

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

U.D. ELECTRONIC CORP.,
Petitioner,

v.

PULSE ELECTRONICS, INC.,
Patent Owner.

Case IPR2019-00262
Patent 9,178,318 B2

Before KEVIN F. TURNER, KRISTEN L. DROESCH, and
SHEILA F. McSHANE, *Administrative Patent Judges*.

DROESCH, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

A. Background

U.D. Electronic Corp. (“Petitioner”) filed a Petition requesting an *inter partes* review of claims 14 and 17 (“challenged claims”) of U.S. Patent No. 9,178,318 B2 (Ex. 1001, “’318 Patent”). Paper 1 (“Pet”). Pulse Electronics, Inc. (“Patent Owner”) timely filed a Preliminary Response. Paper 7 (“Prelim. Resp.”).

We have authority under 35 U.S.C. § 314 and 37 C.F.R. § 42.4. An *inter partes* review may not be instituted unless it is determined that “the information presented in the petition filed under section 311 and any response filed under section 313 shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a).

For the reasons provided below, we determine, based on the record before us, Petitioner has not established that there is a reasonable likelihood Petitioner would prevail in showing at least one of the challenged claims is unpatentable.

B. Related Proceeding

The parties represent that the ’318 Patent is at issue in *Pulse Electronics, Inc. v. U.D. Electronic Corp.*, No. 3:18-cv-00373 (S.D. Cal.). Pet. 2; Paper 4, 1.

C. The ’318 Patent (Ex. 1001)

The ’318 Patent relates to an integrated connector module (ICM) having noise shielding and internal electronic components. *See* Ex. 1001, 1:26–29.

Figure 1 of the '318 Patent is reproduced below.

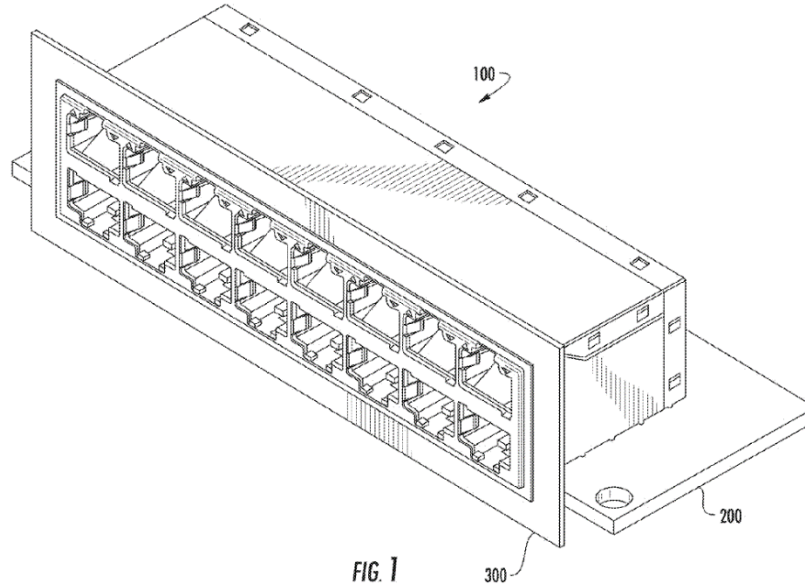


Figure 1 is a perspective view of ICM 100. See Ex. 1001, 3:1–4. ICM 100 is mounted on networking apparatus printed circuit board 200 and interfaces with networking apparatus panel 300. See *id.* at 5:9–11, 5:23–24.

Figure 1A of the '318 Patent is reproduced below.

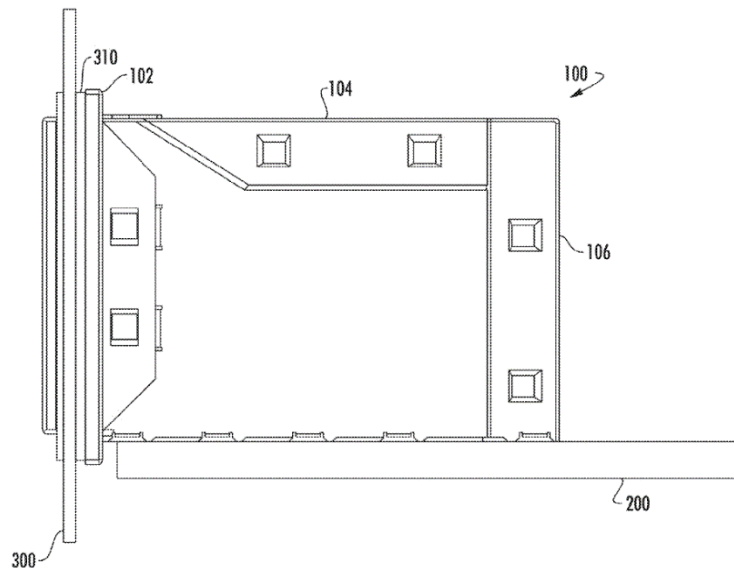


Figure 1A is a side view of ICM 100. See Ex. 1001, 3:5–6. ICM 100 includes back shield 106, body shield 104, and electromagnetic interference (EMI) collar 102 positioned to be in contact with body shield 104, and used

to position EMI gasket 310 against networking apparatus panel 300 and body shield 104. *See id.* at 5:28–34. EMI collar 102 and EMI gasket 310 provide a common ground between body shield 104 and networking apparatus panel 300. *See id.* at 5:34–37.

Figure 1B of the '318 Patent is reproduced below.

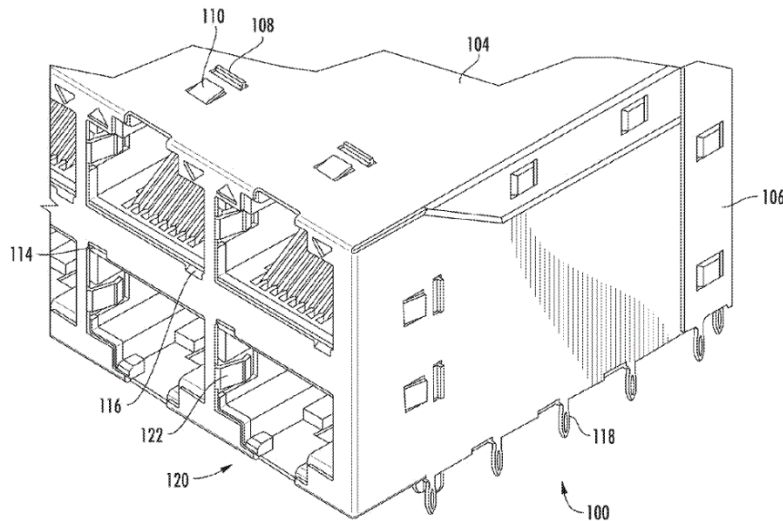


Figure 1B is a detailed perspective view of ICM 100. *See Ex. 1001, 3:7–8.* ICM 100 includes a 2XN configuration of connector ports 120, and shielding tabs 114, 116 of body shield 104 associated with connector ports 120. *See id.* at 6:10–19, 6:21–27, 6:60–61. “These front grounding shield tabs 114, 116 provide electrical connectivity between an internal printed circuit board and the body shield 104.” *Id.* at 6:19–21.

Figure 1D of the '318 Patent is reproduced below.

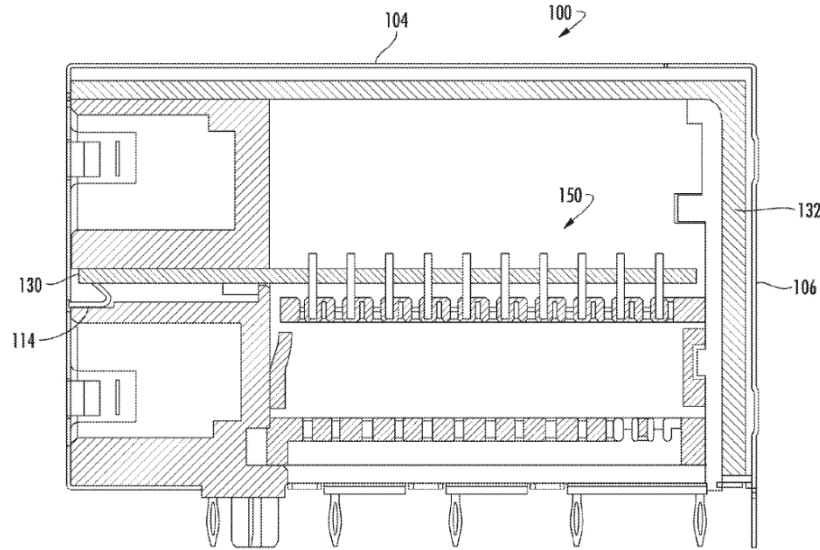


Figure 1D is a cross-sectional side view of ICM 100. *See* Ex. 1001, 3:12–14. ICM 100 includes internal printed circuit board 130 containing grounding pads that interface with front grounding shield tab 114. *See id.* at 6:37–43.

Figure 1F of the '318 Patent is reproduced below.

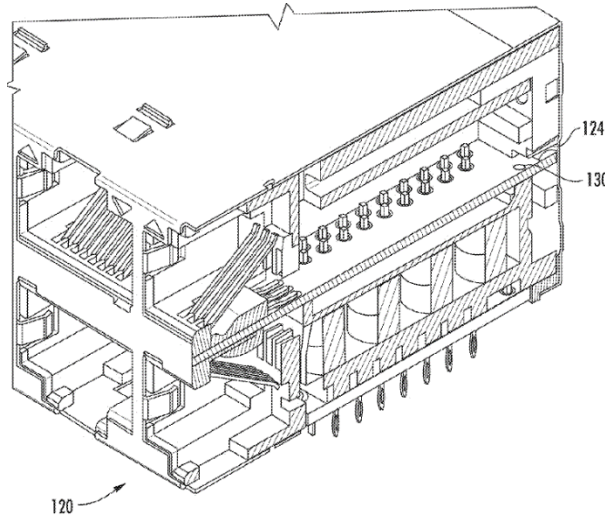


Figure 1F is a cross-sectional perspective view of ICM 100. *See* Ex. 1001, 3:18–20. ICM 100 includes rear grounding shield tab 124 formed from back

shield 106, which interfaces with internal printed circuit board 130. *See id.* at 7:19–40.

Figure 1I of the '318 Patent is reproduced below.

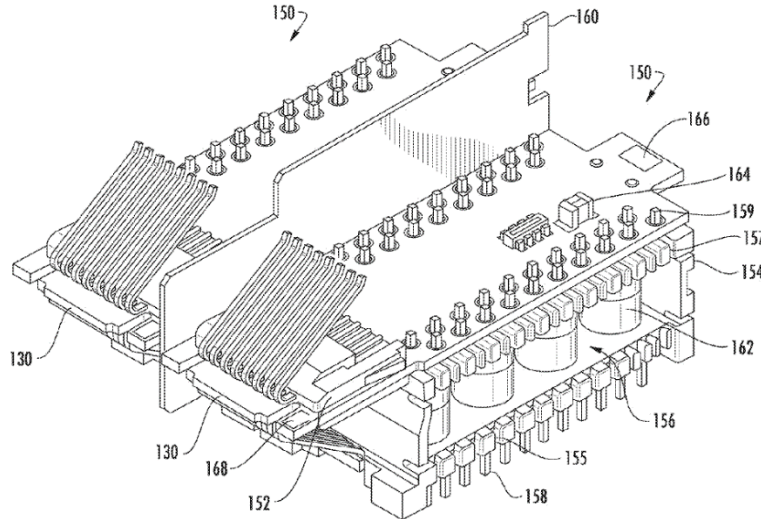


Figure 1I is a perspective view of a pair of electronic subassemblies 150 used in ICM 100. *See Ex. 1001, 3:27–29.* Electronic subassemblies 150 include insert body shield 160, internal printed circuit board 130 including front grounding pads 168 and rear grounding tabs 166, and electronic components 162 within interior cavity 156. *See id.* at 8:38–40, 8:54–57, 9:13–15. Front grounding pads 168 and rear grounding pads 166 are for interfacing with front shield grounding tabs 114 and rear shield grounding tabs 124, respectively. *See id.* at 9:13–17. Insert body shield 160 is positioned between adjacent electronics subassemblies 150 and provides electrical shielding between adjacent columns of ports 120. *See id.* at 8:18–25, 8:40–43, 9:28–31.

D. Illustrative Claim

Claim 17 depends from independent claim 14. Claim 14 is illustrative and reproduced below:

14. An integrated connector module, comprising:

- a connector housing comprising a plurality of connector ports arranged in a row-and-column fashion;
- a plurality of sets of electronic components disposed within one or more insert bodies, the one or more insert bodies further comprising an internal printed circuit board;
- a plurality of electromagnetic interference (EMI) shields configured to provide electrical isolation for the plurality of sets of electronic components;
- the plurality of EMI shields further comprising a body shield that interfaces with the internal printed circuit board at least at a back portion of the internal printed circuit board to improve electrical isolation for the plurality of sets of electronic components; and
- a shielding tab disposed at least partly within at least one of the plurality of connector ports, the shielding tab configured to provide electrical connectivity between the internal printed circuit board and the body shield at a front portion of the internal printed circuit board.

Ex. 1001, 16:19–38.

E. Asserted Grounds of Unpatentability and Asserted Prior Art

Petitioner challenges claims 14 and 17 as unpatentable on the following statutory bases and references (Pet. 4, 16–70):

Claim	Statutory Basis	Reference(s)
14	§ 102(a)	Molex ¹
14	§ 102(e)	Regnier ²
17	§ 103	Molex and Zhang ³
17	§ 103	Regnier and Zhang

The Petition also relies on the Declaration of Michael Lebby, Ph.D. (Ex. 1006).

¹ Ex. 1003, WO 2011/057195 A2, published May 12, 2011 (“Molex”).

² Ex. 1005, US 8,888,538 B2, issued Nov. 18, 2014 (“Regnier”).

³ Ex. 1009, US 2012/0196458 A1, published Aug. 2, 2012 (“Zhang”).

II. ANALYSIS

A. Claim Construction

Petitioner proposes constructions for numerous claim terms and phrases. See Pet. 9–13. Patent Owner disputes two of Petitioner’s constructions, does not dispute others, and proposes constructions for three claim terms. See Prelim. Resp. 10–13.

As demonstrated in the analysis below, no claim terms or phrases require an explicit construction. See *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co. Ltd.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (“[W]e need only construe terms ‘that are in controversy, and only to the extent necessary to resolve the controversy’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

B. Principles of Law

“Under 35 U.S.C. § 102 a claim is anticipated ‘if each and every limitation is found either expressly or inherently in a single prior art reference.’” *King Pharms., Inc. v. Eon Labs, Inc.*, 616 F.3d 1267, 1274 (Fed. Cir. 2010) (quoting *Celeritas Techs. Ltd. v. Rockwell Int’l Corp.*, 150 F.3d 1354, 1361 (Fed. Cir. 1998)). “Anticipation requires the presence in a single prior art disclosure of all elements of a claimed invention arranged as in the claim.”). *Therasense, Inc. v. Becton, Dickinson and Co.*, 593 F.3d 1325, 1332 (Fed. Cir. 2010).

C. Unpatentability of Claim 14 under 35 U.S.C. § 102(a) by Molex, Unpatentability of Claim 14 under 35 U.S.C. § 102(e) by Regnier

1. Overview of Molex (Ex. 1003)

Molex discloses high data rate capable modular telecommunications jacks. See Ex. 1003 ¶ 2.

Figure 1 of Molex is reproduced below.

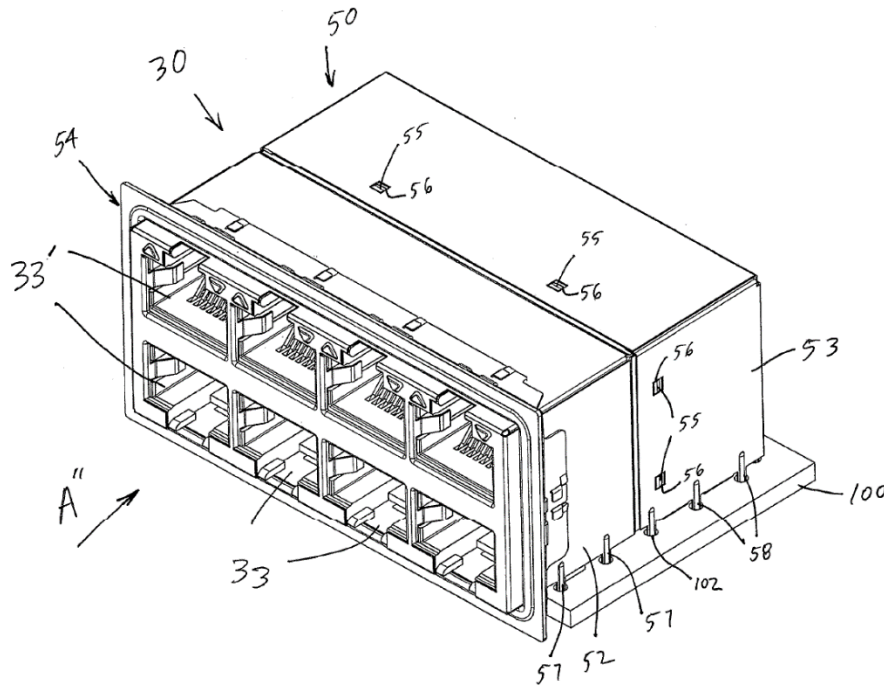


Figure 1 depicts a front perspective view of a multiport magnetic jack assembly 30. *See* Ex. 1003 ¶ 8. Jack 30 includes insulative housing 32 (shown below in Fig. 4) having ports 33 configured to receive an Ethernet or RJ-45 type jack and arranged in vertically aligned pairs 33'. *See id.* ¶ 24. Conductive shield assembly 50 surrounds housing 32 for the purposes of RF and EMI shielding and providing a ground reference. *See id.* Jack 30 is mounted on circuit board 100. *See id.* Shield assembly 50 includes front shield component 52, rear shield component 53, and additional shield components 54. *See id.* ¶ 26.

Figure 4 of Molex is reproduced below.

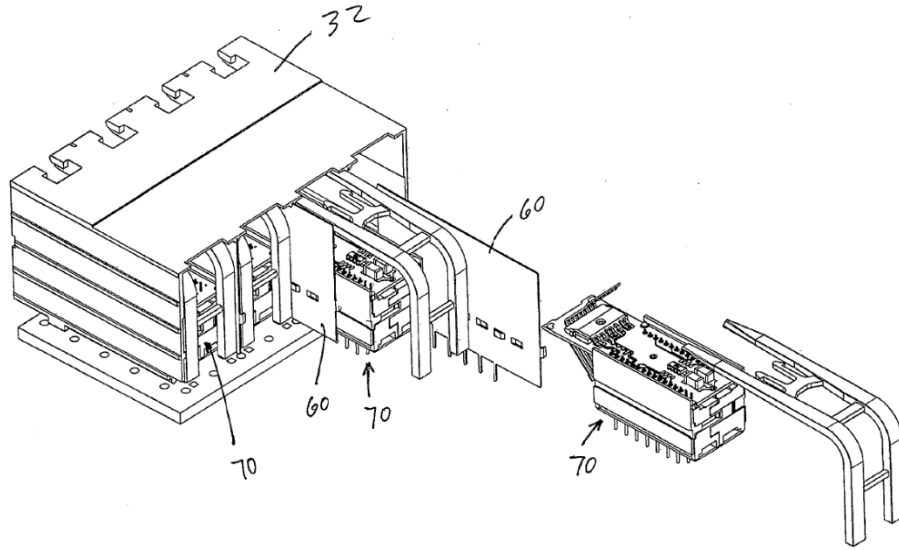


Figure 4 depicts a partially exploded rear perspective view of jack assembly 30 of Figure 1 with internal subassembly modules 70 and inter-module shields 60 in various stages of insertion within housing 32. *See* Ex. 1003 ¶¶ 11, 27. Inter-module shields 60 provide vertical electrical isolation or shielding between each module 70. *See id.* ¶ 27.

Figure 13 of Molex is reproduced below.

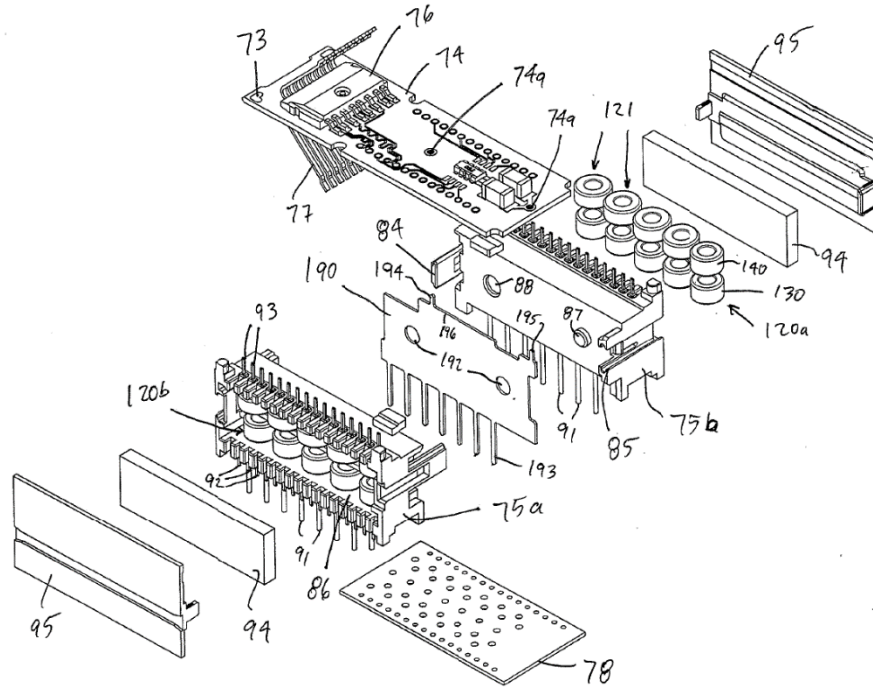


Figure 13 depicts an exploded view of internal subassembly module 70. See Ex. 1003 ¶ 20. Internal subassembly module 70 includes upper circuit board 74 comprising upper contact assembly 76 and lower contact assembly 77, lower circuit board 78, and component housing 75 comprising a two-piece assembly having left housing half 75a and right housing half 75b for holding magnetics 120a, 120b (i.e., transformer and choke subassemblies 121 comprising transformers 130 and chokes 140). See *id.* ¶¶ 37–39. Internal elongated shield member 190 is a generally rectangular plate positioned between the left housing half 75a and the right housing half 75b. See *id.* ¶¶ 40, 44. Internal elongated shield member 190 includes seven downward solder tails 193 configured for insertion and soldering in holes in lower circuit board 78 and two upwardly extending solder tails 194 and 195 configured for insertion and soldering in holes 74a in upper circuit board 74. See *id.* ¶ 44. Internal elongated shield member 190

is configured to shield the transformers 130 and chokes 140 as well as other circuit components of each housing half from those of its adjacent housing half in order to shield the circuitry of the lower port from that of its vertically aligned upper port and to provide a conductive ground or reference path between the upper circuit board 74 and lower circuit board 78.

Id.

Figure 7 of Molex is reproduced below.

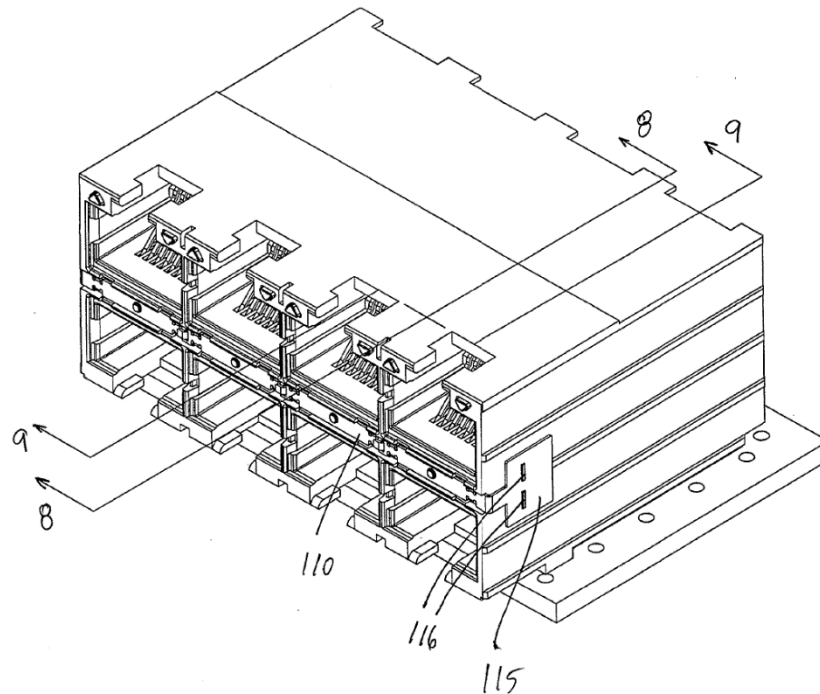


Figure 7 is a front perspective view of magnetic jack assembly of Figure 1. See Ex. 1003 ¶ 14. Shield interconnection clip 110 is a generally elongated, conductive member extending along the front face of housing 32 between upper and lower ports 33 and configured to mechanically and electrically interconnect various shielding components generally adjacent the front portion of jack 30. See *id.* ¶ 33.

Figure 11 of Molex is reproduced below.

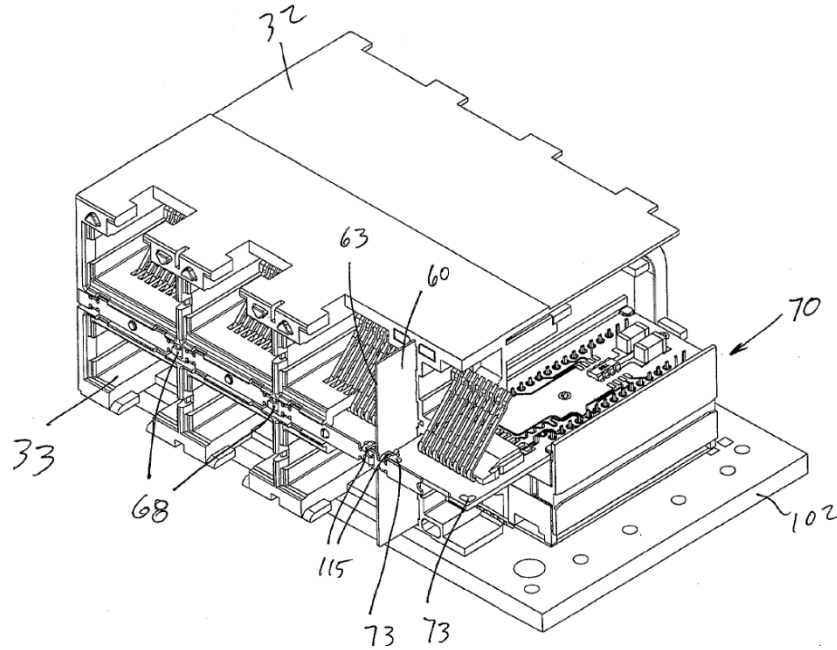


Figure 11 depicts a fragmented front perspective view of magnetic jack assembly of Figure 1. See Ex. 1003 ¶ 18. Shield interconnection clip 110 includes deflectable contact arms 115, each dimensioned and configured to engage conductive ground contact pads 73 located on circuit board 74. See *id.* ¶¶ 34, 50.

2. Overview of Regnier (Ex. 1005)

Regnier discloses the same high data rate capable modular telecommunications jacks as Molex. Compare Ex. 1005, Figs. 1, 4, 7, 11, 13, 1:15–17, 2:14–15, 2:21–25, 2:31–33, 2:42–45, 2:48–49, 3:6–16, 3:28–54, 4:22–47, 5:19–30, 5:51–6:44, 7:3–19, 8:24–40, with Ex. 1003, Figs. 1, 4, 7, 11, 13, ¶¶ 2, 8, 11, 14, 18, 20, 24, 26, 27, 30, 34, 37–40, 44, 50. As such, we consider Petitioner’s contentions regarding Molex and Regnier together below.

3. Analysis

Petitioner identifies Molex's shielding member 190 and upwardly extending solder tail 195 configured for insertion into soldering hole 74a located at a backside of upper circuit board 74, as disclosing "a body shield that interfaces with the internal printed circuit board at least at a back portion of the internal printed circuit board to improve electrical isolation for the plurality of sets of electronic components" ("body shield limitation"), as recited in claim 14. *See* Pet. 31–32 (citing Ex. 1003 ¶ 44, Figs. 8, 12, 13; Ex. 1006 ¶¶ 89–92). Petitioner identifies Molex's clip 110 with flexible contact arms 115 that electrically connect inter-module shields 60 to ground contact pads 73 of circuit board 74 as disclosing "a shielding tab disposed at least partly within at least one of the plurality of connector ports, the shielding tab configured to provide electrical connectivity between the internal printed circuit board and the body shield at a front portion of the internal printed circuit board" ("shielding tab limitation"), as recited in claim 14. *See id.* at 33–35 (citing Ex. 1003 ¶¶ 33–34, Fig. 11; Ex. 1006 ¶¶ 93–99).

As to Regnier's disclosure, Petitioner identifies the same shielding member 190 with upwardly extending solder tail 195 inserted through hole 74a located at a backside of circuit board 74 as disclosing the body shield limitation. *See* Pet. 47–49 (reproducing Ex. 1005, Figs. 8, 12, 13; citing Ex. 1005, 7:3–19; Ex. 1006 ¶¶ 137–140). Petitioner also identifies the same clip 110 with contact arms 115 electrically connecting inter-module shields 60 to circuit board ground contact pads 73 as disclosing the shielding tab limitation. *See id.* at 50–51 (reproducing Ex. 1005, Fig. 11; citing Ex. 1005, 5:4–30; Ex. 1006 ¶¶ 141–146).

Patent Owner contends that Petitioner's mapping of the components of Molex and Regnier to the "body shield" and "shielding tab" recitations are inconsistent with the recited limitations of claim 14. *See* Prelim. Resp. 34. Patent Owner asserts that Petitioner alleges that Molex's and Regnier's elongated shield member 190 constitutes the claimed "body shield" with respect to the body shield limitation. *See id.* at 35 (reproducing Ex. 1004, Fig. 13; citing Pet. 31–33, 47–49). Patent Owner asserts the Petitioner appears to point to the teaching of clip 110 as constituting the claimed "shielding tab," with respect to the shielding tab limitation. *See id.* at 36 (citing Pet. 33–35, 50–51; Ex. 2002 ¶ 104). Patent Owner contends that, consistent with Petitioner's application of the disclosures of Molex and Regnier to the term "body shield," Molex's and Regnier's clip 110 is not "configured to provide electrical connectivity between the internal printed circuit board and the body shield," as required by the shielding tab limitation of claim 14. *See id.* at 36–37 (citing Ex. 1005, 5:20–26; Ex. 2002 ¶¶ 107, 108). Specifically, Patent Owner argues clip 110 does not provide electrical connectivity between circuit board 74 and elongated shield member 190 at a front portion of circuit board 74. *See id.* at 37 (citing Ex. 2002 ¶ 108). Patent Owner further argues that Petitioner fails to address or acknowledge this second recited limitation in claim 14 that applies to "body shield." *See id.* (citing Pet. 33–35, 50–51).

We agree with Patent Owner's arguments. Petitioner does not direct us to any description in Molex or Regnier sufficient to support a finding that clip 110 is configured to provide electrical connectivity between internal printed circuit board 74 or 78 and elongated body shield 190, as required by claim 14. As pointed out by Patent Owner, elongated shield member 190

has solder tails 193–195 that electrically engage upper circuit board 74 and lower circuit board 78. *See* Prelim. Resp. 35–36 (reproducing Ex. 1005, Fig. 13; citing Ex. 1005, 7:3–6, 7:9–12; Ex. 2002 ¶ 102). In other words, although there is electrical connectivity between upper circuit board 74 and body shield 190, provided directly by way of solder tails 194, 195, and electrical connectivity between lower circuit board 78 and body shield 190, provided directly by way of solder tails 193, Petitioner fails to provide evidence of the disclosure of “the shielding tab configured to provide electrical connectivity between the internal printed circuit board and the body shield at a front portion of the internal printed circuit board” in Molex or Regnier. Additionally, although Petitioner points out that Molex and Regnier disclose clip 110 is configured to provide electrical connectivity to circuit board 74 at a front portion of circuit board 74 by way of grounding tab 73, Petitioner, however, does not direct us to any description in Molex or Regnier that clip 110 is configured to provide electrical connectivity between circuit board 74 and elongated body shield 190 at the front portion of circuit board 74. *See* Pet. 33–34, 50–51; Ex. 1003 ¶¶ 33, 34, 50, Figs. 10–11; Ex. 1005, 5:4–30, 8:24–40, Figs. 10–11. Finally, although this is not disclosed in the Petition, assuming that Petitioner attempts to assert that Molex’s and Regnier’s inter-module shields 60 disclose the claimed “body shield,” in the alternative, there does not appear to be any disclosure in Molex or Regnier of inter-module shields 60 interfacing with circuit board 74, at least at a back portion of circuit board 74, to improve electrical isolation for the plurality of sets of electronic components, as required by the body shield limitation of claim 14. *See* Pet. 31–33, 47–49.

Accordingly, based on the record before us, given the deficiencies in the Petition, we conclude that Petitioner has not established that there is a reasonable likelihood that it would prevail in showing independent claim 14 is unpatentable under 35 U.S.C. § 102(a) as anticipated by Molex, or unpatentable under 35 U.S.C. § 102(e) as anticipated by Regnier.

D. Unpatentability of Claim 17 under 35 U.S.C. § 103(a) over Molex and Zhang, and over Regnier and Zhang

Claim 17 depends from claim 14. As applied by Petitioner, the teachings of Zhang do not remedy the deficiencies of Molex and Regnier discussed in the preceding section-addressing claim 14. *See* Pet. 51–70. Accordingly, for the same reasons as those addressing claim 14 in the preceding section, based on the record before us, Petitioner has not established that there is a reasonable likelihood it would prevail in showing claim 17 is unpatentable over Molex and Zhang, or unpatentable over Regnier and Zhang.

E. Discretion to Deny Institution

Patent Owner urges the Board to exercise its discretion and deny institution of review under 35 U.S.C. § 325(d) on the basis that Molex and Regnier are cumulative to the prior art considered during prosecution of the '318 Patent. *See* Prelim. Resp. 45–46. Petitioner and Patent Owner filed additional briefing to address this issue. *See* Papers 8, 9. We need not reach or address the parties' arguments because, as demonstrated in the above analysis, we determine, based on the record before us, Petitioner has not demonstrated a reasonable likelihood that it would prevail in showing at least one of the challenged claims is unpatentable.

III. CONCLUSION

For the foregoing reasons, we determine Petitioner has not established that there is a reasonable likelihood that it would prevail in showing at least one of the challenged claims of the '318 Patent is unpatentable.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), the Petition is denied, and no *inter partes* review is instituted.

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