



- 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.

**FEATURES / BENEFITS**

- Broadband from 30 MHz to 960 MHz
- For applications in tunnels and buildings
- Low coupling loss variations



RLK cable, A-series

**Technical features****GENERAL SPECIFICATIONS**

|      |  |       |
|------|--|-------|
| Size |  | 1-5/8 |
|------|--|-------|

**ELECTRICAL SPECIFICATIONS**

|                                                    |                 |                  |
|----------------------------------------------------|-----------------|------------------|
| Max. Operating Frequency                           | MHz             | 960              |
| Cable Type                                         |                 | RLK              |
| Impedance                                          | Ohm             | 50 +/- 2         |
| Velocity, percent                                  | %               | 89               |
| Capacitance                                        | pF/m (pF/ft)    | 76 (23.2)        |
| Inductance, uH/m (uH/ft)                           | uH/m (uH/ft)    | 0.19 (0.058)     |
| DC-resistance inner conductor, ohm/km (ohm/1000ft) | Ω/km (Ω/1000ft) | 1.62 (0.49)      |
| DC-resistance outer conductor, ohm/km (ohm/1000ft) | Ω/km (Ω/1000ft) | 1.47 (0.45)      |
| Stop bands                                         | MHz             | 300-375, 640-700 |
| Frequency Selection                                | MHz             | 600, 900         |



## MECHANICAL SPECIFICATIONS

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

## 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<br>NFPA130 (ed. 2014) Ch.12 (NFPA70 ) via UL-1685/FT4/IEEE1202 |
|------------------------|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## TEMPERATURE SPECIFICATIONS

|                          |        |                         |
|--------------------------|--------|-------------------------|
| Storage Temperature      | °C(°F) | -70 to 85 (-94 to 185 ) |
| Installation Temperature | °C(°F) | -25 to 60 (-13 to 140 ) |
| Operation Temperature    | °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 |
|----------------|-----------------------------------------|-----------------------|-----------------------|
| 35             | 0,43 (0,13)                             | 48 (51)               | 58 (61)               |
| 75             | 0,62 (0,19)                             | 52 (56)               | 61 (65)               |
| 150            | 0,91 (0,28)                             | 57 (61)               | 69 (73)               |
| 400            | 1,77 (0,54)                             | 56 (58)               | 59 (61)               |
| 450            | 1,86 (0,57)                             | 56 (58)               | 59 (61)               |
| 470            | 1,91 (0,58)                             | 56 (58)               | 59 (61)               |
| 480            | 1,94 (0,59)                             | 56 (58)               | 59 (61)               |
| 800            | 3,06 (0,93)                             | 55 (59)               | 59 (63)               |
| 870            | 3,34 (1,02)                             | 55 (59)               | 59 (63)               |
| 900            | 3,46 (1,06)                             | 55 (59)               | 59 (63)               |
| 960            | 3,73 (1,14)                             | 55 (59)               | 59 (63)               |

## 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 330 MHz) or parallel (above 330 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 +10 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.