United States District Court,
N.D. California, San Jose Division.

REGAL ELECTRONICS, INC,
Plaintiff.
v.
PULSE ENGINEERING, INC., et al,
Defendants.

No. C 03-01296 JW

May 12, 2004.

W. Carlos Leet, Ryan, Steiner and Leet, Scotts Valley, CA, for Plaintiff.

Aimee B. Kolz, Charles Wilbur Shifley, Michael L. Krashin, Thomas K. Pratt, Mark Thomas Banner, Esq., Banner & Witcoff, Ltd, Chicago, IL, Daniel T. Shvodian, Howrey LLP, East Palo Alto, CA, Mark K. Dickson, Winston & Strawn LLP, San Francisco, CA, Stephen Christopher Kyriacou, Howrey Simon Arnold & White, Menlo Park, CA, for Defendants.

ORDER FOLLOWING CLAIMS CONSTRUCTION HEARING

JAMES WARE**, District Judge.**

I. INTRODUCTION

This is a patent infringement case. Plaintiff Regal Electronics, Inc. ("Regal") alleges that Defendants Pulse Engineering, Inc. ("Pulse"), Full Rise Electronic Co., Ltd. ("FRE"), Bel Fuse, Inc. ("Bel Fuse") (collectively "Defendants"), and Stewart Connector Systems, Inc. infringe its patent, U.S. Patent No. 6,171,152 (the '152 Patent"), on an RJ-45 Connector. The '152 Patent entitled "Standard footprint and form factor RJ-45 connector with integrated signal conditioning for high speed networks" was issued to William E. Kunz ("the Applicant," "the Patentee") on January 9, 2001 and is assigned to Regal. The Court has jurisdiction under 28 U.S.C. s.s. 1331, 1332, and 1338. Regal is a California corporation and Defendants allegedly conduct business in Northern California. Venue is proper pursuant to 28 U.S.C. s. 1400. Presently before the Court are the parties' cross-motions and briefs regarding claim construction of the '152 Patent. On April 16, 2004, the Court held a hearing in accordance with Markman v. Westview Instruments, Inc., 517 U.S. 370 (1996), to construe the disputed terms and phrases of the asserted claims.

II. BACKGROUND

A. The Technology

An RJ-45 modular connector is an eight-wire connector used for data transmission over local area networks ("LANs") via standard telephone wires. Harry Newton, *Newton's Telecom Dictionary* 646 (14th ed.,

Telecom Books 1998). LANs are able to support exemplary networking standards such as 100BASE-T, *id*. at 2, and ATM 155, *id*. at 67. The term "RJ" is a Universal Service Order Code adopted by the Federal Communications Commission to denote a "registered jack" having a certain wiring configuration. *Id*. at 644. RJ-45 connectors look similar to the six-wire RJ-11 modular connectors used for connecting telephone equipment, *id*. at 645, but are somewhat wider. An RJ-45 connector is typically mounted on a printed circuit board ("PCB") and receives a matching RJ-45 plug on the end of a data cable. *Newton's Telecom Dictionary* at 647.

RJ-45 connectors are conventionally accompanied by some form of signal conditioning in order to block spurious signals, such as high frequency noise, differential-mode direct current, and common mode voltages. '152 Patent, Col. 1, ll. 13-18. FN1 Signal conditioning functionality was initially embodied in an integrated circuit attached to the PCB next to the RJ-45 connector. U.S. Patent No. 5,647,767 (issued Jul. 15, 1997), Col. 1, ll. 51-56. Later some signal conditioning components were put inside the bodies of their connectors. Col. 1, ll. 28-30. The addition of these components, however, increased the size of these connectors as to prevent their substitution for ordinary connectors already designed into various network products. Col. 1, ll. 33-39. Connectors with signal conditioning functionality that fit within the standard form factor exist, but such functionality is not sophisticated enough for high-speed applications such as LANs. U.S. Patent No. 5,687,233 (issued Nov. 11, 1997), Col. 1, ll. 52-57.

FN1. Hereinafter column and line citations refer to the '152 Patent unless stated otherwise.

B. The Invention

The '152 Patent **discloses an RJ-45 modular connector with signal conditioning in a component package that has a footprint compatible with prior art modular connectors that lack such signal conditioning. Col. 2, ll. 5-6. An example of such a connector is shown in Figure 1. The connector includes a rectangular housing 14 with an open front end to receive a matching RJ-45 plug and an opposite open back end. A contact spring assembly 12 comprising a plurality of wires 20 and supported by a plastic block 22 inserts and locks into the open back end. The plastic block 22 contains signal conditioning circuitry and attaches to a PCB through mounting pins 32 protruding from the bottom surface of the plastic block 22. Examples of signal conditioning circuitry include DC blocking and filter-capacitor circuits, DC blocking and series choke circuits, and common-mode choke circuits. Col. 5, l. 64-Col. 6, l. 17. The modular connector does not exceed a standard form factor, thus making it an eligible substitute for prior art connectors without signal conditioning functionality.**

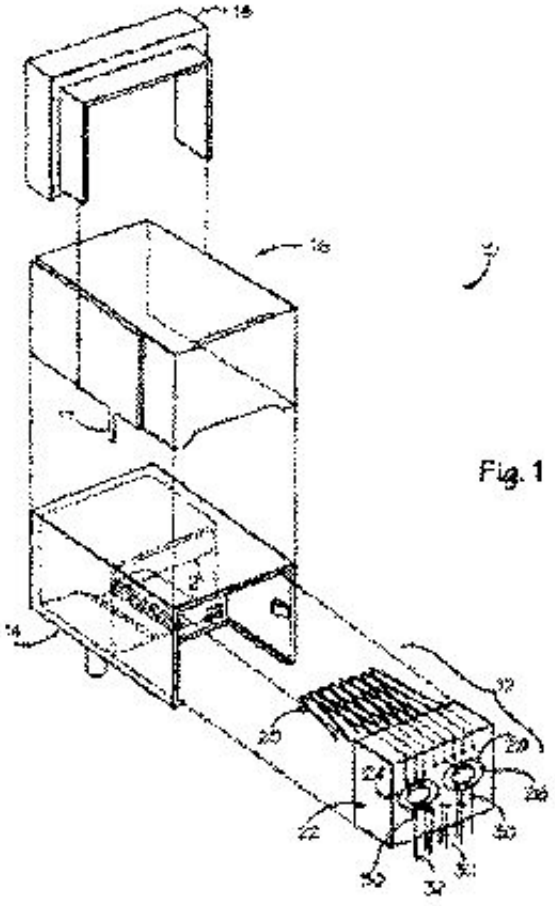

Fig. 1

In addition to its substitutability, the disclosed connector benefits from its ability to be grouped into a larger multiport connector. The '152 Patent discloses a four-port, single row modular connector, shown in Figure 2, as well as an eight-port, two-row connector, shown in Figure 3. The eight-port connector comprises two four-port connectors stacked on top of each other, with the second, upper four-port connector turned upside down. The plurality of wires for the second upper four-port connector are also long enough to reach the rectangular housing for the second connector.

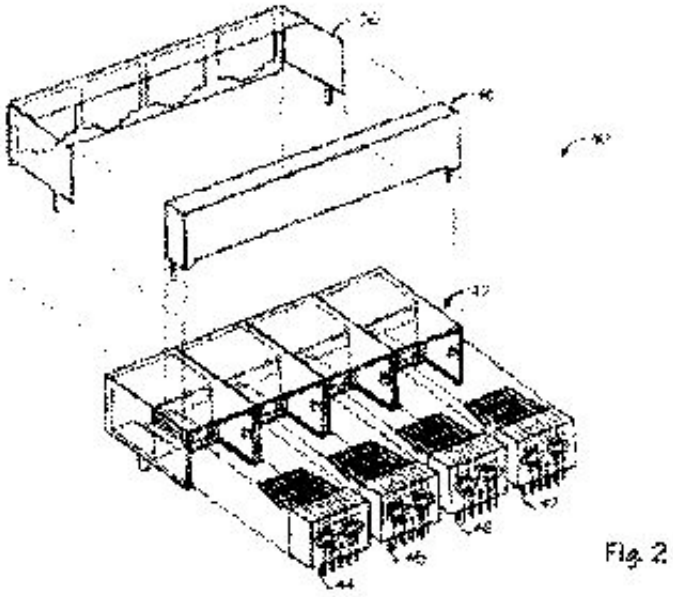

Fig. 2

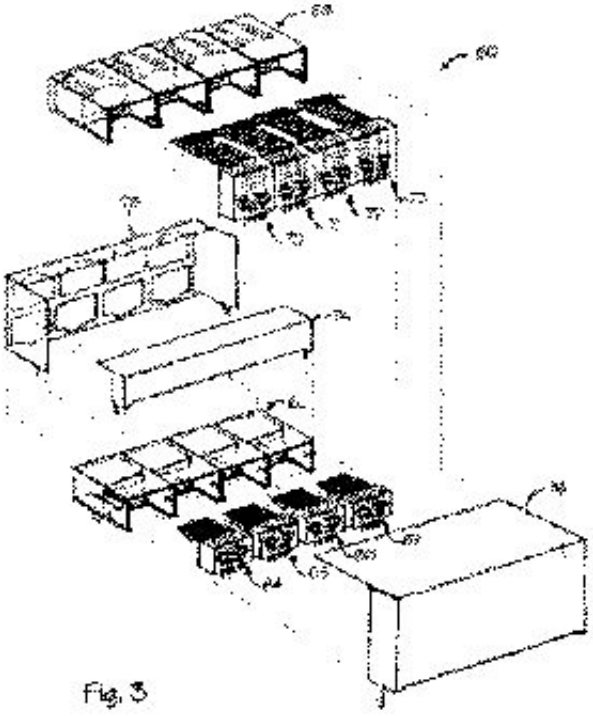

Fig. 3

C. Prosecution History

The Applicant filed application serial number 09/053,883 ("the '883 Application"), which eventually issued as the '152 Patent, on April 1, 1998.

1. ***First Office Action***

On April 2, 1999, the PTO mailed its first office action, rejecting claims 1-4 under 35 U.S.C. s. 102(e) as anticipated by U.S. Patent No. 5,687,233 ("Loudermilk '233") entitled "Modular jack having built-in circuitry." *Loudermilk '233* disclosed an invention relating to modular jack assemblies having built in signal wave shaping, isolation transformers and common mode choke circuitry. The PTO stated that *Loudermilk '233* anticipated the '883 Application because it contained all the limitations of claims 1-4. The PTO also made an obviousness rejection of claims 5-10 under 35 U.S.C. s. 103(a) as being unpatentable over *Loudermilk '233* in view of U.S. Patent No. 5,759,067 ("Scheer") entitled "Shielded Connector." The *Scheer* invention relates to a shielded connector assembly which utilizes vertically stacked components in order to maximize the use of space within the assembly. According to the PTO *Loudermilk '233* disclosed the claimed invention except for there being a plurality of open front end bays and opposite second end bays in the housing. Additionally, *Scheer* taught a housing with a plurality of open front end bays and second end bays. The PTO stated: "... it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the housing of *Loudermilk '233* to include the multiple front end bays and opposite second end bays as taught by *Scheer* in order to have a more diverse assembly of the modular jacks for multiple interconnection capabilities."

2. *The Applicant's Response to the First Office Action*

On July 12, 1999, the Applicant amended independent claims 1 and 5 to distinguish it from the prior art. The Applicant added the following language to claims 1 and 5: "*wherein, the electronic circuit is fully disposed in said vertically oriented plastic block and directly over the set of mounting pins such that a standard form factor is not exceeded by a rear extension compartment that would otherwise be necessary, and that further provides for multilevel stacking*." *See* Docket Item No. 74, Ex. 7 at 59, Raskin Decl. (hereinafter "PH"). FN2 The Applicant argued that the principle advantage of the invention over the cited prior art was the "lack of a rearward overhang to accommodate the conditioning circuits." (PH at 62.) Furthermore, the Applicant argued that claim 5 should not be rendered obvious simply because *Sheer* taught a housing with a plurality of bays. The Applicant stated: "[the] motivation of the present inventor to make the combination of the recited elements of the claims was to allow stacking of jacks even though signal conditioning had to be incorporated in the jack. Therefore, jacks of the present invention fit the original form factors and foot prints of conventional jacks that lack any signal conditioning." FN3 (PH at 64.)

FN2. Claim 5 described above later issues in the '152 Patent as claim 6.

FN3. The Applicant refers to "jacks of the present invention," however the Court believes that The Applicant is using "jacks" to mean "connectors" as used in the '152 Patent.

3. *PTO Issues Final Office Action*

On October 13, 1999, the PTO mailed a final office action, rejecting claims 1-10. The PTO reaffirmed its rejection of claims 1-5 based on *Loudermilk '233* and rejected claims 5-10 as obvious over *Loudermilk '233* in view of U.S. Patent No. 5,639,267 ("Loudermilk '267") . The PTO stated: "Loudermilk teaches having a housing with a plurality of open front end bays and second end bays. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify that housing of Loudermilk et al to include the multiple front end bays and opposite second end bays as taught by Loudermilk ..." (PH at 84.) On November 22, 1999, the Applicant appointed new attorneys to represent him before the PTO for the prosecution of the ' 152 Patent.

4. ***The Applicant Files a Continued Prosecution Application***

On January 13, 2000, the Applicant filed a Continued Prosecution Application ("CPA") pursuant to 37 C.F.R. s. 1.53(d) and abandoned the prior application. Included in the CPA was a Preliminary Amendment. The Applicant amended claims 1-10 to further distinguish the invention from the prior art. Also, Plaintiff included the following new claims:

Claim 5: The connector of claim 1, wherein the plastic block includes a snap-together construction such that mix-and-match signal conditioning parts are capable of being attached to the plastic block using the snap-together construction.

Claim 12: The connector of claim 6, wherein the plastic block includes a snap-together construction such that mix-and-match signal conditioning parts are capable of being attached to the plastic block using the snap-together construction.

(PH at 21).

(a) ***The Applicant's Arguments on Claims 1-4***

In response to the last office action, the Applicant argued that *Loudermilk ' 233* did not disclose or suggest a "contact spring assembly including a plastic block and a signal conditioning part disposed in the plastic block for providing signal conditioning of signals passing from set of mounting pins to said contact spring assembly." (PH at 121.) The Applicant also claimed that *Loudermilk '233* did not disclose or suggest that the signal conditioning part be " *fully disposed* in the vertically oriented plastic block and directly over the set of mounting pins, such that a *standard form factor* would not be exceeded by a rear extension that would otherwise be necessary. (Id.) To overcome the anticipation argument, The Applicant argued that *Loudermilk '233* disclosed signal conditioning technology on the PCB, which the claimed invention avoided to save space on the PCB.

(b) ***The Applicant's Arguments on Claims*** **5-10**

Claims 5-10, referring to the connectors with multiple bays were previously rejected under 35 U.S.C. s. 103(a) as being anticipated by *Loudermilk '233* in view of *Loudermilk '267*. In the previous office action, the examiner had stated, "it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the housing of *[Loudermilk '233]* to include the multiple end bays and opposite second end bays as taught in *[Loudermilk '267]* in order to have a more diverse assembly of the modular jacks for multiple interconnection capabilities." (PH at 84.) The Applicant argued, *inter alia,* that "neither *[Loudermilk '233]* nor *[Loudermilk '267]* individually or in combination disclos[ed] or suggest[ed] a *plastic* rectangular housing with a first plurality of open front end bays for each bay to receive a matching RJ-45 modular jack, and an opposite second plurality of open back end bays." (PH at 123.) (emphasis added). The Applicant also argued that neither patent disclosed or suggested the use of a plastic block that contained a signal conditioning part with the "form factor" limitations of claim 5. *(See* PH at 125.)

5. ***The Applicant Files a Terminal Disclaimer***

On October 1, 2000, the PTO sent an office action rejecting claims 1-12 based upon the judicially created doctrine of obviousness-type double patenting over claims 1-7 of U.S. Patent No. 5,971,813 ("Kunz '813")

in view of *Loudermilk '233* and *Loudermilk '267*. *Kunz '813* disclosed an RJ-45 modular connector with microwave-transmission-line signal conditioning for high speed networks. The PTO stated that a timely filed terminal disclaimer in compliance with 37 C.F.R. s. 1.321(b) and (c) could be used to overcome the rejection as long as the conflicting patent *(Kunz '813)* was commonly owned. On May 25, 2000, the Applicant filed a terminal disclaimer pursuant to 37 C.F.R. s. 1.321(c) to shorten the term of the '152 Patent to expire concurrently with *Loudermilk '233* or in the alternative *Kunz '813*.

6. ***PTO Issues a Notice of Allowance***

On June 20, 2000, the Patent Office sent a Notice of Allowance. In the reasons for allowance the examiner stated:

The prior art fails to disclose an RJ-45 style modular connector which has a signal conditioning part disposed in a plastic block for providing signal conditioning signals passing from the set of the mounting pins to the contact spring assembly. The signal conditioning part is fully disposed in the vertically oriented plastic block and directly over the set of mounting pins such that a standard form factor is not exceeded by a rear extension compartment that would otherwise be necessary and that further provides for multilevel stacking.

(PH at 148.)

III. STANDARDS

The construction of the claims in a patent is a matter left to the province of the court. Markman, 517 U.S. at 391. A court's objective is to determine the plain meaning, if any, that those of ordinary skill in the art would apply to the language used in the patent claims. Warner v. Ford Motor Co., 331 F.3d 851, 854 (Fed .Cir.2003) (citing Rexnord v. Laitram Corp., 274 F.3d 1336, 1342 (Fed.Cir.2001)). Unless the inventor has manifested an express intent to depart from the ordinary and accustomed meaning that patent claim language has in the art, there is a heavy presumption that the inventor intended the ordinary meaning to apply. *See* Teleflex Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1325 (Fed.Cir .2002) *(en banc)* (citation omitted); Bell Atlantic Network Servs., Inc. v. Covad Communications Group, Inc., 262 F.3d 1258, 1268 (Fed.Cir.2001) (citation omitted).

While the court may look to pertinent art dictionaries, treatises and encyclopedias for assistance, Texas Digital Sys., Inc. v. Telegenix, Inc., 308 F.3d 1193, 1202-03 (Fed.Cir.2002), the intrinsic record is the best source of the meaning of claim language. Vitronics Corp. v. Conceptronics, Inc., 90 F.3d 1576, 1582 (Fed.Cir.1996). "All intrinsic evidence is not equal however ... First we look to the claim language ... Then we look to the rest of the intrinsic evidence, beginning with the specification and concluding with the prosecution history, if in evidence." Interactive Gift Express, Inc. v. Compuserve, Inc., 256 F.3d 1323, 1331 (Fed.Cir.2001) (internal citation omitted).

IV. DISCUSSION

The parties request construction of thirteen terms (italicized & bolded) in the following claims of the '152 Patent. The claims are:

1. An ***RJ-45 style modular connector,*** comprising: a plastic rectangular housing with an open front end to receive a matching ***RJ-45 style modular jack,*** and an opposite open back end; a contact spring assembly of

a plurality of wires in separate circuits that pass forward through said ***open back end*** into the back of said open front end of the housing, wherein the contact spring assembly includes a ***plastic block that supports the plurality of wires by a right angle turn*** and is ***vertically oriented with respect to the plurality of wires,*** and wherein the plastic ***block*** inserts and locks into said open back end of the housing; a set of mounting pins is disposed at a bottom edge of said plastic ***block*** for connection to a printed motherboard; and ***a signal conditioning part*** disposed in said plastic ***block*** for providing signal conditioning of signals passing from said set of mounting pins to said contact spring assembly; wherein, said ***signal conditioning part*** is fully ***disposed in said vertically oriented plastic block*** and ***directly over the set of mounting pins*** such that ***a standard form factor*** is not exceeded by ***a rear extension compartment that would otherwise be necessary,*** and that further ***provides for multilevel stacking.***

2. The connector of claim 1, wherein the ***signal conditioning part*** includes a common choke to suppress noise interference associated with an Ethernet Local Area Network (LAN) operating on a LAN media cable connected with said contact spring assembly.

3. The connector of claim 1, wherein the ***signal conditioning part*** includes an isolation transformer to block direct current signal associated with an Ethernet LAN operating on a LAN media cable connected with said contact spring assembly.

4. The connector of claim 1, wherein the ***signal conditioning part*** includes an impedance matching transformer to couple Ethernet LAN signals between said set of mounting pins and a LAN media cable connected with said set of mounting pins.

5. The connector of claim 1, wherein the plastic ***block*** includes a snap-together construction such that mix-and-match signal conditioning parts are capable of being attached to the plastic ***block*** using the snap-together construction.

6. An ***RJ-45 style modular connector,*** comprising: a plastic rectangular housing with a first plurality of open front end bays for each bay to receive a matching ***RJ-45 style modular jack,*** and an opposite second plurality of ***open back end*** bays; and wherein each pair of open front and back end bays is associated with: a contact spring assembly of a plurality of wires in separate circuits that pass forward through said open back end into the back of said open front end of the housing, wherein the contact spring assembly includes a ***plastic block that supports the plurality of wires by a right angle turn*** **and is** ***vertically oriented with respect to the plurality of wires*** and wherein the plastic ***block*** inserts and locks into said open back end of the housing; a set of mounting pins in two fore-and-aft parallel rows on a uniform pin spacing is disposed at a bottom edge of said plastic ***block*** for connection to a printed motherboard; and a ***signal conditioning part*** disposed in said plastic ***block*** for providing signal conditioning of signals passing from said set of mounting pins to said contact spring assembly; wherein, said ***signal conditioning part*** is fully ***disposed in said vertically oriented plastic block*** and ***directly over the set of mounting pins*** such that ***a standard form factor*** is not exceeded by ***a rear extension compartment that would otherwise be necessary,*** and that further ***provides for multilevel stacking.***

7. The connector of claim 6, wherein: the first plurality of open front end bays and second plurality of open back end bays are all disposed in a single horizontal row that abuts a printed circuit motherboard after mounting of said mounting pins, and neither the housing nor any of the plastic ***blocks*** extend to the rear ***substantially beyond a rear row of said mounting pins.***

8. The connector of claim 6, wherein: the first plurality of open front end bays and second plurality of open back end bays are evenly disposed in two horizontal rows, a lower row of which abuts a printed circuit motherboard after mounting of said mounting pins, and an upper row of which abut said first row and extend behind said first row to receive a corresponding set of extended-height spring assemblies; and wherein, neither the housing nor any of said plastic ***blocks*** in said extended-height spring assemblies extend to the rear ***substantially beyond a rear row of said mounting pins.***

9. The connector of claim 6, wherein at least one of the ***signal conditioning parts*** include a common choke to suppress noise interference associated with an Ethernet LAN operating on a LAN media cable connected with a corresponding contact spring assembly.

10. The connector of claim 6, wherein at least one of the ***signal conditioning parts*** include an isolation transformer to block direct current signals associated with an Ethernet LAN operating on a LAN media cable connected with a corresponding contact spring assembly.

11. The connector of claim 6, wherein at least one of the ***signal conditioning parts*** include an impedance matching transformer to couple Ethernet LAN signals between said set of mounting pins connected with a LAN media cable.

12. The connector of claim 6, wherein the plastic ***block*** includes a snaptogether construction such that mix-and-match signal conditioning parts are capable of being attached to the plastic block using the snap-together construction.

The parties have agreed to the meaning of the following terms: "plurality of wires" means "several wires;" "fully" means "totally or completely;" "snap-together construction" means "to fit together with a click;" "mix-and-match" means "coordinated and interchangeable;" and "associated with an Ethernet local area network (LAN) operating on a LAN media cable" means "a local area network conforming to the IEEE 802.3 standard comprising a group of computers and other devices (nodes) connected by coaxial cables, fibre optic cables, or by twisted-pair wiring, through which messages are transmitted."

1. "block(s)" (claims 1, 5-8, 12)

The Court construes "block" as "a firm piece of material having one or more flat sides." The *American Heritage Dictionary* (4th ed.2000) defines "block" as "a solid piece of hard substance such as wood, having one or more flat sides." Both parties agree that a block is "solid," but dispute as to which dictionary meaning of the term "solid" should prevail. Regal submits that "solid" means "firm" and Defendants propose "not hollowed out." Because dictionaries provide several meanings to the term "block," the Court looks to the claims, specification, and prosecution history to determine the meaning of the term "block ." *See* Vitronics, 90 F.3d at 1582.

Claims 1and 6 provide that the "signal conditioning part is fully disposed in said vertically oriented plastic block ..." Regal argues that because the signal conditioning circuitry is claimed to be disposed within the block, the block must be hollow or must have hollow parts. Defendants contend that the block is not hollow because the specification refers to the block as a "molded insert" and a "molded insert" refers to insert molding-a term used to describe molding of plastic around the signal conditioning circuitry.

"Claims are not to be interpreted by adding limitations appearing only in the specification." Electro Medical

Systems, S .A. v. Cooper Life Sciences, Inc., 34 F.3d 1048, 1054 (Fed.Cir.1994). The specification refers to "block" as "plastic insert body" or "insert body" in one embodiment and as "molded insert" in other embodiments. *See* Col. 3, ll. 59-61 ("The group of spring connectors 20 provides for eight industry defined circuit connectors that pass through a plastic insert body ..."); Col. 3, ll. 64-66 ("It is critical to the present invention that such signaling conditioning be implemented entirely within the volume of the *insert body* ..."*);* Col. 5, ll. 10-11 ("Each *molded insert* 63-67 and 70-73 includes a signal conditioning circuit ...") (emphasis added). As such, a person of ordinary skill of the art would understand that a "block" refers to a molded or an unmolded insert body which contains the signaling conditioning entirely within its body. Accordingly, the Court rejects Defendants' narrow construction of "block" to mean "solid *(i.e.* not hollowed out) piece of material having one or more flat sides" and construes "block" to mean "a firm piece of material having one or more flat sides" which would include both hollow and non-hollow block. *See* Electro Medical Systems, 34 F.3d at 1054 ("although the specifications may well indicate that certain embodiments are preferred, particular embodiments appearing in a specification will not be read into the claims when the claim language is broader than such embodiments.").

2. "a standard form factor" (claims 1, 6)

The parties agree that "a standard form factor" means a "footprint" compatible with preexisting connectors. The dispute is over whether "a standard overall factor" also means compatibility with the "shape" of a pre-existing connector. Regal proposes the construction "having a shape and footprint compatible with previously-designed, industry standard RJ-45 connectors that lack signal conditioning." Regal argues that standard form factor does not merely mean footprint. As support for its construction, Regal points out that the *American Heritage Dictionary* (4th ed.2000) defines "form" as the "shape ... of an object" and not as "footprint." Referring to the specification, Regal argues that if "form factor" was synonymous with "footprint," the Patentee would not have used the term "overall form factor" in addition to the "pin-out, pin placements," which Regal defines as "footprint," in stating that both are critical. *See* Col. 4, ll. 1-4 ("The pin-out, pin placements, and overall form factor of the modular connector are critical because it must the be [sic] form, fit, and function equivalent to preexisting PCB's that were designed for prior art modular connectors.").

Pulse and FRE argue that there is no industry standard that defines standard form factor for RJ-45 connectors. While Pulse and Bel Fuse may be correct, this Court assumes that a de facto standard exists in light of the fact that the specification repeatedly refers to compatibility with preexisting connectors and the obvious advantage of having a standard that would accommodate several components.

Defendants, Bel Fuse, Pulse, and FRE further argue that "a standard form factor" merely refers to a "footprint" and not to "shape" as well. They propose the construction "footprint of a previously designed industry standard connector." In support of their construction, Defendants point to statements in the specification and prosecution history where the Patentee uses either footprint or form factor separately. *See* Col. 2, ll. 2-6 ("an object of the present invention [is] to provide a modular connector ... that has a compatible footprint with prior art modular connectors ..."); Col. 1, ll. 36-39 ("the footprints that results would prohibit the embodiments of Peter Scheer, et al., from being able to make a form, fit, and function substitution ..."); (PH at 62) (stating that a rearward overhang "will interfere with components on a motherboard that need the connector to fit a standard form factor").

In the patent and prosecution history, the terms "footprint" and "form factor" are used separately rather than always interchangeably, thereby indicating that the term "form factor" has a meaning that is more than

merely "footprint." The patent-in-suit is entitled "Standard Footprint *and* form factor RJ-45 ..."; the specification provides that "the pin-out, pin placements [defined as "footprint"], *and* overall form factor" are critical; and in the prosecution history the Patentee distinguishes the present invention from prior art as fitting "the original form factors *and* foot prints of conventional" connectors. (PH at 64.) Where the Patentee uses a disputed term in a broad as well as a narrow context, the broader meaning prevails. *See* Johnson Worldwide Assoc., Inc. v. Zebco Corp., 175 F.3d 985 (Fed.Cir.1999) ("Varied use of a disputed term ... demonstrates the breadth the term rather than providing a limited definition"). Moreover, the statements referred to by Defendants in support of their construction also support the Court's construction. The statements merely provide that the term "form factor" also refers to "footprint," a construction that is undisputed. To the extent that the ordinary meaning of the term "form" is "shape ... of an object," *American Heritage Dictionary* (4th ed.2000), and "standard form factor" means more than simply footprint, this Court construes "a standard form factor" to mean "a shape and footprint compatible with previously-designed RJ-45 connectors that lacked signal conditioning."

3. "provides for multilevel stacking" (claims 1, 6)

The principal dispute surrounding this phrase is whether the multiple rows of connectors must be separable or detachable or can come in a fixed form. Plaintiff proposes that the phrase "provides for multilevel stacking" means "affords the arrangement of connectors in an orderly pile of layers." (Docket Item No. 66 (Regal Electronics Inc.'s Opening Brief and Supporting Evidence re Claim Construction) ("Pl.'s Br.") at 16. Defendants Pulse and FRE contend that the disputed phrase means "affords the arrangement of connectors in orderly rows of separable layers." (Docket item No. 72 (Claim Construction Brief pursuant to Patent L.R. 4-5(b)) ("Pulse's Br.") at 19. Defendant Bel Fuse, essentially agrees with Plaintiff's interpretation of this term. Bel Fuse states that the phrase should mean "affords the arrangement of connectors in an orderly pile in several layers so that there is no overhang." (Docket Item No. 73 (Bel Fuse's Responsive Claim Construction Brief and Supporting Evidence Pursuant to Patent Local Rule 4-5(b)) ("Bel Fuse's Br.") at 20. Additionally, Defendant Pulse and FRE would like the Court to adopt a definition that limits the construction to a detachable form. (Pulse's Br. at 20.)

"Provides" has the ordinary meaning, "to make available; afford." *American Heritage Dictionary* (4th ed.2000). The parties agree that "multi-level" has the ordinary meaning, "having several levels." *Id*. at 1155. The ordinary meaning of "stack" is "n.2 an orderly pile, especially one arranged in layers; tr. 1. To arrange in a stack, pile." *Id*. at 1687. Looking to the ordinary meaning of the words within the context of the claim, the Court does not find that the phrase "provides for multilevel stacking" implies that the multiple layers are separable. To a person of ordinary skill in the art, "provides for multi-level stacking," would suggest that construction of the connector is such that it allows for multiple layers of connectors to be arranged without exceeding the standard form factor. This meaning is confirmed by reading that portion of the claim in its entirety "... such that a standard from factor is not exceeded by a rear extension compartment that would otherwise be necessary, and that further provides for multilevel stacking." Col. 6, l. 55.

Next, the court examines the language of the claim in the context of the specification, drawings and prosecution history. Vitronics, 90 F.3d at 1582; *see also* Toro Co. v. White Consolidated Indus., Inc., 199 F.3d 1295, 1301 (Fed.Cir.1999) (words are "not construed in a lexicographic vacuum, but in the context of the specification and the drawings."). The Patentee states in the "Summary of the Invention," "[i]t is a further object of the present invention to provide a modular connector system in which a single-row multi-port modular connector for printed circuit board mounting may accept a second single-row multi-port modular connector." In the "Preferred Embodiment" section, Regal describes a single-row, four-port

modular connector that "can be quickly and easily converted to the eight-port, two-row modular connector ..." Col. 4, ll. 5-62. The specification states that "[s]uch a conversion would include an upper row four-bay insulative housing that accepts four RJ-45 style jacks ..." Col. 4, ll. 63-65.

During prosecution history, Regal argued that the '152 Patent was not obvious in light of *Sheer* because "[the] motivation of the present inventor to make the combination of the recited elements of the claims was to allow stacking of jacks even though signal conditioning had to be incorporated in the jack ... [to] fit the original form factors and foot prints of conventional jacks that lack any signal conditioning." (PH at 64.). The Patentee made no arguments regarding detachability or separability for different layers of modular connectors.

The issue is whether the invention claims an apparatus with multi-port connectors that must be in separable layers, such that one layer can be removed or added to a first layer. The Court does not find any evidence to support this claim limitation. The word "provides," means that the apparatus has the ability to stack with other layers. In other words, separability is an option, not a mandatory feature of the patent. Thus, the claim can encompass an apparatus that includes multi-level modular connector ports already assembled, which have the ability to accept additional rows, or a single row that has the ability to accept a second or third row of modular connector ports. The only limitation imposed by the Patentee is that the standard form factor not be exceeded.

Additionally, the parties agree that "multi" means "several." The ordinary meaning of "several" is "being more than two or three." *Webster's New Riverside Dictionary* (1984). However, the Court does not find that the Patentee limited himself to an invention that is necessarily more than two or three layers. The claims, specification and prosecution history are silent as to the meaning of multi-level, however, the Patentee's own preferred embodiments include two or three row RJ-45 connectors. *See* Col. 4, ll. 50-62. Therefore, the Court does not limit the definition of several to mean more than two or three layers.

Accordingly, the Court construes "provides for multi-level stacking" to mean: "the ability to accept multiple rows of connectors, in an orderly pile of layers, such that the standard form factor is not exceeded by a rear extension compartment that would otherwise be necessary."

4. "RJ-45 style modular connector" (claims 1, 6)

The parties agree that "connector" refers to the component of a two-part connection system that "receives" a matching counterpart. (Pl.'s Br. at 3.); (Pulse's Br. at 7); (Bel Fuse's Br. at 17.) Persons having ordinary skill in the art would recognize such component as the "female" part of the connector. *See Dictionary of Scientific and Technical Terms* 740 (Sybil Parker ed., McGraw-Hill Inc. 5th ed.1994) (female connector: a connector having one or more contacts set into recessed openings). Accordingly, the Court construes "RJ-45 style modular connector" to mean "the female part of an 8-wire industry standard two-part connection assembly of the type configured in accordance with applicable FCC standards."

5. "RJ-45 style modular jack" (claims 1, 6)

The Court construes "RJ-45 style modular jack" to mean "the male counterpart of the RJ-45 style modular connector."

Although the plain and ordinary meaning of "jack" is the female part of the connection assembly, *Modern*

Dictionary of Electronics (7th ed.1999), Regal clearly establishes the alternate definition of "jack" as the male part. "A patentee may choose to be his own lexicographer and use terms in a manner other than their ordinary meaning, as long as the special definition of the term is clearly stated in the patent specification or file history." Vitronics, 90 F.3d at 1582. The claims, the "Summary of the Invention," and the "Detailed Description of the Preferred Embodiment" unambiguously use "RJ-45 style jacks" as the male part that is "accepted" or "received" by the housing. The "Description of the Prior Art" and the prosecution history does use "jack" as the female part in the context of describing several prior art references. However, the rest of the specification, which discloses the substantive parts of the invention, clearly reveals to one of ordinary skill in the art that the Patentee intended "jack" to mean the male part.

Defendants complain that Regal does not provide an explicit definition for "jack," but an explicit definition is not necessary. "The specification acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication." Vitronics, 90 F.3d at 1582.

Finally, the Court adopts Regal's construction to preserve the validity of the claims. "When claims are amenable to more than one construction, they should when reasonably possible be interpreted so as to preserve their validity." Modine Mfg. Co. v. United States Int'l Trade Comm'n, 75 F.3d 1545, 1557 (Fed.Cir.1996). Defendants' construction would result in the absurd scenario of having two female parts, an arguable violation of the definiteness and enablement requirements of 35 U.S.C. s. 112. Defendants rebut that while claims, when ambiguous, should be construed so as to preserve their validity, a court may not rewrite claims to avoid indefiniteness, written description, or enablement defenses. Honeywell Int'l, Inc. v. ITC, 341 F.3d 1332, 1341 (Fed.Cir.2003). *Honeywell* is distinguishable because the intrinsic evidence did not support the Patentee's construction. Here, as stated above, the claims and the specification provide adequate support for Regal's construction. Accordingly, the Court construes "RJ-45 style modular jack" to mean "the male counterpart of the RJ-45 style modular connector."

6. "signal conditioning part(s)" (claims 1-4, 6, 9-11)

The parties agree that the construction for this term includes a component that "controls or compensates for attenuation, noise or distortion in an information-carrying electric impulse or quantity." *American Heritage Dictionary* (4th ed.2000); *Microsoft Computer Dictionary* (5th ed.2002).

The Court rejects Regal's inclusion of the phrase "amplification, filtering, converting and other processes" because it is taken from an extrinsic source not ordinarily relied on by the courts in construing claims. The website from which this phrase is taken does not qualify as a dictionary, encyclopedia, or treatise, and thus constitutes an improper extrinsic source. FN4 Extrinsic evidence "cannot be relied on to change the meaning of the claims when that meaning is made clear by [the intrinsic evidence]." Southwall Technologies v. Cardinal IG Co., 54 F.3d 1570, 1578 (Fed.Cir.1995). Here, "signal conditioning part(s)" is sufficiently clear in light of the specification and various dictionary definitions.

FN4. *See* <<http://efunda.globalspec.com/LearnMore/ Data_Acquisition_ Signal_Conditioning/Signal_Conditioning>> (last visited Apr. 26, 2004)

"[A]s a general rule, the construing court interprets words in a claim as one of skill in the art at the time of invention would understand them." Schering Corp. v. Amgen Inc., 222 F.3d 1347, 1353 (Fed.Cir.2000). There is no evidence that the language from the website reflects the state of the art as of 1998. The

copyright date ranges from 1996 to 2004, and the database purports to have been last updated in 2004.

The Court also rejects Regal's inclusion of the phrase "such as to meet the requirements of high-speed communication systems and applications like LAN and ATM switches" as improper importation of limitations from the specification into the claims. "Limitations from the specification are not to be read into the claims." Comark Communs. v. Harris Corp., 156 F.3d 1182, 1186 (Fed.Cir.1998). Although one of the disclosed embodiments includes "a signal conditioning circuit that provides proper electrical coupling ... to a high speed computer network" and the title of the '152 Patent includes "integrated signal conditioning for high speed network," the specification and claims do not state that "signal conditioning parts" are required to "meet the requirements of high speed communication systems and applications" for purposes of the invention. Similarly, mention of prior art devices that "meet the requirements ... for 10/100BASE-TX and ATM155 applications" and exemplary embodiments used "for coupling ... in 100BASE-T network application[s]" are insufficient to impute the limitations of those devices and embodiments into the claims.

Finally, the plain meaning of this term is also supported by language in the specification. Control or compensation for attenuation, noise or distortion includes "block[ing][of] spurious signals, *e.g.*, high frequency noise, differential-mode direct current (DC), and common mode voltages." Col. 1, ll. 15-18. Such language may be properly incorporated into the construction in concert with the plain meaning. The Court accordingly construes "signal conditioning part(s)" to mean "a component that blocks spurious signals or controls or compensates for attenuation, noise or distortion in an information-carrying electric impulse or quantity."

7. "plastic block that supports the plurality of wires by a right angle turn" (claims 1, 6)

The dispute regarding this term centers primarily upon what "right angle turn" means in the context of claims 1 and 6. Regal proposes that the "right angle turn" means that "the plurality of wires is supported by means of a 90 degree pivot between the plastic block and the wires." (Pl.'s Br. at 12.) Defendants contend that "right angle turn" means the change in direction of the wires. The Court finds the disputed term to mean a "plastic block that holds the plurality of wires by a ninety degree change in direction of the wires."

In its analysis, the Court first turns to the ordinary meaning of the claim term as used by those skilled in the art. Dictionary definitions and learned treatises are especially useful in determining the ordinary and customary meaning of claim terms. *See* Texas Digital, 308 F.3d at 1205. Regal proposes that "turn" has the ordinary meaning, "to change the position of by traversing an arc of a circle; pivot." *American Heritage Dictionary* (4th ed.2000). Defendants on the other hand propose that "turn" means "a change of direction, motion or position." *American Heritage Dictionary* (4th ed.2000). The parties agree that "right angle" has the ordinary meaning, "an angle formed by the perpendicular intersection of two straight lines; an angle of ninety degrees." *American Heritage Dictionary* (4th ed.2000). Since the parties disagree as to what "right angle turn" means in the context of claims 1 and 6, and there is a dispute as to the ordinary meaning of that term, the Court turns to the claims, specification, and prosecution history of the patent in suit, to select from those possible definitions the one most consistent with the use of the term by the inventor. *See* Texas Digital, 308 F.3d at 1205. The written description of the '152 Patent does not explicitly define or describe the meaning of "right angle turn." Drawings may assist the court in construing claim language and may sometimes provide the rationale for defining a claim. *See* General American Transportation Corp. v. Cryo-Trans, Inc., 93 F.3d 766, 770 (Fed.Cir.1996). Figures 1-3 show a plastic block holding a plurality of wires making a 90 degree turn towards the circuit board. Regal argues that figures 4 and 5 show that the plurality of wires is not bent at a right angle, but is merely supported by a plastic block that is oriented at a right

angle to the plurality of wires. (Pl.'s Br. at 13.) However, the patent itself recites that "Fig. 4 is a side view of the eight-port two-row modular connector of Fig. 3" and "Fig. 5 is a side view of a three-row modular connector that started with the two-row modular connector of Figs. 3 and 4." Col 3, ll 4-12. Therefore, all the figures of the '152 Patent essentially depict a plastic block as shown in figures 1-3.

During the prosecution history, Regal amended claims 1 and 5 by removing the language, "plurality of wires ... supported *past* a right angle turn by a vertically oriented plastic block," and changed it to "plastic block that supports the plurality of wires *by* a right angle turn ..." (emphasis added). The Patentee also argued that neither *Loudermilk '233* nor *Loudermilk '267* disclose or suggest a contact spring assembly including a plastic block that supports the plurality of wires by a right angle turn ..." (PH at 125.) *Loudermilk '233* disclosed a contact pin array 120 that has an L-shape configuration to meet a circuit board 200. Id.

The Patentee's original language, "plurality of wires ... supported past a right angle by a vertically oriented plastic block" implies, to one of ordinary skill in the art, that the plastic block is a support for the wires, and that the wires make a turn, beyond the plastic block. One definition of past is "1: so as to reach and go beyond a point near at hand 2: at an end: over." *Webster's Ninth New Collegiate Dictionary* (1991). If the Court accepts the Patentee's proposal that the "right angle turn" is a 90 degree pivot between the plastic block and the wires, the use of the term "past" later amended to the word "by" has no meaning in the context of the claim. Clearly the wires have to go through the plastic block before achieving some level of support. More tellingly, however, is the use of the term "turn" by Regal. The word "turn" implies some sort of change in direction. There is no "turn" where the wires intersect the plastic block. Accordingly, the Court finds that the ordinary meaning of a "right angle turn" in light of the claims and specification means a 90 degree change in direction.

The other issue is whether the Court should adopt Pulse and FRE's narrower construction, "wherein the ninety degree change in the direction of the wires is within the plastic block." The Court does not find this limitation within the claim language, although such a limitation is described in a preferred embodiment, which is described as "[the] circuit connections ... pass through the plastic insert body 22." Col. 3, ll. 59-61. As a general rule, courts should not treat characteristics of a preferred embodiment as claim limitations. Comark Communications, 156 F.3d at 1186. Therefore, the Court adopts the following definition for the disputed phrase: "plastic block that holds the plurality of wires by a ninety degree change in direction of the wires."

8. "vertically oriented with respect to the plurality of wires" (claims 1, 6)

Regal proposes that the disputed phrase means: "positioned or situated at a right angle to the plurality of wires." All parties agree that "vertically oriented with respect to the plurality of wires" means that the plurality of wires intersect the plastic block at a right angle. However, the Court must decide whether to read in any further limitations to this meaning with respect to the position and orientation of the plastic block as proposed by Defendants. Bel Fuse proposes the construction, "the block is elongated so that it has a longitudinal axis, and is aligned so that its longitudinal axis is at right angles with respect to the direction of the wires of contact spring assembly that pass forward through said open back end into the back of the open end into the front end." Pulse and FRE propose the definition, "oriented such that a longer dimension is substantially normal (perpendicular) to the printed circuit board with respect to a shorter dimension which is not and such that the longer dimension is at right angles with respect to the direction of the wires that pass forward through plastic block into the open back end into the back of the open front end of the housing." In essence, Defendants propose that one side of the block must be longer than another side and the plurality of

wires must intersect the longer side of the block. Pulse and FRE limit this definition even further by requiring that the longer side be perpendicular to the printed circuit board.

The Court rejects Defendants' proposed constructions. Nothing in the claims, specification, or prosecution history requires that the block be of a particular shape, let alone a requirement that one side of the block be longer than the other. This Court has previously construed the term "block" to mean "a firm piece of material having one or more flat sides." Such a construction does not require that the block be rectangular or have one side longer than another. Furthermore, there is no support for Pulse and FRE's proposed construction that the "longer dimension is ... perpendicular to the printed circuit board." The claims, specification, and prosecution history indicate that the block is vertically oriented with respect to the plurality of wires and not to the PCB. Claims 1 and 6 recite "a plastic block that ... is vertically oriented *with respect to the plurality of wires* ... " (emphasis added). The specification discloses "the group of spring connectors 20 provides for eight industry defined circuit connections that *pass through a plastic insert* body 22," (emphasis added) indicating that in order to pass through the block, the wires simply cannot be horizontal to the block, but must be perpendicular to the block.

Finally, the prosecution history indicates that the vertical orientation of the block is with respect to the wires and not to the PCB. Prior to amendment, the relevant portions of Claim 1 provided, "a contact spring assembly of plurality of wires ... that are supported past a right angle turn by a vertically oriented plastic block ..." (PH at 30). In order to overcome prior art, the Patentee amended Claim 1 to read, "a contact spring assembly of a plurality of wires ..., wherein the contact spring assembly includes a plastic block that ... is vertically oriented with respect to the plurality of wires ..." (PH at 120). The specific inclusion of the phrase "with respect to the plurality of wires" would indicate to a person of ordinary skill in the art that the plastic block is vertically oriented with respect to the wires and not to the PCB.

Although figures 1-5 show a plastic block with an orientation such that its height is greater than its width, the court will not impose a limitation that is found in the drawings but not also apparent in the claims, specification, or prosecution history. *See* Hockerson-Halberstadt Inc., v. Avia Group International, Inc., 222 F.3d 951, 956 (Fed.Cir.2000) ("... it is well established that patent drawings do not define the precise proportions of the elements and may not be relied on to show particular sizes if the specification is completely silent on the issue."). The only limitation on the orientation of the vertical plastic block is that a "standard form factor not be exceeded by a rear extension that would otherwise be necessary." Claims 1, 6; (PH at 121).

Regal and Bel Fuse, agree that "vertically" has the ordinary meaning: "Being or positioned at right angels to the horizon; upright," *American Heritage Dictionary* (4th ed.2000), and "oriented" has the ordinary meaning: "3. to align or position with respect to a point or system of reference." *Id*. at 1240. Based upon the plain and ordinary meaning of the terms, as evidenced by dictionary definitions, and the claims, specification, and prosecution history, the Court construes "vertically oriented with respect to the plurality of wires" to mean "positioned at a right angle to the plurality of wires, such that the right angle is formed between the plurality of wires and the surface of the block accepting the wires."

9. "disposed in said vertically oriented plastic block" (claims 1, 6)

The dispute regarding this phrase found in claims 1 and 6 centers around whether the signal conditioning part need only be within the "area" or completely contained within the volume of the plastic block. For reasons discussed below, the Court finds that the disputed phrase means: "completely contained within the

volume of the vertically oriented plastic block."

Regal argues that the term "disposed in" means "arranged within the bounds or area of the plastic block, such that a standard form factor is not exceeded by a rear compartment that would otherwise be necessary, and that further provides for multi-level function." (Pl.'s Br. at 15.) In other words, Regal's construction implies that the signal conditioning part need not be enveloped by the plastic block, but simply on or partially within the plastic block such that the space saving function of the patent is maintained. Defendants agree that the disputed phrase should be construed to mean: "set or placed within the bounds of the plastic block," (Pulse's Br. at 15), such that the signal conditioning part is entirely within the volume of the block.

The Court first starts with the plain and ordinary meaning of the claim language itself. *See* Karlin Tech. Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 971 (Fed.Cir.1999). The terms used in the claims bear a "heavy presumption" that they mean what they say and have the ordinary meaning that would be attributed to those words by persons skilled in the relevant art. Texas Digital, 308 F.3d at 1201-02. A reading of the disputed phrase in context of the claim language is particularly helpful in this case. The claim language reads: "wherein said signal conditioning part is *fully* disposed in said vertically oriented plastic block ..." Col. 6, l. 49 (emphasis added). The term "fully" is ordinarily understood to mean "1. Totally or completely," *American Heritage Dictionary* (4th ed.2000). The parties disagree as to the ordinary meaning of "dispose." Regal proposes a broad definition of "dispose," meaning to "arrange." *Id*. at 522. The defendants propose that "dispose" means "1. To place or set in a particular order; arrange." *Id*. The parties agree that "in" means "1. a. within the limits, bounds or area of." *Id*. at 883. Based upon the ordinary meaning of the words as used in the claims, the Court finds that "disposed in" must necessary be modified by the term "fully" to in order to complete its meaning.

Additionally, the specification itself requires that the signal conditioning part be fully contained within the volume of the plastic block. The specification states: "[i]t is critical to the present invention that such signal conditioning be implemented *entirely within the volume of the insert body 22* and especially not off volume on the PCB or in a 'dog house' back extension." Col. 3, ll. 64-67 (emphasis added).

The prosecution history is also particularly revealing on this point. In response to the first office action, the Regal amended claims 1 and 5 (now claims 1 and 6) to add the language "wherein, the electronic circuit is fully disposed in said vertically oriented plastic block ..." (PH at 59.) In the CPA that followed, Patentee argued that *Loudermilk '233* did not disclose or suggest that the signal conditioning part be "fully disposed in the vertically oriented plastic block ..." (PH at 121.) Morever, Patentee stated that "it is critical to the present invention that such signal conditioning be implemented within the volume of the insert body 22 ..." *Id*. at 119.

The Court finds ample support from both the plain and ordinary meaning of the claims as ascertained by dictionary definitions and from the intrinsic evidence to construe "disposed in said vertically oriented plastic block," to mean that the signal conditioning part is "completely contained within the volume of the plastic block."

10. "directly over the set of mounting pins" (claims 1, 6)

Regal proposes the construction that "directly over the set of mounting pins" means "straight above the mounting pins, such that a standard form factor is not exceeded by a rear extension compartment that would otherwise be necessary, and that further provides for multi-level stacking." In support of its construction,

Regal cites to claims 1 and 6, which contain the limitation "such that a standard form factor ... stacking" and argues that "directly over" does not mean "exactly above" because the limitation of not exceeding the standard form factor does not require that the signal conditioning circuitry be exactly above the mounting pins. Regal also submits that the ordinary meaning of "directly" is "in a direct line or manner; straight," *American Heritage Dictionary* (4th ed.2000), and the ordinary meaning of "over" is "in or at a position above or higher than." *American Heritage Dictionary* (4th ed.2000).

Defendants argue that Regal's proposed limitation has no bearing on the interpretation of the disputed phrase and therefore should not be considered. (Pulse's Br. at 18.) Defendants instead submit the construction "exactly above the set of mounting pins." In support of their construction, Defendants cite to figures 4 and 5 and the corresponding description in the specification. *See* Col. 5, ll. 42-44 ("FIG. 4 further shows the critical placement of the signal conditioning circuitry directly above the corresponding PCB mounting pins"); Col. 5, ll. 60-63 ("The signal conditioning circuitry for the third set of molded inserts 106-109 is also critically placed directly above its two rows of PCB mounting pins 110 and 112"). Defendants submit that the ordinary meaning of "directly" is "exactly or totally," *American Heritage Dictionary* (4th ed.2000), and agree with Regal as to the definition of "over."

The dispute is over whether "directly" means "straight" or "exactly" and whether the rest of the claim limits the disputed phrase. Both parties cite to the *American Heritage Dictionary* (4th ed.2000) as to the ordinary meaning of the term "directly." Because more than one possible definition exists in the dictionary, the Court looks to the intrinsic evidence-the claims, the specification, and the prosecution history-to construe the disputed phrase. Texas Digital, 308 F.3d at 1205.

An examination of claims 1 and 6 reveals that the phrase "directly over the set of mounting pins" is limited by the claim language "such that a standard form factor is not exceeded by a rear extension compartment that would otherwise be necessary, and that further provides for multilevel stacking." Prosecution history also supports such a limitation. Patentee added the limiting claim language "said signal conditioning part ... directly over the set of mounting pins such that a standard form factor is not exceeded ..." in order to overcome prior art.

"A principle advantage of the present invention over the cited prior art is the lack of rearward overhang to accommodate the conditioning circuits.... This [extension] will interfere with components on a motherboard that need the connector to fit a standard form factor ... So in order to distinguish from the cited prior art more fully, claim 1 has been amended to add, "wherein, the electronic circuit is fully disposed ... and directly over the set of mounting pins such that a standard form factor is not exceeded by a rear extension compartment that would otherwise by necessary, and that further provides for multilevel stacking."

(PH at 62.) Accordingly, the Court construes the term "directly over" not in isolation but as limited by the rest of the claim language. *See* Schumer v. Lab. Computer Sys., Inc., 308 F.3d 1304, 1312-12 (Fed.Cir.2002) ("statements made during prosecution are used to interpret the scope and meaning of ambiguous claim terminology").

The Court further defines "directly over" to mean "straight above" such that the signal circuitry is straight above the mounting pins and need not be exactly over the mounting pins. Nothing in the claim, specification, or prosecution history requires that the signal conditioning part be exactly over the mounting pins, *i.e.*, within the width of the mounting pins. The claim language merely requires that the signal conditioning part be placed in a way so as to not exceed the standard form factor. Such a limitation does not

require the signal conditioning circuitry to be exactly above the mounting pins. Similarly, the specification simply describes the placement of the signal conditioning circuitry "directly above" and not "exactly above" the corresponding pins. Col. 5, ll. 42-44, 60-63. Although the specific embodiments depicted in figures 4 and 5 show the signal conditioning part as within the width of the mounting pins, "patent drawings ... may not relied on to show particular sizes if the specification is completely silent on the issue." Hockerson-Halberstadt, 222 F.3d at 956.

In light of the above, the Court construes the term "directly over the mounting pins" to mean "straight above the mounting pins, such that a standard form factor is not exceeded by a rear extension compartment that would otherwise be necessary, and that further provides for multi-level stacking."

11. "substantially beyond a rear row of said mounting pins" (claims 7, 8)

The parties agree that "substantially beyond" means "considerably past." The parties, however, differ as to whether the disputed phrase should be limited. Bel Fuse proposes the construction "considerably past." Because Bel Fuse's construction merely defines "substantially beyond" to mean "considerably past," a definition that is undisputed by the parties, the Court examines Pulse and FRE's and Regal's proposed constructions.

Pulse and FRE propose that "substantially beyond a rear row of said mounting pins" should be construed as "considerably past the rear row of mounting pins such that the rearward overhang over the rear row of mounting pins is no greater than .100 inch." As support for their construction, Pulse and FRE cite to the specification which discloses that a critical maximum rear extension is limited to 0.100 inch in order to maintain plug compatibility. *See* Col. 5, ll. 21-25, 53-59. The Court rejects Pulse and FRE's proposed limitation because it requires the improper incorporation of the 0.100 inch limitation from the specification to the claims. *See* Modine, 75 F.3d at 1551 ("It is usually incorrect to read a numerical precision into a claim from which it is absent ..."). Moreover, claim 7 teaches a plurality of bays "all disposed in a single horizontal row ..." while the 0.100 inch limitation is disclosed in the context of a plurality of bays disposed in two or three stacked rows.

Regal proposes the construction "extending considerably past the rear row of mounting pins, so as to exceed a form factor compatible with preexisting connectors." The Court adopts Regal's construction because it is supported by the specification and prosecution history. The Patentee discloses that "an object of the present invention [is] to provide modular connector ... that has a compatible footprint with prior art modular connectors ..." Col. 2, ll. 3-7. And in order to overcome the prior art the Patentee states that "the jacks of the present invention fit the original form factors and footprints of conventional jacks ..." (PH at 64.) Accordingly, the Court construes "substantially beyond a rear row of said mounting pins" to mean "extending considerably past the rear row of mounting pins, so as to exceed a form factor compatible with preexisting connectors."

12. "a rear extension compartment that would otherwise be necessary" (claims 1, 6)

Regal's proposed construction of this term is "[a] part of a connector extending rearward of the mounting pins so as to exceed a standard form factor and prevent compatibility with pre-existing connectors." (Docket Item No. 65 (Joint Claim Construction and Pre-Hearing Statement) ("Joint Statement") at 18). The requirement that the extension exist at the rear of the connector is supported by the specification. Col. 3, ll. 64-67 ("It is critical to the present invention that such signal conditioning be implemented entirely within the volume of the insert body 22, and especially not ... in a 'dog-house' back extension."). The requirement

of compatibility with pre-existing connectors is also well-recited. Col. 2, ll. 2-6 ("It is therefore an object of the present invention to provide a modular connector with integrated signal conditioning in a component package that has a compatible footprint with prior art modular connectors that lack such signal conditioning.").

Bel Fuse's initial proposed construction was "[a] part of a connector housing extending rearwardly of the mounting pins having a dimension which would prevent compatibility with preexisting connectors." (Joint Statement at 20.) This construction, though substantially similar to Regal's proposal, deviates from the spirit of the invention-implementing signal conditioning entirely within a connector not exceeding the standard form factor-by unnecessarily limiting "a rear extension compartment" to "a part of a connector housing." All parts of the connector, not just the connector housing, should fit within the standard form factor. Deviation from this limitation would prevent "multilevel stacking" as detailed in the claims. Bel Fuse's construction leaves open the possibility for signal conditioning circuitry not within the housing to protrude beyond the boundaries of the standard form factor.

Bel Fuse's revised proposed construction is "a hypothetical part of a connector extending rearward of the mounting pins which would be required to hold the signal conditioning part if the signal conditioning part was not fully disposed within the block and/or not directly over the mounting pins." Bel Fuse's Proposed Constructions of the Disputed Claim Terms of the '152 Patent at 12. Whereas Bel Fuse's initial proposal impermissibly limited "a rear extension compartment" to the housing, this revised offering runs afoul by limiting the compartment to a part of the connector "hold[ing] the signal conditioning part." Such construction allows any rear extension compartment not containing a signal conditioning part to impermissibly protrude.

Pulse and FRE's proposed construction is "any rear extension compartment containing the signal conditioning part does not exceed the standard form factor such that the rearward overhang (over the mounting pins) is no more than 0.100 inch." (Joint Statement at 21 .) This proposed construction suffers from the same deficiency as Bel Fuse's revised proposal by unnecessarily limiting "a rear extension compartment" to "any rear extension compartment containing the signal conditioning part." Furthermore, the 0.100 inch overhang limitation from the specification cannot be imported into the claims.

The Court accordingly construes "a rear extension compartment that would otherwise be necessary" to mean "a part of a connector extending rearward of the mounting pins so as to exceed a standard form factor and prevent compatibility with pre-existing connectors."

13. "open back end" (claims 1, 6)

Defendants' proposed construction improperly imports the limitation of "at least two walls or sides" from the specification into the claim. Defendants' contention that the open back end must include two walls or sides for the contact spring assembly to "snap" or "lock" into place is unavailing. The claims mention that "the plastic block inserts and locks into said open back end." However, the term "lock" has a plain and ordinary meaning broader than the "snap-in" action described in the disclosed embodiments and thus cannot be so limited. Accordingly, one of ordinary skill in the art may contemplate any number of ways to "lock" the contact spring into place without using two walls or sides.

The claims recite "a plastic rectangular housing." The inclusion of "plastic" and "rectangular" as limitations on the term "housing" are thus appropriate. The Court accordingly construes "open back end" to mean "the

end of the plastic rectangular housing opposite the end which receives the 'RJ-45 modular jack' and having an opening capable of receiving the contact spring assembly."

V. CONCLUSION

The Court has construed all the terms requested by the parties in the Amended Joint Claim Construction and Pre-hearing Statement. The parties are ordered to attend a Case Management Conference scheduled for June 14, 2004 at 10:00 a.m. The parties may not file any dispositive motions until the Court has issued a Scheduling Order.

Prior to filing any dispositive motion, the moving party must first advise the Court and opposing counsel of its intention to do so by filing and serving a request for a case management conference regarding dispositive motion(s). The request must outline the undisputed factual basis and legal basis of the proposed motion(s) and a proposed briefing and hearing schedule. The Court may schedule a case management conference to establish the schedule for briefing and hearing the motion(s) in an orderly and efficient manner or may issue an order adopting the schedule proposed by the parties.

N.D.Cal.,2004.
Regal Electronics, Inc. v. Pulse Engineering, Inc.