

**UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION**

MURATA MANUFACTURING CO., LTD.,)	
)	
Plaintiff,)	
)	Case No. 03 C 2934
v.)	
)	Judge Joan B. Gottschall
BEL FUSE, INC., BEL FUSE, LTD., BEL)	
STEWART, LTD., and BEL CONNECTOR,)	Magistrate Judge Jeffrey Cole
INC. d/b/a STEWART CONNECTOR and)	
BEL STEWART,)	
)	
Defendants.)	

MEMORANDUM OPINION AND ORDER

Plaintiff Murata Manufacturing Co., Ltd. (“Murata”) has filed a motion seeking summary judgment of literal infringement of Murata’s U.S. Patent No. 5,069,641 (“the ’641 patent”) against defendants Bel Fuse, Inc., Bel Fuse, Ltd., Bel Stewart, Ltd., and Bel Connector Inc. d/b/a Stewart Connector and Bel Stewart (collectively “Bel”). The court heard oral argument on March 25, 2009. For the reasons set forth below, Murata’s motion for summary judgment of literal infringement of the ’641 patent is denied.

I. Undisputed Factual Background

The ’641 patent is directed to a modular jack. U.S. Patent No. 5,069,641 at [54] (filed Jan. 30, 1991); Def.’s 56.1(b)(3)(A) Statement in Resp. to Murata’s Statement of Material Facts in Supp. of Mot. for Summ. J. ¶ 9, *Murata Mfg. Co. v. Bel Fuse, Inc.*, No. 03 C 2934 (N.D. Ill. Mar. 31, 2008) [hereinafter Def.’s Rule 56.1 Statement]. Modular jacks,¹ and the corresponding

¹ In its *Markman* opinion, the court construed “modular jack” as “the female portion of a modular connector in which wires of a circuit are connected at one end and into which a plug is inserted at the other end.” *Murata Mfg. Co. v. Bel Fuse, Inc.*, 445 F. Supp. 2d 938, 945, 954 (N.D. Ill. 2006).

plugs, are common in telephony and computing applications. Typically, they are used in conjunction with wires in order to receive information from, and transmit information to, external sources.

A common problem with modular jacks and plugs is the presence of electromagnetic interference (“EMI”), also known as “noise.” Noise may result from the interaction of closely located current-carrying elements. Noise may also result from environmental effects on the signal lines and within the jacks and plugs themselves. When an intended signal is transmitted via, for example, a connector using a modular jack, noise signals are added to the intended signal. Thus, the received signal is an additive combination of the intended signal and the undesired noise signals.

The strength of a received signal may be measured by the ratio of the power of the intended and noise signals, the “signal-to-noise ratio” (“SNR”). As noise increases, the SNR decreases, making the received signal less reliable and less useful. Noise suppression decreases the noise signal and, as a result, boosts the SNR of a received signal. Thus, noise suppression is an important function in electronic circuits that transmit or receive data.

The ’641 patent discloses a “modular jack which also functions as a noise suppressor.” ’641 patent, col. 1, ll. 60–61.

[A] modular jack according to the [’641 patent] has a printed board containing a noise suppressing electronic element in an insulating housing. A contactor for contacting with a plug and a terminal for contacting with a circuit board are electrically connected with the electronic element by wires on the printed board.

Id., col. 1, l. 66–col. 2, l. 4. This configuration yields “a compact modular jack containing a noise suppressing electronic element, which modular jack hardly receives [sic] external noise.”

Id., col. 2, ll. 7–10.

Claim 1 of the ’641 patent is the only independent claim. It claims:

A modular jack to be mounted on a circuit board, said modular jack comprising:

a printed board containing an electronic element for suppressing noise;

a contactor for contacting with a plug, said contactor being electrically connected with the electronic element by a wire on the printed board;

a terminal for contacting with the circuit board, said terminal being electrically connected with the electronic element by a wire on the printed board;
and

an insulating housing for encasing the printed board.

Id., col. 4, l. 67–col. 5, l. 9. Claim 4 claims “[a] modular jack as claimed in claim 1, wherein the noise suppressing electronic element is a chip capacitor.” *Id.*, col. 6, ll. 3–4. Claim 6 claims “[a] modular jack as claimed in claim 1, wherein the interior of the housing is divided into a first chamber in which the printed board is set and a second chamber to which the contactor is extended, and the terminal is protruded outside the housing of the first chamber.” *Id.*, col. 6, ll. 9–13.

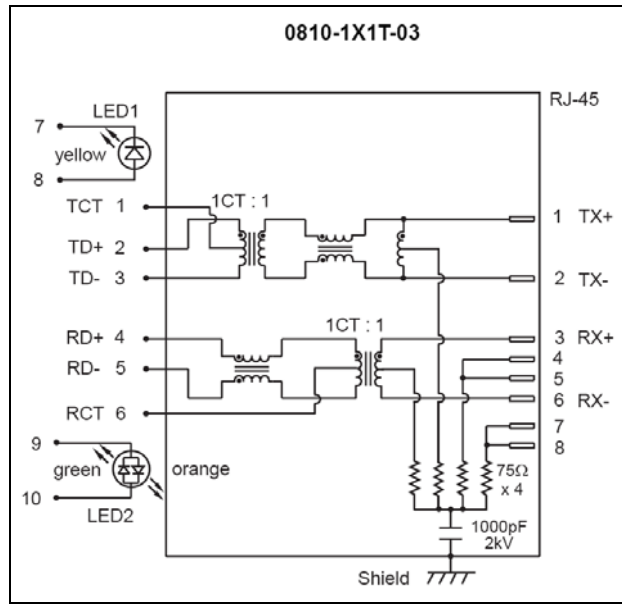
Bel also manufactures modular jacks. Murata alleges that a number of Bel products infringe claims 1, 4, and 6 of the '641 patent. Murata has grouped the allegedly infringing Bel products into four “families.” Def.’s Rule 56.1 Statement ¶ 13. The present motion for summary judgment of infringement concerns “family 1” which includes Bel MagJacks with the following part numbers: 0810-1G4T-06, 0810-1X1T-03, 0810-1X4T-06, 0810-1XX1-03, 0810-1XX1-08, 0812-1X1T-03, 0812-1X1T-08, 0816-1X1T-23, 0821-1X1T-43, 0826-1B4U-43, 0826-1D1T-23, 0826-1G1T-23, 0826-1X1T-23, 0828-1X1T-71, 0833-2X4R-33, 0833-2X6R-54, 0833-2X8R-54, 0833-2X8R-54N, 0843-2B1T-33, 0843-2C1T-33, 0852-1X1T-03, 0853-2X6R-66, 0853-2X8R-69, 0854-2X6R-66, 0862-1J1T-43, 0862-1J1T-G3, 0863-2X6R-54, 0863-2X8R-54, 0873-2X6R-G1, 0875-1G2T-D8, L811-1X1T-03, L826-1M1T-23, R811-1X1T-04, and R811-1X1T-A4. *Id.* ¶ 16. The parties agree that the thirty-four members of family 1 are analogous in structure. *Id.* ¶ 17. The parties also agree that Bel MagJack 0810-1X1T-03 is exemplary of the family 1

members. *Id.* Thus, in this Memorandum Opinion and Order, the court will refer to the Bel MagJack 0810-1X1T-03 as the “Bel MagJack.” The court will limit its analysis to claims 1, 4, and 6 of the ’641 patent and the exemplary alleged infringing device, the Bel MagJack 0810-1X1T-03.²

The Bel MagJack is an RJ-45 modular jack which contains a printed board. *Id.* ¶¶ 18, 21. There are four resistors and one capacitor mounted on the printed board. *Id.* ¶¶ 24, 26. An “RJ-45” modular jack is a modular jack that conforms to certain specifications and is used in Ethernet applications. *See id.* ¶ 18; Murata’s Compendium of Exs. to Murata’s 56.1(A)(3) Statement of Material Facts (“SMF”) in Supp. of Mot. For Summ. J. of Literal Infringement for Family No. 1 ex. 22 at 25, *Murata Mfg. Co. v. Bel Fuse, Inc.*, No. 03 C 2934 (N.D. Ill. Mar. 31, 2008); Def.’s Compendium of Decls. and Exs. in Opp’n to Murata’s Mot. for Summ. J. of Literal Infringement for Family No. 1 ex. 1 ¶ 15, *Murata*, 03 C 2934 (N.D. Ill. May 2, 2008) [hereinafter Def.’s Compendium in Opp’n]. RJ-45 modular jacks, including the Bel MagJack, have eight contactors. *See* Def.’s Rule 56.1 Statement ¶ 31. The schematic for the Bel MagJack is reproduced below.³

² Claims 4 and 6 of the ’641 patent are both dependent from claim 1. Thus, claims 4 and 6 incorporate all of the limitations of claim 1 in addition to the extra limitations present in each of those claims. *See* 35 U.S.C. § 112 ¶ 4 (2006) (“A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.”). Bel maintains that the Bel MagJack does not literally infringe any of the asserted patent claims because the Bel MagJack does not literally infringe claim 1, the only independent claim of the ’641 patent. In other words, Bel argues that the Bel MagJack does not infringe claims 4 and 6 of the ’641 patent even though it does not contest that the Bel MagJack embodies the extra limitations of claims 4 and 6. As a result, the parties’ arguments only address the limitations of claim 1. The court will follow suit and will not address the extra limitations of claims 4 and 6 in this Memorandum Opinion and Order.

³ The parties have designated nearly all of their exhibits as confidential pursuant to the court’s protective order. *See Murata Mfg. Co. v. Bel Fuse, Inc.* No. 03-C-2934 (N.D. Ill. Jan. 3, 2006) (modified protective order). The schematic that is reproduced in this Memorandum Opinion and Order is identical to the one filed in this case and is available in the public domain. 0810-1X1T-



Although the Bel MagJack has eight contactors, only four are wired to transmit and receive Ethernet signals, two for each operation.⁴ 0810-1X1T-03 Datasheet, <http://www.belfuse.com/Data/Datasheets/BM00804.pdf> (last visited Mar. 30, 2009). The remaining four contactors are paired into two nodes on the printed board. *Id.* Each of these two nodes is connected to one of the four resistors which, in turn, are connected to the capacitor. *Id.* The remaining two resistors are connected between other electronic elements and the capacitor. *Id.* The capacitor is then connected to ground. *Id.* The court will refer to the two resistors which connect to the four unused contactors and the capacitor as the “RC circuit.”⁵

03 Datasheet, <http://www.belfuse.com/Data/Datasheets/BM00804.pdf> (last visited Mar. 30, 2009); *see* Decl. of David W. Hughes in Supp. of Murata’s Mot. for Summ. J. of Literal Infringement for Family No. 1 ex. 47; Def.’s Compendium in Opp’n ex. 1 ¶ 23. With respect to the circuitry of the Bel MagJack, the court will refer to the 0810-1X1T-03 datasheet, rather than the parties’ Statements of Material Fact, to clarify the issues discussed herein. The parties attempt to describe the circuit in their submissions, but neither party agrees with the other’s description of the circuit because both parties characterize the circuit in different terms.

⁴ Two contactors are needed for each operation because a “signal,” either transmitted or received, consists of the time-varying difference in voltages between the two contactors.

⁵ The parties dispute whether or not this configuration is a “Bob Smith Termination.” Specifically, the parties dispute (1) whether a Bob Smith Termination includes a capacitor and

This long-running lawsuit began nearly six years ago and the court issued its *Markman* order more than two years ago. *Murata Mfg. Co. v. Bel Fuse, Inc.*, 445 F. Supp. 2d 938 (N.D. Ill. 2006). In that order, the court construed the terms “modular jack,” “printed board,” “wire on the printed board,” “insulating housing,” “electronic element,” “suppressing,” and “containing.” *Id.* at 954. The court adopted the following constructions:

“Modular jack” means “the female portion of a modular connector in which wires of a circuit are connected at one end and into which a plug is inserted at the other end.”

“Printed board” means “a generally flat piece of material typically fabricated from insulating material that provides support and structural integrity for a plurality of electrically interconnected components comprising a circuit, with some or all of the conducting interconnection pattern formed on the board.”

“Wire on the printed board” means “a conductive metallic element interconnecting various regions, [or] contributing to the interconnecting of various regions, on the printed board.”⁶

“Insulating housing” means “a covering which has a high electrical resistance and which can serve to prevent a short circuit between components.”

“Electronic element” means “an electronic component.”

(2) the function of a Bob Smith Termination. Because the court need not resolve either of these issues, the court will refer to this configuration with the neutral term “RC circuit.”

Murata also seems to suggest that there may be two means of sending high frequency signals to ground in the Bel MagJack using the RC Circuit. *See* Murata’s Br. in Supp. of Mot. for Summ. J. of Literal Infringement for Family No. 1 at 4, *Murata Mfg. Co. v. Bel Fuse, Inc.*, No. 03 C 2934 (N.D. Ill. Mar. 31, 2008) [hereinafter Murata’s Br.] (referring to the capacitor and the “Bob Smith termination” separately as noise suppressing elements). This is irrelevant to the court’s analysis because, even assuming Murata is correct that the RC Circuit sends high frequency signals to ground, both of the means Murata has identified involve the capacitor which is not connected to the signal lines. *See* pp. 16-17 *infra*.

⁶ The court’s summary of its adopted constructions includes a typographical error in that it omitted the disjunction “or” from the construction of “wire on the printed board.” In the *Markman* order, the court analyzed the parties’ competing constructions of this term and adopted Murata’s proposed construction. *Murata*, 445 F. Supp. 2d at 946–47. The typographical error appears both in the court’s analysis and the court’s summary. *Id.* at 947, 954. The proper construction, however, does appear in the court’s order. *Id.* at 946 (“As to ‘wire on the printed board,’ Murata proposes: ‘A conductive metallic element interconnecting various regions, or contributing to the interconnecting of various regions, on the printed board.’”). Indeed, the proper construction of the term “wire on the printed board” makes sense only if the disjunction “or” is present.

“Suppressing” means “eliminating or attenuating.”

“Containing” means “including as a component.”

Id.

With this background in mind, the court turns to the present motion for summary judgment of literal infringement of claims 1, 4, and 6 by the Bel MagJack. The court will refer to the parties’ more detailed undisputed facts in its analysis.

II. Legal Standard

“[A] party seeking summary judgment always bears the initial responsibility of informing the district court of the basis for its motion, and identifying those portions of ‘the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any,’ which it believes demonstrate the absence of a genuine issue of material fact.” *Celotex Corp. v. Catrett*, 477 U.S. 317, 323 (1986) (citing Fed. R. Civ. P. 56(c)). “The judgment sought should be rendered if the pleadings, the discovery and disclosure materials on file, and any affidavits show that there is no genuine issue as to any material fact and that the moving party is entitled to a judgment as a matter of law.” Fed. R. Civ. P. 56(c). “All evidence, and the reasonable inferences to be drawn therefrom, are to be viewed in the light most favorable to the nonmovant.” *Miller v. Am. Family Mut. Ins. Co.*, 203 F.3d 997, 1003 (7th Cir. 2000) (citing *Rabinovitz v. Pena*, 89 F.3d 482, 486 (7th Cir. 1996)); *see Bai v. L & L Wings, Inc.*, 160 F.3d 1350, 1353 (Fed. Cir. 1998) (outlining the same standard for summary judgment in patent cases). Summary judgment is improper if a reasonable jury, viewing the evidence in the light most favorable to Bel, could find for Bel. *See Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 248 (1986) (explaining when a dispute about a material fact is “genuine”).

A patent infringement analysis consists of two steps. First, the court must determine the scope and meaning of the allegedly infringed claims. *Markman v. Westview Instruments, Inc.*,

52 F.3d 967, 976 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370 (1996). Second, the properly construed claims are compared to the allegedly infringing device. *Id.* In this case, the court has already construed the claims at issue. *See Murata*, 445 F. Supp. 2d at 954 (summarizing the constructions adopted). Thus, all that remains is to compare the properly construed claims to the allegedly infringing devices.

A device may infringe a patent either literally or under the doctrine of equivalents. *Tate Access Floors, Inc. v. Maxcess Techs., Inc.*, 222 F.3d 958, 964 (Fed. Cir. 2000). *Murata* has sought only summary judgment of literal infringement in the present motion. Accordingly, the court need not address patent infringement under the doctrine of equivalents, only literal infringement. “[W]hoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefor, infringes the patent.” 35 U.S.C. § 271(a) (2006). “To prove direct infringement, the plaintiff must establish by a preponderance of the evidence that one or more claims of the patent read on the accused device” *Cross Med. Prods., Inc. v. Medtronic Sofamor Danek, Inc.*, 424 F.3d 1293, 1310 (Fed. Cir. 2005) (citing *Advanced Cardiovascular Sys., Inc. v. Scimed Life Sys., Inc.*, 261 F.3d 1329, 1336 (Fed. Cir. 2001)). “‘Literal infringement requires that each and every limitation set forth in a claim appear in an accused product.’” *Id.* (quoting *Frank’s Casing Crew & Rental Tools, Inc. v. Weatherford Int’l, Inc.*, 389 F.3d 1370, 1378 (Fed. Cir. 2004)).

“[A] literal infringement issue is properly decided upon summary judgment when no genuine issue of material fact exists, in particular, when no reasonable jury could find that every limitation recited in the properly construed claim either is or is not found in the accused device.” *Bai*, 160 F.3d at 1353. “Often, . . . the composition of the allegedly infringing process or product

is undisputed. In such a case, literal infringement collapses into claim construction—a matter of law—amenable to summary judgment.” *Desper Prods., Inc. v. QSound Labs, Inc.*, 157 F.3d 1325, 1332–33 (Fed. Cir. 1998) (citing *Athletic Alternatives, Inc. v. Prince Mfg., Inc.*, 73 F.3d 1573, 1578 (Fed. Cir. 1996)).

III. Analysis

Murata argues that the Bel MagJack infringes claims 1, 4, and 6 of the '641 patent and that there are no genuine issues of material fact regarding infringement. Bel argues that there are genuine issues of material fact which preclude summary judgment of infringement in this case. Specifically, Bel identifies four claim limitations which it argues are not present in the Bel MagJack. First, Bel argues that the Bel MagJack printed board does not contain an electronic element for suppressing noise. Second, Bel argues that even if the court finds that the Bel MagJack contains an electronic element for suppressing noise, the contactors of the Bel MagJack are not electrically connected with that electronic element “by a wire on the printed board.” Third, Bel argues that even if the court finds that the Bel MagJack contains an electronic element for suppressing noise, the terminals of the Bel MagJack are not electrically connected with that electronic element “by a wire on the printed board.” (Bel argues its second and third arguments separately. Because Bel’s second and third arguments relate to the same claim language, “by a wire on the printed board,” and differ only in what element is connected to the electronic element, the contactors or the terminals, the court will address those arguments together.) Finally, Bel argues that even if the court finds that the Bel MagJack contains an electronic element for suppressing noise, the terminals of the Bel MagJack are not “electrically connected” to the electronic element. Bel does not dispute that the remaining claim limitations of claim 1 of the '641 patent are present in the Bel MagJack. Def.’s Rule 56.1 Statement ¶¶ 18–19, 21, 31–32,

34, 36, 40–41. The three contested terms, one of which appears in two claim limitations, will be addressed in turn.

A. Whether the Contactors and the Terminals of the Bel MagJack are Connected with the RC Circuit by a Wire on the Printed Board

Assuming that the RC circuit of the Bel MagJack is “an electronic element for suppressing noise,” Bel argues that neither the contactors nor the terminals are electrically connected to that electronic element “by a wire on the printed board.” Bel argues that the claim limitations require the contactors and terminals to be connected to the electronic element “by a wire on the printed board” and nothing more. With respect to the contactors, Bel points out that intermediary pins form part of the path between the contactors of the Bel MagJack and the RC circuit. Similarly, Bel points out that winding wires, which are not contained on the printed board, constitute part of the path between the terminals of the Bel MagJack and the RC circuit. Thus, according to Bel, neither the contactors nor the terminals are electrically connected to the RC circuit “by a wire on the printed board.”

Murata responds by arguing that the court’s *Markman* order requires a finding that “a wire on the printed board” need only make up any part of the path between the contactors or terminals and the RC circuit. In this regard, it is undisputed that “[a]t least a portion of each of the paths from contactor to resistor to capacitor is made up of electrically conductive pads and traces printed onto the board.” Def.’s Rule 56.1 Statement ¶ 35. Further, Murata points out that Bel agrees that the electrical path between the terminals and the RC circuit “encounter[s] a very short printed wire on the printed board.” Murata’s Reply in Supp. of Mot. for Summ. J. of Literal Infringement for Family No. 1 at 4–5, *Murata Mfg. Co. v. Bel Fuse, Inc.*, No. 03 C 2934 (N.D. Ill. May 16, 2008) [hereinafter Murata’s Reply]; Bel Fuse’s Br. in Opp’n to Murata’s Mot. For Summ. J. of Literal Infringement For Family No. 1, at 12, *Murata Mfg. Co. v. Bel Fuse, Inc.*, No.

03 C 2934 (N.D. Ill. May 2, 2008) [hereinafter Bel's Opp'n]. Thus, according to Murata, because a printed wire is part of the path between the contactors and terminals, on the one hand, and the RC circuit, on the other, the Bel MagJack includes these limitations of claim 1.

Murata further argues that, according to the court's constructions, a wire on the printed board need not make up the entire path between the components. In its *Markman* order, the court construed "printed board" to mean "a generally flat piece of material typically fabricated from insulating material that provides support and structural integrity for a plurality of electrically interconnected components comprising a circuit, with some or all of the conducting interconnection pattern formed on the board." *Murata*, 445 F. Supp. 2d at 947. The court also construed "wire on the printed board" to mean "a conductive metallic element interconnecting various regions, [or] contributing to the interconnecting of various regions, on the printed board." *Id.* at 954. Murata points to the "some or all" and "contributing to" language in these constructions in support of its argument. The court does not agree that the language of these constructions supports Murata's reasoning. The "some or all" language that Murata points to does not refer to a given path connecting *components*; it refers to a given path connecting various *regions* "on the board." Similarly, the "contributing to" language to which Murata points does not help its argument that the connection between the contactors or terminals, on the one hand, and the RC circuit, on the other, need not be entirely accomplished "on the printed board."

Claim 1 of the '641 patent clearly calls for the contactor and the terminal to be connected with the noise suppressing electronic element "by a wire on the printed board." '641 patent, col. 5 ll. 3-8. The court has already construed "wire on the printed board." Taking the evidence that has been presented and the reasonable inferences drawn therefrom in the light most favorable to Bel, as the court must when resolving this summary judgment motion, the court finds that

Murata has not carried its burden of showing that the contactors and terminals of the Bel MagJack are connected by a wire on the printed board. The contactors of the Bel MagJack are not connected to the alleged noise suppressing element, the RC circuit, exclusively by a wire on the printed board. Instead, the contactors are connected to the RC circuit by intermediary pins and “a very short printed wire on the printed board.” Murata’s Reply at 4–5; Bel’s Opp’n at 12. On summary judgment, it is Murata’s burden to show that the Bel MagJack infringes Claim 1, notwithstanding the fact that it utilizes intermediary pins to connect its contactors to the RC circuit. It has failed to do so. Similarly, the terminals of the Bel MagJack are not connected to the RC circuit exclusively by a wire on the printed board. Instead, the terminals are connected to the RC circuit by, among other elements, winding wires and an isolation transformer, neither of which is contained on the printed board. Murata has failed to carry its burden in showing that this constitutes “a wire on the printed board.” Summary judgment on this basis is consequently denied.

B. Whether the Terminals of the Bel MagJack are Electrically Connected to the RC Circuit

Assuming that the RC circuit of the Bel MagJack is “an electronic element for suppressing noise,” Bel argues that the terminals are not “electrically connected” to the RC circuit. The parties agree that “electrically connected” means “the attachment of two or more component parts so that electrical conduction can take place between them.” The Bel MagJack employs an isolation transformer between the terminals and the RC circuit. This isolation transformer, Bel argues, prevents electrical conduction from taking place between the terminals and the RC circuit because it isolates the current on one side of the isolation transformer from the current on the other side. Furthermore, Bel argues that the isolation transformer creates a magnetic connection between the terminals of the Bel MagJack and the RC Circuit. According to Bel, this prevents the components from being “electrically connected” because electrical conduction is not the

same as magnetic conduction or electromagnetic conduction. Murata responds by arguing that “[w]hen a [Bel] MagJack is being used to send a signal across the jack, electrical conduction occurs at all points between the terminals and the RC circuit; otherwise the signal could not go across the jack.” Murata’s Reply at 3. Murata agrees with Bel that the isolation transformer stops direct current. *Id.*; see Bel’s Opp’n at 9 (“In other words, the current which is conducted through the first circuit . . . cannot flow into the second circuit . . . and vice versa.”). Murata argues that “AC [alternating current] occurs on both sides of the isolation transformer.” Murata’s Reply at 3. That the isolation transformer in the Bel MagJack stops direct current does not, according to Murata, mean that it stops all electrical conduction.

The court did not construe the claim term “electrically connected.” See *Murata*, 445 F. Supp. 2d at 943 n.3. The parties agreed between themselves that the claim term “electrically connected” was to have its ordinary meaning and should be construed as “the attachment of two or more component parts so that electrical conduction can take place between them.” Bel Fuse, Inc.’s Additional Statement of Material Facts Pursuant to Local Rule 56.1(b)(3)(c) ¶ 23, *Murata*, No. 03 C 2934 (N.D. Ill. May 2, 2008). The parties, however, dispute whether the terminals and the RC circuit are attached so that electrical conduction can take place between them. Murata argues that because electrical conduction occurs at all points between the terminals of the Bel MagJack, on the one hand, and the RC circuit, on the other, the claim limitation is satisfied. Bel argues that the isolation transformer prevents the current on one side of the isolation transformer from conducting to the other side of the transformer. In other words, Bel argues that the terminals are not electrically connected to the RC circuit because the current on one side of the isolation transformer is not the same current as the current on the other side.

The parties’ agreed meaning of “electrically connected” does not make a distinction between

direct current and alternating current. The agreed meaning of “electrically connected” only requires that electrical conduction take place. Thus, on summary judgment, the burden is on Murata to demonstrate that the contactors and the RC circuit are “electrically connected” as required by the ’641 patent. Murata argues that electrical conduction can occur between two components if the connection allows alternating current to be conducted. Bel argues that although alternating current is conducted across the connection between the components of the Bel MagJack, electrical conduction does not occur because the isolation transformer prevents the conduction of direct current. Because Murata does not dispute that the isolation transformer inhibits the conduction of direct current, Murata has failed to carry its burden in establishing that electrical conduction occurs between the contactors and the RC circuit of the Bel MagJack. Thus, Murata has failed to establish that the Bel MagJack includes the “electrically connected” limitations of the ’641 patent. Accordingly, summary judgment on this basis is denied.

C. Whether the RC Circuit of the Bel MagJack is an Electronic Element for Suppressing Noise

The Bel MagJack includes eight contactors, Def.’s Rule 56.1 Statement ¶ 31, four of which are not used to transmit or receive information. Each of these four contactors is connected to ground via a resistor in series with the capacitor. 0810-1X1T-03 Datasheet, <http://www.belfuse.com/Data/Datasheets/BM00804.pdf> (last visited Mar. 30, 2009). Bel argues that the RC circuit is not “an electronic element for suppressing noise” because it is not connected to the signal lines (*i.e.*, the transmit and receive contactor pairs). Instead, Bel argues, the RC circuit is connected to “unused” contactors and is meant to prevent the creation of additional noise on the signal lines.⁷

⁷ According to Bel, the RC Circuit prevents the reflection of noise within the Bel MagJack and, as a result, inhibits the creation of additional noise. Bel argues that the RC Circuit is connected to the “unused” contactors in order to comply with “the electrical isolation requirement of IEEE standard 802.3.” Bel’s Opp’n 17.

Murata responds that “Bel is *sub silentio* trying to restrict the claims to ‘suppressing noise’ on so-called signal-carrying paths such that ‘suppressing noise’ on so-called unused paths would not infringe.” Murata’s Reply at 8. Murata asserts that the claims of the ’641 patent are not limited to suppressing noise only on signal-carrying paths and that the RC circuit does, in fact, suppress noise.

In its *Markman* order, the court construed the claim term “electronic element” to mean “an electronic component,” and the claim term “suppressing” to mean “eliminating or attenuating.” *Murata*, 445 F. Supp. 2d at 951–52, 953. Thus, replacing the construed claim terms with the court’s definitions, the claim limitation reads, “a printed board containing an electronic component for eliminating or attenuating noise.”

It is undisputed that the Bel MagJack contains a printed board. Def.’s Rule 56.1 Statement ¶ 21. It is further undisputed that the Bel MagJack printed board contains resistors and a capacitor. *Id.* ¶¶ 23, 26. Thus, the only remaining question is whether the RC circuit forms “an electronic component for eliminating or attenuating noise.”

Murata argues that the RC circuit is “an electronic element for suppressing noise” because it eliminates noise “by a process sometimes called ‘shunting.’” Murata’s Br. at 7. In the original *Markman* briefing, Murata proposed a construction of “suppressing noise” that included “shunting.” *Murata*, 445 F. Supp. 2d at 952. That construction was rejected. *Id.* at 953.

When the court issued its *Markman* order, it construed “suppressing noise” by relying on Bel’s statement that “the specification of the ’641 patent does not teach noise suppression that occurs by shunting” *Murata*, 445 F. Supp. 2d at 952–53. Now, Murata argues that the ’641 patent specification does, in fact, teach “shunting.” Murata’s Reply at 7–8. Yet, Murata, relying largely on a footnote in the court’s *Markman* order that discusses the lack of adequate briefing on

this issue, argues that the court need not revisit its construction of “suppressing noise” because even under the current construction, the RC circuit is “an electronic element for suppressing noise.” *Id.* Bel argues that by focusing on “shunting,” Murata is asking the court to revisit its claim construction of “suppressing.” Bel’s Opp’n at 18–19. Murata in turn argues that Bel is asking for reconsideration. Murata’s Reply at 8. The court accepts each party’s representation, reiterated at oral argument, that it does not wish the court to reconsider the *Markman* order and consequently retains the construction of the claim term “suppressing” as “eliminating or attenuating.” *Murata*, 445 F. Supp. 2d at 953. Further, as the parties previously agreed, “‘noise’ is properly construed as ‘undesired electrical signals.’” *Id.* at 952.

On summary judgment, it is Murata’s burden to show that the RC circuit is “an electronic element for suppressing noise.” Yet, viewing the evidence in the light most favorable to Bel, the RC circuit does not eliminate or attenuate noise as defined in the patent and as construed in the court’s previous claim construction order. First, Bel argues that the RC circuit in the Bel MagJack is not “for” suppressing noise on the signal line (as it is in the patent); rather, it is present to comply with “the electrical isolation requirement of IEEE standard 802.3.”⁸ Bel’s Opp’n 17. Bel admits that the RC circuit does prevent some new noise, but this is to prevent the reflection of noise on the “unused” lines of the device. Indeed, Bel argues that the Bel MagJack uses electrical components known as common-mode chokes to suppress noise on the signal line. Second, the noise suppressing common-mode chokes of the Bel MagJack are not contained on

⁸ Bel does not explain how the capacitor of the RC circuit brings the Bel MagJack into compliance with this standard or its “electrical isolation requirement.” Murata is also silent as to what IEEE standard 802.3 requires and if the capacitor of the RC circuit brings the Bel MagJack in compliance with that standard. The court therefore assumes that, with respect to the present motion, the relevance of IEEE standard 802.3, and specifically its “electrical isolation requirement,” is limited to providing a plausible reason why the capacitor of the RC circuit is present in the Bel MagJack other than to suppress noise.

