

United States District Court,
N.D. New York.

ARROW COMMUNICATION LABORATORIES, INC., and Tresness Irrevocable Patent Trust,
Plaintiffs.

v.

JOHN MEZZALINGUA ASSOCIATES, INC,
Defendant.

John Mezzalingua Associates, Inc,
Plaintiff.

v.

Arrow Communication Laboratories, Inc., and Tresness Irrevocable Patent Trust,
Defendants.

Civil Action Nos. 5:05-CV-1456 (NAM/DEP), 5:05-CV-703 (NAM/DEP)

May 16, 2008.

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REPORT AND RECOMMENDATION

DAVID E. PEEBLES, United State Magistrate Judge.

At issue in this matter, involving a variety of claims and counterclaims with patent infringement causes of action predominating, are three patents-two issued to the Tresness Irrevocable Patent Trust ("TI PT"), one of the plaintiffs in the first of these actions, and owned by co-plaintiff Arrow Communications Laboratories, Inc. ("ARCOM"), and a third held by defendant John Mezzalingua Associates, Inc. d/b/a PPC ("PPC"). The patents in suit, while addressed to different primary technology, generally relate to electronic filters utilized in the cable television industry.

The parties have applied to the court for clarification of certain disputed claim terms appearing within the three patents in suit, and the matter has been referred to me for the issuance of a report and recommendation to Chief Judge Norman A. Mordue, the assigned district judge, regarding claim construction. The following constitutes my reported findings and recommendations, based upon comprehensive submissions from the parties and a claim construction hearing conducted on January 25, 2008.

I. BACKGROUND

Each of the three patents in suit describes an invention for use in the cable television industry. FN1, FN2 Within a typical CATV system with two-way communication capability, television programming signals are transmitted from a centralized location to subscribers over a specified frequency band, known as the forward (or downstream) path, while other signals travel upstream in the reverse direction. FN3 United States Patent No. 5,745,838 1 :15-20. In order to differentiate between the two streams, signals in the return path are typically transmitted at different frequency ranges than those in the forward stream. *Id.* at 1:20-25. The first of the three patents, United States Patent No. 5,745,838 (the "'838 patent"), issued to the TIPT and held by ARCOM, is entitled "Return Path Filter". The technology disclosed in the '838 patent relates to attenuation, through the interjection of flat loss, in the return path frequency band in a two-way cable television system. The avowed purpose of the invention forming the basis of the '838 patent is to address loss variance in the return path without affecting the forward path signal, in such a way as to satisfy the objectives of minimizing the cost, size and weight of the device while at the same time leaving unaffected the forward path response. '838 Patent 2:8-32. Plaintiffs allege that PPC has infringed the '838 patent by manufacturing, selling and offering for sale, as well as by importing, electronic filters covered by the claims of the '838 patent, identifying certain of PPC's accused step attenuators by particular model numbers.

FN1. The type of system in which the patented technology in issue is designed to operate is commonly referred to as a community antenna television ("CATV") network. *See* United States Patent No. 5,745,838 (the "'838 patent") 1 :13-15.

FN2. The patents involved in this case are included in the record at several locations, including as Exhibits B, C and D, to the Declaration of James R. Muldoon, Esq., submitted in support of PPC's claim construction presentation, respectively, *see* Dkt. No. 192, and additionally are appended to the complaint and answer filed in the 05-CV-1456 action. *See* Dkt. Nos. 146, 147. For ease of reference, those patents will be cited in this report simply by their last three assigned digits without making specific reference to where they are found within the record.

FN3. The need for return path signal capacity has increased dramatically with the advent of such features as pay-per-view, telephony, interactive digital networks, and computer data transmission. '838 Patent 1:40-45.

The second patent at issue is United States Patent No. 6,674,343 (the "'343 patent"), entitled "Electronic Filter Assembly". The '343 patent, relates primarily to the sealing of the collet connectors at the input ends of filters employed within the cable television industry, in order to prevent moisture from penetrating the filter assembly. Plaintiffs allege that PPC has infringed certain claims of the '343 patent by manufacturing, selling, and offering for sale, as well as by importing, electronic filter assemblies covered by the claims of that patent.

The third patent implicated in this action is United States Patent No. 6,737,935 (the "'5 patent"), entitled "Diplex Circuit Forming Bandstop Filter" and owned by PPC, as assignee. The '5 patent, which is the subject of PPC's infringement counterclaim in 05-CV-1456 (NAM/DEP), generally relates to the separation of high and low frequencies for passage through filters designed to block or attenuate certain designated frequencies. PPC accuses ARCOM of patent infringement, based upon its importation, use, sale and offering for sale of diplex circuit forming bandstop filters alleged to infringe one or more claims of its '5 patent.

II. DISCUSSION

A. Claim Construction

As a precursor to adjudication of the various infringement claims and defenses raised in this action, the parties have sought the court's guidance in defining certain disputed terms contained within the claims of the three patents in suit. Patent claim construction implicates an issue of law, to be decided by the court. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed.Cir.1995), *aff'd*, 517 U.S. 370, 116 S.Ct. 1384 (1996); *see also* *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1304 (Fed.Cir.1999) (citing *Markman*). When engaged in patent construction, a court must define claim terms as one of ordinary skill in the relevant art would understand and interpret them. *Markman*, 52 F.3d at 986; *see also* *K-2 Corp. v. Salomon S.A.*, 191 F.3d 1356, 1365 (Fed.Cir.1999).

Perhaps the most comprehensive discourse to date regarding the claim construction calculus came in the Federal Circuit's *en banc* decision in *Phillips v. AWA Corp.*, 415 F.3d 1303 (Fed.Cir.2005). In *Phillips*, though with extensive illuminating discussion regarding the relative importance of intrinsic and extrinsic evidence, the Federal Circuit in essence endorsed its earlier decision in *Vitronics Corp. v. Conceptor, Inc.*, 90 F.3d 1576 (Fed.Cir.1996), previously regarded by the courts and patent practitioners as defining the contours of the claim construction inquiry. *Phillips*, 415 F.3d at 1324.

The principal teaching of *Phillips*-and not a significant departure from earlier claim construction jurisprudence-is that the claims of a patent define the scope of protection afforded to the inventor. *Phillips*, 415 F.3d at 1312. It therefore follows that the language of a claim itself generally provides the most definitive source of enlightenment concerning the intended meaning of disputed terms. *Vitronics*, 90 F.3d at 1582. Words contained within a patent normally should be given their ordinary and customary meaning, considered from the perspective of a person of ordinary skill in the art in question at the time of the invention-that is, the effective filing date of the patent application. *Phillips*, 415 F.3d at 1313 (citing, *inter alia*, *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1116 (Fed.Cir.2004)).

While it is true that the words of a patent claim will generally control, they should not be interpreted in isolation, in disregard of other portions of the patent including the specification; instead "the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification." *Phillips*, 415 F.3d at 1313. In this regard a patent specification, which some liken to an internal dictionary, must be carefully reviewed to determine whether the inventor has used a particular term in a manner inconsistent with its ordinary meaning. *Id.* at 1313-14; *see also* *Vitronics*, 90 F.3d at 1582 (citing *Markman*, 52 F.3d at 979). A patent's specification often constitutes the "single best guide to the meaning of a disputed term." *Vitronics*, 90 F.3d at 1582.

When resorting to a patent's specification for guidance with respect to disputed claim terms one must consider it as a whole, and all portions should be read in a manner that renders the patent internally consistent. *Budde v. Harley-Davidson, Inc.*, 250 F.3d 1369, 1379-80 (Fed.Cir.2001). "Where the specification makes clear that the invention does not include a particular feature, that feature is deemed to be outside the reach of the claims of the patent, even though the language of the claims, read without reference to the specification, might be considered broad enough to encompass the feature in question." *SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1341 (Fed.Cir.2001).

"[W]hile it is true that claims are to be interpreted *in light of* the specification and with a view to

ascertaining the invention, it does not follow that limitations from the specification may be read into the claims[.]" See *Sjolund v. Musland*, 847 F.2d 1573, 1581 (Fed.Cir.1988) (emphasis in original). Similarly, as another judge of this court has observed, "[n]or should particular embodiments in the specification be read into the claims; the general rule is that the claims of a patent are not limited to the preferred embodiment." *Cornell Univ. v. Hewlett-Packard Co.*, 313 F.Supp.2d 114, 126 (N.D.N.Y.2004) (Mordue, C.J.) (citing, *inter alia*, *Texas Digital Sys., Inc. v. Telegenix, Inc.*, 308 F.3d 1193, 1204 (Fed.Cir.2002)).

In addition to the claim terms themselves and the patent's specification, a third category of relevant intrinsic evidence worthy of consideration is the history surrounding the prosecution of the patent. That history, which is customarily though not always offered to assist a court in fulfilling its claim construction responsibilities, is generally comprised of the complete record of proceedings before the United States Patent and Trademark Office ("PTO") including, significantly, any express representations made by the applicant regarding the intended scope of the claims being made, and an examination of the prior art. *Vitronics*, 90 F.3d at 1582-83. Such evidence, which typically chronicles the dialogue which occurred between the inventor and the PTO leading up to the issuance of the patent in suit, and thus acts as a reliable indicator of any limitations or concessions on the part of the applicant, can often be highly instructive on the issue of claim construction. Accordingly, courts supplied with prosecution history strive to avoid definitions upon which the PTO could not reasonably have settled in order to ensure against the possibility of an applicant obtaining a range of protection which encompasses subject matter that, through the conscious efforts of the applicant, the PTO did not examine. *Genentech, Inc. v. Wellcome Found. Ltd.*, 29 F.3d 1555, 1564 (Fed.Cir.1994). Similarly, representations made in an attempt to overcome objections by the patent examiner can prove informative in construing claims and estopping inventors from later attempting to broaden the dimensions of their claimed invention beyond the scope of the claims presented before the PTO. *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., Ltd.*, 535 U.S. 722, 733-34, 122 S.Ct. 1831, 1838-39 (2002); *see also* *Vitronics*, 90 F.3d at 1583.

If analysis of the available intrinsic evidence resolves a perceived ambiguity in a disputed claim term, then the inquiry is ended. *Vitronics*, 90 F.3d at 1583. When, on the other hand, there remains uncertainty regarding a claim after consideration of all intrinsic evidence, the court must next turn to examination of such available extrinsic sources as expert testimony, inventor testimony, dictionaries, and technical treatises and articles, for guidance in reconciling any conflicting intrinsic indicators. *Id.* at 1584. It should be noted, however, that extrinsic evidence may only be used to aid the court in understanding patent claims, and cannot be relied upon to justify any departure from or contradiction of the actual claim language employed by the applicant. *Id.* To assist in resolving an ambiguity, in its discretion, a court may admit and rely on prior art, whether or not it is cited in the specification or file history. *Id.* at 1584-85. Prior art and dictionaries, as publicly accessible, objective information, are for obvious reasons preferable to expert testimony as tools for resolving ambiguity. *Id.* at 1585; *see also* *Texas Digital Sys.*, 308 F.3d at 1202-03.

Ultimately, interpretation of the terms of a patent claim can only be determined with a full understanding of what the inventor actually invented and intended to envelop within the scope of his or her patent claims. *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1250 (Fed.Cir.1998). For this reason, when inventors distinguish their invention from prior art, that prior art is properly excluded from coverage of the patent's claims. *Ortho-McNeil Pharm., Inc. v. Mylan Labs., Inc.*, 267 F.Supp.2d 533, 543 (N.D.W.Va.2003) (citing *SciMed Life Sys., Inc.*, 242 F.3d at 1343).

B. Person Of Ordinary Skill In The Art

Before turning to the task of claim construction, the court must first determine the relevant prism through which the patent's terms must be viewed. The court's assigned task, when addressing claim construction, is to ascertain how a person of ordinary skill in the art would have understood the disputed claim terms at the time of the invention. *Markman*, 52 F.3d at 986. Accordingly, patent claims must be interpreted not through the eyes of the court, nor those of any proffered experts, but rather from the standpoint of a person skilled in the relevant art. *Interactive Gift Express, Inc. v. Compuserve Inc.*, 256 F.3d 1323, 1332 (Fed.Cir.2001). In fashioning the hypothetical construct of a person of ordinary skill in the art, a court should consider the educational level of the inventor, the type of issues encountered in the art, the prior art solutions to problems experienced, the rapidity with which innovations are made in the subject area, the sophistication of the technology involved, and the educational level of workers in the field. *Helifix Ltd. v. Blok-Lok, Ltd.*, 208 F.3d 1339, 1347 (Fed.Cir.2000) (citation omitted).

In this instance, only PPC has specifically addressed in its written presentation the attributes of a person of ordinary skill in the art to serve as a frame of reference for purposes of the claim construction analysis. In its principal brief, PPC asserts that with respect to the '838 and '5 patents, where the electrical aspects of the technology, as distinct from mechanical elements, predominate,

a person of ordinary skill in the art would have at least an associate's degree in electrical engineering or electrical/electronic technology, or comparable training, knowledge of CATV systems, electronics filters in general, as well as the electronic filters associated with bi-directional communication systems, and the design and manufacture of cable TV systems and components.

PPC Memorandum (Dkt. No. 192-37) at 4. Turning to the '343 patent, which implicates mechanical engineering concepts, PPC advocates that

a person or ordinary skill in the art would have at least an associate's degree in mechanical engineering, electrical engineering or physics, or comparable training, knowledge of CATV systems, the processes of designing and manufacturing cable TV electronic filter devices and related mechanical components.

Id. Since ARCOM, when pressed during oral argument, accepted these suggested attributes, which appear reasonable based upon the court's understanding of the technology at issue, I will do likewise and define a person or ordinary skill in the art consistent with these proposed constructs.

C. Claim Construction In This Case

1. The '838 Patent

The portion of the '838 patent alleged by ARCOM to have been infringed by PPC includes claims 12, 15, and 39. The parties have jointly proposed construction of certain terms contained within those claims, including "attenuates", "attenuation", "first passband", "forward path", "passband", "passive", "return path", "stop band" and "stop band which attenuates signals". FN4 The parties are distinctly at odds, however, regarding the meaning of several terms of the '838 patent claims. Their disagreements center around the terms "terminal", of which a first and second are described; "passive filter network"; "coupled"; "passive attenuator network/circuit"; "resistive network"; "second passband" and "filter".

FN4. Having reviewed the proposed definitions of those claim elements, I find them reasonable and therefore will include the jointly offered constructions within my recommended findings.

a) *First/Second "Terminal"*

The three claims in issue describe a passive filter comprised of certain specified components, including a first and second terminal. The parties disagree as to the proper interpretation to be assigned to the word "terminal". For its definition of this term, ARCOM proposes "an electrical conductor through which signals enter and/or exit." PPC counters by asserting that the term should be construed as comprising a "conductive element extending from and connecting the circuit board to the communication system." While both parties assert that their definitions are supported by the intrinsic evidence, each has nonetheless offered supplemental, extrinsic evidence in the form principally of expert declarations.

Implicit in the generally accepted meaning of the word "terminal" is that it relates to an extremity, or boundary. *See, e.g., Merriam-Webster Collegiate Dictionary* 1216 (10th ed.1993). There is no indication in the specification or prosecution history that suggests that a departure from this customary usage of the term was intended by the '838 patent inventors. As confirmation of this fact, Figure 1 of the '838 patent, depicting the preferred embodiment, shows an input terminal 30 extending into connector 26, and an output terminal 32 extending into connector 28. *See '828 Patent* 7:17-21.

Undeniably, as PPC argues, when used in the context of an electrical circuit the word "terminal" generally signifies a point of electrical connection. In support of its proposed definition, PPC offers observations related to ARCOM's claims of infringement by the PPC step attenuator. *See PPC Memorandum* (Dkt. No. 192-37) at 7. This observation carries no weight, however, since claim construction must be made without regard to the accused product. *See Exigent Tech., Inc. v. Atrana Solutions, Inc.*, 442 F.3d 1301, 1309 n. 10 (Fed.Cir.2006) ("It is true that a claim is construed in the light of the claim language ... *not* in light of the accused device.") (citation and internal quotation marks omitted) (emphasis in original); *but see Wilson Sporting Goods Co. v. Hillerich & Bradsby Co.*, 442 F.3d 1322, 1326-27 (Fed.Cir.2006) ("While a trial court should certainly not prejudge the ultimate infringement analysis by construing claims with an aim to include or exclude an accused product or process, knowledge of that product or process provides meaningful context for the first step of the infringement analysis, claim construction."). PPC further asserts that various of the depictions contained within the '838 patent, including Figures 1 and 10, support its view that the terminals specified must in fact extend from inside of the connectors to the circuit board. To construe the claim in reliance upon those figures, however, would be to violate the well-established precept that the meaning of claim terms is not confined to the preferred embodiment unless the patent language specifically provides otherwise. *See SanDisk Corp. v. Memorex Products, Inc.*, 415 F.3d 1278, 1286 (Fed.Cir.2005) ("[I]t is axiomatic that without more the court will not limit claim terms to a preferred embodiment.").

Finding nothing in the prosecution history or '838 patent that requires the *direct* connection of a terminal to the interior circuit board of the device disclosed by the '838 patent, I recommend rejection of PPC's more limiting definition and acceptance of ARCOM's proposed construction, with slight modification, and that the court define "terminal" to mean "an electrical conductor through which signals enter and/or exit the return path filter."

b) *"Filter" and "Passive Filter Network"*

The parties next request construction of the word "filter" and the phrase "passive filter network," terms also common to all three claims in issue. With respect to use in connection with "passive filter network" and other claim terms, the parties have stipulated that the word "passive" means "not requiring a source of electrical power to operate." Moreover, although they have not specifically proposed a joint definition of

this term, the parties appear to be in agreement as to the significance of the word "network". At the heart of the parties' controversy regarding this phrase, then, is the meaning to be attributed to the word "filter". ARCOM proposes that the term be construed to mean "a frequency selective circuit". PPC, for its part, requests that it be interpreted to mean "a device or circuit that blocks a defined range of frequencies of a signal, while passing the remaining frequencies."

Both parties appear to agree that by definition, a filter of the nature involved must have some frequency selection characteristics. Where they part company is over the required effect of that frequency selection. PPC takes a narrow view, advocating that the term "filter" be construed as a device permitting signals of certain frequency ranges to pass, while blocking others. ARCOM would propose an interpretation which refers to frequency selection without further elaboration.

Having carefully reviewed the parties' submissions and the '838 patent, I recommend a construction which lies somewhere between these extremes. While I agree with ARCOM that a filter can differentiate between signal frequencies without necessarily blocking a specified frequency or frequency range *in toto*, at a minimum there must be some basis for differentiation. Indeed, in an early claim construction chart and discovery responses even ARCOM appears to have recognized this concept, advancing as its proposed construction of the term "an electrical circuit that is frequency selective", going on to note that "[i]t blocks or suppresses signals at certain frequencies and allows signals at other frequencies to pass." *See Muldoon Decl.* (Dkt. No. 192-11) Exh. G at 1, 6. I therefore recommend a construction of the term "passive filter network" as "a passive-meaning that it does not require any electrical source-network which is frequency selective, in that it blocks or suppresses signals at certain frequencies, while allowing signals at other frequencies to pass unimpeded."

c) "*Coupled*"

The parties next seek the court's guidance regarding the term "coupled", a word which, while commonly used, has a definition which is largely dependent upon context. ARCOM proposes that the term be construed to mean "in electrical communication with." PPC, noting that this construction is so broad as to admit of wireless interfacing not contemplated under the '838 patent, proposes a narrower definition to include "directly linked together to form an electrical connection."

As can be seen, the parties' disagreement over this term focuses chiefly upon the question of whether it requires actual physical, or direct linking, or instead merely signifies electrical communication generally. Seizing upon language contained within the '838 patent specification, PPC argues that the term "coupled" is used by the inventor to denote a direct contact between two elements through use of a single component, without additional intervening components, distinguishing the term "connected", which appears to be utilized in the broader sense, such as when elements are joined by two or more intervening parts. PPC Memorandum (Dkt. No. 192-37) at 7-8.

Having carefully reviewed the specification of the '838 patent, and in particular Figure 1, I am unable to discern this same distinction. In the description of Figure 1, the '838 patent specification notes that the "passive filter network 34 is mounted inside housing 24, and is *connected* to input terminal 30, ..." '838 Patent 7:21-23 (emphasis added). Those are two components which are connected with only a node between them. The specification goes on to note that "[n]etwork 34 includes a forward path filter network 36 ... [which] is *coupled* to input terminal 30 at a node 37 and to output terminal 32 at a node 39." *Id.* at 7:23-25 (emphasis added). These usages do not appear to support PPC's asserted distinction.

In support of its proposed definition, ARCOM urges the Federal Circuit's decision in *NeoMagic Corp. v. Trident Microsystems, Inc.*, 287 F.3d 1062 (Fed.Cir.2002). In that case the Federal Circuit began its examination of the usage of the term "coupling" within the patent in suit by observing that "[t]he ordinary meaning of 'coupling' refers to an electrical communication-the transfer of energy-between two circuits, ...", later going on to note that the technical definition of the term also means "[a] mutual relation between two circuits that permits energy transfer from one to another, through a wire, resistor, transformer, capacitor, or other device." *NeoMagic*, 287 F.3d at 1070-71 (quoting McGraw-Hill Dictionary of Scientific and Technical Terms 474 (5th ed.1994)).FN5

FN5. In that case *NeoMagic* placed particular emphasis upon technical dictionary definitions of the term "coupling", as has PPC in this instance. The decision in *NeoMagic*, however, predated the Federal Circuit's *en banc* decision in *Phillips*, in which that court significantly de-emphasized the role of such dictionary definitions in the claim construction analysis. *See Phillips*, 415 F.3d at 1320.

Based upon my careful review of the '838 patent and prosecution history, I find nothing to support PPC's proposed additional requirement that any connection associated with the term "coupling" must be "direct". Accordingly, I recommend a construction of the term to mean "a connection, or mutual relation, between two circuits that permits energy transfer between the two."

d) *Passive Attenuator Network/Circuit*

Claim 12 of the '838 patent as well as one of its dependent claims, claim 15, make reference to the term "passive attenuator network," while claim 39 utilizes the variant "passive attenuator circuit." At odds over the intended meaning of these terms, with their dispute apparently centering upon the word "attenuator", the parties have requested that they be construed by the court.

The parties are in accord over the term "passive", and similarly agree in essence that the words "network" and "circuit" are co-extensive.FN6 Both sides have also indicated their agreement that for purposes of the '838 patent, attenuation is a concept which entails reduction of the level or strength of a signal. It would therefore appear, at first blush, that the term "passive attenuator network" is not particularly controversial, and that the court should accept ARCOM's suggested interpretation, to include "a network/circuit of non-powered components that together reduce the strength of signals."

FN6. ARCOM has proposed that network be construed as meaning "circuit". ARCOM Principal Brief (Dkt. No. 191) at 7-10. Noting that the terms "circuit" and "network" appear throughout and at different locations within the '838 patent claims, including on occasion within the same claim, PPC asserts that the two terms appear to present a distinction without a difference relevant to any of the infringement issues in the case and asserts that neither term needs construction. PPC Memorandum (Dkt. No. 192-37) at 4-5. I agree, and therefore recommend that neither claim be construed at this time.

Despite this seeming agreement over each of the disputed term's words, PPC proposes interjection of an additional limitation which would require that the circuit or network exhibit frequency-independent attenuation. To support this added requirement, PPC focuses on portions of the claim specification including the description of the preferred embodiment, and the intended function of introducing flat loss into a

specified filter, as well as the emphasis in the specification upon the use of a resistive, or frequency-independent, network to effectuate the desired reduction, in contrast to conventional lowpass filters featuring frequency-dependent inductors.

PPC's proposed definition appears to draw support from the patent specification, which states that "[t]he return path network further includes an attenuator network which is designed to attenuate the signals in the return path frequency band, as they pass through the return path network." '838 Patent 5:7-10. This additional limitation urged by PPC, however, does not appear evident from the face of the disputed phrase, nor is there any evidence to suggest that the inventor has disavowed inclusion of any attenuator network/circuits that are not frequency independent. PPC's reliance upon the specification to narrow the disputed claim term and import a limitation into the patent claims is therefore improper. Phillips, 415 F.3d at 1323.

Addressing this argument, I note further that neither "flat loss" nor "frequency independent" appear as stated concepts anywhere in the asserted claims. While there is some suggestion that the preference is that the signal strength or level reduction introduced by the attenuator network/circuit should be flat loss, there is no indication anywhere that it must be frequency independent.FN7 It should be noted, moreover, that the concept of the passive attenuator network described in claim 12 consisting of a "resistive network" is introduced in claim 15, which is dependent upon claim 12, thereby suggesting that the inventors did not intend the passive attenuator network referenced in claim 12 to be limited to a resistive network.

FN7. Frequency independent means simply that the reduction in signal level or strength, or attenuation, is the same regardless of the frequency of the signal.

It is true that the '838 preferred embodiment specifies a low pass band that provides for flat loss attenuation, defined as "frequency independent", of return path signals. '838 Patent 7:40-45. The specification also provides, however, that "[p]referably, the attenuator network is a resistive network which provides a predetermined amount of flat loss." *Id.* at 5:7-10. This language lends support to ARCOM's position that while flat loss may be preferable, frequency independence is not an absolute requirement for the specified passive attenuator network/circuit.

Having carefully considered the arguments of the parties, I recommend a claim construction of the term "passive attenuator network/circuit" as including "a network/circuit of non-powered components that together have the effect of reducing or attenuating the level or strength of signals," without the added requirement that the reduction be frequency independent.

e) *Resistive Network*

The parties additionally request court guidance regarding the term "resistive network", a phrase appearing only in claim 15 of the '838 Patent. ARCOM proposes a definition which would focus upon the resistive character of the entire network, whereas PPC urges a more limited definition, requiring the network to consist *entirely* of resistors.

The concept of resistance, as utilized in the field of electrical engineering, is neither novel nor complex, in simple terms generally describing the opposition characteristics of a device or material to the flow of current. *See, e.g.,* Tehrani v. Hamilton Med., Inc., 331 F.3d 1355, 1358 (Fed.Cir.2003) ("Resistance is the

opposition to flow caused by the forces of friction."); Merriam-Webster Collegiate Dictionary 996 (10th ed.1993) (defining resistance as "the opposition offered by a body or substance to the passage through it of a steady electric current"). Given this, the inventors' utilization of the term "resistive network" as distinct from "network of resistors" would seem to support ARCOM's proposed construction of this disputed term. As PPC asserts, however, the networks exemplified in Figures 1, 5 and 6 of the '838 patent consist entirely of resistors, though configured differently. Nonetheless, to focus upon those various embodiments, without definitive indication from the patent specification or prosecution history that the inventors intended to limit themselves to the types of resistive networks depicted in those embodiments, would violate the Federal Circuit's express cautionary directive in *Phillips*. See *Phillips*, 415 F.3d at 1323; see also *Cornell Univ.*, 313 F.Supp.2d at 126.

PPC further argues that literally all circuits and components exhibit a resistive character, to some degree. See *Eldering Rebuttal* (Dkt. No. 204-2) para. 4. Given this fact, acceptance of ARCOM's proposed definition for this claim limitation would not appear to be meaningful, a fact which could mitigate against acceptance of the interpretation espoused by ARCOM. See *Merck & Co. v. Teva Pharms. USA, Inc.*, 395 F.3d 1364, 1372 (Fed.Cir.2005) ("A claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so."). The definition urged by PPC, on the other hand, is too restrictive and though consistent with each of the embodiments disclosed in the '838 patent, is not mandated by the claim language. Accordingly, I recommend a construction which falls somewhere between the two extremes, defining the term to mean "a network of electrical components which includes one or more resistors and whose components, as a whole, exhibit a resistive character."

f) *Second Passband*

The parties are in agreement that the claim term "passband" means a "defined range of frequencies over which signals are passed ." While independent claim 12 and dependent claim 13 of the '838 patent refer only to "a passband" in two different locations, claim 39 specifies a "first passband" and a "second passband", the first passing signals in the forward path while the second is intended to address signals in the return path. While the parties are in agreement that a "first passband" is simply a "first defined range of frequencies over which signals are passed", they differ concerning interpretation of the phrase "second passband". The parties' difference over this term centers upon whether there must be separation between the range of the first passband, which passes signals traveling in the forward path, and the second, without the possibility of continuity, or even overlap. ARCOM proposes a definition of the term "second passband" as including "a second defined range of frequencies over which signals are passed", without regard to whether the ranges passed are separated or "windowed", or instead can be contiguous. PPC, by contrast, would further narrow that definition to include a second defined range of frequencies over which signals are passed, separated from a first defined range of frequencies over which signals are passed.

Conceptually, PPC's argument would seemingly garner support in the event that the first passband and second passband specified in claim 39 of the '838 patent covered signals traveling in the same path, if for no other reason than based upon common sense. Under this circumstance, if the frequency ranges permitted to pass by the first and second passband were contiguous, and the passbands were both designed to permit signals to pass without being blocked or attenuated, logically a continuum would result, and there would be no reason to differentiate between the two.

This, however, is not the situation now presented. The first and second passbands specified in claim 39 address signals passing in different directions. Moreover, as the '838 patent notes, the second passband is

designed to "[attenuate] signals in the return path by a predetermined amount as the signals pass through the second passband of [the] filter network." '838 Patent 17:2-4. Thus, while Figure 15 of the '838 patent illustrates an embodiment in which the passband filter in the return path is "windowed", and separated by a stop band from the forward path highpass filter, the patent does not disclose that this is an essential element of claim 39. One could imagine, for example, making reference to Figure 15, a return path passband permitting signals between 15 and 50 MHz to pass, and a forward passband permitting passage of signals occupying the spectrum between 50 and 750 MHz, but where the return path signals are attenuated to a different degree than those set forth in the forward path.

Since neither the express terms of the '838 patent nor its prosecution history gives indication that there must be separation between the first and second passbands specified in claim 39, I recommend acceptance of ARCOM's proposed definition of that term, to include "a second defined range of frequencies over which signals are passed."

2. *The '343 Patent*

The '343 patent discloses a particular assembly inside of the female connector portion of a CATV filter housing, designed to shield the filter from moisture penetration. Effectively sealing against moisture is an important feature in light of the common usage within CATV systems of such filters in outdoor settings. In the '343 patent the collet assembly described receives a conductive pin from a coaxial cable connector or other cable device utilized in a cable system, engaging the conductive pin through use of expanding spring portions designed to contract and thereby secure the conductive pin, thus establishing an electrical connection. An insulator member surrounds the conductor and insulates it from the metallic female connector, and the isomeric sealing member disclosed in the invention is compressed in an inner wall of the female connector to act as a moisture barrier.

At the heart of the parties' disagreement regarding the '343 patent are terms contained within claims 23 and 25 of that patent. Once again, the parties have agreed upon the meaning to be attributed to certain terms within those claims, including "input end (conductor)", "input end (housing)", "output end (housing)" and "only a single", but disagree with regard to the intended meaning of the terms "cable TV electronic filter device" and "cable TV filter circuit", "insulator member", "elastomeric sealing member/seal", "body portion", "cylindrical", "generally cylindrical/substantially cylindrical", "adjacent", "bore" and "through".FN8 I will therefore recommend that the court's claim construction decision adopt the jointly proposed definitions, and make the following findings with regard to the claim terms in dispute.

FN8. As will be seen, the chief battleground regarding the '343 patent concerns whether, as PPC argues, the electronic filter mentioned must block a certain specified range of frequencies of a cable TV signal, while allowing other frequencies to pass, or instead can include an incomplete or only partially effective filter circuit, as ARCOM advocates.

a) *Cable TV Electronic Filter Device*

PPC has requested that the court define the term "cable TV electronic filter device" as a "device that blocks a defined range(s) of frequencies of a cable TV signal, while passing the remaining frequencies." In response, ARCOM asserts that the term is purely preambulatory in nature, and therefore does not have the effect of limiting the claims beyond the scope of the claim terms themselves.

In general, the portion of a patent claim which precedes a transitional term such as "comprising," the word which separates the claim term now under consideration from the remainder of claim 23 of the '343 patent, is viewed as a claim preamble. *Rapoport v. Dement*, 254 F.3d 1053, 1058-59 (Fed.Cir.2001). A preamble in a patent claim is generally not considered to impose a limitation or claim element which must also be found in an accused device in order to establish infringement. *Pitney Bowes*, 182 F.3d at 1305 (indicating that a preamble that "merely states ... the purpose or intended use of an invention ... is of no significance to claim construction because it cannot be said to constitute or explain a claim limitation"). Only when a preamble "breathes life" into a claim, either because it was relied upon by the applicant during the prosecution to distinguish the claimed invention from prior art, or where elements of the claim set forth in the body specifically refer back to elements in the preamble, is it considered an essential claim element. *Id.* at 1306; *see also* *Loctite Corp. v. Ultraseal, Ltd.*, 781 F.2d 861, 867 (Fed.Cir.1985), *overruled on other grounds*, *Nobelpharma AB v. Implant Innovations, Inc.*, 141 F.3d 1059 (Fed.Cir.1998).

The Federal Circuit has addressed the issue now presented in a number of cases, on one occasion observing that

[i]n general, a preamble limits the invention if it recites essential structure or steps, or if it is necessary to give life, meaning, and vitality to the claim. Conversely, a preamble is not limiting where a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention.

Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc., 289 F.3d 801, 808 (Fed.Cir.2002) (quotations and citations omitted); *see also* *On Demand Machine Corp. v. Ingram Indus., Inc.*, 442 F.3d 1331, 1343 (Fed.Cir.2006). This statement is consistent with the principle that it is the body of a claim, rather than the intended use specified in such introductory language, that controls and provides the critical attributes of a patented invention. *See* *Catalina Mktg.*, 289 F.3d at 808; *see also* *Schumer v. Lab. Computer Sys., Inc.*, 308 F.3d 1304, 1310 (Fed.Cir.2002).

There is no particular bright line test to be followed in every case when determining whether preambulatory language is limiting; there are, however, established guideposts which can inform a court's analysis. *Catalina Mktg.*, 289 F.3d at 808. Among them is the principle that "when the preamble is essential to understand limitations or terms in the claim body, the preamble limits claim scope." *Id.* (citing *Pitney Bowes*, 182 F.3d at 1306); *see also* *Seachange Int'l, Inc. v. C-COR Inc.*, 413 F.3d 1361, 1375-76 (Fed.Cir.2005). Critically, in *Catalina Mktg.* the Federal Circuit noted that "preambles describing the use of an invention generally do not limit the claims because the patentability of apparatus or composition claims depends on the claimed structure, not on the use or purpose of that structure." *Catalina Mktg.*, 289 F.3d at 809 (citing *In re: Gardiner*, 36 C.C.P.A. 748, 171 F.2d 313-16, 80 UPSQ 99, 101 (1948)). As an illustration of the point being made, the Federal Circuit in that case hypothesized an invention of "a composition for polishing shoes", noting that a subsequent inventor determining that the very same composition could be used to grow hair "cannot invoke this use limitation to limit [the patent holder's] composition claim because that preamble phrase states a use or purpose of the composition and does not impose a limit on [the patent holder's] claim." *Id.* at 809-10.

In requesting interpretation of the preambulatory language of claim 23 to import an additional limitation into the body of the claim, in essence thereby requiring that the device in issue be intended for use in a cable TV system, PPC places heavy reliance upon a memorandum contained within the prosecution history in which, it contends, ARCOM distanced itself from prior art by representing that "claims 5 to 29 have been amended

to make clear that the subject matter claimed in [those] claims is a cable TV filter device ." See Muldoon Decl. (Dkt No. 192-15) Exh. K at p. 19, PPC Exh. 86 at PPC 008400. Given this representation by the patentees explicitly narrowing the subject matter intended to be covered by their invention, I agree with PPC, and will therefore recommend a finding that the preambulatory language in this case is limiting, restricting the device disclosed in claim 23 as being for use in a cable TV system. See *Conoco, Inc. v. Energy & Env'tl. Int'l, L.C.*, 460 F.3d 1349, 1363-64 (Fed.Cir.2006). Accordingly, I recommend a construction of the phrase "cable TV electronic filter device" as "an electronic device including within it a cable TV filter circuit."

b) Cable TV Filter Circuit

The parties next request construction of the term "cable TV filter circuit", as utilized in independent claims 23 and 25 of the '343 patent.FN9 Seizing upon language set forth in the specification directed toward the definition of "filter circuit" or "circuit", ARCOM advocates a definition which would include "any arrangement of a circuit component or circuit components, whether or not constituting a complete or identifiable filter circuit." PPC, by contrast, argues that the claim should be construed more narrowly to mean a circuit that blocks a defined range of frequencies of a cable TV signal, while passing the remaining frequencies.

FN9. While claim 24 of the '343 patent is also implicated in this infringement action, it is dependent upon claim 23, in which the controversial term is located.

In support of its restrictive, proposed reading of the disputed claim term, PPC emphasizes what it treats as the inventors' manifest intention to limit the invention to that illustrated in Figure 3A of the patent. PPC also notes references in patent prosecution history to "electronic filter assembly" in order to distance the invention from prior art.

It is true, as PPC argues, that a patentee may express a desire to limit the invention disclosed in a patent to embodiments contained within a specification by using terms such as "this invention" or "the present invention" in a context which makes such a manifest intent clear and unequivocal. See, e.g., *Honeywell Int'l, Inc. v. ITT Indus., Inc.*, 452 F.3d 1312, 1318 (Fed.Cir.2006) (noting reference in the written description to a fuel filter as "this invention" or "the present invention", and adding that "[t]he public is entitled to take the patentee at his word" when a specification makes repeated reference to a disclosed apparatus as "this invention" or "the present invention"); see also *Alloc, Inc. v. Int'l Trade Com.'n*, 342 F.3d 1361, 1368-69 (Fed.Cir.2003) (reference to "the invention"); *Scimed Life Sys.*, 242 F.3d at 1343 (portion of specification describing "the present invention", together with other factors, found limiting); *Watts v. XL Sys., Inc.*, 232 F.3d 877, 883 (Fed.Cir.2000) (finding the limitation based upon use of language "the present invention", adding that "[o]ne purpose of examining the specification is to determine if the patentee has limited the scope of the claims") (citations omitted).

In this instance, however, I am unconvinced that through the patent specification the '343 inventors have evinced such a clear intent to limit the coverage of their patent. Referring to Figure 3A, the focus of PPC's argument, the specification states that it "depicts the *preferred embodiment* of the present invention", rather than stating that it in fact depicts the invention itself. '343 Patent 4:50-53 (emphasis added). In the patent, Figure 3A is also described as "a longitudinal cross-sectional view of a filter constructed in accordance with the present invention" *Id.* at 4:4-5. These references thus do not appear to have been intended to limit

the '343 patent solely to the embodiment depicted in that illustrative figure.

The '343 patent specification addresses the intended meaning of the terms "filter circuit" and "circuit", advising the reader as follows:

When we refer to a "filter circuit" or "circuit" on a circuit board, in this disclosure and in the claims, it is intended to mean any arrangement of a circuit component or circuit components, whether or not constituting a complete or identifiable filter circuit.

'343 Patent 5 :54-58. Undeniably, a patentee is entitled to act as his or her own lexicographer and, consequently, any definition propounded within a patent should ordinarily control and exclude definitions which are contrary to the patent applicant's manifest intent. *See Phillips*, 415 F.3d at 1316; *see also Sinorgchem Co., Shandong v. Int'l Trade Comm'n*, 511 F.3d 1132, 1136 (Fed.Cir.2007).

A careful reading of the quoted section, however, reveals that it was not intended to provide a complete definition of the phrase "cable TV filter circuit", nor does it even completely define a filter circuit. Instead, the passage upon which ARCOM now focuses notes that reference to the terms "on a circuit board" is simply intended to mean any arrangement and, as the next sentence makes clear, to specifically disavow any intention to limit usage of those terms based upon the example which, according to the specification, "is merely to illustrate the suitability of a parallel circuit board arrangement (of the present invention) to a dual path circuit." '343 Patent 5:58-61.

With respect to this term, having carefully reviewed the patent and the prosecution history, I conclude that neither definition proposed by the parties is fully adequate. ARCOM's proposed definition, for example, is far too broad, in that when given its ordinary meaning, the proposed definition does not even purport to require that the circuit in question comprise a filter circuit. Similarly, ARCOM's definition makes no reference to cable TV signals, even though the patent specification and the term itself make clear that it is limited to such usage. PPC's definition, on the other hand, is far too narrow since the term filter does not necessarily always require that certain signals be permitted to pass, while others are blocked.

I will therefore recommend a definition of the term "cable TV filter circuit" to include "any arrangement of a circuit component or circuit components, whether or not constituting a complete or identifiable filter circuit, which discriminates among frequencies of a cable TV signal, permitting some to pass unimpeded while blocking or attenuating others."

c) Insulator Member

The seemingly benign term "insulator member" has provided yet another battleground in this case. Urging that the term is readily understood and its meaning self-apparent, ARCOM proposes as a definition "a member made of an insulating material." PPC, on the other hand, would limit the meaning of that term significantly, requiring that it comprise a "single piece of material surrounding the entire length of the conductor that inhibits or prevents the flow of electricity between the conductor and the female first connector." As can be seen, the parties' disagreement over this term centers around two issues, including whether 1) the insulator member should be limited to a single piece of material, and 2) it must surround the entire length of the conductor.

In support of its proposed definition, ARCOM places heavy reliance upon the declaration of its expert,

Martin Sperber, who opines that one of ordinary skill in the art would consider the term to be clear on its face, and not necessarily limited to a single piece of material that surrounds the entire length of the conductor. ARCOM Exhibits (Dkt. No. 191-12) Exh. 11, para. 4. While that may be generally true it ignores the extrinsic evidence suggesting to the contrary, including notably a statement in the '343 patent abstract itself in which the inventors represent that "[t]he insulator is made from a single piece of insulator material, containing a bore therethrough." '343 Patent, Abstract. ARCOM's proposed definition also overlooks representations made during the course of the prosecution of the '343 patent whereby the applicants distinguished their invention from those employing two piece insulator arrangements as disclosed in certain prior art, including the U.S Patent No. 5,662,494, issued to Zennamo, Jr., and U.S. Patent 5,088,937, issued to Gabany, arguing that both disclose two-piece arrangements for insulating the collet terminal from the conductive female terminal cap, or connector.

Based upon these excerpts, I agree with PPC that the '343 patent discloses a single piece insulator member. This conclusion is further buttressed by consideration of a declaration submitted by inventor Gerry Gould, in response to yet another rejection by the patent examiner, claiming that "Andrew Tresness and I decided to use a one-piece collet insulator to surround the collet terminal. There was no point in using the standard industry two-piece insulator, since the [identified competitor's] contact could be press-fit within a single insulator block." FN10 Muldoon Decl. (Dkt No. 192-24) Exh. T at pp. 2-3, para. 7, PPC Exh. 40 at PPC008292-93.

FN10. ARCOM apparently attempts to walk a fine line, arguing on one hand that the insulator prescribed can be made from more than one piece of material, while at the same time arguing that the patent claims in issue disclose only a single insulator, asserting that the electromeric seal specified, while also potentially made of an insulating material, should not be considered as a second insulator. *See* ARCOM Principal Brief (Dkt. No. 191) at 21-22.

It does not necessarily follow from the intrinsic evidence, including the patent abstract and prosecution history, however, that the specified single-piece insulator must surround the entire length of the conductor. Indeed Figure 3A, which depicts the preferred embodiment of the invention, discloses an insulator (96b) which does not extend the entire length of the conductor (96a). Under these circumstances PPC's definition cannot withstand scrutiny since it would exclude the insulator depicted in the preferred embodiment. *See* Oatey Co. v. IPS Corp., 514 F.3d 1271, 1276-77 (Fed.Cir.2008) ("We normally do not interpret claim terms in a way that excludes embodiments disclosed in the specification."); Vitronics, 90 F.3d at 1583 (indicating that a claim construction that excludes a preferred embodiment is "rarely, if ever, correct").

Based upon the foregoing, I recommend that the term "insulator member" be defined as comprising "a single piece of material surrounding all or a portion of the conductor in the female connector passageway that inhibits or prevents the flow of electricity between the conductor and the female connector."

d) *Elastomeric Sealing Member/Seal*

Claim 23 of the '343 patent utilizes the terms "elastomeric sealing member" and "elastomeric seal" without providing guidance as to whether they have been used interchangeably. Claim 25 of the patent also makes use of the term "elastomeric sealing member." FN11 The parties differ over the use of these terms, their dispute centering upon two issues, including whether the terms have indeed been used interchangeably, or instead have different meanings, and whether, by virtue of the specification and prosecution history, the

patentees have abandoned a fairly wide ranging definition to include only a particular configuration.

FN11. While not having so stipulated, the parties have jointly settled on a definition of "elastomeric" as signifying an "elastic" or "rubber-like" substance.

Addressing this issue, ARCOM offers a definition which comports with the general understanding of that term by both lay persons and, as they have shown, one of ordinary skill in the art, offering as a proposed definition "an elastic or rubber-like component that prevents or reduces the seepage of moisture." Offering extrinsic evidence reflecting how a person of ordinary skill in the art would normally define seal or sealing member, ARCOM proposes a definition which includes, as an element, that the component described must seal against moisture to prevent or reduce the seepage of moisture, in this case along the inner wall of the female connector. *See, e.g.*, ARCOM Exhibits (Dkt. No. 191-12) Exh. 11 (Sperber Decl.) para. 4(b); Exh. 12 (McGraw-Hill Dictionary of Scientific and Technical Terms); Exh. 14 (Webster's 9th Collegiate Dictionary).

While noting that ARCOM has offered extrinsic evidence and turned its back on more limiting references within the patent and prosecution history, PPC does not appear to quarrel in theory with the portion of ARCOM's definition addressing the intended function of a sealing device, instead focusing on its shape, and specifically whether it must be in the shape of an o-ring—that is, that its cross-section, when sliced perpendicular to its circumference, must be circular in shape. Pointing to excerpts of the patent and prosecution history, PPC proposes a far more limiting definition which would require that the elastomeric sealing member/seal be circular in shape and thus constitute what is generally known as an o-ring.

It is true, as PPC argues, that when describing the invention the '343 patent makes reference in several locations to the elastomeric seal as "an o-ring". *See, e.g.*, '343 Patent 3:39, 3:59, 6:38; 6:41. Similarly the preferred embodiment, as depicted in Figure 3A, appears to disclose a sealing member which is o-shaped. None of those references, however, appear to limit all embodiments of the '343 patent invention such that the elastomeric seal must be o-shaped. To be sure, as PPC argues, during the course of attempts in June of 2003 to distance the '343 invention from prior art of concern to the patent examiner, the applicants' counsel referred to the invention as "a complete redesign of the collet assembly for a cable TV filter device ...", going on to make specific reference to the fact that "[i]t uses an insulator 96b that fits within the surrounding female connector 66, with a groove in its outer surface 96c for an O-ring seal 96d," Muldoon Decl. (Dkt. No. 192-15) Exh. K at 19-20, PPC008400-01. A careful reading of that document, however, does not reveal that the use of the o-ring was material to the grounds for distinguishing the relevant prior art, nor does it evince a clear intention on the part of the applicant to limit the isomeric seal to an o-ring and relinquish the possibility that the seal could take another shape, and certainly not to a degree sufficient to establish prosecution history estoppel and thus bind the patentees. *See Conoco*, 460 F.3d at 1363-64.

It is also true that in their information disclosure statement, the applicants distinguished their invention from that disclosed in U.S. Patent No. 4,701,726, issued in 1987 to Holdsworth, noting that in that patent "[a]dhesive is used instead of 'o' rings". Muldoon Decl. (Dkt. No. 192-19) Exh. O at p. 2, para. 6, PPC008492-93. Since upon its face that representation distinguishes only adhesives for use as sealants, while undeniably referring to o-rings, the statement does not evidence an intention by the patentee to relinquish any claim to other shaped, non-adhesive isomeric sealing members.

In support of its claim for a restrictive definition of this disputed term PPC also points to a declaration

given by Jerry Gould, one of the '343 inventors, during the prosecution of the patent submitted to overcome a section 102(f) rejection. In it, Gould describes the process used for settling on the inventive design and rejecting the industry-standard two-piece insulator, going on to state that "[e]ither Tresness or I suggested that the collet insulator contained an o-ring groove and that an o-ring be seated in the groove, to establish a seal around the outside of the insulator." FN12 Muldoon Decl. (Dkt. No. 192-24) Exh. T at pp. 2-3, para. 7-8, PPC008292-93. In my view this exchange is similarly insufficient to evidence an intention on the part of the inventors to abandon any claim to an isomeric seal which would fit within a groove within the conductor, and be of a rubberlike material, but not be o-shaped, nor does there appear from the record to have been any reason to do so in order to distinguish prior art.

FN12. A rejection under section 102(f) reflects a finding that the applicant "did not himself [or herself] invent the subject matter sought to be patented," 35 U.S.C. s. 102(f); *see PerSeptive Biosys., Inc. v. Pharmacia Biotech, Inc.*, 225 F.3d 1315, 1321-22 (Fed.Cir.2000) (citing section 102(f)).

For these reasons, I recommend adoption of ARCOM's definition of the term "isometric seal/sealing member", to include "an elastic or rubberlike component that prevents or reduces the seepage of moisture." Moreover, having been provided with no persuasive evidence to suggest that different meanings should be attributed to the terms "sealing member" and "seal", I conclude that they have been used in claim 23 interchangeably and, accordingly, recommend a finding that their definitions are co-extensive.

e) "Only A Single [Substantially] Cylindrical Insulator Member"

Despite the parties' agreement that the modifier "only a single" means "no more than one", even after construction of the remaining terms in this phrase, including "substantially", "cylindrical" and "insulator member", yet another dispute remains. Adopting an extremely restrictive view, PPC argues that the patented device can contain no more than one insulator-an interpretation which, as will be seen, effectively undermines the patent specification, including its preferred embodiment. ARCOM, on the other hand, urges an interpretation permitting the presence of two components which could be viewed as insulators.

The source of the parties' disagreement lies in the presence and description of the elastomeric seal. After going to great lengths to show that the '343 applicants distanced themselves from prior art disclosing two-piece insulators, and despite the fact that the '343 patent discloses both an insulator and a separate isomeric ring made of rubber-like material, and thus with insulating properties, PPC apparently now argues that the presence of both a single insulating member and the isomeric o-ring discloses two insulators, whereas claim 23 is limited to a single insulating member.

This argument would effectively disqualify the preferred embodiment from falling within the scope of claim 23, since it discloses the presence of both an insulator and an isomeric ring, both with insulating characteristics. I therefore reject the argument, as creative and at first blush plausible, yet in the end indefensible. *Oatey Co.*, 514 F.3d at 1276-77; *Vitronics*, 90 F.3d at 1583. Simply stated, claim 23 does not admit of a definition which would exclude the presence of both an insulating member, in the traditional sense, and an elastomeric seal, or o-ring, which is clearly one of the principal focuses of the invention.

f) Body Portion

As uncontroversial as the phrase may seem, the parties differ over construction of the term "body portion" in claim 23 of the '343 patent, which describes "a generally cylindrical body portion and a threaded female

connector at the input end of said housing, ... [with a] printed circuit board within the body portion of said housing;" '343 Patent 12:38-44. ARCOM proposes a construction of body portion which would encompass "the portion of the housing that primarily surrounds the circuit board." PPC responds with a far more constricting definition which would require that the term be limited to the "portion of the housing between the female connector and the male connector."

The cable TV electronic filter device disclosed in claim 23 consists of a conductive housing with input and output ends.FN13 The claim goes on to state that the housing includes "a generally cylindrical body portion and a threaded female connector at the input end of said housing, the female connector having an interior surface which defines a passageway through the connector;" '343 Patent 12:38-42.

FN13. The parties have agreed that the housing input end is the portion of the housing which includes at least a female first connector, and the output end of the housing consists of a portion of the housing which includes at least the second connector. It should be noted, however, that claims 23 and 25 do not recite a threaded male connector.

Having reviewed the relevant materials, I agree with ARCOM's proposed definition. Both claims 23 and 25 reference "a printed circuit board within the body portion of the housing." ARCOM's proposed definition, then, merely mirrors that reference and discloses the location and function of the body portion of the housing, potentially creating a redundancy should ARCOM's proposed definition be adopted.

Unquestionably, as PPC argues, the '343 patent appears to differentiate between the body portion of the conductive housing and the male and female connectors. PPC's proposed definition, however, is unsupported by the intrinsic evidence for two reasons. First, as was previously noted, to require that the body lie between the connectors overlooks the fact that no male connector is specified in certain of the claims. Additionally, PPC's proposed definition eliminates the possibility of overlap between the body portion and the male terminal cap, as reflected in the embodiment shown in Figure 3A.

Having reviewed the materials contained within the record, I recommend that the term "body portion" be construed as the "portion of the conductive housing centrally located between the threaded female connector at the input end of said housing and the output end, whether or not it includes a male connector, provided, however, that the body portion can overlap with the terminal caps located at the input and output ends."

g) *Cylindrical*

Claim 23 of the '343 patent employs the geometrically-descriptive term "cylindrical" to define various elements of the filter device specified, including the body portion, insulator member, and bore. The parties request construction of this term as well as certain modifiers associated with it, including "generally" and "substantially". ARCOM proposes that cylindrical be defined to mean "tube-like". PPC, in contrast, urges a more precise geometric definition, arguing that it should be construed to mean "having 1) a surface that is curved and continuous, and 2) a cross section that is fixed and circular along its axis."

The primary object of the claim construction exercise in a patent infringement action is to discern how terms, particularly those susceptible of varying interpretations by those of ordinary skill in the art, or those used with some degree of imprecision, should be interpreted and applied by a jury to the infringement claims in suit. *See AFG Indus., Inc. v. Cardinal IG Co., Inc.*, 239 F.3d 1239, 1247 (Fed.Cir.2001) ("It is

critical for trial courts to set forth an express construction of the material claim terms in dispute, in part because the claim construction becomes the basis of the ... instructions [submitted to a jury at trial].") (citing *IPPV Enterprises, LLC v. Echostar Communications Corp.*, 106 F.Supp.2d 595, 601 (D.Del.2000)). Not every word of a patent claim, however, must be construed in order to permit proper consideration of an infringement claim; there are certain terms utilized within patent claims which are readily susceptible of understanding by lay jurors and thus require no further refinement, provided that nothing within the patent itself or the prosecution history suggests that the inventors intended a different or more narrow meaning than that commonly understood. *Phillips*, 415 F.3d at 1314 (indicating that some claim terms "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").

The term "cylindrical" is one of those terms. That word, an adjective, generally describes an object having the form and properties of a cylinder. *Merriam-Webster Collegiate Dictionary* 288 (10th ed.1993). A cylinder, in turn, is a geometric shape known to and studied by most middle school students, and is thus capable of understanding by both a lay person and a person of ordinary skill in the art seeking to determine the scope and extent of protection owing to the '343 claims. Under these circumstances I respectfully recommend a construction of cylindrical to mean "having the form or properties of a cylinder", and decline PPC's invitation to further define cylinder, believing the term to be readily understood by both a person of ordinary skill in the art and an average jury, and that the definition proposed by PPC would be counterproductive, unduly complicating what appears to be a relatively simply matter.

h) Generally Cylindrical/Substantially Cylindrical

At various points, the '343 patent utilizes the modifiers "generally" and "substantially", including in claim 23 where both are used at different places to modify "cylindrical". The parties have requested that the court construe these terms and provide more clarity regarding their usage. For its part, ARCOM urges interpretations which would essentially make those terms interchangeable, to mean "at least approximately". PPC, by contrast, advocates separate constructions under which "generally" would in essence mean "mostly", whereas "substantially" would require a greater degree of similarity, described as "almost completely".

In instances where strict, mathematical precision is either not achievable, or lacks critical significance to the invention at issue, patent drafters sometimes resort to the use of relaxing modifiers such as "about", "approximately", and "relatively". *See Ecolab, Inc. v. Envirochem, Inc.*, 264 F.3d 1358, 1367 (Fed.Cir.2001); *see also Anchor Wall Sys., Inc. v. Rockwood Retaining Walls, Inc.*, 340 F.3d 1298, 1310-11 (Fed.Cir.2003) (citing cases). The terms "generally" and "substantially" fall within the ambit of this category.

The Federal Circuit has not taken a categorical approach to interpretation of such patent terms; instead, it has noted that the meaning of such qualifying words or phrases hinges upon the technological particulars of the patent at issue. *See Ortho-McNeil Pharm. Corp. v. Caraco Pham. Labs., Ltd.*, 476 F.3d 1321, 1326 (Fed.Cir.2007). That court has further observed that the use of such words

avoids a strict numerical boundary to the specified parameter. Its range must be interpreted in its technological and stylistic context. We thus consider how the term ... used in the patent specification, the prosecution history, and other claims. It is appropriate to consider the effects of varying that parameter, for the inventor's intended meaning is relevant. Extrinsic evidence of meaning and usage in the art may be

helpful in determining the criticality of the parameter....

Id. at 1326 (citing and quoting *Paul Corp. v. Micron Separations, Inc.*, 66 F.3d 1211, 1217 (Fed.Cir.1995) (citations omitted)).

While stressing the importance of intrinsic sources for use as guidance on the meaning of disputed patent claim terms, the Federal Circuit has not altogether abandoned other, previously well-accepted sources, including dictionaries, to assist in the claim construction process. That court confirmed the continued availability of such sources in its claim construction tutorial in *Phillips*, stating that

[a]s we have noted above, however, we do not intend to preclude the appropriate use of dictionaries. Dictionaries or comparable sources are often useful to assist in understanding the commonly understood meaning of words and have been used both by our court and the Supreme Court in claim interpretation.

Phillips, 415 F.3d at 1322 (citations omitted).

The term "generally" is defined by various dictionaries as follows:

<i>Source</i>	<i>Definition</i>
Merriam-Webster Collegiate Dictionary 485 (10th ed. 1993)	In disregard of specific instances and with regard to an overall picture
American Heritage Dictionary 732 (4th ed. 2000)	For the most part; Without reference to particular instances or details; Not specifically

The term "substantially" is defined by various authoritative dictionaries as follows:

<i>Source</i>	<i>Definition</i>
Merriam-Webster Collegiate Dictionary 1174 (10th ed. 1993)	Substantially great; Being largely but not wholly that which is specified
American Heritage Dictionary 1726 (4th ed. 2000)	Ample; sustaining; Considerable in importance, value, degree, amount or extent

As can be seen, these various dictionary definitions support the notion, advocated by PPC, that the term "substantially" suggests a greater degree of similarity than does "generally". Those sources do not, however, disclose definitions which would be different than those ordinarily attributed by a person of ordinary skill in the art, or by an average juror, nor do they support a readily-apparent basis for distinguishing the two adjectives.

I note that the terms which these two words modify, particularly the cylindrical requirement for the body portion and bore referenced in claim 23, do not appear to be of great significance to the invention, which seems to focus, at least in terms relevant to this case, upon the collet assembly associated with the female terminal of the filter assembly and the prescribed method of sealing to prevent penetration of moisture in

that end of the device. Whether the body portion of the filter device is substantially cylindrical, generally cylindrical, or perhaps even not very cylindrical, does not appear to have significance to the novel aspects of the invention disclosed in the '343 patent.

This notwithstanding, guidance regarding these terms may ultimately prove useful. In order to provide that direction I return to the notion, supported by consideration of the manner of usage in the '343 patent, that these two terms denote differing degrees of similarity. This notion comports not only with the dictionary definitions set forth above, but additionally consideration of other cases. Thus, for example, the Federal Circuit has approved of a definition of the term "generally", used to modify a term of mathematical or geometrical consequences-in that instance the term "parallel", which is not exceedingly different from the concept of cylindrical-as admitting of "some amount of deviation from exactly parallel." *Anchor Wall Sys.*, 340 F.3d at 1311. "Substantially", on the other hand, has been variously defined in cases to mean something more. *See, e.g., Epcos Gas Systems, Inc. v. Bauer Compressors, Inc.*, 279 F.3d 1022, 1031 (Fed.Cir.2002) (approving of construction of term "substantially below" to mean below "to a considerable degree", further interpreting "considerable" to mean "large"); *Ecolab*, 264 F.3d at 1366-69 (construing the phrase "substantially uniform" to mean "largely but not wholly" in the same form, based upon the dictionary meaning and lack of any indication in the claim language, written description or prosecution history, suggesting that a contrary meaning was intended); *but see Cordis Corp. v. Medtronic Ave., Inc.*, 339 F.3d 1353, 1360 (Fed.Cir.2003) (construing term "substantially uniform thickness" to denote an approximation).

Accordingly, against this backdrop, I will recommend construction of the term "generally cylindrical" as "permitting some amount of deviation from exactly cylindrical", and of "substantially cylindrical" as meaning "cylindrical to a considerable and large degree".

i) *Adjacent*

Claim 23 of the '343 patent uses the term "adjacent" in two places, describing the input end of the conductor and the input end of the housing as being adjacent, and additionally utilizing that term to describe the relationship between the elastomeric seal and the insulator member. The parties request construction of the term "adjacent" as employed in this claim language. Noting that both of those disclose a relationship in which one component surrounds the other, and further citing intrinsic evidence in the form of representations made during the prosecution history, PPC asks the court to eschew the commonly understood meaning of the term and proposes a more restrictive definition, which would require a relationship between the two components specified where one is "surrounded by" the other. ARCOM, by contrast, urges the court to accord that term its ordinary every day meaning, of "nearby, not distant," citing various dictionary sources and noting the absence of any indication in the intrinsic history that a more narrow definition was contemplated by the patent drafters.

The term "adjacent" is a relatively common term with no particular technical meaning. Dictionary definitions of the term, while varying, typically include concepts such as "not distant" and "adjoining". *See, e.g., American Heritage Dictionary* 21 (4th ed.2000) (defining "adjacent", in part, as "close to; lying near; next to; adjoining"); *Merriam-Webster Collegiate Dictionary* 14 (10th ed.1993) (defining "adjacent", in part, as "not distant; nearby"). Consistent with these indicators, several courts have construed the term, as used in other patents, to reference such a proximate physical relationship. *See, e.g., Free Motion Fitness, Inc. v. Cybex Int'l, Inc.*, 423 F.3d 1343, 1349 (Fed.Cir.2005) (construing the term adjacent to mean "not distant", based in part on relevant dictionary definitions); *Centennial Molding, LLC v. Carlson*, 401 F.Supp.2d 985, 991 (D.Nev.2005) (following dictionary definition defining adjacent as "close to; lying near; near or close to

but not necessarily touching."); *Ricoh Co., Ltd. v. Katun Corp.*, 380 F.Supp.2d 418, 425-26 (D.N.J.2005) (interpreting the term to mean "relatively near, or nearby"); *Lifetime Products, Inc. v. GSC Tech. Corp.*, 321 F.Supp.2d 938, 942 n. 2 (N.D.Ill.2004) (interpreting the term to mean "not distant").

Referring to the portions of the '343 specification, including notably the preferred embodiment, PPC points out that a "surrounding" relationship is disclosed by both elastomeric seal and insulator description, where the term "adjacent" is utilized to describe the two, and also with respect to the conductor and housing input ends. Reference to the preferred embodiment, however, does not ordinarily limit a claim term unless an intention to accept such a reduction in scope is specifically and clearly manifested. *See Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 906 (Fed.Cir.2004); *see also* *Decisioning.com, Inc. v. Federated Dep't Stores, Inc.*, 527 F.3d 1300, 2008 WL 1966704, at (Fed.Cir. May 7, 2008) ("[The] description of a preferred embodiment, in the absence of a clear intention to limit claim scope, is an insufficient basis on which to narrow the claims.") (citing *Liebel-Flarsheim*).

PPC also offers portions of the prosecution history to further support its proffered construction of this term. *See* Muldoon Decl. (Dkt. No. 192-15) Exh. K at 20, PPC008401. That excerpt, however, merely describes the "surrounding" relationships between the elastomeric seal and the insulator and female connector, but does not in any way evidence an intention on the part of the patent applicants to distance themselves from prior art by limiting their use of the term "adjacent" in the patent, particularly as describing the relationship between the input ends of the insulator member and conductor and housing as a "surrounding" relationship. Accordingly, I recommend that the court construe the term "adjacent" to mean "nearby, not distant".

j) Bore

Claim 23 of the '343 patent describes "a generally cylindrical bore" extending through the length of the insulator member in which a conductor is situated. The parties seek clarification regarding the term "bore" as used within that claim.

The controversy over this term does not implicate the physical or geometric characteristics of a bore, both parties agreeing that it describes a void which is generally cylindrical or circular in shape. Instead the parties' disagreement centers upon whether the manner in which the void is created is significant. ARCOM advocates for a simple definition which would describe only the physical characteristics, requesting that the term be construed to mean "a generally cylindrical hole." PPC, by contrast, requests that the term be defined to include the manner in which it is created, urging as a definition a "hole made by removing material with a rotary cutting instrument."

Dictionary definitions related to bore generally focus upon physical attributes, interpreting the term variously to include a cylindrical hole or hollow such as the intersurface of a hollow cylindrical object. *See, e.g.*, *American Heritage Dictionary* 213 (4th ed.2000) (defining the term, in part, as "[t]he interior diameter of a hole, tube, or cylinder"); *Merriam-Webster's Collegiate Dictionary* 133 (10th ed.1993) ("the long [usually] cylindrical hollow part of something"). While it is true, as PPC argues, that when used as a verb the term "bore" generally specifies a method for creating such a space, and some definitions of the term, when utilized as a noun, make reference to that fact, *see, e.g.*, *Merriam-Webster's Collegiate Dictionary* 133 (10th ed.1993) ("a [usually] cylindrical hole made by *or as if by* boring") (emphasis added), none appear to include this as an absolute requirement, eliminating the possibility of creating the void through other means such as, for example, molding.

In support of its request for the additional restriction governing the manner in which the bore is constructed, PPC points to various places within the '343 patent where a similarly shaped void is referred to as a "hole" or "opening", and further suggests that use of the terms "cylindrical" and "generally cylindrical" in conjunction with bore would unnecessarily be redundant if ARCOM's definition were to be accepted.

However indiscriminately those terms may have been used, it is clear that the term "bore" describes the physical characteristics of the opening in question; nowhere in the patent, including the specification, or the prosecution history is there reference specifically indicating an intended limitation to be dependent upon the manner in which it was created. Accordingly, resorting to traditional dictionary definitions and common usage of the term, I recommend a construction of the term "bore" as meaning "a generally cylindrical hole made by or as if by boring through the use of a rotary instrument."

k) "Through"

The term "through" is yet another of those seemingly common and well understood words over which the parties now do battle. The term, which appears in twenty of the twenty-nine claims of the '343 patent, is utilized, for example, in claim 23 to convey that the cylindrical insulator member specified contains a "generally cylindrical bore through its length". At issue is whether "through" was intended by the inventors to mean "completely through", in that instance signifying that the generally cylindrical bore must extend through the entire length of the insulator member. Arguing that the definition of the term is generally accepted and needs no further refinement, ARCOM urges a construction that "through" means "through". PPC counters by asserting that the modifier "completely" should be added to flesh out the patentees' intended meaning, bolstering its argument by noting the use of "substantially through" elsewhere in the patent.

As PPC argues, in general parlance the term "through" normally conveys a concept which includes traversing completely from one end or side of an object to the other. *See, e.g.,* American Heritage Dictionary 1803 (4th ed.2000) (defining in the term "through" as "[i]n one side and out the opposite or another side of; ... [f]rom beginning to end; completely ...; [t]hroughout the whole extent or thickness"); Merriam Webster Collegiate Dictionary 1230 (10th ed.1993) (describing the term as indicating "movement into at one side or point and out at another and [especially] the opposite side of ...; over the whole surface or extent of; throughout"). ARCOM argues that in this instance, however, adoption of this generally-accepted interpretation would effectively exclude the preferred embodiment from the scope of the claim, a circumstance which strongly indicates that the contemplated construction cannot be correct. *See* Vitronics, 90 F.3d at 1583-84. In support of its position, ARCOM notes that the conductors (96a) disclosed in Figures 3A and 3B, depicting the preferred embodiment, do not extend the entire length of the bore, (96b). This argument, however, ignores the fact that those drawings reveal a conductor which does in fact extend through the entire length of the bore in the insulating member, excluding the tapered cut in the insulation immediately adjacent to the bore.

Interpretation of "through" to convey a complete traversing of an element from one end to the other appears to be supported by the fact that in the '343 patent the term is modified when something less is intended. In claims 1 as well as 5 through 12, for example, the '343 patent discloses a collet terminal which is "extending *substantially through* the hole of [the/said] insulator", in stark contrast to claims 13, 18, 23 and 25, where the conductor extends "through the [opening/bore] of the insulator member." *See, e.g.,* '343 Patent 7:55, 11:1-2 (emphasis added).

PPC's proposed construction also derives support from the prosecution history associated with the '343 patent. In January of 2003, for example, after rejection of certain claims, the patent applicants amended claims 1, 5, and 6, which had previously recited "a collet terminal extending through the hole of the insulator" to add the modifier "substantially" to the concept of throughness. *See* Muldoon Decl. (Dkt. No. 192-20) Exh. P, PPC Exh. 87 at PPC008284-85. The inventors clarified the intent in making that change, stating that it was "to [make] clear that Claims 1, 5, and 6 do not require the collet termination to extend completely through the insulator." FN14 *Id.* at PPC008260, p. 8.

FN14. At that time, in addition to amending claims 1, 5 and 6, the inventors also added claims 6 through 12, all of which likewise recited a "collet [terminal] extending substantially through the hole of [the] said insulator." *Id.* at p. 3.

In view of the use of the modifier "substantially" in connection with "through" at various places within the claims of the '343 patent, as well as this prosecution history, and consistent with the overwhelming weight of authority among accepted dictionary sources, I recommend a definition of the term "through", as used in the disputed claims, in such a way as to convey the concept of extending completely from one end of the object to another, defining that term to mean "traversing an element from one end to the other."

3. *The* "5 Patent

The "5 patent, held by PPC as assignee, is entitled "Diplex Circuit Forming Bandstop Filter". Bandstop filters, utilized frequently in the CATV industry, are devices designed to block transmissions to certain specified frequency ranges while allowing others to pass. FN15 "5 Patent 1:23-25.

FN15. A typical use of a bandstop filter in a CATV setting would be to block certain premium channels for which a subscriber has not paid. '935 Patent 1:25-31.

The patented invention described in the "5 patent begins with a diplexer, a frequency-selective device which either separates radio frequency ("RF") signals entering the device or reunites them upon their exit. "5 Patent 1:9-10. At the input diplexer, the signal is separated into a range of high frequencies and a range of low frequencies which then pass, respectively, through a highpass filter and a lowpass filter, connected in parallel, designed to permit certain frequency ranges to pass, while blocking others. As the signals output the two filters, they are combined through use of a second diplexer.

Certain of the "5 patent claim terms are not at issue, and the parties having jointly proposed construction of "bandstop filter for CATV applications", "input" (bandstop filter), "input line" (bandstop filter), "output" (bandstop filter); "output line" (band stop filter); and "node". Having reviewed those jointly proposed definitions and found them to be reasonable, I therefore recommend their inclusion in a final claims construction order.

The parties now seek findings with regard to several disputed claims set forth in claims 1, 3, 14, 18, 20, 21 and 22, including "diplexer", "first/second diplexer", "said diplexers are frequency selective", "first/second filter means" and "surface mounted" and "surface mounted type". FN16 While the parties agree as to the proposed construction for the term "bandstop filter for CATV applications", PPC also requests that the court consider whether the phrase, which appears in the preamble, is limiting in nature.

FN16. Not all of these claims are implicated in PPC's infringement cause of action against ARCOM based upon the '5 patent. PPC nonetheless argues that interpretation of terms contained within those claims not involved in this suit is necessary in view of invalidity arguments raised by ARCOM in defense of the infringement counterclaims asserted under that patent.

a) *Bandstop Filter for CATV Applications*

PPC requests that the court construe the term "bandstop filter for CATV applications" as limiting the claims in which it is included, despite its prambulatory nature. Such a request would generally trigger a survey to determine whether the language is purely introductory in nature, or instead was intended by the patentee to import limitations into the language of the claim itself, utilizing well-established principles which were previously addressed in this report.FN17 This exercise takes on less significance in this setting, however, since it is the patent holder who in this instance is advocating for resort to the preamble to limit the '935 patent claims in scope. In any event, application of generally accepted principles supports PPC's proposed definition of this dispute phrase.

FN17. *See* pp. 30-32, ante.

Leaving aside the method claims disclosed in claims 20, 21 and 22, the '5 patent is comprised of two independent claims, claims 1 and 14, and seventeen dependent claims all of which at the outset reference a "bandstop filter". Moreover claim 1, as well as the specification itself, make clear that the invention described in the '5 patent was intended for use in CATV applications. While the term "bandstop filter" could be construed as part of the introductory language of the nineteen claims of the '5 patent which include that phrase, it should be noted that "a preamble generally limits the claimed invention if it recites essential structure or steps, or if it is necessary to give life, meaning, and vitality to the claim." *NTP, Inc. v. Research In Motion, Ltd.*, 418 F.3d 1282, 1305 (Fed.Cir.2005) (quoting *Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed.Cir.2002)); *see also* *Pitney Bowes*, 182 F.3d at 1305; *Loctite Corp.*, 781 F.2d at 866. As the Federal Circuit has noted, "[w]hen limitations in the body of the claim rely upon and derive antecedent basis from the preamble, then the preamble may act as a necessary component of the claimed invention." *NTP, Inc.*, 418 F.3d at 1305 (citation and internal quotations omitted).

In this instance not only the preamble, but indeed the patent title and specification, make clear that the invention specified "relates to filter circuits of the type used in cable television (CATV) applications, and more specifically to bandstop filters." *See* '5 Patent 1:6-9, 2:32-56. Moreover, the specification discloses that all of the objects of the invention are directed to a "bandstop filter", leaving little doubt that the preamble term "bandstop filter for CATV applications" was intended by the patentees as a limitation on the scope of the patent's claims. *See* *Poly-America L.P. v. GSE Lining Tech., Inc.*, 383 F.3d 1303, 1310 (Fed.Cir.2004).

Under these circumstances, and particularly given the pure number of references in the body of the specification to the term "bandstop filter", I therefore recommend a finding that it was intended by the inventor to provide limiting language consistent with the parties' agreed definition of the term "bandstop filter for CATV applications" to mean "a device that blocks a defined range of frequencies of a CATV signal, while passing the frequencies above and below the defined range."

b) *Diplexer*

The '5 patent defines a "diplexer" as "a device which separates or combines RF signals." '5 Patent 1:9-10. The specification goes on to describe the function of the diplexer, noting that "RF signals are divided by the first diplexer between those at frequencies which pass the highpass and those which pass the lowpass filters." *Id.* at 2:5-8. The specification further notes that "[s]ignals passing through filters 16 and 18 are combined at node 20 of second diplexer 22 and are carried by output line 24." *Id.* 3:15-17.

There appear to be two separate points of contention with regard to this term. While the '5 patent specifically defines the term "diplexer" as "a device which separate or combines RF signals[,]" '5 Patent 1:9-10, ARCOM has requested that the court expand upon this definition to make it clear that a node could itself constitute a diplexer, an extension which PPC resists. For its part, PPC asserts that a person of ordinary skill in the art would understand that a node alone cannot perform the signal splitting or combining function, and that from the specification and patent claims, would appreciate that a diplexer is something more than a mere node. PPC goes on to request that the definition specified in the '5 patent be refined to reflect that the signal separation or combination function served by the diplexer can occur in both the forward and the return paths.

An interpretation of the term "diplexer" which would encompass within it a mere node is neither consistent with the parties' proposed definition of the term "node", nor does it gain support from the patent itself. A node has been defined by the parties as simply a "point of connection or junction where electrical lines or components meet." In other words, a node may serve the function of joining signals. As PPC effectively argues, however, a person of ordinary skill in the art would understand that signal separation on a basis which discriminates among frequencies requires electrical components in addition to a mere node. *See* Elderling Decl. (Dkt. No. 192-36) para. 4-5; *see also* '5 Patent 2:5-15.

The assertion by PPC that a diplexer is something more than a simple node is also supported by the patent specification and claims. The specification identifies a first node (12) as existing within the first diplexer (14), and a second node (20) within a second diplexer (22), referring to Figure 1 of the '935 patent. Had the inventor intended the terms to be co-extensive, there would have been no need to have both items separately identified on the same drawing. It should also be noted that in claim 1, for example, the patentee has stated that the filter specified is comprised of "a first diplexer to which said input is connected at a first node;" '5 Patent 6:43-44. Later, claim 1 references "a second diplexer having a second node to which the said first output end of said lowpass filter, said second output end of said highpass filter and said output are all connected." *Id.* at 6:58-59. ARCOM's proposed definition disposes of the distinctions which are inherent in these limitations.

Turning to the second disputed issue, I note that as ARCOM effectively argues, the '5 patent does not specify path direction when discussing the diplexer. While functionally speaking it may be true, as PPC argues, that the effect of placing the prescribed diplexer filter in a two-way CATV which includes both forward and return signals will be as PPC describes, the patent language itself does not speak in those terms. Consequently, I recommend against the refinement that PPC now argues.

PPC's proposed definition is belied by the terms of the patent specification itself. Describing figure 1, "an illustrative flow or block diagram of the circuit of the invention", the specification identifies the line at the left and of the invention (10) as the "input line", provided that the signals then enter and are divided, some

to flow to the upper leg of the circuit, or the lowpass filter, with the others routed to the highpass filter. "5 Patent 2:60-66. After certain signals are permitted to pass, while others are blocked, they are described as being combined and carried to the output line (24). *Id.* at 3:9-16. Thus, adopting the inventor's lexicography as well as the disclosures within the patent itself, I recommend a definition of the term "diplexer" as "a device which separates or combines RF signals", and find no basis to further refine the meaning of "diplexer" by adopting PPC's proposed definition which would essentially convert the "5 patent into a bi-directional CATV system.FN18

FN18. Based upon this determination I find no basis to further define the terms "first diplexer" and "second diplexer" as requested by PPC, and accordingly make a recommendation against such refinement, instead recommending that those terms be accorded no significance beyond their ordinary meaning as a first something and a second of the same element.

c) "*Said Diplexers Are Frequency Selective*"

Claim 21 of the "5 patent specifies that the diplexers recited "are frequency selective." "5 Patent 8:47-48. This feature is described in the patent specification as being attributable to the diplexers contained within the highpass and lowpass filters, it being noted that

[s]ince the high and low frequency signals are divided and pass, respectively, through highpass and lowpass filters before being recombined, the filter is of the frequency-selective type

"5 Patent, 6:11-14. As the inventor, Steven Shafer, confirmed during his deposition, "[frequency selective] means we define where they [the frequencies] want to pass and reject,"-that is, defining cut off frequencies. ARCOM Exhibits (Dkt. No. 191-11) Exh. 10 at 225. The parties request clarification regarding the usage of this phrase.

Urging the declaration of its technical expert, Dr. Charles Aldering, PPC asserts that a person of ordinary skill in the art would interpret the "5 patent provision requiring frequency selective characteristics to mean that in order to provide the desired frequency isolation, the components utilized are reactive in nature, meaning they include capacitors and/or inductors, rather than merely resistors. Addressing the concept, however, the patent itself describes the first diplexer as dividing the RF signal contained in the input between frequencies passing in the highpass filter and those entering the lowpass filter, a result achieved by the fact that "[t]he diplexers are frequency selective, resulting in lower insertion loss due to frequency isolation of the two output ports." "5 Patent 2:13-15.

Once again PPC has urged a construction which does not necessarily follow from the plain language of the specification. The term "selective" is readily understood as related to the characteristic of selection or the act of selecting. Merriam Webster Collegiate Dictionary 1059 (10th ed.1993). During his deposition the "5 patent inventor acknowledged that the phrase "frequency selective" simply signifies the act of defining what frequencies to pass, and which to reject. Shafer Dep. (ARCOM Exhibit 10) at 225. While agreeing with PPC that a diplexer cannot be simply a node, I am unable to conclude that the frequency selection must be accomplished through a combination of inductors and capacitors. While this may be one method of accomplishing frequency selection, and one which is disclosed in the embodiments set forth in the "5 patent, this method of frequency selection is not specified in claim 21, and the record does not disclose any basis for limiting the desired frequency selection to this particular method.

Having carefully reviewed the record, I reject both proposed definitions of the phrase "said diplexers are frequency selective" as inconsistent with the patent claims and specification, and unsupported. Instead, having already suggested definition of the term a "diplexer", I recommend that the concept of frequency selective be defined as including the additional limitation that "the RF signals passing through the diplexer are divided based upon frequency or frequency range."

d) *First Filter Means/Second Filter Means*

Independent claim 14 of the '5 Patent specifies a bandstop filter for CATV applications including, as components, *inter alia*, a "first filter means for receiving signals ..." and a "second filter means for receiving signals...." ARCOM requests construction of these terms as they appear in that claim, urging that the first filter should be construed as "a low pass filter or equivalent thereof", and second filter mean should be defined as "a high pass filter or equivalent thereof." Noting that infringement of claim 14 has not been asserted in the case, PPC requests that the court decline ARCOM's invitation to construe those terms as contained within that claim.

When engaged in claim construction, "only those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy." *Vivid Technologies, Inc. v. American Sci. and Eng'g, Inc.*, 200 F.3d 795, 803 (Fed.Cir.1999); *Westvaco Corp. v. Viva Magnetics Ltd.*, No. 00 CIV. 9399, 2002 WL 31052870, at *2 S.D.N.Y. (Sept. 13, 2002) ("The principle that a court should construe only disputed terms is intended to avoid advisory opinions violative of Article III of the United States Constitution.") "[I]f a claim, an element of a claim, or an aspect of a claim is not material to a plaintiff's allegation of infringement, then a court need not and should not construe it as part of its *Markman* ruling." *Centillion Data Sys., Inc. v. American Mgmt. Sys., Inc.*, 138 F.Supp.2d 1117, 1120 (S.D.Ind.2001). The determination of when a case or controversy exists in a patent case "is evaluated on a claim-by-claim basis." FN19 *Jervis v. Webb Co. v. Southern Sys., Inc.*, 742 F.2d 1388, 1399 (Fed.Cir.1984) (internal citations omitted).

FN19. Even where a defendant asserts a declaratory judgment counterclaim seeking a determination of invalidity as to all the claims in a patent, if the plaintiff only asserts and litigates the infringement of certain claims, and the evidence in the record is insufficient to demonstrate the existence of a case or controversy regarding the remaining claims, it is unlikely that a court is required to construe the unasserted claims in the patent. *See Jervis v. Webb Co. v. Southern Sys., Inc.*, 742 F.2d 1388, 1399 & nn. 7-8 (Fed.Cir.1984).

As both parties recognize, the relevant portions of claim 14 are drafted in classic "means-plus-function" format. Such claims are subject to specific provisions of 35 U.S.C. s. 112 (paragraph 6) to include the structure disclosed in the patent for performing the function recited in the claim, as well as any structural equivalents thereof. *Cybor Corp. v. FAS Technologies Inc.*, 138 F.3d 1448, 1457 (Fed.Cir.1998); *see also Sage Products, Inc. v. Devon Indus., Inc.*, 126 F.3d 1420, 1428 (Fed.Cir.1997) (a "means plus function" analysis involves identifying the specified function, then determining the components described in the patent specification that perform that function). In claim 14 there are three stated functions, including 1) receiving of signals, 2) passing of certain signals to the filter output, and 3) blocking of other frequencies. While ARCOM's proposed definition of first filter means, and second filter means, as comprising lowpass and highpass filters or their equivalents, respectively, may include the concept of passing and blocking in part, it does not take into consideration that the structure denoted in the specification demonstrates the receipt of a signal from an input terminal and a separating and filtering of signal and includes, in the case of

the highpass filter, inductor L01, a node, L1, C1, L2, C2, L3, C3, C4, C5, L4, C6 and C7. Figure 2 of the patent discloses that the high pass filter does not include inductors L01 and L06. Accordingly, ARCOM's proposed definition, which would eliminate the receiving function, does not comport with the patent and patent specification itself.

In any event, because claim 14 is not an issue in this case I recommend that the court not construe the means-plus-function terms of that claim.

e) Surface Mounted/Surface Mount Type

The last of the disputed terms of the "5 patent relates to surface mounting, a concept which appears in claims 3, 18 and 22. ARCOM asserts that a person of ordinary skill in the art would understand that use of these terms was meant to imply that the invention was capable of being "attached to one or both sides of a substrate (printed circuit board) without the use of holes or feed through mechanical attachments[.]" and that surface mount type generally connotes "a chip-level integrated circuit (IC) or component package designed to be surface mounted." PPC responds that once again ARCOM is requesting interpretation of terms which are not included in any of the claims asserted in the case, and argues alternatively, that in any event they are terms readily capable of being understood by a person of ordinary skill in the art, and by a jury.

Describing the mounting characteristics of the invention, the "5 patent specifications states as follows:

Also, by using surface mount components with the highpass and lowpass filter components mounted on opposite sides of a single circuit board, the band stop filter is embodied in an extremely compact physical package. A fully operational bandstop filter of the present invention may be realized by mounting commercially available inductors and capacitors in the configuration shown in FIGS. 3a and 3b on a circuit board having an area of about 250 square millimeters on each surface, although it will be understood that design options using both larger and smaller boards are possible within the scope of the invention.

"5 Patent 6:20-28.

As was previously discussed, only those terms in controversy must be construed during claim construction. *Vivid Technologies*, 200 F.3d at 803. As PPC argues, the terms "surface mount type" and "surface mounted" appear to be clear and do not require further construction. To do so could potentially result in restriction of the patent beyond the intended meaning attributed by the drafters. In any event, because the disputed terms do not appear in any of the patent claims asserted by PPC in its infringement counterclaims, I recommend that the court reject ARCOM's efforts to seek clarification of those patent terms.

IV. SUMMARY AND RECOMMENDATION

The three patents in suit involve relatively simply mechanical and electronic devices described in the claims of those patents in terms many of which are readily understood by a lay person, without the need for technical or expert assistance or further refinement. In certain instances, however, those claims make reference to terms the meaning of which are not readily apparent, in which case further refinement is required. Based upon the foregoing, it is hereby

RECOMMENDED that the court affix the following meanings to the agreed-upon and disputed claim terms of the three patents in suit:

*Agreed Upon '838
Terms*

Construction

Attenuates	Reduces the level or strength of a signal
Attenuation	Reduction in the level or strength of a signal
First Passband	First defined range of frequencies over which signals are passed
Forward Path	Range of frequencies used for transmission of signals from a centralized unit to a user unit in a two-way communication system
Passband	Defined range of frequencies over which signals are passed
Passive	Not requiring a source of a electrical power to operate
Return Path	Range of frequencies used for transmission of signals from a centralized unit to a in two-way communication system
Stop Band	Defined range of frequencies over which signals are blocked
Stop Band Which Attenuates Signals	Defined range of frequencies over which signals are blocked by reducing the level or strength of a signal

*Disputed '838
Terms*

Terminal	An electrical conductor through which signals enter and/or exit the return path filter
Filter	A device that blocks or suppresses signals at certain frequencies, while allowing signals at other frequencies to pass unimpeded
Passive Filter Network	A passive network-meaning that it does not require any electrical source-which is frequency selective, in that it blocks or suppresses signals at certain frequencies, while allowing signals at other frequencies to pass unimpeded
Coupled	A connection, or mutual relation, between two circuits that permits energy transfer between the two
Passive Attenuator Network/Circuit	A network/circuit of non-powered components that together have the effect of reducing or attenuating the level or strength of signals

Resistive Network A network of electrical components which includes one or more resistors and whose components, as a whole, exhibit a resistive character

Second Passband A second defined range of frequencies over which signals are passed

Agreed Upon '343 Terms

Input End (Conductor) Portion of the conductor that receives a conductive pin

Input End (Housing) Portion of the housing that includes at least the female first connector

Only a single No more than one

Output end (housing) Portion of the housing that includes at least the second connector

Disputed '343 Terms

Cable TV Electronic Filter Device An electronic device including within it a cable TV filter circuit

Cable TV Filter Circuit Any arrangement of a circuit component or circuit components, whether or not constituting a complete or identifiable filter circuit, which discriminates among frequencies of a cable TV signal, permitting some to pass unimpeded while blocking or attenuating others

Insulator Member A single piece of material surrounding all or a portion of the conductor in the female connector passageway that inhibits or prevents the flow of electricity between the conductor and the female connector

Elastomeric Sealing Member/Seal An elastic or rubber-like component that prevents or reduces the seepage of moisture

Body Portion The portion of the conductive housing centrally located between the threaded female connector at the input end of said housing and the output end, whether or not it includes a male connector, provided, however, that the body portion can overlap with the terminal

caps located at the input and output ends

Cylindrical Having the form or properties of a cylinder

Generally Cylindrical Permitting some amount of deviation from exactly cylindrical

Substantially Cylindrical Cylindrical to a considerable and large degree

Adjacent Nearby, not distant

Bore A generally cylindrical hole made by or as if by boring through the use of a rotary instrument

Through Traversing an element from one end to the other

*Agreed Upon '935
Terms Patent*

Bandstop Filter for CATV Applications Device that blocks a defined range of frequencies of a CATV signal, while passing the frequencies above and below the defined range

Input (bandstop filter) First conductive element for carrying signals into and out of the bandstop filter

Input line (bandstop filter) First conductive element for carrying signals into and out of the bandstop filter

Output (bandstop filter) Second conductive element for carrying signals into and out of the bandstop filter

Output Line (bandstop filter) Second conductive element for carrying signals into and out of the bandstop filter

Node Point of connection or junction where electrical lines or components meet

Disputed '935 Terms

Diplexer A device which separates or combines RF signals

First/Second Diplexer No further construction required

Said Diplexers are
Frequency Selective

The RF signals passing through the diplexer are divided based upon
frequency or frequency range

First/Second Filter Means

No construction required

Surface Mounted

No construction required

Surface Mount Type

No construction required

NOTICE: Pursuant to 28 U.S.C. s. 636(b)(1), the parties may lodge written objections to the foregoing report. Such objections shall be filed with the Clerk of the Court within TEN (10) days. FAILURE TO SO OBJECT TO THIS REPORT WILL PRECLUDE APPELLATE REVIEW. 28 U.S.C. s. 636(b)(1); Fed.R.Civ.P. 6(a), 6(e) and 72; Roldan v. Racette, 984 F.2d 85 (2d Cir.1993).

IT IS FURTHER ORDERED, that the Clerk of the Court serve a copy of this report and recommendation upon the parties in accordance with the local rules of this court.

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