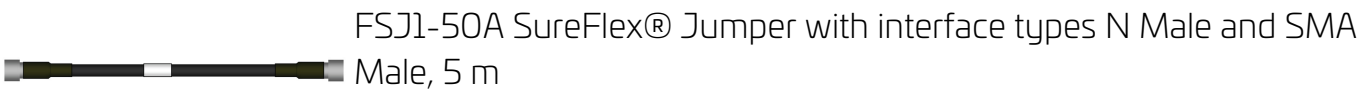


# F1A-NMSM-5M-P



## Product Classification

|                |                               |
|----------------|-------------------------------|
| Product Type   | SureFlex® Premium, static PIM |
| Product Brand  | HELIAX®   SureFlex®           |
| Product Series | FSJ1-50A                      |

## General Specifications

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

## Dimensions

|              |                 |
|--------------|-----------------|
| Length       | 5 m   16.404 ft |
| Nominal Size | 1/4 in          |

## Electrical Specifications

|                                  |                      |
|----------------------------------|----------------------|
| 3rd Order IMD Static             | -97 dBm              |
| 3rd Order IMD Static Test Method | Two +43 dBm carriers |

## VSWR/Return Loss

| Frequency Band | VSWR  | Return Loss (dB) |
|----------------|-------|------------------|
| 698–960 MHz    | 1.222 | 20               |
| 1700–2200 MHz  | 1.222 | 20               |
| 2200–2700 MHz  | 1.222 | 20               |

# F1A-NMSM-5M-P

## Jumper Assembly Sample Label



## Environmental Specifications

### Immersion Test Method

Meets IEC 60529:2001, IP68 in mated condition

## Included Products

|            |   |  |
|------------|---|--|
| 35422-33   | - | Heat Treated FSJ1-50A, HELIAX® Superflexible Low Density Foam Coaxial Cable, corrugated copper, 1/4 in, black PE Jacket  |
| 35422-75   | - | Heat Treated FSJ1RK-50B, HELIAX® Superflexible Foam Coaxial Cable, corrugated copper, 1/4 in, black non-halogenated, fire retardant polyolefin jacket            |
| FSJ1-50A   | - | FSJ1-50A, HELIAX® Superflexible Low Density Foam Coaxial Cable, corrugated copper, 1/4 in, black PE jacket   |
| FSJ1RK-50A | - | FSJ1-50A, HELIAX® Superflexible Foam Coaxial Cable, corrugated copper, 1/4 in, black non-halogenated, fire retardant polyolefin jacket, B2ca s1a dO a1 Compliant |



Heat Treated 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®                |
| Product Series | FSJ1-50A               |

General Specifications

|                  |  |
|------------------|--|
| 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  | 6.562 ohms/km   2 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              |
| Peak Power                      | 6.4 kW                     |

Velocity 82 %

VSWR/Return Loss

| Frequency Band | VSWR  | Return Loss (dB) |
|----------------|-------|------------------|
| 680–960 MHz    | 1.201 | 20.79            |
| 1700–2200 MHz  | 1.201 | 20.79            |
| 2200–2700 MHz  | 1.433 | 14.99            |

Attenuation

| Frequency (MHz) | Attenuation (dB/100 m) | Attenuation (dB/100 ft) |
|-----------------|------------------------|-------------------------|
| 0.5             | 0.407                  | 0.124                   |
| 1.0             | 0.577                  | 0.176                   |
| 1.5             | 0.707                  | 0.215                   |
| 2.0             | 0.816                  | 0.249                   |
| 10.0            | 1.833                  | 0.559                   |
| 20.0            | 2.6                    | 0.792                   |
| 30.0            | 3.192                  | 0.973                   |
| 50.0            | 4.136                  | 1.261                   |
| 85.0            | 5.419                  | 1.652                   |
| 88.0            | 5.516                  | 1.681                   |
| 100.0           | 5.889                  | 1.795                   |
| 108.0           | 6.12                   | 1.867                   |
| 150.0           | 7.25                   | 2.21                    |
| 174.0           | 7.825                  | 2.385                   |
| 200.0           | 8.408                  | 2.563                   |
| 204.0           | 8.495                  | 2.589                   |
| 300.0           | 10.373                 | 3.162                   |
| 400.0           | 12.051                 | 3.673                   |
| 450.0           | 12.817                 | 3.906                   |
| 500.0           | 13.545                 | 4.128                   |
| 512.0           | 13.715                 | 4.18                    |
| 600.0           | 14.909                 | 4.544                   |
| 700.0           | 16.175                 | 4.93                    |
| 800.0           | 17.362                 | 5.292                   |
| 824.0           | 17.637                 | 5.376                   |

|         |         |        |
|---------|---------|--------|
| 894.0   | 18.42   | 5.614  |
| 960.0   | 19.134  | 5.832  |
| 1000.0  | 19.556  | 5.96   |
| 1218.0  | 21.738  | 6.626  |
| 1250.0  | 22.044  | 6.719  |
| 1500.0  | 24.326  | 7.414  |
| 1700.0  | 26.038  | 7.936  |
| 1794.0  | 26.813  | 8.172  |
| 1800.0  | 26.862  | 8.187  |
| 2000.0  | 28.455  | 8.673  |
| 2100.0  | 29.227  | 8.908  |
| 2200.0  | 29.984  | 9.139  |
| 2300.0  | 30.727  | 9.365  |
| 2500.0  | 32.174  | 9.806  |
| 2700.0  | 33.576  | 10.233 |
| 3000.0  | 35.602  | 10.851 |
| 3400.0  | 38.183  | 11.638 |
| 3700.0  | 40.041  | 12.204 |
| 4000.0  | 41.841  | 12.753 |
| 5000.0  | 47.5    | 14.477 |
| 6000.0  | 52.747  | 16.077 |
| 8000.0  | 62.37   | 19.01  |
| 8800.0  | 65.974  | 20.108 |
| 10000.0 | 71.173  | 21.693 |
| 12000.0 | 79.393  | 24.198 |
| 14000.0 | 87.172  | 26.569 |
| 15800.0 | 93.872  | 28.611 |
| 16000.0 | 94.601  | 28.833 |
| 18000.0 | 101.745 | 31.01  |

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                      | 1.1 N-m   9.736 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 |
|--------------|-------------------------|

Regulatory Compliance/Certifications

| Agency               | Classification   |
|----------------------|--|
| ISO 9001:2015        | Designed, manufactured and/or distributed under this quality management system |
| UL/ETL Certification | Compliant  |





Heat Treated FSJ1RK-50B, HELIAX® Superflexible Foam Coaxial Cable, corrugated copper, 1/4 in, black non-halogenated, fire retardant polyolefin jacket

Product Classification

|                |                        |
|----------------|------------------------|
| Product Type   | Coaxial wireless cable |
| Product Brand  | HELIAX®                |
| Product Series | FSJ1-50B               |

General Specifications

|                  |  |
|------------------|--|
| 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     | 7.62 mm   0.3 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  | 6.562 ohms/km   2 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) | 4000 V                     |
| Operating Frequency Band        | 1 – 18000 MHz              |
| Peak Power                      | 6.4 kW                     |

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Velocity 82 %

## VSWR/Return Loss

| Frequency Band | VSWR  | Return Loss (dB) |
|----------------|-------|------------------|
| 680–960 MHz    | 1.201 | 20.79            |
| 1700–2200 MHz  | 1.201 | 20.79            |
| 2200–2700 MHz  | 1.433 | 14.99            |

## 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               |
| 824.0           | 17.637                 | 5.376                   | 0.41               |

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|        |        |        |      |
|--------|--------|--------|------|
| 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 |
| 8800.0 | 65.974 | 20.108 | 0.11 |

# 35422-75

|         |         |        |      |
|---------|---------|--------|------|
| 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          | Non-halogenated, fire retardant polyolefin |
| 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                      | 1.1 N-m   9.736 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                      | -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                      |
| Fire Retardancy Test Method                | UL 1666/CATVR/CMR                    |
| Smoke Index Test Method                    | IEC 61034                            |
| Toxicity Index Test Method                 | IEC 60754-1   IEC 60754-2            |

## Packaging and Weights

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

Regulatory Compliance/Certifications

| Agency   | Classification   |
|--|--|
| ISO 9001:2015  | Designed, manufactured and/or distributed under this quality management system |
| UL/ETL Certification   | Compliant  |
|  |  |

# 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

|        |        |        |      |
|--------|--------|--------|------|
| 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

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## 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  |



# FSJ1RK-50A

FSJ1-50A, HELIAX® Superflexible Foam Coaxial Cable, corrugated copper, 1/4 in, black non-halogenated, fire retardant polyolefin jacket, B2ca s1a d0 a1 Compliant

## Product Classification

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

## General Specifications

|                  |  |
|------------------|--|
| 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     | 7.62 mm   0.3 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) | 4000 V                         |
| Operating Frequency Band        | 1 – 18000 MHz                  |
| Peak Power                      | 6.4 kW                         |
| Velocity                        | 82 %                           |

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## VSWR/Return Loss

| Frequency Band | VSWR  | Return Loss (dB) |
|----------------|-------|------------------|
| 680–960 MHz    | 1.201 | 20.79            |
| 1700–2200 MHz  | 1.201 | 20.79            |
| 2200–2700 MHz  | 1.433 | 14.99            |

## 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               |
| 824.0           | 17.637                 | 5.376                   | 0.41               |

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|        |        |        |      |
|--------|--------|--------|------|
| 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 |
| 8800.0 | 65.974 | 20.108 | 0.11 |

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|         |         |        |      |
|---------|---------|--------|------|
| 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          | Non-halogenated, fire retardant polyolefin |
| 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                        | -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  | d0                                   |
| EN50575 CPR Cable EuroClass Acidity Rating   | a1                                   |

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|                             |   |
|-----------------------------|---|
| Fire Retardancy Test Method | IEC 60332-1-2   IEC 60332-3-24   NFPA 130-2010   UL 1666/CATVR /CMR   UL 1685 |
| Smoke Index Test Method     | IEC 61034   |
| Toxicity Index Test Method  | IEC 60754-1   IEC 60754-2   |

## Packaging and Weights

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

## Regulatory Compliance/Certifications

| Agency               | Classification   |
|----------------------|--|
| CENELEC              | EN 50575 compliant, Declaration of Performance (DoP) available   |
| 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  |

