

# F1A-PNMNM-6M



FSJ1-50A SureFlex® Jumper with interface types N Male and N Male,  
6m

## Product Classification

|                |                     |
|----------------|---------------------|
| Product Type   | SureFlex® standard  |
| Product Brand  | HELIAX®   SureFlex® |
| Product Series | FSJ1-50A            |

## General Specifications

|                                    |          |
|------------------------------------|----------|
| Body Style, Connector A            | Straight |
| Body Style, Connector B            | Straight |
| Interface, Connector A             | N Male   |
| Interface, Connector B             | N Male   |
| Specification Sheet Revision Level | A        |

## Dimensions

|              |                 |
|--------------|-----------------|
| Length       | 6 m   19.685 ft |
| Nominal Size | 1/4 in          |

## VSWR/Return Loss

| Frequency Band | VSWR  | Return Loss (dB) |
|----------------|-------|------------------|
| 700–3000 MHz   | 1.222 | 20.01            |

## Jumper Assembly Sample Label

# F1A-PNMNM-6M



## Environmental Specifications

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

## Regulatory Compliance/Certifications

| Agency        | Classification   |
|---------------|--|
| CHINA-ROHS    | Below maximum concentration value  |
| ISO 9001:2015 | Designed, manufactured and/or distributed under this quality management system   |
| REACH-SVHC    | Compliant as per SVHC revision on <a href="http://www.andrew.com/ProductCompliance">www.andrew.com/ProductCompliance</a> |
| ROHS          | Compliant  |
| UK-ROHS       | Compliant  |



## Included Products

|          |  |
|----------|--|
| F1TNM-LS | - Type N Male for 1/4 in foam and air coaxial cable, factory attached  |
| FSJ1-50A | - FSJ1-50A, HELIAX® Superflexible Low Density Foam Coaxial Cable, corrugated copper, 1/4 in, black PE jacket |

# F1TNM-LS



Type N Male for 1/4 in foam and air coaxial cable, factory attached

## Product Classification

|               |                                  |
|---------------|----------------------------------|
| Product Type  | Wireless and radiating connector |
| Product Brand | HELIAX®   SureFlex®              |

## General Specifications

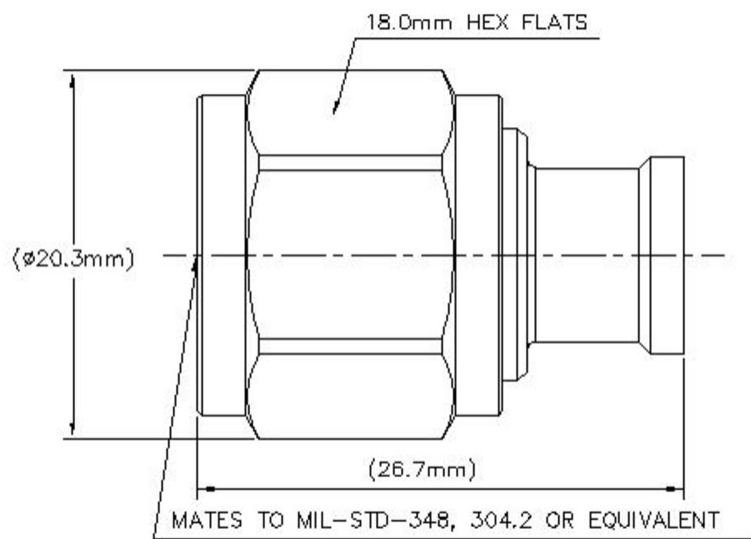
|                                 |          |
|---------------------------------|----------|
| Body Style                      | Straight |
| Inner Contact Attachment Method | Solder   |
| Inner Contact Plating           | Silver   |
| Interface                       | N Male   |
| Outer Contact Attachment Method | Solder   |
| Outer Contact Plating           | Trimetal |
| Pressurizable                   | No       |

## Dimensions

|              |                    |
|--------------|--------------------|
| Length       | 26.67 mm   1.05 in |
| Diameter     | 20.32 mm   0.8 in  |
| Nominal Size | 1/4 in             |

# F1TNM-LS

## Outline Drawing



## Electrical Specifications

|                                      |                    |
|--------------------------------------|--------------------|
| 3rd Order IMD at Frequency           | -110 dBm @ 910 MHz |
| Insertion Loss Coefficient, typical  | 0.05               |
| Average Power at Frequency           | 0.4 kW @ 900 MHz   |
| Cable Impedance                      | 50 ohm             |
| Connector Impedance                  | 50 ohm             |
| dc Test Voltage                      | 1600 V             |
| Inner Contact Resistance, maximum    | 1 mOhm             |
| Insulation Resistance, minimum       | 5000 MOhm          |
| Operating Frequency Band             | 0 – 6000 MHz       |
| Outer Contact Resistance, maximum    | 0.25 mOhm          |
| Peak Power, maximum                  | 6.4 kW             |
| RF Operating Voltage, maximum (vrms) | 565 V              |
| Shielding Effectiveness              | -110 dB            |

## VSWR/Return Loss

| Frequency Band | VSWR  | Return Loss (dB) |
|----------------|-------|------------------|
| 0–960 MHz      | 1.036 | 35.05            |

# F1TNM-LS

|               |       |       |
|---------------|-------|-------|
| 1710–2200 MHz | 1.046 | 32.96 |
| 2200–2700 MHz | 1.065 | 30.04 |
| 2700–3000 MHz | 1.065 | 30.04 |
| 3000–6000 MHz | 1.152 | 23.02 |

## Mechanical Specifications

|                                     |                        |
|-------------------------------------|------------------------|
| Connector Retention Tensile Force   | 667.23 N   150 lbf     |
| Connector Retention Torque          | 1.1 N-m   9.736 in lb  |
| Coupling Nut Proof Torque           | 1.7 N-m   15.046 in lb |
| Coupling Nut Proof Torque Method    | IEC 61169-16:9.3.11    |
| Coupling Nut Retention Force        | 445 N   100.04 lbf     |
| Coupling Nut Retention Force Method | IEC 61169-15:9.3.11    |
| Insertion Force                     | 27.98 N   6.29 lbf     |
| Insertion Force Method              | IEC 61169-15:9.3.5     |
| Interface Durability                | 500 cycles             |
| Interface Durability Method         | IEC 61169-4:17         |
| 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                        |
| Average Power, Inner Conductor Temperature | 100 °C   212 °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

# F1TNM-LS

Weight, net 20.65 g | 0.046 lb

## Regulatory Compliance/Certifications

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



### \* Footnotes

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

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

# FSJ1-50A



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

## Product Classification

|                |                        |
|----------------|------------------------|
| Product Type   | Coaxial wireless cable |
| Product Brand  | HELIAX®   SureFlex®    |
| Product Series | FSJ1-50A   MLOC        |

## General Specifications

|                  |  |
|------------------|--|
| Product Number   | 887009902/00   SZ887009902/00                    |
| Flexibility      | Superflexible                                    |
| Jacket Color     | Black  |
| Performance Note | Attenuation values typical, guaranteed within 5% |

## Dimensions

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

## Electrical Specifications

|                                 |                                |
|---------------------------------|--------------------------------|
| Cable Impedance                 | 50 ohm ±1 ohm                  |
| Capacitance                     | 79.4 pF/m   24.201 pF/ft       |
| dc Resistance, Inner Conductor  | 9.843 ohms/km   3 ohms/kft     |
| dc Resistance, Outer Conductor  | 7.216 ohms/km   2.199 ohms/kft |
| dc Test Voltage                 | 1600 V                         |
| Inductance                      | 0.2 µH/m   0.061 µH/ft         |
| Insulation Resistance           | 100000 MOhms-km                |
| Jacket Spark Test Voltage (rms) | 5000 V                         |
| Operating Frequency Band        | 1 – 18000 MHz                  |

# FSJ1-50A

|            |        |
|------------|--------|
| Peak Power | 6.4 kW |
| Velocity   | 82 %   |

## VSWR/Return Loss

| Frequency Band | VSWR  | Return Loss (dB) |
|----------------|-------|------------------|
| 680–960 MHz    | 1.201 | 20.8             |
| 1700–2200 MHz  | 1.201 | 20.8             |
| 2200–2700 MHz  | 1.433 | 15               |

## Attenuation

| Frequency (MHz) | Attenuation (dB/100 m) | Attenuation (dB/100 ft) | Average Power (kW) |
|-----------------|------------------------|-------------------------|--------------------|
| 1.0             | 0.577                  | 0.176                   | 6.4                |
| 1.5             | 0.707                  | 0.215                   | 6.4                |
| 2.0             | 0.816                  | 0.249                   | 6.4                |
| 10.0            | 1.833                  | 0.559                   | 3.99               |
| 20.0            | 2.6                    | 0.792                   | 2.81               |
| 30.0            | 3.192                  | 0.973                   | 2.29               |
| 50.0            | 4.136                  | 1.261                   | 1.77               |
| 85.0            | 5.419                  | 1.652                   | 1.35               |
| 88.0            | 5.516                  | 1.681                   | 1.33               |
| 100.0           | 5.889                  | 1.795                   | 1.24               |
| 108.0           | 6.125                  | 1.867                   | 1.19               |
| 150.0           | 7.25                   | 2.21                    | 1.01               |
| 174.0           | 7.825                  | 2.385                   | 0.93               |
| 200.0           | 8.408                  | 2.563                   | 0.87               |
| 204.0           | 8.495                  | 2.589                   | 0.86               |
| 300.0           | 10.373                 | 3.162                   | 0.71               |
| 400.0           | 12.051                 | 3.673                   | 0.61               |
| 450.0           | 12.817                 | 3.906                   | 0.57               |
| 460.0           | 12.965                 | 3.952                   | 0.56               |
| 500.0           | 13.545                 | 4.128                   | 0.54               |
| 512.0           | 13.715                 | 4.18                    | 0.53               |
| 600.0           | 14.909                 | 4.544                   | 0.49               |
| 700.0           | 16.175                 | 4.93                    | 0.45               |
| 800.0           | 17.362                 | 5.292                   | 0.42               |



# FSJ1-50A

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|        |        |        |      |
|--------|--------|--------|------|
| 824.0  | 17.637 | 5.376  | 0.41 |
| 894.0  | 18.42  | 5.614  | 0.4  |
| 960.0  | 19.134 | 5.832  | 0.38 |
| 1000.0 | 19.556 | 5.96   | 0.37 |
| 1218.0 | 21.738 | 6.626  | 0.34 |
| 1250.0 | 22.044 | 6.719  | 0.33 |
| 1500.0 | 24.326 | 7.414  | 0.3  |
| 1700.0 | 26.038 | 7.936  | 0.28 |
| 1794.0 | 26.813 | 8.172  | 0.27 |
| 1800.0 | 26.862 | 8.187  | 0.27 |
| 2000.0 | 28.455 | 8.673  | 0.26 |
| 2100.0 | 29.227 | 8.908  | 0.25 |
| 2200.0 | 29.984 | 9.139  | 0.24 |
| 2300.0 | 30.727 | 9.365  | 0.24 |
| 2500.0 | 32.174 | 9.806  | 0.23 |
| 2700.0 | 33.576 | 10.233 | 0.22 |
| 3000.0 | 35.602 | 10.851 | 0.21 |
| 3400.0 | 38.183 | 11.638 | 0.19 |
| 3600.0 | 39.428 | 12.017 | 0.19 |
| 3700.0 | 40.041 | 12.204 | 0.18 |
| 3800.0 | 40.647 | 12.389 | 0.18 |
| 3900.0 | 41.247 | 12.571 | 0.18 |
| 4000.0 | 41.841 | 12.753 | 0.17 |
| 4100.0 | 42.429 | 12.932 | 0.17 |
| 4200.0 | 43.012 | 13.11  | 0.17 |
| 4300.0 | 43.59  | 13.286 | 0.17 |
| 4400.0 | 44.163 | 13.46  | 0.17 |
| 4500.0 | 44.73  | 13.633 | 0.16 |
| 4600.0 | 45.293 | 13.805 | 0.16 |
| 4700.0 | 45.852 | 13.975 | 0.16 |
| 4800.0 | 46.405 | 14.144 | 0.16 |
| 4900.0 | 46.955 | 14.311 | 0.16 |
| 5000.0 | 47.5   | 14.477 | 0.15 |
| 6000.0 | 52.747 | 16.077 | 0.14 |
| 8000.0 | 62.37  | 19.01  | 0.12 |

# FSJ1-50A

|         |         |        |      |
|---------|---------|--------|------|
| 8800.0  | 65.974  | 20.108 | 0.11 |
| 10000.0 | 71.173  | 21.693 | 0.1  |
| 12000.0 | 79.393  | 24.198 | 0.09 |
| 14000.0 | 87.172  | 26.569 | 0.08 |
| 15800.0 | 93.872  | 28.611 | 0.08 |
| 16000.0 | 94.601  | 28.833 | 0.08 |
| 18000.0 | 101.745 | 31.01  | 0.07 |

## Material Specifications

|                          |                           |
|--------------------------|---------------------------|
| Dielectric Material      | Foam PE                   |
| Jacket Material          | PE                        |
| Inner Conductor Material | Copper-clad aluminum wire |
| Outer Conductor Material | Corrugated copper         |

## Mechanical Specifications

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

## Environmental Specifications

|  |                                      |
|--|--------------------------------------|
| Installation temperature                   | -40 °C to +60 °C (-40 °F to +140 °F) |
| Operating Temperature                      | -55 °C to +85 °C (-67 °F to +185 °F) |
| Storage Temperature                        | -70 °C to +85 °C (-94 °F to +185 °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                      |

## Packaging and Weights

|              |                         |
|--------------|-------------------------|
| Cable weight | 0.07 kg/m   0.047 lb/ft |
|--------------|-------------------------|

# FSJ1-50A

## Regulatory Compliance/Certifications

| Agency               | Classification   |
|----------------------|--|
| CHINA-ROHS           | Below maximum concentration value  |
| ISO 9001:2015        | Designed, manufactured and/or distributed under this quality management system   |
| REACH-SVHC           | Compliant as per SVHC revision on <a href="http://www.andrew.com/ProductCompliance">www.andrew.com/ProductCompliance</a> |
| ROHS                 | Compliant  |
| UK-ROHS              | Compliant  |
| UL/ETL Certification | Compliant  |

