

# F4CR-HMDM-2M-E1



HELIAX® 1/2" Superflexible Fire retardant SureFlex® Jumper with interface types 4.3-10 Male and 7-16 DIN Male , 2m, with black non-halogenated fire retardant polyolefin jacket

## Product Classification

Product Type	Wireless transmission cable assembly
Product Brand	HELIAX®   SureFlex®
Product Series	RSJ4-50

## General Specifications

Body Style, Connector A	Straight
Body Style, Connector B	Straight
Interface, Connector A	4.3-10 Male
Interface, Connector B	7-16 DIN Male
Specification Sheet Revision Level	A

## Dimensions

Length	2 m   6.562 ft
Nominal Size	1/2 in

## Electrical Specifications

3rd Order IMD Static	-116 dBm
3rd Order IMD Test Method	Two +43 dBm carriers
DTF, Connector A	-32 dB
DTF, Connector B	-32 dB

## VSWR/Return Loss

Frequency Band	VSWR	Return Loss (dB)	Insertion Loss, typical (dB)
698–960 MHz	1.065	30.04	0.32
1700–2200 MHz	1.065	30.04	0.5
2300–2700 MHz	1.083	27.99	0.56
3400–3800 MHz	1.222	20.01	0.65

# F4CR-HMDM-2M-E1

## Jumper Assembly Sample Label



## Environmental Specifications

<b>EN50575 CPR Cable EuroClass Fire Performance</b>	B2ca
<b>EN50575 CPR Cable EuroClass Smoke Rating</b>	s1a
<b>EN50575 CPR Cable EuroClass Droplets Rating</b>	d1
<b>EN50575 CPR Cable EuroClass Acidity Rating</b>	a1
<b>Immersion Test Method</b>	Meets IEC 60529:2001, IP68 in mated condition

## Regulatory Compliance/Certifications

Agency	Classification
CHINA-ROHS	Above maximum concentration value
REACH-SVHC	Compliant as per SVHC revision on <a href="http://www.commscope.com/ProductCompliance">www.commscope.com/ProductCompliance</a>
ROHS	Compliant/Exempted
UK-ROHS	Compliant/Exempted



## Included Products

F4XDM-S2	–	7-16DIN Male for 1/2 in RSJ4-50LF cable, factory attached
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F4CR-HMDM-2M-E1

F4XHM-S2	–	4.3-10 Male for 1/2 in RSJ4-50LF cable, factory attached
RSJ4RK-50LF	–	RSJ4-50, HELIAX® Superflexible Foam Coaxial Cable, corrugated copper, 1/2 in, black non-halogenated, fire retardant polyolefin jacket B2ca-s1a,d1,a1

# F4XDM-S2



7-16DIN Male for 1/2 in RSJ4-50LF cable, factory attached

## Product Classification

Product Type	Wireless and radiating connector
Product Brand	HELIAX®

## General Specifications

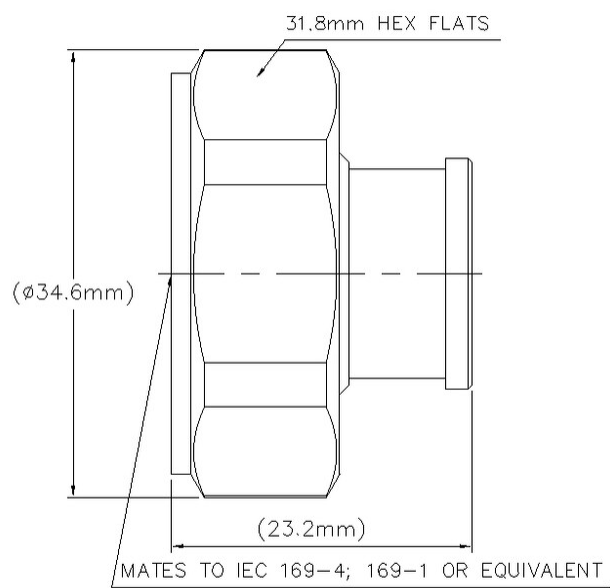
Body Style	Straight
Cable Family	RSJ4-50
Inner Contact Attachment Method	Captivated
Inner Contact Plating	Silver
Interface	7-16 DIN Male
Outer Contact Attachment Method	Solder
Outer Contact Plating	Trimetal
Pressurizable	No

## Dimensions

Length	23.2 mm   0.913 in
Diameter	34.54 mm   1.36 in
Nominal Size	1/2 in

## Outline Drawing

# F4XDM-S2



## Electrical Specifications

3rd Order IMD at Frequency	-116 dBm @ 910 MHz
3rd Order IMD Test Method	Two +43 dBm carriers
Insertion Loss Coefficient, typical	0.05
Cable Impedance	50 ohm
Connector Impedance	50 ohm
dc Test Voltage	2500 V
Inner Contact Resistance, maximum	0.8 mOhm
Insulation Resistance, minimum	5000 MOhm
Operating Frequency Band	0 – 7500 MHz
Outer Contact Resistance, maximum	1.5 mOhm
Peak Power, maximum	15.6 kW
RF Operating Voltage, maximum (vrms)	884 V
Shielding Effectiveness	-110 dB

## VSWR/Return Loss

Frequency Band	VSWR	Return Loss (dB)
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# F4XDM-S2

698–960 MHz	1.032	36.06
1700–2200 MHz	1.032	36.06
2200–2700 MHz	1.041	33.94
3400–3800 MHz	1.106	25.96

## Mechanical Specifications

Connector Retention Tensile Force	889.64 N   200 lbf
Connector Retention Torque	4.07 N-m   36.023 in lb
Coupling Nut Proof Torque	25 N-m   221.269 in lb
Coupling Nut Retention Force	1,000.85 N   225 lbf
Coupling Nut Retention Force Method	MIL-C-39012C-3.25, 4.6.22
Interface Durability	500 cycles
Mechanical Shock Test Method	MIL-STD-202F, Method 213B, Test Condition C

## Environmental Specifications

Operating Temperature	-55 °C to +85 °C (-67 °F to +185 °F)
Storage Temperature	-65 °C to +125 °C (-85 °F to +257 °F)
Attenuation, Ambient Temperature	20 °C   68 °F
Average Power, Ambient Temperature	40 °C   104 °F
Corrosion Test Method	MIL-STD-1344A, Method 1001.1, Test Condition A
Immersion Depth	1 m
Immersion Test Mating	Mated
Immersion Test Method	IEC 60529:2001, IP68
Moisture Resistance Test Method	MIL-STD-202F, Method 106F
Thermal Shock Test Method	MIL-STD-202F, Method 107G, Test Condition A-1, Low Temperature -55 °C
Vibration Test Method	MIL-STD-202F, Method 204D, Test Condition B

## Packaging and Weights

Weight, net	47.2 g   0.104 lb
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## \* Footnotes

Insertion Loss Coefficient, typical	0.05√freq (GHz) (not applicable for elliptical waveguide)
Immersion Depth	Immersion at specified depth for 24 hours

# F4XHM-S2



4.3-10 Male for 1/2 in RSJ4-50LF cable, factory attached

## Product Classification

Product Type	Wireless and radiating connector
Product Brand	HELIAX®

## General Specifications

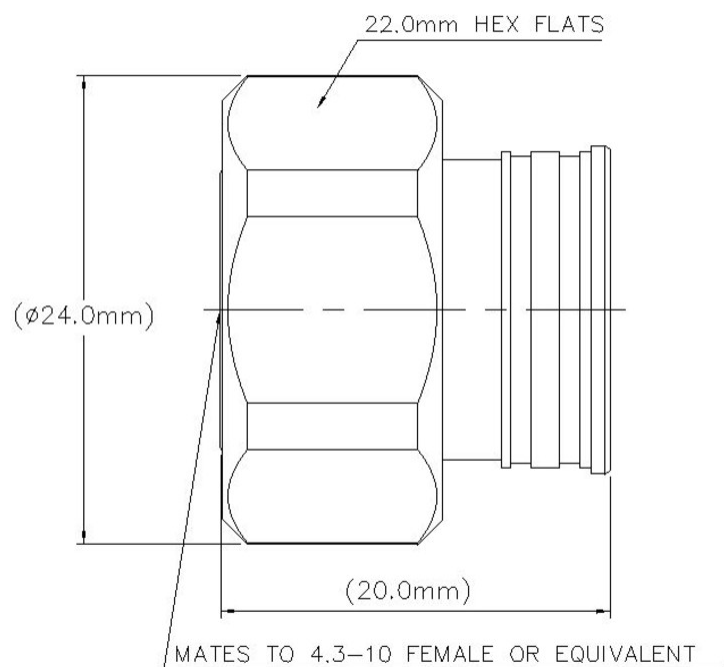
Body Style	Straight
Cable Family	RSJ4-50
Inner Contact Attachment Method	Captivated
Inner Contact Plating	Silver
Interface	4.3-10 Male
Outer Contact Attachment Method	Solder
Outer Contact Plating	Trimetal

## Dimensions

Length	20 mm   0.787 in
Diameter	24 mm   0.945 in
Nominal Size	1/2 in

## Outline Drawing

# F4XHM-S2



## Electrical Specifications

3rd Order IMD at Frequency	-119 dBm @ 910 MHz
3rd Order IMD Test Method	Two +43 dBm carriers
Insertion Loss Coefficient, typical	0.05
Cable Impedance	50 ohm
Connector Impedance	50 ohm
dc Test Voltage	2500 V
Inner Contact Resistance, maximum	1 mOhm
Insulation Resistance, minimum	5000 MOhm
Operating Frequency Band	0 – 6000 MHz
Outer Contact Resistance, maximum	1 mOhm
Peak Power, maximum	15 kW

## VSWR/Return Loss

Frequency Band	VSWR	Return Loss (dB)
698–960 MHz	1.032	36.06



# F4XHM-S2

1700–2200 MHz	1.032	36.06
2200–2700 MHz	1.041	33.94
3400–3800 MHz	1.106	25.96

## Mechanical Specifications

Connector Retention Tensile Force	889.64 N   200 lbf
Connector Retention Torque	4.1 N-m   36.288 in lb
Coupling Nut Proof Torque	8 N-m   70.806 in lb
Coupling Nut Retention Force	449.98 N   101.16 lbf
Interface Durability	100 cycles
Mechanical Shock Test Method	IEC 60068-2-27

## Environmental Specifications

Operating Temperature	-55 °C to +85 °C (-67 °F to +185 °F)
Storage Temperature	-65 °C to +125 °C (-85 °F to +257 °F)
Attenuation, Ambient Temperature	20 °C   68 °F
Average Power, Ambient Temperature	40 °C   104 °F
Corrosion Test Method	IEC 60068-2-11
Immersion Depth	1 m
Immersion Test Mating	Mated
Immersion Test Method	IEC 60529:2001, IP68
Moisture Resistance Test Method	IEC 60068-2-3
Thermal Shock Test Method	IEC 60068-2-14
Vibration Test Method	IEC 60068-2-6

## Packaging and Weights

Weight, net	22.04 g   0.049 lb
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## Regulatory Compliance/Certifications

Agency	Classification
CHINA-ROHS	Below maximum concentration value
REACH-SVHC	Compliant as per SVHC revision on <a href="http://www.commscope.com/ProductCompliance">www.commscope.com/ProductCompliance</a>
ROHS	Compliant
UK-ROHS	Compliant

# F4XHM-S2

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\* Footnotes

**Insertion Loss Coefficient, typical** 0.05√freq (GHz) (not applicable for elliptical waveguide)

**Immersion Depth** Immersion at specified depth for 24 hours

# RSJ4RK-50LF



RSJ4-50, HELIAX® Superflexible Foam Coaxial Cable, corrugated copper, 1/2 in, black non-halogenated, fire retardant polyolefin jacket  
B2ca-s1a,d1,a1

## Product Classification

Product Type	Coaxial wireless cable
Product Brand	HELIAX®   SureFlex®
Product Series	RSJ4-50

## General Specifications

Flexibility	Superflexible
Jacket Color	Black
Performance Note	Attenuation values typical, guaranteed within 5%

## Dimensions

Diameter Over Dielectric	9.423 mm   0.371 in
Diameter Over Jacket	13.411 mm   0.528 in
Inner Conductor OD	3.594 mm   0.141 in
Outer Conductor OD	11.989 mm   0.472 in
Nominal Size	1/2 in

## Electrical Specifications

Cable Impedance	50 ohm ±1 ohm
Capacitance	83.9 pF/m   25.573 pF/ft
dc Resistance, Inner Conductor	2.76 ohms/km   0.841 ohms/kft
dc Resistance, Outer Conductor	5.73 ohms/km   1.747 ohms/kft
dc Test Voltage	2500 V
Inductance	0.213 µH/m   0.065 µH/ft
Insulation Resistance	100000 MOhms-km
Jacket Spark Test Voltage (rms)	4000 V
Operating Frequency Band	1 – 10200 MHz
Peak Power	15.6 kW

# RSJ4RK-50LF

Velocity

79 %

## VSWR/Return Loss

Frequency Band	VSWR	Return Loss (dB)
680–800 MHz	1.201	20.79
800–960 MHz	1.201	20.79
1700–2200 MHz	1.201	20.79
2300–2700 MHz	1.201	20.79

## Attenuation

Frequency (MHz)	Attenuation (dB/100 m)	Attenuation (dB/100 ft)	Average Power (kW)
1.0	0.327	0.1	15.6
1.5	0.401	0.122	15.6
2.0	0.463	0.141	15.6
10.0	1.044	0.318	10.12
20.0	1.485	0.453	7.11
30.0	1.828	0.557	5.78
50.0	2.377	0.724	4.44
85.0	3.13	0.954	3.38
88.0	3.187	0.971	3.32
100.0	3.406	1.038	3.1
108.0	3.546	1.081	2.98
150.0	4.214	1.285	2.51
174.0	4.558	1.389	2.32
200.0	4.908	1.496	2.15
204.0	4.96	1.512	2.13
300.0	6.095	1.858	1.73
400.0	7.121	2.17	1.48
450.0	7.592	2.314	1.39
460.0	7.684	2.342	1.37
500.0	8.042	2.451	1.31
512.0	8.148	2.483	1.3
600.0	8.891	2.71	1.19
700.0	9.683	2.951	1.09
800.0	10.431	3.179	1.01

# RSJ4RK-50LF

824.0	10.605	3.232	1
894.0	11.101	3.383	0.95
960.0	11.555	3.522	0.91
1000.0	11.824	3.604	0.89
1218.0	13.226	4.031	0.8
1250.0	13.423	4.091	0.79
1500.0	14.906	4.543	0.71
1700.0	16.027	4.885	0.66
1794.0	16.537	5.04	0.64
1800.0	16.57	5.05	0.64
2000.0	17.624	5.371	0.6
2100.0	18.137	5.528	0.58
2200.0	18.641	5.682	0.57
2300.0	19.138	5.833	0.55
2500.0	20.11	6.129	0.53
2700.0	21.056	6.418	0.5
3000.0	22.432	6.837	0.47
3400.0	24.198	7.375	0.44
3600.0	25.055	7.636	0.42
3700.0	25.478	7.765	0.41
3800.0	25.898	7.893	0.41
3900.0	26.314	8.02	0.4
4000.0	26.727	8.146	0.4
4100.0	27.136	8.271	0.39
4200.0	27.542	8.394	0.38
4300.0	27.946	8.517	0.38
4400.0	28.346	8.639	0.37
4500.0	28.744	8.761	0.37
4600.0	29.139	8.881	0.36
4700.0	29.531	9.001	0.36
4800.0	29.921	9.119	0.35
4900.0	30.308	9.238	0.35
5000.0	30.693	9.355	0.34
6000.0	34.427	10.493	0.31
8000.0	41.403	12.619	0.26



# RSJ4RK-50LF

8800.0	44.054	13.427	0.24
10000.0	47.914	14.603	0.22

## Material Specifications

Dielectric Material	Foam PE
Jacket Material	Non-halogenated, fire retardant polyolefin
Inner Conductor Material	Copper-plating aluminum wire
Outer Conductor Material	Corrugated copper

## Mechanical Specifications

Minimum Bend Radius, multiple Bends	31.75 mm   1.25 in
Minimum Bend Radius, single Bend	31.75 mm   1.25 in
Number of Bends, minimum	12
Number of Bends, typical	15
Tensile Strength	79 kg   174.165 lb
Bending Moment	2.6 N-m   23.012 in lb
Flat Plate Crush Strength	2 kg/mm   111.995 lb/in

## Environmental Specifications

Installation temperature	-40 °C to +60 °C (-40 °F to +140 °F)
Operating Temperature	-40 °C to +60 °C (-40 °F to +140 °F)
Storage Temperature	-40 °C to +60 °C (-40 °F to +140 °F)
Attenuation, Ambient Temperature	68 °F   20 °C
Average Power, Ambient Temperature	104 °F   40 °C
Average Power, Inner Conductor Temperature	212 °F   100 °C
EN50575 CPR Cable EuroClass Fire Performance	B2ca
EN50575 CPR Cable EuroClass Smoke Rating	s1a
EN50575 CPR Cable EuroClass Droplets Rating	d1
EN50575 CPR Cable EuroClass Acidity Rating	a1
Fire Retardancy Test Method	IEC 60332-1-2   NFPA 130-2010   UL 1666/CATVR/CMR
Smoke Index Test Method	IEC 61034
Toxicity Index Test Method	IEC 60754-2

## Packaging and Weights

# RSJ4RK-50LF

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**Cable weight** 0.15 kg/m | 0.101 lb/ft