

# F1-PNMNM-15M-HF

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FSJ1-50A Jumper with interface types N Male and N Male, 15M



## Product Classification

<b>Product Type</b>	Wireless transmission cable assembly
<b>Product Series</b>	FSJ1-50A

## General Specifications

<b>Body Style, Connector A</b>	Straight
<b>Body Style, Connector B</b>	Straight
<b>Interface, Connector A</b>	N Male
<b>Interface, Connector B</b>	N Male
<b>Specification Sheet Revision Level</b>	A

## Dimensions

<b>Length</b>	15 m   49.213 ft
<b>Nominal Size</b>	1/4 in

## VSWR/Return Loss

Frequency Band	VSWR	Return Loss (dB)
10–18000 MHz	1.671	12

## Jumper Assembly Sample Label

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## Environmental Specifications

### Immersion Test Method

Meets IEC 60529:2001, IP68 in mated condition

## Included Products

- F1PNM-HF    -    Type N Male for 1/4 in FSJ1-50A cable
- FSJ1-50A    -    FSJ1-50A, HELIAX® Superflexible Low Density Foam Coaxial Cable, corrugated copper, 1/4 in, black PE jacket

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Type N Male for 1/4 in FSJ1-50A cable

## Product Classification

<b>Product Type</b>	Wireless and radiating connector
<b>Product Brand</b>	HELIAX®

## General Specifications

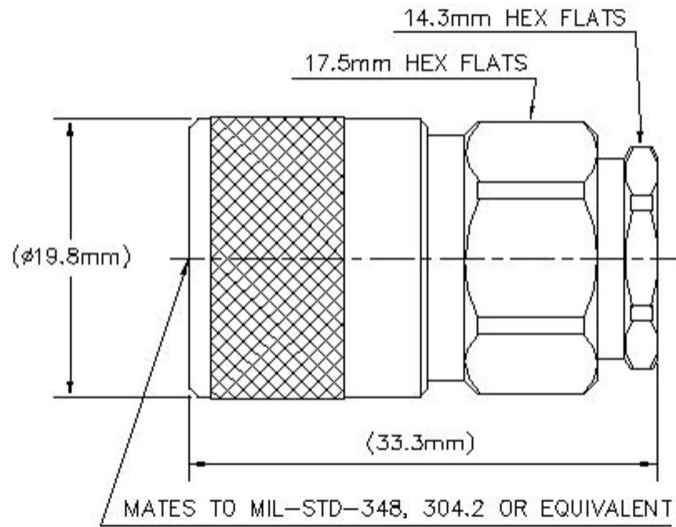
<b>Body Style</b>	Straight
<b>Cable Family</b>	FSJ1-50A
<b>Inner Contact Attachment Method</b>	Solder
<b>Inner Contact Plating</b>	Gold
<b>Interface</b>	N Male
<b>Mounting Angle</b>	Straight
<b>Outer Contact Attachment Method</b>	Tab-flare
<b>Outer Contact Plating</b>	Silver
<b>Pressurizable</b>	No

## Dimensions

<b>Height</b>	20.32 mm   0.8 in
<b>Width</b>	20.32 mm   0.8 in
<b>Length</b>	33.27 mm   1.31 in
<b>Diameter</b>	20.32 mm   0.8 in
<b>Nominal Size</b>	1/4 in

## Outline Drawing

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## Electrical Specifications

<b>Average Power at Frequency</b>	0.4 kW @ 900 MHz
<b>Cable Impedance</b>	50 ohm
<b>Connector Impedance</b>	50 ohm
<b>dc Test Voltage</b>	1600 V
<b>Inner Contact Resistance, maximum</b>	1 mOhm
<b>Insulation Resistance, minimum</b>	5000 MOhm
<b>Operating Frequency Band</b>	0 – 18000 MHz
<b>Outer Contact Resistance, maximum</b>	0.25 mOhm
<b>Peak Power, maximum</b>	6.4 kW
<b>RF Operating Voltage, maximum (vrms)</b>	565 V
<b>Shielding Effectiveness</b>	-110 dB

## VSWR/Return Loss

Frequency Band	VSWR	Return Loss (dB)
45–4100 MHz	1.05	33
4100–6200 MHz	1.09	28
6200–11000 MHz	1.18	22
11000–18000 MHz	1.23	20

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## Mechanical Specifications

<b>Connector Retention Tensile Force</b>	449.27 N   101 lbf
<b>Coupling Nut Proof Torque</b>	1.7 N-m   15.046 in lb
<b>Coupling Nut Proof Torque Method</b>	IEC 61169-16:9.3.11
<b>Coupling Nut Retention Force</b>	445 N   100.04 lbf
<b>Coupling Nut Retention Force Method</b>	IEC 61169-16:9.3.11
<b>Insertion Force</b>	124.55 N   28 lbf
<b>Insertion Force Method</b>	IEC 61169-16:9.3.5
<b>Interface Durability</b>	500 cycles
<b>Interface Durability Method</b>	IEC 61169-4:17
<b>Mechanical Shock Test Method</b>	IEC 60068-2-27

## Environmental Specifications

<b>Operating Temperature</b>	-55 °C to +85 °C (-67 °F to +185 °F)
<b>Storage Temperature</b>	-65 °C to +125 °C (-85 °F to +257 °F)
<b>Attenuation, Ambient Temperature</b>	20 °C   68 °F
<b>Average Power, Ambient Temperature</b>	40 °C   104 °F
<b>Average Power, Inner Conductor Temperature</b>	100 °C   212 °F
<b>Corrosion Test Method</b>	IEC 60068-2-11
<b>Immersion Depth</b>	1 m
<b>Immersion Test Mating</b>	Mated
<b>Immersion Test Method</b>	IEC 60529:2001, IP68
<b>Moisture Resistance Test Method</b>	IEC 60068-2-3
<b>Thermal Shock Test Method</b>	IEC 60068-2-14
<b>Vibration Test Method</b>	IEC 60068-2-6

## Packaging and Weights

<b>Weight, net</b>	49.18 g   0.108 lb
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## Regulatory Compliance/Certifications

<b>Agency</b>	<b>Classification</b>
CHINA-ROHS	Below maximum concentration value
ISO 9001:2015	Designed, manufactured and/or distributed under this quality management system

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ROHS



Compliant

## \* Footnotes

**Immersion Depth**

Immersion at specified depth for 24 hours

# FSJ1-50A

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FSJ1-50A, HELIAX® Superflexible Low Density Foam Coaxial Cable, corrugated copper, 1/4 in, black PE jacket

## Product Classification

<b>Product Type</b>	Coaxial wireless cable
<b>Product Brand</b>	HELIAX®   SureFlex®
<b>Product Series</b>	FSJ1-50A   MLOC

## General Specifications

<b>Flexibility</b>	Superflexible
<b>Jacket Color</b>	Black

## Dimensions

<b>Diameter Over Dielectric</b>	4.826 mm   0.19 in
<b>Diameter Over Jacket</b>	7.366 mm   0.29 in
<b>Inner Conductor OD</b>	1.905 mm   0.075 in
<b>Outer Conductor OD</b>	6.35 mm   0.25 in
<b>Nominal Size</b>	1/4 in

## Electrical Specifications

<b>Cable Impedance</b>	50 ohm ±1 ohm
<b>Capacitance</b>	79.4 pF/m   24.201 pF/ft
<b>dc Resistance, Inner Conductor</b>	9.843 ohms/km   3 ohms/kft
<b>dc Resistance, Outer Conductor</b>	7.216 ohms/km   2.199 ohms/kft
<b>dc Test Voltage</b>	1600 V
<b>Inductance</b>	0.2 µH/m   0.061 µH/ft
<b>Insulation Resistance</b>	100000 MOhms-km
<b>Jacket Spark Test Voltage (rms)</b>	5000 V

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<b>Operating Frequency Band</b>	1 – 18000 MHz
<b>Peak Power</b>	6.4 kW
<b>Velocity</b>	82 %

## VSWR/Return Loss

<b>Frequency Band</b>	<b>VSWR</b>	<b>Return Loss (dB)</b>
<b>680–960 MHz</b>	1.201	20.8
<b>1700–2200 MHz</b>	1.201	20.8
<b>2200–2700 MHz</b>	1.433	15

## Attenuation

<b>Frequency (MHz)</b>	<b>Attenuation (dB/100 m)</b>	<b>Attenuation (dB/100 ft)</b>	<b>Average Power (kW)</b>
<b>1.0</b>	0.577	0.176	6.4
<b>1.5</b>	0.707	0.215	6.4
<b>2.0</b>	0.816	0.249	6.4
<b>10.0</b>	1.833	0.559	3.99
<b>20.0</b>	2.6	0.792	2.81
<b>30.0</b>	3.192	0.973	2.29
<b>50.0</b>	4.136	1.261	1.77
<b>85.0</b>	5.419	1.652	1.35
<b>88.0</b>	5.516	1.681	1.33
<b>100.0</b>	5.889	1.795	1.24
<b>108.0</b>	6.125	1.867	1.19
<b>150.0</b>	7.25	2.21	1.01
<b>174.0</b>	7.825	2.385	0.93
<b>200.0</b>	8.408	2.563	0.87
<b>204.0</b>	8.495	2.589	0.86
<b>300.0</b>	10.373	3.162	0.71
<b>400.0</b>	12.051	3.673	0.61
<b>450.0</b>	12.817	3.906	0.57
<b>460.0</b>	12.965	3.952	0.56
<b>500.0</b>	13.545	4.128	0.54
<b>512.0</b>	13.715	4.18	0.53
<b>600.0</b>	14.909	4.544	0.49
<b>700.0</b>	16.175	4.93	0.45



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<b>800.0</b>	17.362	5.292	0.42
<b>824.0</b>	17.637	5.376	0.41
<b>894.0</b>	18.42	5.614	0.4
<b>960.0</b>	19.134	5.832	0.38
<b>1000.0</b>	19.556	5.96	0.37
<b>1218.0</b>	21.738	6.626	0.34
<b>1250.0</b>	22.044	6.719	0.33
<b>1500.0</b>	24.326	7.414	0.3
<b>1700.0</b>	26.038	7.936	0.28
<b>1794.0</b>	26.813	8.172	0.27
<b>1800.0</b>	26.862	8.187	0.27
<b>2000.0</b>	28.455	8.673	0.26
<b>2100.0</b>	29.227	8.908	0.25
<b>2200.0</b>	29.984	9.139	0.24
<b>2300.0</b>	30.727	9.365	0.24
<b>2500.0</b>	32.174	9.806	0.23
<b>2700.0</b>	33.576	10.233	0.22
<b>3000.0</b>	35.602	10.851	0.21
<b>3400.0</b>	38.183	11.638	0.19
<b>3600.0</b>	39.428	12.017	0.19
<b>3700.0</b>	40.041	12.204	0.18
<b>3800.0</b>	40.647	12.389	0.18
<b>3900.0</b>	41.247	12.571	0.18
<b>4000.0</b>	41.841	12.753	0.17
<b>4100.0</b>	42.429	12.932	0.17
<b>4200.0</b>	43.012	13.11	0.17
<b>4300.0</b>	43.59	13.286	0.17
<b>4400.0</b>	44.163	13.46	0.17
<b>4500.0</b>	44.73	13.633	0.16
<b>4600.0</b>	45.293	13.805	0.16
<b>4700.0</b>	45.852	13.975	0.16
<b>4800.0</b>	46.405	14.144	0.16
<b>4900.0</b>	46.955	14.311	0.16
<b>5000.0</b>	47.5	14.477	0.15
<b>6000.0</b>	52.747	16.077	0.14

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<b>8000.0</b>	62.37	19.01	0.12
<b>8800.0</b>	65.974	20.108	0.11
<b>10000.0</b>	71.173	21.693	0.1
<b>12000.0</b>	79.393	24.198	0.09
<b>14000.0</b>	87.172	26.569	0.08
<b>15800.0</b>	93.872	28.611	0.08
<b>16000.0</b>	94.601	28.833	0.08
<b>18000.0</b>	101.745	31.01	0.07

## Material Specifications

<b>Dielectric Material</b>	Foam PE
<b>Jacket Material</b>	PE
<b>Inner Conductor Material</b>	Copper-clad aluminum wire
<b>Outer Conductor Material</b>	Corrugated copper

## Mechanical Specifications

<b>Minimum Bend Radius, multiple Bends</b>	25.4 mm   1 in
<b>Minimum Bend Radius, single Bend</b>	25.4 mm   1 in
<b>Number of Bends, minimum</b>	15
<b>Number of Bends, typical</b>	20
<b>Tensile Strength</b>	68 kg   149.914 lb
<b>Bending Moment</b>	0.7 N-m   6.196 in lb
<b>Flat Plate Crush Strength</b>	1.8 kg/mm   100.795 lb/in

## Environmental Specifications

<b>Installation temperature</b>	-40 °C to +60 °C (-40 °F to +140 °F)
<b>Operating Temperature</b>	-55 °C to +85 °C (-67 °F to +185 °F)
<b>Storage Temperature</b>	-70 °C to +85 °C (-94 °F to +185 °F)
<b>Attenuation, Ambient Temperature</b>	68 °F   20 °C
<b>Average Power, Ambient Temperature</b>	104 °F   40 °C
<b>Average Power, Inner Conductor Temperature</b>	212 °F   100 °C

## Packaging and Weights

<b>Cable weight</b>	0.07 kg/m   0.047 lb/ft
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## Regulatory Compliance/Certifications

<b>Agency</b>	<b>Classification</b>
CHINA-ROHS	Above maximum concentration value
ISO 9001:2015	Designed, manufactured and/or distributed under this quality management system
ROHS	Compliant
UL/ETL Certification	Compliant

