



RLKU78-50JFNA

7/8" RADIAFLEX® RLKU Cable, A-series



- RADIAFLEX® functions as a distributed antenna to provide communications in tunnels, mines and large building complexes and is the solution for any application in confined areas.
- Slots in the copper outer conductor allow a controlled portion of the internal RF energy to be radiated into the surrounding environment. Conversely, a signal transmitted near the cable will couple into the slots and be carried along the cable length.
- RADIAFLEX® is used for both one-way and two-way communication systems and because of its broadband capability, a single radiating cable can handle multiple communication systems simultaneously.
- This RADIAFLEX® radiating cable utilize a low-loss cellular polyethylene foam dielectric and a smooth copper outer conductor which offers a superior electrical performance together with good bending properties.

Feature / Benefits

- Ultra wideband from 30 MHz to 2700 MHz
- For applications in tunnels and buildings
- Low coupling loss variations

Technical features

GENERAL SPECIFICATIONS

|      |     |
|------|-----|
| Size | 7/8 |
|------|-----|

ELECTRICAL SPECIFICATIONS

|                               |                                             |
|-------------------------------|---------------------------------------------|
| Max. Operating Frequency      | 2700 MHz                                    |
| Cable Type                    | RLKU                                        |
| Impedance                     | 50 +/- 2                                    |
| Velocity                      | 89 percent                                  |
| Capacitance                   | 75pF/m (22.9pF/ft)                          |
| Inductance                    | 0.188µH/m (0.057µH/ft)                      |
| DC-resistance inner conductor | 1.74ohm/1000 m (0.53ohm/1000 ft)            |
| DC-resistance outer conductor | 2.52ohm/1000 m (0.77ohm/1000 ft)            |
| Stop bands                    | 650-750, 1330-1430, 2025-2100               |
| Frequency Selection           | 600, 900, 1800/1900, 2200, 2400, 2500, 2700 |



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**MECHANICAL SPECIFICATIONS**

|                                     |                                                                              |
|-------------------------------------|------------------------------------------------------------------------------|
| Jacket                              | JFN                                                                          |
| Jacket Description                  | Halogen free, non corrosive, flame and fire retardant, low smoke, polyolefin |
| Slot Design                         | Groups of vertical slots at short intervals                                  |
| Inner Conductor Material            | Copper Tube                                                                  |
| Outer Conductor Material            | Overlapping Copper Strip                                                     |
| Diameter Inner Conductor            | 9.3mm (0.37in)                                                               |
| Diameter Outer Conductor            | 23.8mm (0.94in)                                                              |
| Minimum Bending Radius              | 350mm (13.8in)                                                               |
| Cable Weight                        | 0.55kg/m (0.37lb/ft)                                                         |
| Tensile Force                       | 2300N (507lb)                                                                |
| Indication of Slot Alignment        | Bulge atop slots                                                             |
| Recommended / Maximum Clamp Spacing | 0.9m (3ft)                                                                   |
| Minimum Distance to Wall            | 80mm (3.15in)                                                                |

**TESTING AND ENVIRONMENTAL**

|                        |                                                                                                                                                                                                                                          |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Jacket Testing Methods | Test methods for fire behaviour of cable :<br>IEC 60754-1/-2 smoke emission: halogen free, non corrosive<br>IEC 61034 low smoke<br>IEC 60332-1 flame retardant<br>IEC 60332-3-24 fire retardant<br>UL1666, ASTM E 662, NES711 and NES713 |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**TEMPERATURE SPECIFICATIONS**

|                          |                                |
|--------------------------|--------------------------------|
| Storage Temperature      | -70°C to 85°C (-94°F to 185°F) |
| Installation Temperature | -25°C to 60°C (-13°F to 140°F) |
| Operation Temperature    | -40°C to 85°C (-40°F to 185°F) |

**ATTENUATION AND POWER RATING**

| Frequency, MHz | Longitudinal Loss, dB/100 m<br>(dB/100 ft) | Coupling Loss 50%, dB | Coupling Loss 95%, dB |
|----------------|--------------------------------------------|-----------------------|-----------------------|
| 75             | 1,02 (0,31)                                | 52 (56)               | 64 (68)               |
| 150            | 1,46 (0,44)                                | 61 (65)               | 73 (77)               |
| 450            | 2,67 (0,81)                                | 69 (72)               | 81 (84)               |
| 800            | 4,07 (1,24)                                | 67 (69)               | 74 (77)               |
| 870            | 4,23 (1,29)                                | 63 (66)               | 70 (74)               |
| 900            | 4,34 (1,32)                                | 63 (66)               | 71 (74)               |
| 960            | 4,62 (1,41)                                | 64 (66)               | 71 (74)               |
| 1800           | 7,70 (2,35)                                | 59 (62)               | 67 (70)               |
| 1900           | 8,18 (2,50)                                | 59 (62)               | 67 (70)               |
| 2000           | 8,66 (2,64)                                | 60 (63)               | 67 (71)               |
| 2200           | 9,94 (3,03)                                | 58 (61)               | 66 (69)               |
| 2400           | 11,68 (3,56)                               | 57 (60)               | 65 (68)               |
| 2600           | 13,7 (4,18)                                | 58 (60)               | 66 (68)               |
| 2700           | 14,95 (4,56)                               | 61 (63)               | 69 (71)               |

**NOTES**

- Coupling loss as well as longitudinal attenuation of RADIAFLEX® cables are measured by the free space method according to IEC 61196-4.
- Coupling loss values are measured with a radial (below 650 MHz) or parallel (above 650 MHz) orientated dipole antenna.
- The coupling loss values given in brackets are average values of all three spatial orientations (radial, parallel and orthogonal) of dipole antenna.
- Coupling loss values are given with a tolerance of +5 dB and longitudinal loss values with a tolerance of +5%. Note: Measured values below nominal are better. They are not limited by any tolerance-range.
- In case of a conflict of operational and stop band, please contact RFS for further assistance.
- As with any radiating cable, the performance in building or tunnel environments may deviate from figures based on free space method.

**Related Documents****WINS Value Proposition**  
Value Propositions