "proportional" of claims 1 and 17 permits different gain factors; and (c) the term "input portion" of claims 1 and 17 requires the signal source to be physically located in a separate mechanical housing as the source of electrical signals because the claims do not limit the location of the sources. (Def.'s Markman Br. at 11.)

FN11. Rockford further asserts that in the presence of a function and the absence of a structure, the phrase "generating an intermediate electrical signal" of the input portion is subject to the 35 U.S.C. s. 112(6) analysis as well. (Def.'s Markman Br. at 13.) Rockford claims that this phrase is in "means-plus-function" format even though it does not use the word "means" because the claim language fails to identify a structure

for performing that function. Id. Rockford points to extrinsic evidence, such as Fiori's Proposed *Markman* Constructions at 7, Fiori Deposition at 2548, and Fiori's Technical Brief at 6 to assert that in order to perform the function of "generating the intermediate electrical signal," the input portion (op-amp 63) must be isolated from the output portion (op-amp 65), as well as to argue that the necessary components and corresponding structure to perform the "generating" function include op-amp 64, resistors 10, 11, transformer 32, diodes 14, 15, and capacitors 12, 13. *Id*. at 15.

a. Means-Plus-Function Limitation

In certain circumstances, pursuant to 35 U.S.C. s. 112(6),FN12 a claim element can be expressed as a means for performing a specified function without reciting structure or material. 35 U.S.C. s. 112(6) (1984). Whether an element of a claim is in means-plus-function form is a claim construction question. Wenger Mfg. v. Coating Mach. Sys., 239 F.3d 1225, 1231 (Fed.Cir.2001). Use of the term "means" creates a presumption that the element is to be construed in accordance with 35 U.S.C. s. 112(6). Altiris, Inc. v. Symantec Corp., 318 F.3d 1363, 1375 (Fed.Cir.2002). This presumption maybe rebutted, however, when the claim element recites sufficiently definite structure or material to perform the claimed function. *Id*. Conversely, absence of the term "means" creates a presumption that the element is *not* to be construed in accordance with 35 U.S.C. s. 112(6). *Id*. However, this presumption may be rebutted when the claim element does not recite sufficiently definite structure or material to perform the claimed function. *Id*. In determining whether these presumptions have been rebutted by a preponderance of the evidence, the court may examine the intrinsic evidence and any relevant extrinsic evidence. Personalized Media Commc'ns v. Int'l Trade Comm'n, 161 F.3d 696, 704-05, (Fed.Cir.1998).

FN12. 35 U.S.C. s. 112(6) provides as follows:
An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

Rockford correctly asserts that 35 U.S.C. s. 112(6) can be triggered even if the claim does not use the word "means." *See* Raytheon Co. v. Roper Corp., 724 F.2d 951, 957 (Fed.Cir.1983). "Nonetheless, the use of the term 'means' has come to be so closely associated with 'means-plus-function' claiming that it is fair to state that the use of the term 'means' (particularly as used in the phrase 'means for') generally invokes section 112(6) and that the use of a different formulation does not." I. Melbourne Greenberg, M.D. v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580 (Fed.Cir.1996). In the present case, "means-for-function" language is expressly used in only three instances in the five (5) claims of either of the patents-in-suit.FN13

FN13. Plaintiff implements the language in a section of the output stage of claims 1 and 17 of the '148 Patent and as part of the voltage regulation of claim 38 of the Reissue Patent.

As a matter of law, claim construction is the duty of the court. Markman, 52 F.3d at 973. This Court does not find that "input portion" is a means-plus-function limitation under 35 U.S.C. s. 112(6) whose structure includes a power supply transformer because isolation is required to perform the recited function, and the

transformer provides isolation. This Court finds that the input stage of claims 1 and 17 are specifically defined physical structures. Moreover, it is defined in the specification and file history as an operational amplifier such as op-amp 63. The structure is specifically connected to two conductors (physical structures) and is recited as generating the intermediate signal. Nowhere is the element referred to in terms of its functionality in the specification. Accordingly, Rockford's "means-plus-function construction" of the phrase "generating an intermediate electrical signal" is erroneous. There is no evidence that Fiori "intended to claim in means-plus-function fashion" except in those places identified by Plaintiff. *Id*. at 1584.

b. Gain Factors

Next, Rockford asserts that claims 1 and 17 permit different gain factors because they use the word "proportional" to define function.FN14 (Def.'s Markman Br. at 16.) The ordinary meaning of "proportional," used in the specification of claims 1 and 17 of the ' 148 Patent, includes multiplication by a constant factor.FN15 Id. Rockford argues that because the term "proportional" is implemented in claims 1 and 17, the interpretation of "input portion" must define the function as permitting gain factors.

FN14. According to Rockford, while the intermediate signal is generally a copy of the received electrical signal, the intermediate signal may be larger in amplitude than the received electrical signal.

FN15. "Proportional" is defined as follows: If "a" is proportional to "b", then a/b (a divided by b) is a constant. The relationship is written as a(alpha)b which implies a=cb, for some constant "c". CRC Concise Encyclopedia of Mathematics 1457 (1999). Rockford's constructions include a multiplication factor ("G") in the equation describing the function of the input portion. (Rockford's Markman Br. at 17.)

The ability of a circuit to increase the amplitude of a signal is called "gain." It is generally understood that gain is a common product of an electrical circuit. Contrary to Rockford's interpretation, the Court finds that there is no gain factor discussed in any of the claims or in either of the patents-in-dispute. Although there is no requirement that "gain" have a particular value in any of the claims in either patent, Fiori specifically states that the gain, or "g", can have any numerical value and can be selected according to the design requirements of the individual circuit in his specifications. *See* U.S. Patent No. 5,386,148, column 2-10 (filed May 8,1992); (Pl.'s Rebuttal Br. at 17.) Accordingly, Defendant's interpretation that the term "input portion" in claims 1 and 17 of the '148 Patent must permit different gain factors because it uses the word "proportional" to define its function is unsupported.

Moreover, Fiori asserts that the signal processing relationships contained in the final clauses of all five (5) claims account for the possibility that additional signals and relationships could be presented by an accused device and still fall within the scope of the claims. An indefinite article "a" in patent parlance, as in the "a sum" clause of claim 28 carries the meaning of "one or more" in open ended claims containing the transitional phrase "comprising." KCJ Corp. v. Connecticut Concepts, Inc., 223 F.3d 1351 (Fed.Cir.2000). "Comprising" indicates an open ended construction that is narrowly understood to signify that the claims do not preclude the presence in the accused apparatus of elements or factors in addition to those explicitly recited. It is a general rule that absent some special circumstances or estoppel that excludes the additional factor, infringement is not avoided by the presence of elements or steps in addition to those specifically recited in the claim.FN16 *Vivitech,* Inc. v. Am. Sci. & Eng'g, Inc., 200 F.3d 795 (Fed.Cir.1999). Because no special circumstances or estoppel exclude the additional factor, the proper construction of Plaintiff's gain

factor claim includes any numerical value selected according to the design requirements of the individual circuit in the claim specifications. Accordingly, this Court finds that Rockford's position advancing a rigid interpretation of the term of "proportional" as requiring exact mathematical certitude is fundamentally flawed because Plaintiff Fiori uses the transitional term "comprising" in all five (5) of the claims at issue.

FN16. Furthermore, the Federal Court has stated that:
If a patent requires and the accused device or process uses "a" and "b", infringement will only be avoided if the patent's definition of "a" excludes the possibility of "b". Statements in patents simply noting a distinction between "a" and "b" are thus not determinative. What matters is not that the patent describes "a" and "b" as different, but whether, according to the patent, "a" and "b" must be mutually exclusive.

Northern Telecom, Ltd. v. Samsung Elec. Co., 215 F.3d 1281 (Fed.Cir.2000).

c. Physical Locale

Finally, Rockford interprets the term "input portion" as requiring the signal source to be physically located in a separate mechanical housing as the source of electrical signals because claims 1 and 17 do not limit the location of the sources. (Def.'s Markman Br. at 11.) Rockford asserts that the term "input" is an adjective that merely associates the claimed "portion" with "the received electrical signal." According to Rockford, the ordinary definition of "single conductor" means individual material that allows charge carriers to move with ease among atoms. STAN GIBILISCO, THE ILLUSTRATED DICTIONARY OF ELECTRONICS 139 (8th ed.2001). Thus, Rockford claims that none of the terms in the "input portion" specify a location of the signal source.FN17 Rockford argues that because the claim imposes no limitation on its location, the signal source must be in the same housing as the input portion.

FN17. Rockford cites to Fiori's deposition to conclude that Fiori's own proposed construction is consistent with Rockford's regarding the lack of specific location of the signal source, thus corroborating the ordinary meaning of the words of the claim. (Def.'s Markman Br. at 18.)

Fiori generally counters that Rockford's construction of "input portion" in claims 1 and 17, as well as its claim constructions for all five (5) claims at issue, are coined exclusively for this suit, and erroneously read limitations into the claims at issue under the guise of indefiniteness, and have no relation to the specifications.FN18 Fiori argues that the prosecution history of the ' 148 Patent broadly defines the operation of the claimed invention in the context of the input, output and reference signals.FN19

FN18. For example, Fiori alleges that Rockford's proposed constructions attempt to read these claim 6 elements into claims 1 and 17 in violation of the doctrine of claim differentiation. (Pl.'s Markman Br. at 23.) Fiori further alleges that claims 6,7 and 8 further define claim 1 as requiring a first and second power supply means for providing direct current to the respective input and output portions such that the first and second power means are isolated. Claims 7 and 8 further recite the inclusion of switching power supplies. Claims 6 through 8 thus specifically add such power elements as element 31, 32, 33, 34 and resistors 50-54. According to the doctrine of claim differentiation, neither claims 1 nor 17 include the recitals of the claims 2 through 8.

FN19. In an office response dated January 10, 1994, Fiori's counsel characterized claim 9 as follows:

The output signals of each operational amplifier 63 and 64 and the corresponding reference signals are connected to the input of the operational amplifier 65 so that the output of operational amplifier 65 represents the differences between the input potentials and the reference potentials, as well as adding the output reference potential so that a signal tracts [sic] the reference of the device connected to the signal conditioning apparatus of the present invention. Figure 1 of the subject application represents one embodiment for achieving such a result.

Hence, counsel for Fiori defined the invention in the context of operational amplifiers such as elements 63, 64 and 65 and the broad constructions advanced in the present case. The PTO examiner expressly accepted this interpretation. The examiner noted that the distinction between claims 1 and 17 and claim 9 "in that in claims 1 and 17, the system is directed to single conductor, whereas in claim 9, a plurality of electrical signals each being received from a conductor" is recited. Referring to Figure 1, the examiner noted:
Such is clearly shown in Figure 1 with electrical signals A and B being received at the inner conductors a coaxial cable and 4 and 19, respectively, and the corresponding reference signals being received at the outer shields of coaxial cables 4 and 19, respectively. Thus, claim 9 is interpreted to include this "single conductor" construction similar to those of the single signal apparatuses of claims 1 and 17, except in a multi-signal apparatus as set forth in Figure 1.

As a matter of law, courts should not adjudge claims to be indefinite even if the claim construction issue is difficult.FN20 Morton Int'l v. Cardinal Chem. Co., 5 F.3d 1464 (Fed.Cir.1993). "If the claims, read in the light of the specification, reasonably apprise those skilled in the art both of the utilization and scope of the invention, and if the language is as precise as the subject matter permits, the courts can demand no more." Shatterproof Glass Corp. v. Libbey-Owens Ford Co., 758 F.2d 613, 624 (Fed.Cir.1985) *cert. denied,* 474 U.S. 976, 106 S.Ct. 340, 88 L.Ed.2d 326 (1985) (quoting *Georgia-Pacific Corp. v. U.S. Plywood Corp.,* 258 F.2d 124,136, cert. denied, 358 U.S. 884 (1958)). Courts must protect the inventive contribution of patentees, even when the drafting of their patents has been less than ideal. FN21 *N.* Am. Vaccine, Inc. v. Am. Cyanamid Co., 7 F.3d 1571, 1579 (Fed.Cir.1993). Moreover, the Manual of Patent Examining Procedure ("MPEP"), the PTO operational manual used by the Examiner Corps, instructs examiners in a similar manner.FN22 Accordingly, this Court finds that Rockford's interpretation of "input portion" as requiring the signal source to be physically located in a separate mechanical housing as the source of electrical signals unsupported because the claims do not limit the location of the sources.

FN20. As the Federal Circuit stated:
We have not held that a claim is indefinite merely because it poses a difficult issue of claim construction. We engage in claim construction every day, and cases frequently present close questions of claim construction on which expert witnesses, trial courts, and even the judges of this Court may disagree. Under a broad concept of indefiniteness, all but the clearest claim construction issues could be regarded as giving rise to invalidating indefiniteness in the claims at issue. But we have not adopted that approach to the law of indefiniteness. We have not insisted that claims be plain on their face in order to avoid condemnation for indefiniteness; rather, what we have asked is that the claims be amendable to construction, however difficult that task may be. If a claim is insolubly ambiguous, and no narrowing construction can be properly adopted,

we have held the claim indefinite. If the meaning of the claim is discernible, even though the task may be formidable and the conclusion may be one over which reasonable persons will disagree, we have held the claim sufficiently clear to avoid invalidity on indefiniteness grounds.

Exxon Research Eng'g Co. v. U.S., 265 F.3d 1371, 1375 (citation omitted).
FN21. In *N*. Am. Vaccine, Inc. v. Am. Cyanamid Co., 7 F.3d 1571, 1579 (Fed.Cir.1993), the Court stated that:
By looking to the specification, one of skill in the art could determine that 'a period sufficient' is about 0.25 hours, and preferably 0.5 hours. Becaue the patent makes clear that the period in question will vary with changes in the catalyst and the conditions in which the process is run, we conclude that the claim limitation is expressed in terms that are reasonably precise in light of the subject matter. *See* Orthokinetics, Inc. v. Safety Travel Chairs, Inc., 806 F.2d 1565, 1576 (Fed.Cir.1986) (construing "so dimensioned" as definite and stating that the term "is as accurate as the subject matter permits, automobiles being of various sizes").

FN22. MPEP 706.03(d), specifically provides that examiners should allow claims which define the patentable novelty with a reasonable degree of particularity and distinctness. Some latitude in the manner of expression and the aptness of terms should be permitted even though the claim language is not as precise as the examiner might desire.

2. "Output Portion"

As noted, claims 1 and 17 of the '148 Patent recite a signal conditioning apparatus containing two broad elements, an input portion and an output portion. Fiori asserts that the output portion of claims 1 and 17 are identical and clearly defined in the specification as a second operational amplifier (shown exemplary as operational amplifier 65). (Pl.'s Markman Br. at 20.) Fiori claims further that output operational amplifier 65 is clearly described as being separate, independent and isolated from the input operational amplifier 63.FN23 Id.

FN23. This is described in the specification as being essential for the system to work. *See* '148 Patent, column 6, lines 22-29.

Fiori claims that the output amplifier (65) generates a destination signal and a corresponding destination reference signal which is described in the specification as a return reference potential which is substantially equal to the output reference ground connected to cable 58 such that this destination signal is the result of the intermediate signal minus the received reference signal plus the destination reference. Accordingly, the destination signal is the output of the operational amplifier 65 and is the resultant end of the intermediate signal which is the output of 63 minus the ground reference potential signal at 18 plus the output reference ground connected to cable (58). The output portion has an output connection for transmission of the destination signal, shown as the connection to cable 58. The '148 Patent, column 4-5.
Similar to its previous arguments regarding the term "input portion," Rockford claims that the term "output portion" is indefinite and contains a means-plus function limitation.FN24 (Def.'s Markman Br. at 19.) Secondly, Rockford asserts that the "output portion" lacks gain because the language of claims 1 and 17 do not include the word "proportional." FN25 Id. at 20.

FN24. Rockford argues that the function for the output portion specifies a gain factor of one (1), also called a "unity gain," because the claims call for a circuit to add and subtract signals without multiplication. (Def.'s Markman Br. at 19.) Defendant also asserts that the corresponding structures of the "means" include transformers of the power supply transformer because isolation is required to perform the function, and the transformer provides the isolation. Id.

FN25. Rockford concludes that in contrast, "input portion" includes the word proportional and therefore allows for multiplication. Rockford alleges that neither the specification nor the prosecution history provides a special meaning for "plus," "minus," "proportional," or "resultant." (Def.'s Markman Br. at 22.) Rockford argues that the ordinary meaning of the words defining "destination signal" specify a gain factor of one (1). According to Rockford, the phrase "said intermediate electrical signal" refers to the identical signal defined in the limitation for the input portion. "Minus" is the operation of subtraction. "Plus" is the addition of two quantities. The claimed function is like 1+1 =2. It adds and subtracts terms without any multiplication. The absence of multiplication is a gain factor of one (1).

Fiori counters that Rockford erroneously attempts to construct "output portion" by reading the claims in isolation as well as applying fragments of the inventor's testimony, compiled over the course of this *Markman* process, in an effort to rewrite the claims.FN26 (Pl.'s Rebuttal Br. at 8-9.)

FN26. Rockford's supporting *Markman* brief includes 80-pages of excerpts from Fiori's deposition (both *Markman* and non- *Markman* related testimony), at least 29 transcript references and testimonial passages and color inserts from Deposition Exhibits. For example, Fiori claims that Rockford sites to Plaintiff's Technical Brief to the Court although the relevance of that document, prepared to generally advise the Court of the technical issues, is entirely unrelated to the *Markman* process.

As previously explained, claims must be read in view of the specification of which they are a part. Markman, 52 F.3d at 979. Moreover, the testimony and the intent of the inventor offers extremely little probative value in determining the scope of the claims, except to the extent that it is documented in the prosecution history. *See* Engel Indus., Inc. v. Lockformer Co., 96 F.3d 1398, 1405 (Fed.Cir.1996) (citing Markman, 52 F.3d at 985). Rockford's construction fails to interpret "output portion" according to the public record of the claims, but instead focuses primarily upon Fiori's testimony. Rockford's construction is based upon Fiori's after-the-fact testimony, has no relation to the specifications of the patents-in suit, and "is of little weight compared to the clear import of the patent disclosure itself." Voice Techs. Group, Inc. v. VMC Sys., Inc., 164 F.3d 605, 615-16 (Fed.Cir.1999) (acknowledging that "the inventor cannot by later testimony change the invention and the claims from their meaning at the time the patent was drafted and granted). Moreover, the *Markman* Court specifically reasoned that an inventor is not competent to construe patent claims for the following reasons:

Commonly the claims are drafted by the inventor's patent solicitor and they may even be drafted by the patent examiner in an examiner's amendment (subject to the approval of the inventor's solicitor). While presumably the inventor has approved any changes to the claim scope that have occurred via amendment during the prosecution process, it is not unusual for there to be a significant difference between what an inventor thinks his patented invention is and what the ultimate scope of the claims are after allowance by

the PTO.

Markman, 52 F.3d at 985.

As a matter of law, the Federal Circuit's position is clear that Fiori's testimony is irrelevant to the matters which presently face this Court. Thus, Rockford's proposed construction, which relies on Fiori's testimony, is erroneous and unsupported. The output stage of claims 1 and 17 are defined in the specification as a second op-amp. The output portion (e.g.65), described as being separate and independent from the input op-amp (e.g.63), is demonstrated in Figure 1 of the '148 Patent. The output portion is a physical structure clearly defined as element 65 in columns 4 and 5 of the specification and the prosecution history of the '148 Patent.

B. The Reissue Patent

The Reissue Patent can be characterized by a discrete number of components that perform the isolation of noise in order to allow the audio signal to be propagated through to its destination without interference. The main elements in the Reissue Patent, which provide critical functions, are described generally as a first stage, a second stage, and a power supply. Each element performs its own, unique function and each element is assigned appropriate inputs and outputs.

The first stage operates to receive an input signal and an input reference signal. The first stage then generates an intermediate signal that is derived from the input signal connection as the potential that appears at the connection is expressed with respect to the potential that appears on the input reference signal connection. In order to perform this function properly, and to avoid corrupting the input reference signal fidelity, as it appears to the preamplifier circuit, any audio frequency current flow that would result from the common mode noise variation must be eliminated or isolated.

The recited power supply provides this isolation by means of a high impedance constant current power supply or voltage regulator which effectively eliminates this extraneous audio frequency to the first stage. This impedance to audio frequency noise only needs to be enough to ensure that there is not any extraneous parasitic audio frequency noise current leaked to the first stage and then, through the direct connections provided, to the input reference connection that would interfere with the proper operation of the first stage and the accurate expression of the common mode noise voltage on the input reference connection.

The intermediate signal, free from any audio frequency noise when compared to the potential at the input reference signal connection, can then be transferred into a second stage of the circuit where the input reference signal is subtracted from the intermediate signal, and where the output reference signal is considered in generating an output signal which is free of any common mode interference with respect to the output reference signal. Coming out of the second stage is an output signal which is now free from interference and allows users to enjoy higher quality sound than would be possible prior to the introduction of the noise abatement circuitry.

1. "Second Stage"

Fiori asserts that claim 28 calls for a "second stage," operatively coupled to the first stage, for generating an output signal which is a sum of the at least one intermediate signal generated in the first stage minus a potential of the at least one return reference signal plus an output return reference signal. (Pl.'s Markman Br. at 27-28.) Fiori claims that the specification of the Reissue Patent provides explicit guidance as to the

meaning of this terminology. According to Fiori, "second stage" is clearly described in an example as an operational amplifier in connection with resistors.FN27 Id.

FN27. As set forth at column 7, lines 24 to 44, the process whereby this output operational amplifier produces a potential at its output which is a sum of the intermediate signal generated in the first stage minus a potential of the one return reference signal plus an output return reference signal.

Defendant submits that the "second stage" of claim 28 of the Reissue Patent specifies a gain factor of one (1). (Def.'s Markman Br. at 2, 31.) Rockford claims that the specification in the Reissue Patent and a comparison of claims 28 and 36 illustrate that the patent uses the word "proportional" synonymously with "gain." Rockford concludes that claim 36 defines the term "intermediate signal" as "the sum of the input source reference potential and a proportion of the input signal." Id. at 31. According to Rockford, "sum" cannot inherently encompass gain because if it did, the word "proportion" would add no meaning to claim 36. Id. Thus, similar to "output portion" of claims 1 and 17, Rockford argues that claim 28 specifies a gain factor of one (1) because the ordinary meaning of the words of claim 28 specify such and the claim calls for addition and subtraction of signals without multiplication. Id.

As previously discussed, there is no gain factor recited in either patent-in-issue. There is no requirement that "gain" have any value in any of the claims, let alone a requirement that gain have a value of 1 or unitary gain. Moreover, similar to its previously discussed interpretation of the term "output stage," Rockford overwhelmingly relies upon the testimony and the intent of the inventor Fiori. As previously stated, the testimony and the intent of the inventor offers extremely little probative value in determining the scope of the claims, except to the extent that it is documented in the prosecution history. *See* Engel Indus., Inc. v. Lockformer Co., 96 F.3d 1398, 1405 (Fed.Cir.1996) (citing Markman, 52 F.3d at 985). As a matter of law, Fiori's testimony is irrelevant to the matters which presently face this Court. Thus, Rockford's interpretation of the term "second stage" is erroneous and unsupported. Finally, an indefinite article "a" in patent parlance, as in the "a sum" clause of claim 28 carries the meaning of "one or more" in open ended claims containing the transitional phrase "comprising." *KCJCorp. v. Connecticut* Concepts, Inc., 223 F.3d 1351 (Fed.Cir.2000). Thus, Rockford's interpretation that claim 28 specifies a gain factor of one (1) is erroneous and unsupported by intrinsic evidence.

2. "Power Supply Circuit"

Claims 28, 36 and 38 of the Reissue Patent incorporate a power supply circuit. The principle area of dispute, it appears, is the parties disagreement over whether terms such as "constant current" and "high impedance," as used in the context of the Reissue Patent, are too ambiguous and require a precise numerical value. In regards to the power supply circuitry of claim 28, Rockford argues that: (a) the term "constant current" is limited to current deviations less than 0.1 % per volt change in input source reference potential because the specification only shows circuits that have currents with less deviation; (b) the term "high impedance" is limited to impedances greater than 25 kilo-ohms because the specification only shows circuits having higher impedance; and (c) the phrase "increase electrical isolation between the first stage and the at least return signal" lacks definite meaning because the first stage is not isolated from the return reference potential, and the patent provides no baseline for measuring increase. (Def.'s Markman Br. at 2-3, 32-44.)

Rockford argues that the terms "constant current" and "high impedance" require some absolute numerical value because they are ambiguous and indefinite. *Id.* at 23-27. According to Rockford, the term "constant

current" of claim 28 of the Reissue Patent is limited to current deviations less than 0.1% per volt change in input source reference potential because the specification only shows circuits that have currents with less deviation. (Def.'s Markman Br. at 2.) Rockford also alleges that the term "high impedance" is limited to impedances greater than 25 kilo-ohms because the specification only shows circuits having higher impedance. *Id*. Finally, Rockford concludes that the phrase "increase electrical isolation between the first stage and the at least one return reference signal" lacks definite meaning because the first stage is not isolated from the return reference potential, and the patent provides no baseline for measuring an increase. *Id*. at 2-3.

Fiori counters that the intrinsic evidence clearly demonstrates that the claim language of the patents-in-suit were presented and approved by the PTO examiners, and therefore do not violate 35 U.S.C. s. 112(2) or require some absolute numerical value. (Pl.'s Markman Br. at 11.) Fiori asserts that "[t]he specification and Figures provide a complete definitional framework" for its claims. (Pl.'s Markman Br. at 20.) He contends that the Reissue Patent defines "constant current" as an exact current precisely metered through each transistor to operate the op-amps. *Id*. at 27. Fiori claims that the specification of the Reissue Patent teaches and defines that this power supply provides a current to the first stage preamplifier circuit that does not respond to changes in the potential of the supply pins of the op-amps (e.g., 38) so that the first stage is able to track the input reference signal without inducing any corrupting noise variations in the preamplifier circuit or in the return input reference signal current pathway. *Id*. According to Fiori, because the current is metered precisely, any changes and potential of the op-amp supply pins will have no bearing on the current delivered. *Id*. As a result, the effective impedance of the power supply is extremely high. FN28 *Id*. Fiori further contends that "constant current," defined in the specification with precision, is a "degree term." (Pl.'s Markman Br. at 11 n. 5.)

FN28. Figure 3 in the specification similarly describes an alternative power supply for providing a constant current.

The Federal Circuit has consistently held that terms of "degree" such as "high", "low", "substantially", "significantly", "approach each other", "close to", "substantially equal", and "closely approximate" are definite under 35 U.S.C. s. 112(2) and do not require further mathematical precision. *See* Seattle Box Co. v. Industrial Crating & Packing, 731 F.2d 818, 826 (Fed.Cir.1984) (citing W.L. Gore & Assocs., Inc. v. Garlock, Inc., 721 F.2d 1540, 1557 (Fed.Cir.1983), *cert. denied,* 469 U.S. 851, 105 S.Ct. 172, 83 L.Ed.2d 107 (1984)) ("substantially equal" is a term of degree, and that its acceptability depends on "whether one of ordinary skill in the art would understand what is claimed ... in light of the specification"); *see also* Shatterproof Glass Corp. v. Libbey-Owens Ford Co., 758 F.2d 613, 624 (Fed.Cir.1985) *cert. denied,* 474 U.S. 976, 106 S.Ct. 340, 88 L.Ed.2d 326 (1985); *N*. Am. Vaccine, Inc., 7 F.3d at 1579; Hybritech, Inc. v. Monoclonal Antibodies, Inc., 802 F.2d 1367, 1385 (Fed.Cir.1986). As the Federal Circuit has noted in Andrew Corp. v. Gabnel Elecs., Inc., 847 F.2d 819, 821 (Fed.Cir.1988), such words are ubiquitous in patent claims. Such usages, when serving reasonably to describe the claimed subject matter to those of skill in the field of the invention, and to distinguish the claimed subject mater from the prior art, have been accepted in patent examination and upheld by the Courts. *See* Rosemount Inc. v. Beckman Instruments, Inc., 727 F.2d 1540 (Fed.Cir.1984). Furthermore, when a claim term is expressed in general descriptive words, the Court will not limit the terms to a numerical range that may appear in written description or in other claims. *See* Modine Mfg. Co. v. U.S. Int'l Trade Comm'n, 75 F.3d 1545, 1551 (Fed.Cir.1996) (citation omitted). Accordingly, this Court finds that Rockford's interpretation that the terms "constant current" and "high impedance" require some absolute numerical value is unpersuasive. The general descriptive terms in which

the terms are expressed are acceptable under the present state of the law.

In regards to the power supply circuitry of claims 36 and 38, Rockford argues that: (a) the location of the "constant current" in both claims is between the power supply and the first power supply circuit because claims 36 and 38 state that the first power supply circuit draws the current from the power supply; and (b) the elements of the voltage regulation means in claim 38 include a bias voltage circuit. (Def.'s Markman Br. at 2, 24-30.)

In its *Markman* brief, Rockford first contends that the ordinary meaning of the words of claims 36 and 38 place the "constant current" between the power supply and the first power supply circuit. *Id*. at 25. According to Rockford, analogous to a "farmer drawing FN29 water from a well," the first power supply circuit performs the act of drawing and the power supply circuit draws current toward itself from the power supply. *Id*. at 26. Thus, Rockford believes that the location of the "constant current," as described in both claims, must be restricted because the limitations refer "to the particular water the farmer takes from the well" ... and do "not refer to water used in the barn where animals drink." *Id*.

FN29. "Draw" means "to cause to move after or toward on by applying continuous force." JOSEPH M. PALVELL, THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE 561 (3d ed.1992).

This Court does not agree. As previously stated, "if the claims, read in the light of the specification, reasonably apprise those skilled in the art both of the utilization and scope of the invention, and if the language is as precise as the subject matter permits, the courts can demand no more." Shatterproof Glass Corp. v. Libbey-Owens Ford Co., 758 F.2d 613, 624 (Fed.Cir.) *cert. dismissed,* 474 U.S. 976, 106 S.Ct. 340, 88 L.Ed.2d 326 (1985) (quoting Georgia-Pacific Corp. v. U.S. Plywood Corp., 258 F.2d 124, 136, *cert. denied,* 358 U.S. 884, 79 S.Ct. 124, 3 L.Ed.2d 112 (1958)). Here, the term "constant current," as described in claims 36 and 38, is specifically defined in the specifications and claims and is not required to be situated between the first power supply circuit and the power supply. As such, Rockford's construction of claims 36 and 38 is too narrow in scope and its "farmer and the well" rationale is tenuous and unpersuasive.

Rockford further asserts that the "voltage regulation means" of claim 38 includes the voltage regulator circuitry found within the constant current circuits. Despite the parties stipulating that "voltage means" includes transistors 22, 24, resistors 21, 25, and op-amps 23 and 26, Rockford interprets the pertinent language of the specification FN30 of claim 38 to include elements 80, 82 and 84 and 85 and the op-amps requiring a bias voltage circuit. *Id*. at 2, 25, 27-30. According to Fiori, the first and second stage recitals of claim 38 are identical in scope to claim 36 and the power supply in claim 38 is recited as comprising a voltage regulating means for drawing the constant current from the first power supply with respect to the changes in the input source reference potential to isolate the first power supply circuit from the first stage. (Pl.'s Markman Br. at 29.) Moreover, Fiori contends that the specification describes the voltage regulation means as the transistors 47, 22, 50 and 24 in combination with the resistor and op-amps and zener diode 43 and 45. *Id*.

FN30. The op-amps provide the biasing necessary for the transistors to conduct exactly that current required to produce that voltage across the resistors that match the biasing voltages produced by zener diodes 80 and 85 in combination with resistors 82 and 84. The Reissue Patent, column 5, line 18-27. Capacitors 81 and 86 are included to further reject any interference which may be present on the power supply as provided by

contacts 91, 89 and 90. In this way, an exact current is precisely metered through each transistor to operate op-amps 13, 16, 38 and 41. *Id*. The op-amps provide the biasing necessary for the transistors to conduct exactly that current required to produce that voltage across the resistors that match the biasing voltages produced by zener diodes 80 and 85 in combination with resistors 82 and 84. *Id*. Capacitators 81 and 86 are included to further reject any interference which may be present on the power supply as provided by contacts 91, 89 and 90. *Id*. In this way, an exact current is precisely metered through each transistor to operate op-amps 13, 16, 38 and 41. *Id*.

This Court does not agree with Rockford's position that claim 38 includes the voltage regulator circuitry found within the constant current circuits. Rockford fails to establish the relevance or materiality its assertion serves for the purpose of this *Markman* process.FN31

FN31. Similarly, Rockford's argument that Fiori's claim constructions are unfounded in an effort to cover up the flaws of Plaintiff's case, is irrelevant for purposes of this *Markman* process. (Def.'s Rebuttal Br. at 25-30.)

IV. CONCLUSION

The Court concludes that the disputed terms have the following meanings:

1. "Input Portion" of claims 1 and 17 of the '148 Patent shall mean a specifically defined physical structure, connected to two conductors and recited as generating an intermediate signal.

2. "Output Portion" of claims 1 and 17 of the '148 Patent shall mean a physical structure, specifically defined as op-amp 65, which is separate, independent and isolated from the input operational amplifier and recited as generating a destination signal and a corresponding destination reference signal.

3. "Second Stage" of claim 28 of the Reissue Patent shall mean a stage, operatively coupled to the first stage,FN32 generating an output signal which is a sum of the at least one intermediate signal generated in the first stage minus a potential of the at least return reference signal plus an output return reference signal.

FN32. There is no issue between the parties regarding the "first stage" of the Reissue Patent.

4. "High Impedance" of claim 28 of the Reissue Patent shall mean a mathematically sufficient term of degree for providing a constant current power supply circuit coupled to said first stage to increase electrical isolation between the first stage and the at least one return reference signal.

5. "Constant Current" of claims 28, 36 and 38 ofthe Reissue Patent shall mean an exact, non-absolute numerically valued current, precisely metered through each transistor to operate the op-amps, and not required to be situated between the first power supply circuit and the power supply.

6. "Power Supply Circuit" of claims 28, 36 and 38 of the Reissue Patent shall mean a first stage preamplifier circuit that does not respond to changes in the potential of the supply pins of the op-amps (e.g., 38) so that the first stage is able to track the input reference signal without inducing any corrupting noise variations in

the preamplifier circuit or in the return input reference signal current pathway.

An appropriate order follows.

ORDER

AND NOW, this ____ day of June, 2006, upon consideration of the briefs and materials submitted by the parties, and after a *Markman* hearing on patent claim construction, it is hereby **ORDERED** that the following terms in the claims of United States Patent No. 5,386,148 ("the '148 Patent") and United States Reissued Patent RE37,130 E ("the Reissue Patent") shall be construed to have the definitions herein assigned to them:

The Court concludes that the disputed terms have the following meanings:

1. "Input Portion" of claims 1 and 17 of the '148 Patent shall mean a specifically defined physical structure, connected to two conductors and recited as generating an intermediate signal.

2. "Output Portion" of claims 1 and 17 of the '148 Patent shall mean a physical structure, specifically defined as op-amp 65, which is separate, independent and isolated from the input operational amplifier and recited as generating a destination signal and a corresponding destination reference signal.

3. "Second Stage" of claim 28 of the Reissue Patent shall mean a stage, operatively coupled to the first stage,FN33 generating an output signal which is a sum of the at least one intermediate signal generated in the first stage minus a potential of the at least return reference signal plus an output return reference signal.

FN33. There is no issue between the parties regarding the "first stage" of the Reissue Patent.

4. "High Impedance" of claim 28 of the Reissue Patent shall mean a mathematically sufficient term of degree for providing a constant current power supply circuit coupled to said first stage to increase electrical isolation between the first stage and the at least one return reference signal.

5. "Constant Current" of claims 28,36 and 38 of the Reissue Patent shall mean an exact, non-absolute numerically valued current, precisely metered through each transistor to operate the op-amps, and not required to be situated between the first power supply circuit and the power supply.

6. "Power Supply Circuit" of claims 28, 36 and 38 of the Reissue Patent shall mean a first stage preamplifier circuit that does not respond to changes in the potential of the supply pins of the op-amps (e.g., 38) so that the first stage is able to track the input reference signal without inducing any corrupting noise variations in the preamplifier circuit or in the return input reference signal current pathway.

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