F4CR-DMDR-2M-E1

HELIAX® 1/2" Superflexible Fire retardant SureFlex® Jumper with interface types 7-16 DIN Male and 7-16 DIN Male Right Angle, 2M with black non-halogenated fire retardant polyolefin jacket.t

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	Right angle
Interface, Connector A	7-16 DIN Male
Interface, Connector B	7-16 DIN Male
Specification Sheet Revision Level	D

Dimensions

Length	2 m | 6.562 ft
Nominal Size	1/2 in

Electrical Specifications

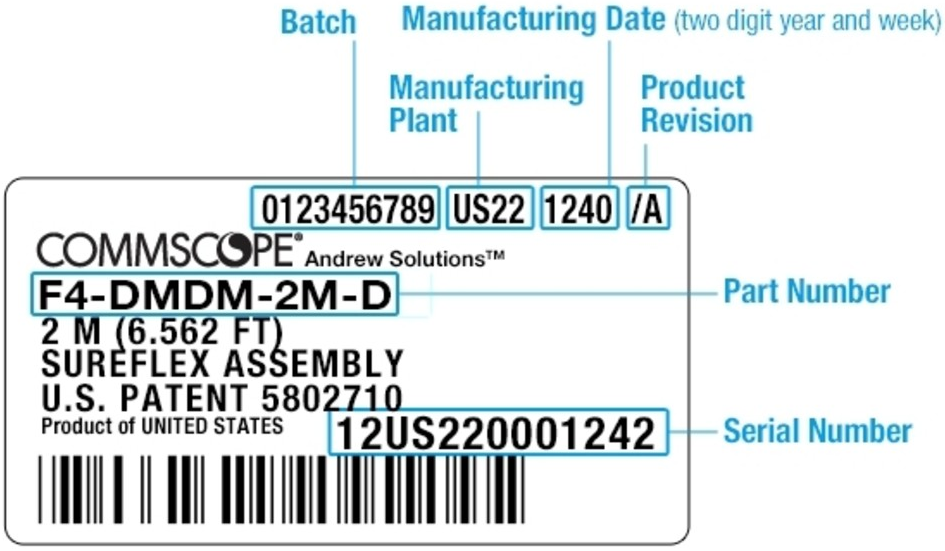
3rd Order IMD Static	-110 dBm
3rd Order IMD Test Method	Two +43 dBm carriers
DTF, Connector A	-32 dB
DTF, Connector B	-32 dB

VSWR/Return Loss

Frequency Band	VSWR	Return Loss (dB)	Insertion Loss, typical (dB)
698–960 MHz	1.065	30.04	0.49
1700–2200 MHz	1.083	27.99	0.76

2300–2700 MHz	1.106	25.96	0.86
3400–3800 MHz	1.222	20.01	1.08

Jumper Assembly Sample Label



Environmental Specifications

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
Immersion Test Method	Meets IEC 60529:2001, IP68 in mated condition

Included Products

F4DR-S2	–	7-16 DIN Male Right Angle for 1/2 in FSJ4-50B and RSJ4-50 cable, factory attached
F4XDM-S2	–	7-16DIN 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

F4DR-S2

7-16 DIN Male Right Angle for 1/2 in FSJ4-50B and RSJ4-50 cable, factory attached

Product Classification

Product Type	Wireless and radiating connector
Product Brand	HELIAX®

General Specifications

Body Style	Right angle
Cable Family	FSJ4-50B
Inner Contact Attachment Method	Solder
Inner Contact Plating	Silver
Interface	7-16 DIN Male
Mounting Angle	Right angle
Outer Contact Attachment Method	Solder
Outer Contact Plating	Silver
Pressurizable	No

Dimensions

Width	31.75 mm | 1.25 in
Length	62.23 mm | 2.45 in
Right Angle Length	40.39 mm | 1.59 in
Diameter	34.54 mm | 1.36 in
Nominal Size	1/2 in

Electrical Specifications

3rd Order IMD at Frequency	-120 dBm @ 910 MHz
3rd Order IMD Test Method	Two +43 dBm carriers
Insertion Loss Coefficient, typical	0.05
Average Power at Frequency	1.0 kW @ 900 MHz
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)
0–2000 MHz	1.016	42.01

Mechanical Specifications

Connector Retention Tensile Force	889.64 N | 200 lbf
Connector Retention Torque	4.07 N-m | 35.996 in lb
Coupling Nut Proof Torque	50.17 N-m | 443.998 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
Interface Durability Method	IEC 61169-4:9.5
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	-55 °C to +85 °C (-67 °F to +185 °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

Water Jetting Test Mating	Mated
Water Jetting Test Method	IEC 60529:2001, IP66

Packaging and Weights

Weight, net	110.04 g | 0.243 lb

* Footnotes

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

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

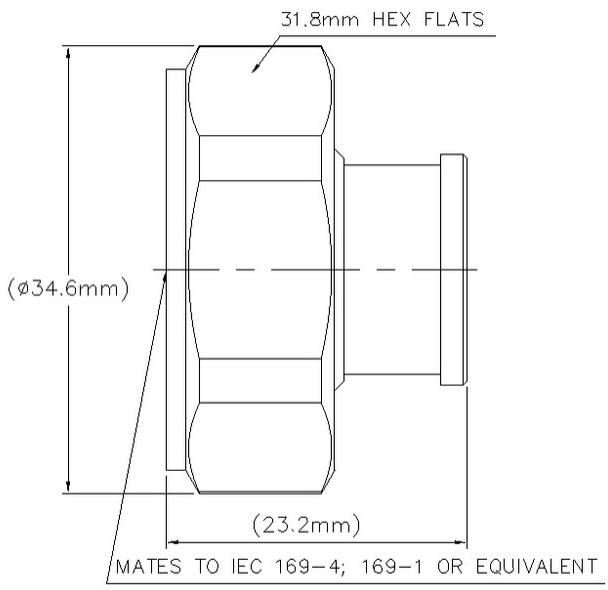
Body Style	Straight
Cable Family	RSJ4-50
Inner Contact Attachment Method	Captivated
Inner Contact Plating	Silver
Interface	7-16 DIN Male
Outer Contact Attachment Method	Solder
Outer Contact Plating	Trimetal
Pressurizable	No

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)

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

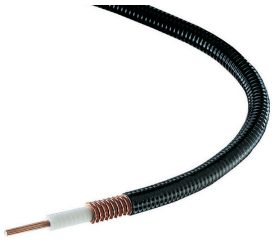
Packaging and Weights

Weight, net	47.2 g | 0.104 lb

* 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

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

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

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

Cable weight	0.15 kg/m | 0.101 lb/ft