

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
29 November 2018 (29.11.2018)



(10) International Publication Number
WO 2018/218248 A1

(51) International Patent Classification:

G01R 1/38 (2006.01) G01R 1/20 (2006.01)
G01R 1/06 (2006.01) G01R 1/04 (2006.01)

(21) International Application Number:

PCT/US2018/034927

(22) International Filing Date:

29 May 2018 (29.05.2018)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

62/511,839 26 May 2017 (26.05.2017) US

(71) Applicant: SMITHS INTERCONNECT AMERICAS, INC. [US/US]; 5101 Richland Avenue, Kansas City, Kansas 66106 (US).

(72) Inventors: ZHOU, Jiachun; 137 E. Elliot Rd., #3306, Gilbert, Arizona 85299 (US). LIU, Dexian; No. 49-501, XinchengXinYuan, Yshuan Road, SND, Suzhou, Jiangsu 215011 (CN). DEFORD, Kevin; 5101 Richland Ave., Kansas City, Kansas 66106 (US). SPOONER, Jim; 1843 Quiet Brook Court, Manteca, California 95337 (US). SHI, Bo; 49-202 LianHuaXinCunYiQu, DongYan Road, Suzhou, Jiangsu 215000 (CN).

(74) Agent: VAKIL, Ketan S.; SNELL & WILMER L.L.P., 600 Anton Boulevard, Suite 1400, Costa Mesa, California 92626 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

(54) Title: IMPEDANCE CONTROLLED TEST SOCKET

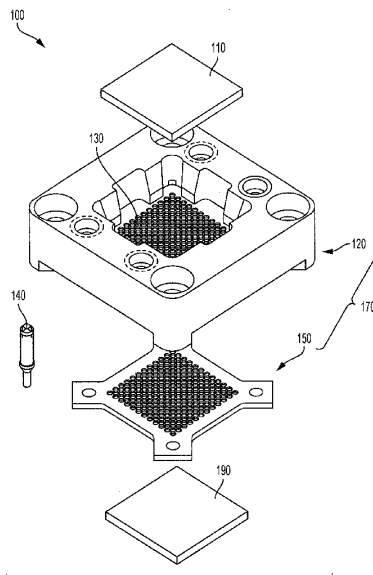


FIG. 1

(57) Abstract: Methods, systems, and apparatus for electrical connector assemblies. The assemblies include a socket defining a signal cavity, the socket having a first socket opening and a second socket opening. The assemblies include a signal contact probe located within the signal cavity. The signal contact probe includes a first plunger received in the shell cavity and extending through a first shell opening and located in the first socket opening. The signal contact probe includes a second plunger received in the shell cavity and extending through a second shell opening and located in the second socket opening. The assemblies include an end insulation ring located in the second socket opening and around the second plunger, the end insulation ring configured to facilitate substantially constant impedance through the signal spring probe, and configured to restrict lateral movement of the second plunger within the second socket opening.

[Continued on next page]

Declarations under Rule 4.17:

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

Published:

- *with international search report (Art. 21(3))*