

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

FUJITSU LIMITED,)	
)	
Plaintiff / Counter Defendant,)	
v.)	No. 09 C 4530
)	
TELLABS, INC., TELLABS OPERATIONS,)	
INC., and TELLABS NORTH AMERICA, INC.,)	
)	
Defendants / Counter Claimants.)	

MEMORANDUM OPINION OF REASONS FOR DENYING TELLABS’ MOTION
FOR SUMMARY JUDGMENT OF INVALIDITY OF THE ‘737 PATENT

JAMES F. HOLDERMAN, Chief Judge:

On September 27, 2012, this court denied “Tellabs, Inc.’s, Tellabs Operations, Inc.’s, and Tellabs North America, Inc.’s Motion for Summary Judgment of Invalidity of U.S. Patent No. 5,521,737” (Dkt. No. 479), stating, “Based on the materials before the court, the court finds that material disputes of fact exist precluding Tellabs’ requested summary judgment that the asserted claims of the ‘737 Patent were anticipated by the disclosures of the Hicks References (EP654 and the ‘849 Patent) or rendered obvious by the disclosures of the Hicks References in combination with the disclosures of the [Kinsel] Patent and the knowledge of a person of ordinary skill in the art in August 1989.” (Dkt. No. 953 (“9/27/2012 Order”).) The following memorandum opinion sets forth the court’s analysis with greater amplification.

BACKGROUND

On January 29, 2008, plaintiff Fujitsu Limited (“Fujitsu”)¹ filed its Complaint in the Eastern District of Texas against Tellabs, Inc. and Tellabs Operations, Inc.² alleging infringement of U.S. Patent No. 5,521,737 (the “‘737 Patent”). (Dkt. No. 1.) On March 21, 2008, Tellabs filed counterclaims for declaratory judgment of non-infringement of the ‘737 Patent and for declaratory judgment of invalidity of the ‘737 Patent. (Dkt. No. 21; *see also* Dkt. No. 441.) The case was transferred to this court on July 29, 2009 and was assigned the Northern District of Illinois case number 09 C 4530. On December 30, 2011, Tellabs filed its “Motion for Summary Judgment of Invalidity of U.S. Patent No. 5,521,737” (Dkt. No. 479 (“Tellabs’ SJ Mot.”)), arguing that the asserted claims of the ‘737 Patent, Claims 4, 5, 11 and 12, are invalid because those claims were anticipated by certain alleged prior art or, in the alternative, because those claims were made obvious by the alleged prior art.

Claims 4 and 11 are independent claims of the ‘737 Patent, and Claims 5 and 12 depend from Claims 4 and 11, respectively. This court construed the disputed claim terms of the ‘737 Patent in a memorandum opinion and order previously issued on September 29, 2011. (*See* Dkt. No. 379 (“9/29/2011 Order”) at 52-68 (construing the terms “second optical signal of a second wavelength,” “optical coupler,” and “branching the second optical signal from the first optical signal”).) Set forth below is the relevant claim language of the ‘737 Patent, with the disputed claim terms emphasized in italics and the court’s claim construction inserted in brackets:

¹ Co-plaintiff Fujitsu Network Communications, Inc. was dismissed from this lawsuit on August 14, 2008. (Dkt. No. 42.)

² On December 15, 2011, Fujitsu filed a First Amended Complaint adding Tellabs North America, Inc. as a defendant. (Dkt. No. 449.) The court refers to Tellabs, Inc., Tellabs, Operations, Inc., and Tellabs North America, Inc. collectively as “Tellabs.”

4. An optical amplifier for amplifying a first optical signal of a first wavelength and receiving a *second optical signal of a second wavelength* [a second optical signal of second wavelength that is different from the wavelength of the first wavelength], said optical amplifier comprising:

an optical fiber, doped with a rare earth element, having an input and an output;

a semiconductor laser emitting a pumping light beam to one of the input and the output of said optical fiber;

an optical coupler [a device that combines or splits signals], optically coupled to the input of said optical fiber, for receiving a first optical signal of the first wavelength and a *second optical signal of a second wavelength* [a second optical signal of second wavelength that is different from the wavelength of the first wavelength] having a different wavelength from the first wavelength, for introducing the first optical signal to the input of said optical fiber, and for branching the second optical signal; and

a signal receiver receiving the second optical signal.

5. An optical amplifier according to claim 4, further comprising:

a controller, coupled to said signal receiver, to detect information with which the second optical signal is modulated.

* * *

11. A method for amplifying an optical signal comprising the steps of:

emitting a pumping light beam;

receiving a first optical signal of a first wavelength and a *second optical signal of a second wavelength* [a second optical signal of second wavelength that is different from the wavelength of the first wavelength];

branching the second optical signal from the first optical signal [splitting the second optical signal from the first optical signal] for receipt by a receiver; and

inputting the pumping light beam and the first optical signal to a rare earth element doped optical fiber.

12. A method for amplifying an optical signal according to claim 11, further comprising the step of:

processing the second optical signal to detect information carried by the second optical signal.

(‘737 Patent at col.7 l.65-col.8 l.17; col.9 l.17-col.10 l.8.)

In its motion for summary judgment of invalidity, Tellabs relies on two nearly identical items of alleged prior art identified as “Published European Patent Application No. 0 260 654” (“EP654”) and U.S. Patent No. 4,768,849 (the “‘849 Patent”). (Dkt. No. 481 (“Tellabs’ SJ Mem.”) at 3-4.) It is undisputed that EP654 was published on March 23, 1988, and that the ‘849 Patent was issued on September 6, 1988—both prior to the August 31, 1989 date of invention for the ‘737 Patent. (Dkt. No. 518 (“Fujitsu’s SMF Resp.”) ¶¶ 11-14.) It is also undisputed that EP654 and the ‘849 Patent “contain identical disclosures.” (*Id.* ¶ 19.) For ease of reference, the court therefore adopts Fujitsu’s terminology in referring to both prior art references together as the “Hicks References,” while recognizing Tellabs’ position that each of these references, by itself, functions to anticipate the ‘737 Patent.³

Tellabs argues that the Hicks References anticipate the asserted claims of the ‘737 Patent under 35 U.S.C. §§ 102(a), (b) or (e), by explicitly disclosing “each element or step of independent claims 4 and 11 of the ‘737 Patent” and by inherently disclosing “each additional element or step recited in dependent claims 5 and 12 of the ‘737 Patent.” (Tellabs’ SJ Mem. at 1-2.) Tellabs further argues that “each element or step” of the asserted claims of the ‘737 Patent was rendered obvious under 35 U.S.C. § 103(a) by the disclosures set forth in U.S. Patent No.

³ Tellabs filed the “Declaration of Dr. A. Bruce Buckman in Support of Tellabs’ Motion for Summary Judgment of Invalidity of U.S. Patent No. 5,521,737” in support of its motion. (Dkt. No. 479-1 (“Buckman Declaration”).) EP654 is included in the record as Exhibit 4 to the Buckman Declaration, and the ‘849 Patent is included in the record as Exhibit 5 to the Buckman Declaration. (*See* Dkt. No. 479-10.) John W. Hicks, Jr. is listed as the inventor on both references.

3,714,437 (the “Kinsel Patent”),⁴ which issued on January 30, 1973, in combination with the knowledge of a person of ordinary skill in the art at the time of the claimed invention, e.g. August 31, 1989. (Tellabs’ SJ Mem. at 2.)

Fujitsu contends that the Hicks References do not disclose a “second optical signal,” a “signal receiver,” a separate “optical coupler,” or a “controller” within the meaning of Claims 4, 5, 11 and 12 of the ‘737 Patent, in large part based on Fujitsu’s contention that “[t]he Hicks References have nothing to do with signals used internally at an optical amplifier to assist in the amplification operation.” (Dkt. No. 515 (“Fujitsu’s Resp.”) at 18; *see also* 14-26.) Fujitsu also asserts that “[t]he [Kinsel] Patent supplies nothing to the Hicks References that would lead to obviousness of Claims 4, 5, 11 and 12 of the ‘737 Patent.” (*Id.* at 28.)

LEGAL STANDARD

Under Federal Rule of Civil Procedure 56(a), summary judgment is appropriate “if the movant shows that there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law.” Fed. R. Civ. P. 56(a). The court’s role in reviewing a motion for summary judgment is simply “to determine based on the record whether there is a genuine issue of material fact requiring trial.” *Costello v. Grundon*, 651 F.3d 614, 636 (7th Cir. 2011). In performing this analysis, the court views the evidence in the light most favorable to the non-movant. *Berry v. Chicago Transit Authority*, 618 F.3d 688, 691 (7th Cir. 2010). The court does not, however, “weigh the evidence or decide which inferences should be drawn from the facts.” *Costello*, 651 F.3d at 636. If there is no genuine issue of material fact requiring trial, summary

⁴ The Kinsel Patent is included in the record as Exhibit 6 to the Buckman Declaration. (*See* Dkt. No. 479-10.)

judgment is appropriate in favor of the movant. *Berry*, 618 F.3d at 690-91.

While patents are presumed to be valid, claims of patent infringement are subject to the defense of invalidity. 35 U.S.C. § 282. A patent is invalid if its claimed subject matter is anticipated or obvious, as defined by statute. *See generally* 35 U.S.C. §§ 102, 103. “The presumption of validity . . . requires those challenging validity to introduce clear and convincing evidence on all issues relating to the status of a particular reference as prior art.” *Sandt Technology, Ltd. v. Resco Metal & Plastics Corp.*, 264 F.3d 1344, 1350 (Fed. Cir. 2001). “[S]ummary judgment is inappropriate if a trier of fact applying the clear and convincing standard could find for either party.” *Oney v. Ratliff*, 182 F.3d 893, 895 (Fed. Cir. 1999).

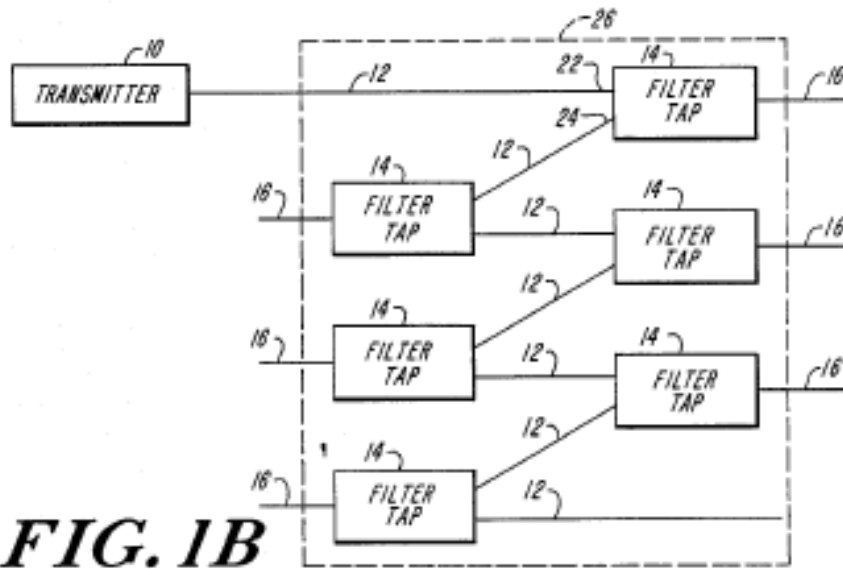
ANALYSIS

The court begins with a brief description of the invention disclosed in the Hicks References. The Hicks References disclose a “filter tap” for use on a “main trunk line carrying optical signals on a plurality of bands” in an optical communications system. (‘849 Patent,⁵ Abstract.) The filter tap is aimed at “removing or injecting signals in a selected band of channels . . . with minimal perturbation of signals in nonselected bands.” (‘849 Patent at col.1 ll.8-10.)

For example, as disclosed in Figure 1B of the Hicks References (below), an optical “hub or node” **26** consisting of a “plurality of filter taps” **14** acts to remove “several or all of the bands from the [main] trunk line” **12** by directing “[a] different band of channels . . . to each of the branch lines” **16**. (‘849 Patent at col.4 ll.32-37; *see also* ‘849 Patent col.4 ll.17-19 (“Each filter tap **14** removes a selected band of channels from the main trunk line **12** and directs the selected

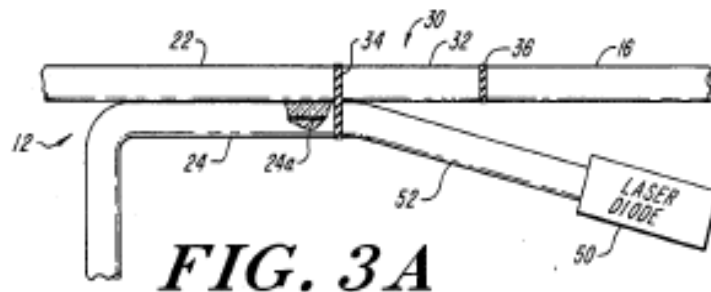
⁵ For ease of reference the court cites only to the ‘849 Patent, while recognizing that all disclosures of the ‘849 Patent are also present in EP654.

band to a branch line 16.”.) “For each filter tap 14, there is an input portion 22 and an output portion 24 of the main trunk line 12.” (‘849 Patent at col.4 ll.39-41.) “The branch line 16 is an optical fiber which typically connects to a photodetector . . . which converts the optical signal into an electrical signal.” (‘849 Patent at col.4 ll.19-22.)



Each filter tap, in turn, includes a “resonant optical cavity” 30 having an optical fiber 32 with “dielectric mirrors” 34 and 36 coupled to each end. (‘849 Patent at col.4 ll.43-46; see also Figure 3A (below).) The input portion 22 and output portion 24 of the main trunk line 12 are coupled directly to one mirror, and the branch line 16 is coupled directly to the other mirror. (‘849 Patent at col.4 ll.46-49, 55-57.) The dielectric mirror coupled to the main trunk line “reflects typically 90% to 99% of the incident power over the spectrum of interest,” while “the energy at the resonant wavelength band is transmitted through the cavity 30 onto branch line 16.” (‘849 Patent at col.5

ll.12-13, 19-20.)



The '849 Patent also discloses the use of an optical amplifier in conjunction with the disclosed filter tap. Figure 3A of the '849 Patent (above) shows an arrangement “utiliz[ing] optical pumping to provide optical amplification of the signals on the main trunk line.” ('849 Patent at col.6 ll.18-20.) This arrangement includes a “laser diode **50** operating at an appropriate optical pumping wavelength . . . coupled by means of an optical fiber **52** to the dielectric mirror **34**.” ('849 Patent at col.6 ll.20-22.) In this embodiment, “a section of the output portion **24** at or near the couple is doped with neodymium or erbium” to produce “optimal pump power . . . in accordance with known optical pumping techniques.” ('849 Patent at col.6 ll.26-28.)

Having generally described the disclosures of the Hicks References, the court now turns to an analysis of the parties' respective arguments regarding the validity of the '737 Patent.

I. Anticipation

“[D]etermining whether a prior art reference discloses each and every limitation of the claim expressly or inherently is a factual question . . . contingent on the proper claim construction.” *Akamai Tech., Inc. v. Cable & Wireless Internet Servs., Inc.*, 344 F.3d 1186, 1192 (Fed. Cir. 2003) (internal citation omitted). “[T]he dispositive question regarding anticipation is

whether one skilled in the art would reasonably understand or infer from the prior art reference's teaching that every claim [limitation] was disclosed in that single reference." *Id.* at 1192-93 (quoting *Dayco Prods., Inc. v. Total Containment, Inc.*, 329 F.3d 1358, 1368 (Fed. Cir. 2003)).

A. *Second Optical Signal*

Fujitsu first disputes whether the Hicks References disclose the claim limitation of a "second optical signal" as set forth in the asserted claims of the '737 Patent and as construed by the court.

In this court's September 29, 2011 claim construction opinion, the term "second optical signal of a second wavelength" was construed to mean "a second optical signal of second wavelength that is different from the wavelength of the first wavelength." (9/27/2011 Order at 61.) Claim 4, on its face, further requires that the second optical signal (1) be received by the optical coupler "for branching" and (2) be received by the signal receiver. ('737 Patent at col.8 ll.5-12.) Similarly, the method disclosed in Claim 11 requires (1) "receiving" the second optical signal and (2) "branching the second optical signal from the first optical signal for receipt by a receiver." ('737 Patent at col.9 l.19-col.10 l.2.)⁶ Dependent Claims 5 and 12 further require the second optical signal to be "modulated" with, or carry, information. ('737 Patent at col.8 ll.15-17; col.10 ll.7-8.)

Fujitsu argues that, as a matter of "language, syntax, and logic" (Fujitsu's Resp. at 11), the asserted claims of the '737 Patent also require that the second optical signal carry

⁶ As construed by the court, the "branching" method disclosed in independent Claim 11 requires "splitting the second optical signal from the first optical signal." (9/27/2011 Order at 68.)

information that is “used **internally** by the claimed optical amplifier itself.” (*Id.* at 18 (emphasis in original).)⁷ The plain language of Claims 4, 5, 11, and 12 does not support Fujitsu’s argument. Claims 4 and 11 do not require that the second optical signal be used in any way other than to be “receiv[ed]” and “branch[ed].”⁸ Claims 5 and 12 require only that the second optical signal carry “information.” There is no language in any of the four asserted claims of the ‘737 Patent that identifies the type of information that is to be carried by the second optical signal, or the use to which such information must be put. This court has construed the term “second optical signal of a second wavelength” at the parties’ request, giving the phrase its ordinary meaning as proposed by Fujitsu in its claim construction briefing. To the extent Fujitsu now seeks additional limitations on the meaning of “second optical signal,” the court declines to engage in further claim construction at this stage of the litigation.

Fujitsu does not dispute that the Hicks References disclose “an optical communication system carrying a plurality of optical signals having different wavelengths” (Tellabs’ SJ Mem. at 14), and thus disclose “a second optical signal of second wavelength that is different from the wavelength of the first wavelength.” (*See also* ‘849 Patent at col.2 ll.39-40 (disclosing “a main trunk line carrying optical signals on a plurality of bands of channels”).) It is also undisputed that the Hicks References disclose a second optical signal that is “branched” from a first optical signal of a different wavelength, before being “received” elsewhere in the system. Finally,

⁷ Although Fujitsu twice notes that “the ‘737 Patent is directed to the transmission of supervisory information on a supervisory channel through an optical amplifier,” (Fujitsu’s Resp. at 1, 17), Fujitsu denies taking the position that the second optical signal must carry “supervisory control information.” (Dkt. No. 589 (“Fujitsu’s Sur-Reply”) at 3.)

⁸ Fujitsu’s arguments regarding the limitations of the “optical coupler” and the “[signal] receiver” are addressed in detail below.

Fujitsu does not dispute that the second optical signal disclosed in the Hicks References is “modulated” with “information” as required by Claims 5 and 12. (*See* ‘849 Patent at col.1 ll.22-24 (describing the context for the Hicks References, wherein “[a] plurality of modulated channels [is] carried on the optical fiber simultaneously to increase its information-carrying capability”).) The court therefore finds there is no genuine dispute as to the material fact that a person of ordinary skill in the art in August 1989 would have reasonably understood the claim limitation of a “second optical signal” to be disclosed in the Hicks References.

B. *Signal Receiver*

Fujitsu next argues that the Hicks References did not disclose the claim limitation of a “[signal] receiver” as set forth by the asserted claims of the Fujitsu ‘737 Patent.

The only explicit claim limitation for the “signal receiver” element set forth in Claim 4 is that it must “receiv[e] the second optical signal.” (‘737 Patent at col.8 l.12.) Similarly, Claim 11 requires branching the second optical signal from the first optical signal “for receipt by a receiver.” (‘737 Patent at col.10 ll.1-2.)⁹

Fujitsu argues that the specification of the ‘737 Patent also requires that the signal receiver “perform[] decoding of the received second optical signal.” (*Id.* at 21.) This interpretation is not supported by the plain language of Claim 4, which requires only that the signal receiver *receive* the second optical signal. (‘737 Patent at col.8 l.12.) Moreover, “claim terms are normally used consistently throughout the patent,” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005), and the additional limitation in Claim 5 of a “controller, coupled to

⁹ Claim 5 includes the additional limitation that the signal receiver must be coupled to the controller. (‘737 Patent at col.8 l.15.) The controller element of Claim 5 is discussed in Section D, *infra*.

said signal receiver, to detect information with which the second optical signal is modulated” (‘737 Patent at col.8 ll.15-17), suggests that the second optical signal has not yet been decoded or demodulated by the time it reaches the controller. Ignoring the plain language of the asserted claims, Fujitsu argues “[t]he ‘737 specification discloses that its claimed signal receiver performs decoding of the received second optical signal.” (Fujitsu’s Resp. at 21.) There are two problems with this argument. First, the specification language in question states specifically that the receiver decodes a “delivery command” for “downward-bound supervisory information.” (‘737 Patent at col.6 ll.19-23.) This delivery command, unlike the “second optical signal,” is not branched from the first optical signal, and performs a different function with respect to the embodiment set forth in Figure 6 of the ‘737 Patent. (*See generally* ‘737 Patent at col.6 ll.19-52.) Second, there is no language in any of the asserted claims describing a “delivery command” or a “decoding” function performed by the receiver, and the specification does not demonstrate a “clear intention” to limit the asserted claims to the embodiment set forth in Figure 6 of the ‘737 Patent. (*See* 9/29/2011 Order at 58 (quoting *i4i Ltd. P’ship v. Microsoft Corp.*, 598 F.3d 831, 843 (Fed. Cir. 2010).) The court therefore declines to adopt Fujitsu’s proposed additional claim limitation that the signal receiver must perform decoding of the received second optical signal.¹⁰

Having identified the limitations associated with the receiver element of Claims 4 and 11, the court turns to the question of whether a person of ordinary skill in the art in August 1989 would reasonably have understood the Hicks References to disclose a “[signal] receiver” as

¹⁰ Although the court’s decision is based on the intrinsic record alone, the court further notes that it has considered the opinion of Fujitsu’s expert, Dr. Alan E. Willner, on this point. The court agrees with Tellabs that Dr. Willner’s opinion “provides no meaningful information regarding the scope of the claim.” (Dkt. No. 557 (“Tellabs’ Reply”) at 5.)

described in the asserted claims of the '737 Patent.

The parties agree that the Hicks References disclose a photodetector connected to branch line **16**, which “converts the optical signal into an electrical signal.” (‘849 Patent at col.4 ll.19-22.) Based on this language, and on the corresponding drawings disclosed in the Hicks References, Tellabs’ expert, Dr. A. Bruce Buckman, opines that the photodetector disclosed in the Hicks References “receives a second optical signal” and therefore “corresponds to the ‘signal receiver receiving the second optical signal.’” (Buckman Decl. ¶¶ 68-69.) Fujitsu does not dispute that the photodetector disclosed in the Hicks References receives an optical signal that has been previously branched from a different optical signal having a different wavelength. Fujitsu contends, however, that the photodetector disclosed in the Hicks References cannot function as the signal receiver described by the asserted claims of the '737 Patent, because the photodetector is “located in subscriber equipment at the end of the Hicks branch lines” and is therefore “**external** to the amplifying region of the lateral couplers in the Hicks filter taps.” (Fujitsu’s Resp. at 20 (emphasis in original).) In other words, the photodetector disclosed in the Hicks References is not a signal receiver, because it is not “**inside an optical amplifier itself**.” (Fujitsu’s Sur-Reply at 5 (emphasis in original).)

Fujitsu’s argument is based on the preamble to Claim 4, which recites, “[a]n optical amplifier . . . comprising:,” followed by four elements, including “a signal receiver receiving the second optical signal.” (‘737 Patent at col.7 l.67-col.8 l.12.)¹¹ As discussed above, the asserted

¹¹ Similarly, the preamble to Claim 11 recites, “[a] method for amplifying an optical signal comprising the steps of . . .,” after which Claim 11 goes on to include the step of “branching the second optical signal from the first optical signal for receipt by a receiver.” (‘737 Patent at col.9 l.15-col.10 l.2.)

claims of the '737 Patent do not require the second optical signal to carry any particular type of information, nor do they require the information carried by the second optical signal to be put to any particular use. Additionally, the signal receiver itself need only *receive* the second optical signal. On the other hand, the court agrees with Fujitsu that the plain language of the asserted claims requires that the signal receiver “compris[e]” part of the optical amplifier. *See Eaton Corp. v. Rockwell Int’l Corp.*, 323 F.3d 1332, 1339 (Fed. Cir. 2003) (“In general, a preamble 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.”) (internal quotations and alterations omitted).

As Dr. Willner notes, “Claim 4 **does not** say the optical amplifier is ***connected*** to the signal receiver. . . but refers to an optical amplifier **“*comprising*”** a signal receiver.” (Willner Decl. ¶ 32 (emphasis in original).) According to Dr. Willner, “[a]ny or all of the[] elements [comprising the optical amplifier disclosed in Claim 4] could be physically separated in an optical amplifier product . . . as long as they remain functionally connected.” (*Id.* ¶ 36, n.3.) In Dr. Willner’s opinion, “the Hicks photodetector is not part of any optical amplifier,” in part because it is “located on the Hicks branch line at a subscriber location completely outside of Hicks filter tap (which contains Hicks version of an optical amplifier).” (*Id.* ¶ 60.) Tellabs argues in response that the photodetector disclosed in the Hicks References “is unquestionably ‘functionally connected’ to the other components of the filter tap comprising the optical amplifier.” (Tellabs’ Reply at 12.)

The parties appear to agree that an element “comprising” an optical amplifier must be “functionally connected” to the optical amplifier, although they dispute whether the photodetector disclosed in the Hicks References meets this requirement. Dr. Willner opines that

the photodetector disclosed in the Hicks References is not an element comprising the optical amplifier. (*See* Willner Decl. ¶¶ 32, 36, 58-60.) Dr. Willner’s opinion, however, is based in large part on considerations the court has determined are not limitations of the asserted claims, including the type of information carried on the optical signal received by the photodetector and the use to which that information is put. (*Id.*) Fujitsu explicitly denies that “geographic location” of the photodetector is a relevant consideration. (Fujitsu’s Sur-Reply at 5 (“The geographic location of any subscriber equipment relative to the Hicks optical amplifier is irrelevant. Rather, the issue is one of function.”).) Tellabs agrees that “the distinction between remote, or ‘external,’ reception of the second optical signal” is not part of the relevant inquiry. (Tellabs’ Reply at 11.) Tellabs argues instead that the photodetector disclosed in the Hicks References “is unquestionably ‘functionally connected’ to the other components . . . comprising the optical amplifier[, because] it performs the **only function** recited in the Asserted Claims — that of receiving a second optical signal.” (*Id.* at 12.)

The parties contend that Dr. Buckman’s deposition testimony supports their respective positions. (*See* Dkt. No. 517-1 (“Buckman Dep.”) at 156:13-158:11.) With respect to the Hicks References, Dr. Buckman testified that it “would be kind of silly” to build a controller into the optical amplifier itself for purposes of receiving and demodulating¹² a second optical signal, because “then the controller would be doing electrical processing after that.” (*Id.* at 156:22-

¹² Dr. Buckman’s testimony on this point suggests that he is using the term controller to refer to both “receivers” and “demodulators.” (Buckman Dep. at 156:24-157:7 (“I’d have to have the receiver there”); 158:2-3 (“that would include the receivers”).) Dr. Buckman’s testimony was in response to the question, “Are you aware of any optical amplifier for an optical communication system where the manufacturer built a controller into the optical amplifier to receive and demodulate subscriber information?” (*Id.* at 156:13-16.)

157:7.) While electrical signals “might be capable of being used” in such a scenario, Dr. Buckman testified that “it sort of defeats the purpose of going as far as you can with — with optical fiber.” (*Id.* at 157:13-23.) Tellabs asserts that this scenario is nevertheless “exactly what the [Hicks References] disclosed when [they] described ‘a telecommunications system [that] requires taps to a main trunk line at different subscriber locations.’” (Tellabs’ Reply at 11 (citing ‘849 Patent at col 1 ll. 22-33).)

Viewing Dr. Buckman’s testimony in the light most favorable Fujitsu, as the court must do at this stage of the litigation, the court finds that Dr. Buckman’s testimony reasonably supports Fujitsu’s position that the photodetector disclosed in the Hicks References does *not* comprise part of the optical amplifier. It is undisputed that the photodetector disclosed in the Hicks References “converts the optical signal into an electrical signal.” (‘849 Patent at col.4 ll.19-22.) Dr. Buckman’s deposition testimony can be reasonably understood to suggest that, if the purpose of an optical amplifier is to amplify an optical signal for further transmission, it would make little sense to immediately convert the optical signal into an electrical signal, as would be the case if the photodetector disclosed in the Hicks References was part of the optical amplifier itself. Dr. Buckman also appears to describe the scenario of building the photodetector into the optical amplifier as “an alternative approach” to the approach disclosed in the Hicks References, in contrast to Tellabs’ asserted position that the two approaches are the same. (*See* Buckman Dep. at 157:8-17 (“Looking at Figure 1B of the ‘849 Patent . . . we’ve got various fibers going to different — different houses. Having the receiver and the signal processor out within this device constitutes an alternative approach. It would no longer be fiber to the home in that instance.”).)

Consequently, the court finds that there is a disputed question of material fact regarding whether the photodetector disclosed in the Hicks References comprises part of the optical amplifier. Applying the clear and convincing standard of evidence, a reasonable jury could find that Tellabs has failed to meet its burden of proving that, to a person of ordinary skill in the art in August 1989, the Hicks References disclose the “[signal] receiver” element of the asserted claims of the ‘737 Patent.

C. *Optical Coupler*

In the court’s September 29, 2011 claim construction opinion, the term “optical coupler” was construed to mean “a device that combines or splits signals.” (9/27/2011 Order at 66.) The additional claim limitations for the “optical coupler” set forth in Claim 4 are (1) that it must be optically coupled to the input of an optical fiber doped with a rare earth element (2) for the purpose of (i) receiving the first optical signal and the second optical signal of a different wavelength, (ii) “introducing the first optical signal to the input of said optical fiber,” and (iii) “branching the second optical signal.” (‘737 Patent at col.8 ll.5-11.)¹³

Tellabs argues that “[t]ogether, the lateral coupler and resonant optical cavity [in the Hicks References] form an optical coupler that splits optical signals.” (Tellabs’ SJ Mem. at 21 (citing ‘849 Patent at col.5 l.66-col.6 l.6).) Specifically, the lateral coupler disclosed in the Hicks References receives first and second optical signals of different wavelengths “along the input portion **22** of the main trunk **12**” and transfers the first optical signal (“[t]he remaining

¹³ Similarly, Claim 11 requires (1) “receiving a first optical signal of a first wavelength and a second optical signal of a second wavelength,” (2) “branching the second optical signal from the first optical signal for receipt by a receiver,” and (3) “inputting the pumping light beam and the first optical signal to a rare earth element doped optical fiber.” (‘737 Patent at co.9 l.21-col.10 l.4.)

nonselected channels”) “to output portion **24** of the main trunk line **12**,” while the resonant cavity removes the second optical signal (“[a] selected band of these channels”) “from the main trunk line **12**” and “direct[s]” the second optical signal “onto branch line **16**.” (‘849 Patent at col.5 l.66-col.6 l.6.) The Hicks References further disclose that “a section of the output portion **24** at or near the coupler is doped with neodymium or erbium,” which are both rare earth elements. (‘849 Patent at col.6 ll.26-28.)

Fujitsu argues that Claim 4 “requires a separate and distinct optical coupler to be coupled to the separate and distinct input to a separate and distinct rare-earth doped fiber,” and that Dr. Buckman improperly “collapses the doped region of the optical fiber in Hicks and the input to the optical fiber into the structure of Hicks’ lateral coupler.” (Fujitsu’s Resp. at 22-23.)

The function of the lateral coupler disclosed in the Hicks References is “to couple all of the light beam except the selected wavelength band from the input portion **22** of the main trunk **12** to the output portion **24** of the main trunk **12**,” with the section of the output portion that is “at or near the coupler” having been doped with a rare earth element. (‘849 Patent at col.5 ll.26-29; col.6 ll.26-28.) The general goal of the coupling process is to effect the transfer of a light beam from one fiber to another fiber “gradually” over a particular “distance.” (‘849 Patent at col.5 ll. 34-37.) Thus, to the extent Dr. Buckman’s marked-up version of Figure 3A of the Hicks References, (*see* Fujitsu’s Resp. at 22), suggests that the “optical coupler” overlaps with the “input” to the “rare-earth doped fiber,” this is to be expected in a functioning optical connector. Indeed, Fujitsu cites no evidence suggesting there is any other way to practice the claim limitations of the optical coupler element of Claim 4.

Fujitsu does not otherwise dispute that the Hicks References disclose the all of the limitations of the “optical coupler” element recited in Claim 4 and the relevant steps recited in Claim 11. The court therefore finds there is no genuine dispute of material fact that a person of ordinary skill in the art in August 1989 would reasonably have understood these limitations to be disclosed in the Hicks References.

D. *Controller*

The only claim limitations for the “controller” set forth in dependent Claim 5 are that it is (1) coupled to the signal receiver (2) to “detect information with which the second optical signal is modulated.” (‘737 Patent at col.8 ll.15-17.) Similarly, dependent Claim 12 requires the step of “processing the second optical signal to detect information carried by the second optical signal.” (‘737 Patent at col.10 ll.7-8.)

As in the above analysis, the court declines to limit Claims 5 and 12 to the embodiment set forth in the specification of the ‘737 Patent, finding no clear intent to incorporate the limitations of Figure 6 into the asserted claims. The court also declines to limit the controller element of Claim 5 and the processing step of Claim 12 based on the type of information carried by the second optical signal or the use to which this information is put. Accordingly, the court rejects Fujitsu’s assertion that the controller must also “control[] the optical amplifier based on the decoded command information detected from the second optical signal.” (Fujitsu’s Resp. at 25.)

Tellabs contends that the Hicks References inherently disclose each of the limitations of the controller element in Claim 5, insofar as any “functioning optical communication system [“for communicating and exchanging information”]. . . necessarily includes a controller, coupled

to the signal receiver, to detect the information with which the optical signal is modulated.” (Tellabs’ SJ Mem. at 27-28.) Tellabs asserts that the Hicks References, as part of a functioning optical communication system, would have therefore inherently included “a controller . . . coupled to photodetector 20.” (*Id.* at 29.)

There are two problems with Tellabs’ argument on this point. The first is that the photodetector disclosed in the Hicks References has already “convert[ed] the optical signal into an electrical signal.” (‘849 Patent at col.4 ll.19-22.) It is therefore a linguistic stretch to argue that a device coupled to the photodetector could “detect information with which the second optical signal is modulated” as required by Claim 5 or “process[] the second optical signal to detect information carried by the second optical signal” as required by Claim 12. Additionally, and perhaps more important, Tellabs’ argument ignores the requirement of the preamble to Claim 5 that the controller, like the signal receiver, must “compris[e]” part of the optical amplifier. (‘737 Patent at col.8 l.13-14.)¹⁴ The court has already determined there is a disputed question of material fact regarding whether the photodetector disclosed in the Hicks References comprises part of the optical amplifier. To the extent any controller can be considered inherently coupled to the photodetector, this element is subject to the same disputed question of material fact.

Applying the clear and convincing standard of evidence, a reasonable jury could find that Tellabs has failed to meet its burden of proving that, to a person of ordinary skill in the art in August 1989, the Hicks References disclose the “controller” element of Claim 5 and the

¹⁴ Claim 12 likewise recites a step that is part of “[a] method for amplifying an optical signal.” (‘737 Patent at col.10 ll.5-6.)

“processing” step of Claim 12 of the ‘737 Patent.

II. Obviousness

Section 103(a) bars an inventor from obtaining a patent “if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art.” 35 U.S.C. § 103(a). The test for obviousness under § 103 involves four factors: (1) the scope and content of the prior art; (2) the differences between the asserted claims and the prior art; (3) the level of ordinary skill in the pertinent art; and (4) secondary considerations of nonobviousness, if any. *KSR Int’l Co. v. Telefax Inc.*, 550 U.S. 398, 406-07 (2007) (confirming that the factors identified in *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1 (1966), “continue to define the inquiry that controls”). If “the content of the prior art, the scope of the patent claim, and the level of ordinary skill in the art are not in material dispute, and the obviousness of the claim is apparent in light of these factors, summary judgment is appropriate.” *KSR*, 550 U.S. at 427.

In its argument for invalidity based on obviousness, Tellabs takes the position that “the only possible difference between the disclosures of [the Hicks References] and dependent claims 5 and 12 is the lack of an explicit identification and description of equipment or methods for processing the modulated optical signals selected by a filter tap to detect the information carried by those signals.” (Tellabs’ SJ Mot. at 36.) Tellabs asserts that this missing element or step “is explicitly disclosed in detail in the [Kinsel] Patent,” thus “the apparatus and method described by the combination of [the Hicks References] and the [Kinsel] Patent are identical to the apparatus and method recited in claims 5 and 12 of the ‘737 Patent.” (*Id.* at 36-37.)

As discussed in detail above, the court has identified additional potential differences between the disclosures of the Hicks References and the asserted claims of the ‘737 Patent — namely, whether the photodetector disclosed in the Hicks References comprises part of the optical amplifier and whether any controller inherently connected to the photodetector is also part of the optical amplifier. An object of the invention disclosed in the Kinsel Patent is to enhance the “information rate capability” of a multilevel pulse code modulation (“PCM”) optical communication system. (Kinsel Patent at col.1 ll.37-42.) The Kinsel Patent does not include the term “optical amplifier” anywhere in its ten columns of single-spaced text. Accordingly, the court finds that the Kinsel Patent cannot function to supply the missing elements or steps required by the asserted claims of the Fujitsu ‘737 Patent to be part of the optical amplifier apparatus or method for amplifying an optical signal.

CONCLUSION

For the reasons set forth above, and in accordance with its September 27, 2012 ruling denying “Tellabs, Inc.’s, Tellabs Operations, Inc.’s, and Tellabs North America, Inc.’s Motion for Summary Judgment of Invalidity of U.S. Patent No. 5,521,737” (Dkt. No. 953), the court has determined that disputed questions of material fact preclude the entry of judgment in favor of Tellabs at this stage of the litigation on Tellabs’ counterclaim alleging invalidity of the Fujitsu ‘737 Patent.

ENTER:


JAMES F. HOLDERMAN
Chief Judge, United States District Court

Date: October 26, 2012