



- 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.



RLK cable, A-series

**FEATURES / BENEFITS**

- Ultra wideband from 30 MHz to 2700 MHz
- For applications in tunnels and buildings
- Low coupling loss variations
- Lowest insertion loss and excellent coupling performance to minimize count of active equipment
- Best-in-class, RF ultra wideband radiating cable, accomodating all current and future commercial radio and private radio service from 30 MHz to 2700 MHz

**Technical features**

**GENERAL SPECIFICATIONS**

|             |  |       |
|-------------|--|-------|
| <b>Size</b> |  | 1-5/8 |
|-------------|--|-------|

**ELECTRICAL SPECIFICATIONS**

|   |                 |   |
|---|-----------------|---|
| <b>Max. Operating Frequency</b>                           | MHz             | 2700  |
| <b>Cable Type</b>   |                 | RLKU  |
| <b>Impedance</b>  | Ohm             | 50 +/- 2                                    |
| <b>Velocity, percent</b>                                  | %               | 89  |
| <b>Capacitance</b>  | pF/m (pF/ft)    | 76 (23.2)                                   |
| <b>Inductance, uH/m (uH/ft)</b>                           | μH/m (μH/ft)    | 0.19 (0.058)                                |
| <b>DC-resistance inner conductor, ohm/km (ohm/1000ft)</b> | Ω/km (Ω/1000ft) | 1.62 (0.49)                                 |
| <b>DC-resistance outer conductor, ohm/km (ohm/1000ft)</b> | Ω/km (Ω/1000ft) | 1.47 (0.45)                                 |
| <b>Stop bands</b>   | MHz             | 540-610                                     |
| <b>Frequency Selection</b>                                | MHz             | 600, 900, 1800/1900, 2200, 2400, 2500, 2700 |



**MECHANICAL SPECIFICATIONS**

|  |              |   |
|--|--------------|---|
| <b>Jacket</b>                              |              | JFL   |
| <b>Jacket Description</b>                  |              | Halogen free, non corrosive, flame and fire retardant, low smoke, polyolefin + flame barrier tape above outer conductor for lowest cable loss |
| <b>Slot Design</b>                         |              | Groups of vertical slots at short intervals   |
| <b>Inner Conductor Material</b>            |              | Corrugated Copper Tube  |
| <b>Outer Conductor Material</b>            |              | Overlapping Copper Strip  |
| <b>Diameter Inner Conductor</b>            | mm (in)      | 17.6 (0.69)   |
| <b>Diameter Outer Conductor</b>            | mm (in)      | 44.2 (1.74)   |
| <b>Diameter over Jacket Nominal</b>        | mm (in)      | 48.2 (1.9)  |
| <b>Minimum Bending Radius, Single Bend</b> | mm (in)      | 700 (28)  |
| <b>Cable Weight</b>                        | kg/m (lb/ft) | 1.01 (0.68)   |
| <b>Tensile Force</b>                       | N (lb)       | 1200 (270)  |
| <b>Indication of Slot Alignment</b>        |              | Guides opposite to slots  |
| <b>Recommended / Maximum Clamp Spacing</b> | m (ft)       | 1.5 (5)   |
| <b>Minimum Distance to Wall</b>            | mm (in)      | 80 (3.15)   |

**TESTING AND ENVIRONMENTAL**

|                               |  |  |
|-------------------------------|--|--|
| <b>Jacket Testing Methods</b> |  | <p>Test methods for fire behaviour of cable :</p> <p>IEC 60754-1/-2 smoke emission: halogen free, non corrosive</p> <p>IEC 61034 low smoke</p> <p>IEC 60332-1 flame retardant</p> <p>IEC 60332-3-24 fire retardant</p> <p>UL1666, ASTM E 662, NES711 and NES713</p> <p>NFPA130 (ed. 2014) Ch.12 (NFPA70 ) via UL-1685/FT4/IEEE1202</p> |
|-------------------------------|--|--|

**TEMPERATURE SPECIFICATIONS**

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



**ATTENUATION**

| Frequency, MHz | Longitudinal Loss, dB/100 m (dB/100 ft) | Coupling Loss 50%, dB | Coupling Loss 95%, dB |
|----------------|---|-----------------------|-----------------------|
| 75             | 0,55 (0,17)                             | 70 (75)               | 78 (82)               |
| 150            | 0,81 (0,25)                             | 70 (75)               | 78 (82)               |
| 700            | 2,00 (0,61)                             | 69 (71)               | 71 (74)               |
| 800            | 2,17 (0,66)                             | 67 (71)               | 68 (73)               |
| 870            | 2,29 (0,70)                             | 67 (72)               | 69 (74)               |
| 900            | 2,32 (0,71)                             | 68 (72)               | 70 (75)               |
| 960            | 2,43 (0,74)                             | 66 (70)               | 69 (73)               |
| 1700           | 3,57 (1,09)                             | 65 (69)               | 70 (74)               |
| 1800           | 3,70 (1,13)                             | 62 (66)               | 65 (70)               |
| 1900           | 3,95 (1,20)                             | 62 (66)               | 65 (70)               |
| 2000           | 4,15 (1,27)                             | 63 (67)               | 67 (72)               |
| 2100           | 4,41 (1,34)                             | 62 (66)               | 66 (71)               |
| 2200           | 4,62 (1,41)                             | 62 (66)               | 66 (71)               |
| 2400           | 5,18 (1,58)                             | 63 (68)               | 67 (71)               |
| 2600           | 5,80 (1,77)                             | 61 (65)               | 64 (68)               |
| 2700           | 5,96 (1,82)                             | 63 (66)               | 67 (70)               |

External Document Links

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 540 MHz) or parallel (above 610 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 Technologies for further assistance.
- As with any radiating cable, the performance in building or tunnel environments may deviate from figures based on free space method.

;