



- 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

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

ELECTRICAL SPECIFICATIONS

| | | |
|---|-----------------|---|
| Max. Operating Frequency | MHz | 2700 |
| Cable Type | | RLKU |
| Impedance | Ohm | 50 +/- 2 |
| Velocity, percent | % | 89 |
| Capacitance | pF/m (pF/ft) | 76 (23.2) |
| Inductance, uH/m (uH/ft) | µH/m (µH/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 | 540-610 |
| Frequency Selection | MHz | 600, 900, 1800/1900, 2200, 2400, 2500, 2700 |



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 | | 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 (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 | | <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> |
|-------------------------------|--|---|

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 |
|----------------|---|-----------------------|-----------------------|
| 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.

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