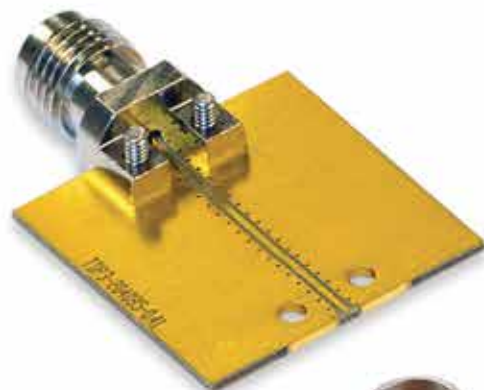




mmWave Connectors

Coaxial Connectors & Cables
for High Frequency



HRS HIROSE
ELECTRIC
AMERICAS

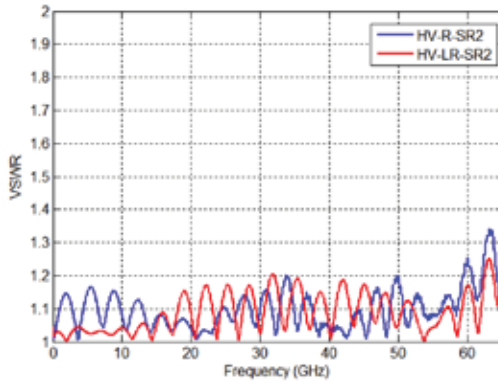
CONNECTING THE FUTURE



1.85mm SERIES

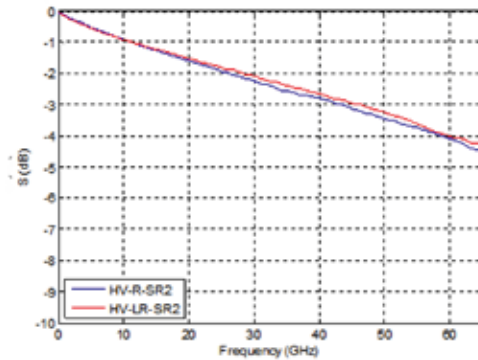
- Cable harnesses and receptacles supporting up to 67GHz
- IEC standard compliant (IEC 61169-32).
- Screw mount receptacles facilitate various PCB thicknesses.
- Space saving, lightweight attenuators and terminators utilizing a durable two-part contact design to alleviate angle mating stress.
- Available in Vertical and End Launch

Receptacle:

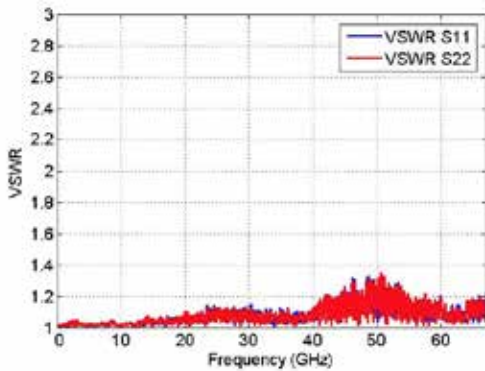


D.U. T. FOR HV-R-SR2 INCLUDES TWO HV-R-SR2 WITH PCB TRACE LENGTH 1"

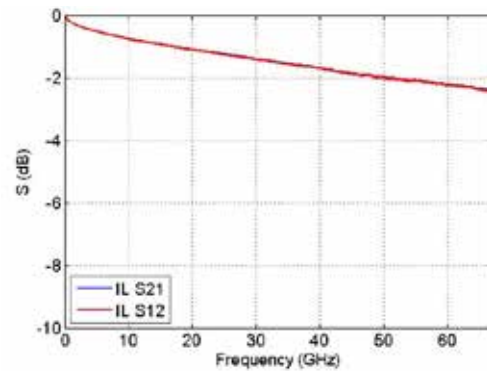
D.U. T. FOR HV-LR-SR2 INCLUDES TWO HV-LR-SR2 WITH PCB TRACE LENGTH 1"



Cable Harness:



D.U.T. FOR HV-P-SF085 INCLUDES DOUBLE ENDED CABLE LENGTH 12"



1.85mm US Cable Supplier Specs

Specification	Unit	Value
Operating Temp.	°C	-55 to 105
Capacitance	pF/foot	typical 27
Propagation Delay	ns/foot	typical 1.3
Velocity of Propagation	% C	typical 75
Min. Bend Radius	mm	5.0



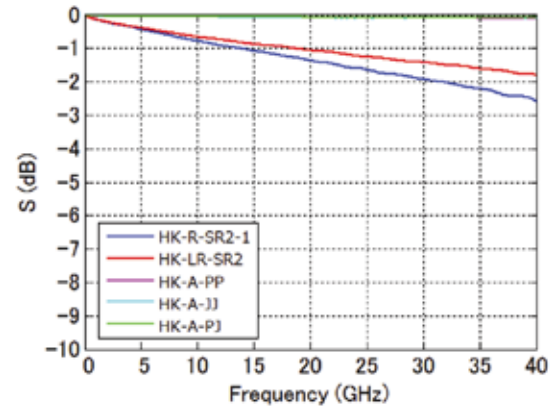
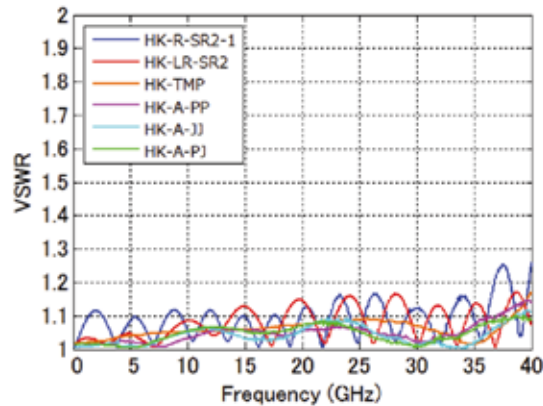
- 1 Center Conductor
- 2 Dielectric
- 3 Outer Conductor
- 4 Jacket



2.92mm SERIES

- Cable harnesses and receptacles supporting up to 40 GHz
- MIL-STD-348B standard compliant
- Screw mount receptacles support various PCB thicknesses
- Space saving, lightweight attenuators and terminators utilizing a durable two-part contact
- Available in Vertical and End Launch

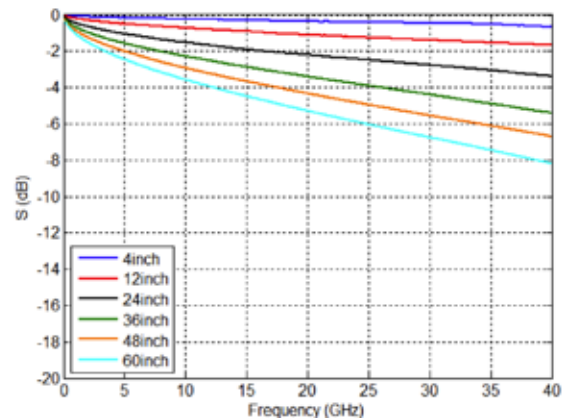
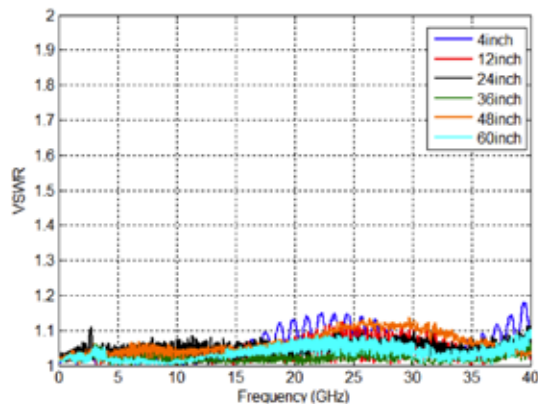
Receptacle:



DUT FOR HK-R-SR2-1 INCLUDES TWO HK-R-SR2-1 WITH PCB TRACE LENGTH 1"

DUT FOR HK-LR-SR2 INCLUDES TWO HK-LR-SR2 WITH PCB TRACE LENGTH 0.8"

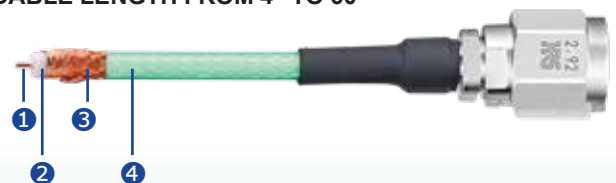
Cable Harness:



D.U. T. FOR HK-2P-MC1-A-XXIN INCLUDES DOUBLE ENDED CABLE LENGTH FROM 4" TO 60"

2.92 Japan Cable Supplier Specs

Specification	Unit	Value
Operating Temp.	°C	-55 to 105
Capacitance	pF/m	typical 98
Propagation Delay	ns/m	typical 4.7
Velocity of Propagation	% C	typical 70
Min. Bend Radius	mm	5.0



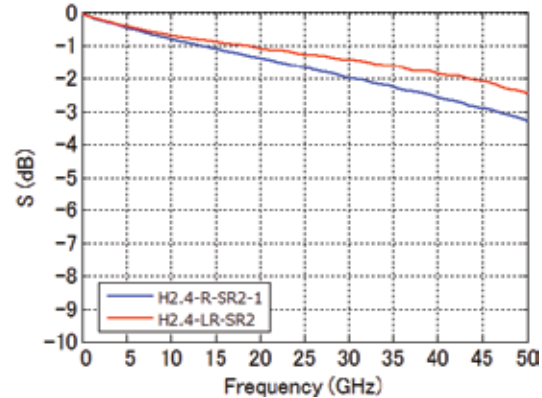
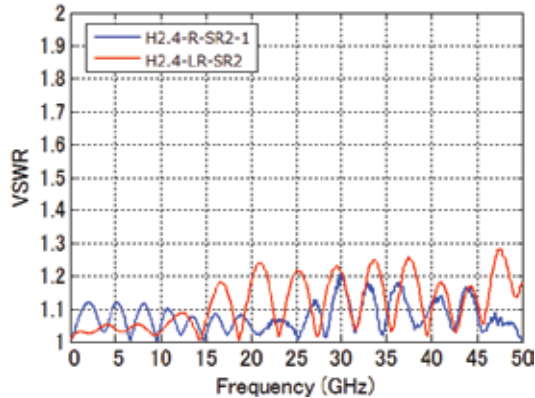
- 1 Center Conductor
- 2 Dielectric
- 3 Outer Conductor
- 4 Jacket



2.4mm SERIES

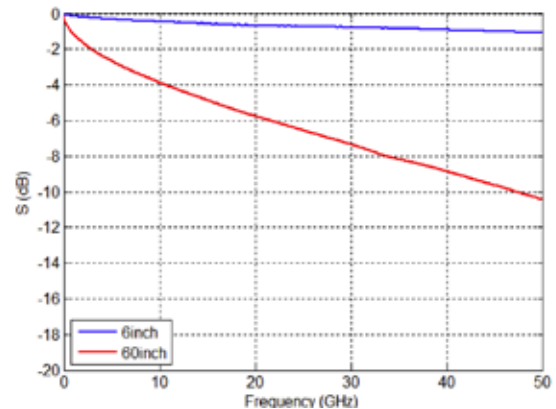
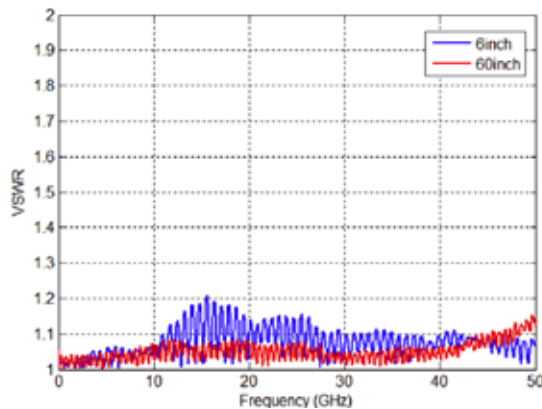
- Cable harnesses and receptacles supporting up to 50 GHz
- MIL-STD-348B standard compliant
- Screw mount receptacles support various PCB thicknesses
- Space saving, lightweight attenuators and terminators utilizing a durable two-part contact
- Available in Vertical and End Launch

Receptacle:



DUT FOR H2.4-R-SR2-1 INCLUDES TWO H2.4-R-SR2-1 WITH PCB TRACE LENGTH 1"
DUT FOR H2.4-LR-SR2 INCLUDES TWO H2.4-LR-SR2 WITH PCB TRACE LENGTH 0.8"

Cable Harness:



D.U. T. FOR H2.4-2P-SF085MC1-A-XXIN INCLUDES DOUBLE ENDED CABLE LENGTH 6" OR 60"

2.4 Japan Cable Supplier Specs

Specification	Unit	Value
Operating Temp.	°C	-55 to 105
Capacitance	pF/m	typical 98
Propagation Delay	ns/m	typical 4.7
Velocity of Propagation	% C	typical 70
Min. Bend Radius	mm	5.0



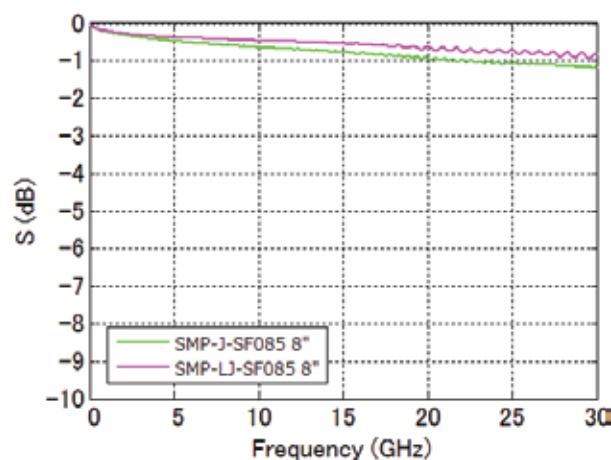
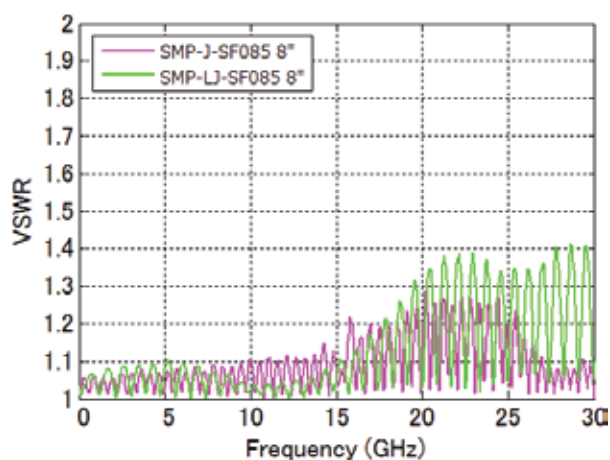
- 1 Center Conductor
- 2 Dielectric
- 3 Outer Conductor
- 4 Jacket



SMP SERIES

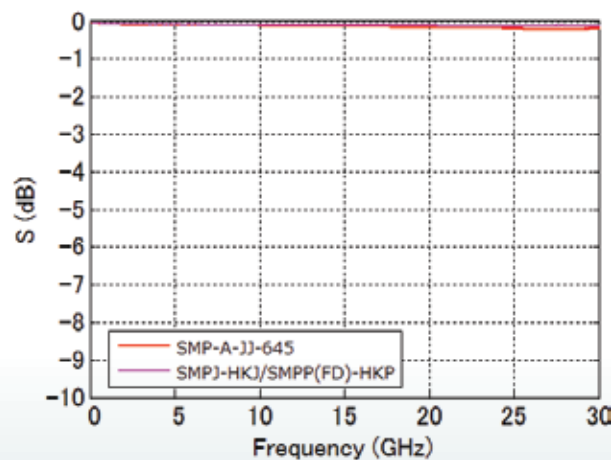
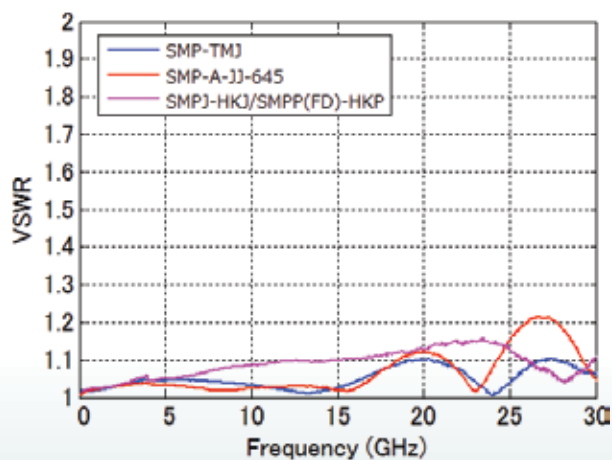
- Supporting up to 40GHz
- MIL standard MIL-STD -348B.
- User friendly push on design
- Straight and right angle plug options
- Straight and right-angle PCB mount jacks
- Terminators and conversion adapter options

Cable Harness:



DUT FOR SMP-J-SF085 INCLUDES DOUBLE ENDED CABLE LENGTH 8" AND SMPP(SB)-HKP FOR BOTH ENDS
 DUT FOR SMP-LJ-SF085 INCLUDES DOUBLE ENDED CABLE LENGTH 8 " AND SMPP(SB)-HKP FOR BOTH ENDS

Terminator & Adapter:




DUT FOR SMP-TMJ INCLUDES SMP-TMJ AND SMPP(SB)-HKP
 DUT FOR SMP-A-JJ-645 INCLUDES SMP-A-JJ-645 AND SMPP(SB)-HKP FOR BOTH ENDS


Hirose Delivers on Many Levels


- ▶ Responsive, Local Support Teams
 - Technical, Engineering Level Support
 - Best of Class Logistics, Inventory, Lead Time Management
- ▶ Industry leading small form factors
- ▶ Best of Class Signal Integrity Performance
- ▶ Wide range of related connector solutions.
- ▶ Competitive price, top tier support, performance!

US Based FAE, SI Engineering Teams

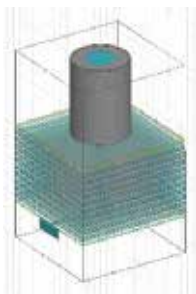



PCB PATTERN OPTIMIZATION





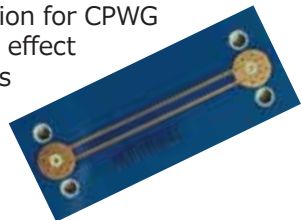
SIMULATION MODELING





PCB DESIGN CONSIDERATIONS

- GND via and Anti-pad optimization
- Side plating effect
- Stitching via location for CPWG
- Glass weave style effect
- Surface roughness of copper foil
- Via stub effect
- PCB material



Hirose Mechanical, Electrical Advantages

Edge Launch Solutions

Series (2.92, 2.4, 1.85mm)	Hirose	Comp A	Comp B	Comp C
Form Factor Width (smaller)	☆☆☆	☆☆	☆☆	☆
VSWR (lower)	☆☆☆	☆	☆	☆
Local Engineering Support				

Vertical Stripline Solutions

Vertical Stripline Series (2.92, 2.4, 1.85mm)	Hirose	Comp A	Comp B	Comp C
Form Factor Width (smaller)	☆☆☆	☆☆	☆☆☆	☆☆☆
VSWR (lower)	☆☆☆	☆☆	☆☆☆	☆☆
Local Engineering Support				

Vertical Microstrip Solutions

Vertical Microstrip Series (2.92, 2.4, 1.85mm)	Hirose	Comp A	Comp B	Comp C
Form Factor Width (smaller)	☆☆	☆☆☆	☆☆	☆☆
VSWR (lower)	☆☆☆	☆☆	☆☆☆	☆
Local Engineering Support				

Hirose Logistics Advantage

- ▶ In house, distributed manufacturing sites in Japan and Asia, with full piece part, materials, to finished assemblies
- ▶ Advanced lead time management, both from Hirose factory allocation, build to forecast, as well as...
- ▶ Aggressive N.America customer support planning with our RF distribution partners in the Western hemisphere.
- ▶ Test & Measurement often requires quick deliveries to meet your engineering builds...Hirose knows this, and has multiple proven success stories in working as partners to ensure key customer forecasts and out of cycle connector needs are available, in stock, including reserved inventories.

Hirose RF Family Solutions

FL Series

(Invented By Hirose)



U.FL Series

RF Switches

(best of class floating tolerances)



MS180 Series

Micro Board-to-Board/FPC/Wire

(supporting RF, video, 5G)



DF81 Series

BM46 ("5G") Series

2.92, 2.4, 1.85 mm Wave

(Rugged, Reliable)



mmWave Series

BNC75

(Video Apps)



BNC75 Series

MMC, MMCX

(pop on test solutions)



MMCX Series

Technical Support

- ▶ Local, US based factory FAEs from RF Group. Japan
- ▶ San Jose based local hire, Signal Integrity Engineering team experienced in latest mm wave, 5G, RF system design optimization.
- ▶ Hirose offers engineering level support beyond just the connector sale...



mmWave Connectors

HRS HIROSE
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Series	Type	HRS Product Name	Product Number CL	Note	Screw Size for PCB Mount	Attached Screw Length
1.85mm -65GHz	Horizontal	HV-LR-SR2	338 0018 0 00	Edge Mount	No. 0-80UNF	-
		HV-LR-SR2(11)	338 0018 0 11	Edge Mount w/Screws	No. 0-80UNF	6.35mm (1/4 Inch)
		HV-LR-SR2(12)	338 0018 0 12	Edge Mount w/Screws	No. 0-80UNF	4.76mm (3/16 Inch)
	Vertical	HV-R-SR2-SA	338 0030 0 00	Vertical mount, Special Grade	No. 0-80UNF	-
		HV-R-SR2-SA(15)	338 0030 0 15	Vertical mount w/Screws, Special Grade	No. 0-80UNF	6.35mm (1/4 Inch) & 4.76mm (3/16 Inch)
		HV-R-SR2	338 0010 0 00	Vertical Mount	No. 0-80UNF	-
		HV-R-SR2(11)	338 0010 0 11	Vertical Mount w/Screws	No. 0-80UNF	6.35mm (1/4 Inch)
		HV-R-SR2(12)	338 0010 0 12	Vertical Mount w/Screws	No. 0-80UNF	4.76mm (3/16 Inch)
	Cable	HV-2P-IW-A-6IN	321 6633 0 01	6inch cable	-	-
		HV-2P-IW-A-12IN	321 6633 0 02	12inch cable	-	-
		HV-2P-IW-A-24IN	321 6633 0 03	24inch cable	-	-
		HV-2P-IW-A-36IN	321 6633 0 04	36inch cable	-	-
		HV-2P-IW-A-48IN	321 6633 0 05	48inch cable	-	-
	Terminator	HV-TMP-1	353 0025 0 00	Male Terminator.	-	-
2.4mm -50GHz	Horizontal	H2.4-LR-SR2	338 0603 0 00	Edge Mount	No. 0-80UNF	-
		H2.4-LR-SR2(11)	338 0603 0 11	Edge Mount w/Screws	No. 0-80UNF	6.35mm (1/4 Inch)
		H2.4-LR-SR2(12)	338 0603 0 12	Edge Mount w/Screws	No. 0-80UNF	4.76mm (3/16 Inch)
	Vertical	H2.4-R-SR2-SA	338 0029 0 00	Vertical mount, Special Grade	No. 0-80UNF	-
		H2.4-R-SR2-SA(15)	338 0029 0 15	Vertical mount w/Screws, Special Grade	No. 0-80UNF	6.35mm (1/4 Inch) & 4.76mm (3/16 Inch)
		H2.4-R-SR2-S	338 0605 0 00	Vertical mount	No. 0-80UNF	-
		H2.4-R-SR2-S(11)	338 0605 0 11	Vertical mount w/Screws	No. 0-80UNF	6.35mm (1/4 Inch)
		H2.4-R-SR2-S(12)	338 0605 0 12	Vertical mount w/Screws	No. 0-80UNF	4.76mm (3/16 Inch)
		H2.4-R-SR2-1	338 0607 0 00	Vertical Mount	No. 0-80UNF	-
		H2.4-R-SR2-1(11)	338 0607 0 11	Vertical Mount w/Screws	No. 0-80UNF	6.35mm (1/4 Inch)
		H2.4-R-SR2-1(12)	338 0607 0 12	Vertical Mount w/Screws	No. 0-80UNF	4.76mm (3/16 Inch)
	Cable	H2.4-2P-SF085MC1-A-6IN	321 5132 0 01	6inch cable	-	-
		H2.4-2P-SF085MC1-A-12IN	321 5132 0 02	12inch cable	-	-
		H2.4-2P-SF085MC1-A-24IN	321 5132 0 03	24inch cable	-	-
		H2.4-2P-SF085MC1-A-36IN	321 5132 0 04	36inch cable	-	-
		H2.4-2P-SF085MC1-A-48IN	321 5132 0 05	48inch cable	-	-
		H2.4-2P-SF085MC1-A-60IN	321 5132 0 06	60inch cable	-	-
	Terminator	H2.4-TMP	353 0174 0 00	Male Terminator.	-	-

mmWave Connectors

Series	Type	HRS Product Name	Product Number CL	Note	Screw Size for PCB Mount	Attached Screw Length
2.92mm -40GHz	Horizontal	HK-LR-SR2	338 0079 0 00	Edge Mount	No. 0-80UNF	-
		HK-LR-SR2(11)	338 0079 0 11	Edge Mount w/Screws	No. 0-80UNF	6.35mm (1/4 Inch)
		HK-LR-SR2(12)	338 0079 0 12	Edge Mount w/Screws	No. 0-80UNF	4.76mm (3/16 Inch)
	Vertical	HK-R-SR2-SA	338 0028 0 00	Vertical mount, Special Grade	No. 0-80UNF	-
		HK-R-SR2-SA(15)	338 0028 0 15	Vertical mount w/Screws, Special Grade	No. 0-80UNF	6.35mm (1/4 Inch) & 4.76mm (3/16 Inch)
		HK-R-SR2-S	338 0006 0 00	Vertical mount	No. 0-80UNF	-
		HK-R-SR2-S(11)	338 0006 0 11	Vertical mount w/Screws	No. 0-80UNF	6.35mm (1/4 Inch)
		HK-R-SR2-S(12)	338 0006 0 12	Vertical mount w/Screws	No. 0-80UNF	4.76mm (3/16 Inch)
		HK-R-SR2-1	338 0003 0 00	Vertical Mount	No. 0-80UNF	-
		HK-R-SR2-1(11)	338 0003 0 11	Vertical Mount w/Screws	No. 0-80UNF	6.35mm (1/4 Inch)
		HK-R-SR2-1(12)	338 0003 0 12	Vertical Mount w/Screws	No. 0-80UNF	4.76mm (3/16 Inch)
	Cable	HK-2P-MC1-A-6IN	321 1934 0 05	6inch cable	-	-
		HK-2P-MC1-A-12IN	321 1934 0 10	12inch cable	-	-
		HK-2P-MC1-A-24IN	321 1934 0 12	24inch cable	-	-
		HK-2P-MC1-A-36IN	321 1934 0 13	36inch cable	-	-
		HK-2P-MC1-A-48IN	321 1934 0 14	48inch cable	-	-
		HK-2P-MC1-A-60IN	321 1934 0 15	60inch cable	-	-
	Adapter	HK-A-PJ	338 0097 0 00	Male to Female	-	-
		HK-A-PP	338 0099 0 00	Male to Male	-	-
		HK-A-JJ	338 0098 0 00	Female to Female	-	-
	Terminator	HK-TMP	353 0014 0 00	Male Terminator	-	-
SMPM -65GHz	Adapter	SMPM-A-JJ-532	338 0500 0 00	Female to Female	-	-
		SMPMP(FD)-HVP	311 0419 5 00	Full Detent Male to 1.85 Male	-	-
		SMPMP(SB)-HVP	311 0420 4 00	Smooth Bore Male to 1.85 Male	-	-
		SMPMJ-HVJ	311 0421 7 00	Female to 1.85 Female	-	-
SMP -40GHz	Horizontal	SMP-LPR(FD)-SMT-1	338 1105 0 00	Straight Plug Receptacle Full Detent	-	-
		SMP-LPR(LD)-SMT-1	338 1107 0 00	Straight Plug Receptacle Limited Detent	-	-
		SMP-LPR(SB)-SMT-1	338 1108 0 00	Straight Plug Receptacle Smooth Bore	-	-
	Vertical	SMP-PR(FD)-SMT-1	338 1102 0 00	Right Angle Plug Receptacle Full Detent	-	-
		SMP-PR(LD)-SMT-1	338 1103 0 00	Right Angle Plug Receptacle Limited Detent	-	-
		SMP-PR(SB)-SMT-1	338 1104 0 00	Right Angle Plug Receptacle Full Detent	-	-
	Adapter	SMP-A-JJ-645	338 1106 0 00	Female to Female	-	-
		SMPP(FD)-HKP	311 0199 0 00	Full Detent Male to 2.92 Male	-	-
		SMPP(SB)-HKP	311 1001 0 00	Smooth Bore Male to 2.92 Male	-	-
		SMPJ-HKJ	311 0013 0 00	Female to 2.92 Female	-	-
	Terminator	SMP-TMJ	353 0024 0 00	Female Terminator	-	-



For additional information please go to
https://www.hirose.com/en/product/en/pr/mmwave/board_test/
 Specifications herein are subject to change without notice.
 Contact Hirose for latest specifications, drawings, or availabilities.

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mmWave INNOVATION



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