



- 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 corrugated copper outer conductor which offers a combination of remarkable flexibility, high strength and excellent electrical performance.

FEATURES / BENEFITS

- Broadband radiating cable supporting all wireless application between 75 MHz to 6000 MHz
- Ideally suited for application that require low bending radii
- Robust radiating cable operational under all enviromental conditions as e.g. harsh tunnels or mines



RCF cable

Technical features

GENERAL SPECIFICATIONS

| | | |
|------|--|-----|
| Size | | 1/2 |
|------|--|-----|

ELECTRICAL SPECIFICATIONS

| | | |
|--|-----------------|---|
| Max. Operating Frequency | MHz | 6000 |
| Cable Type | | RCF |
| Impedance | Ohm | 50 +/- 2 |
| Velocity, percent | % | 88 |
| 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) | 1.57 (0.48) |
| DC-resistance outer conductor, ohm/km (ohm/1000ft) | Ω/km (Ω/1000ft) | 2.23 (0.68) |
| Stop bands | MHz | None |
| Frequency Selection | MHz | 600, 900, 1800/1900, 2200, 2400, 2500, 2700, 6000 |



MECHANICAL SPECIFICATIONS

| | | |
|-------------------------------------|--------------|---|
| Jacket | | JFL |
| Jacket Color | | Standard Black, other colors on request |
| 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 | | Milled (Two-Row) |
| Inner Conductor Material | | Copper Clad Aluminum Wire |
| Outer Conductor Material | | Corrugated Copper Tube |
| Diameter Inner Conductor | mm (in) | 4.8 (0.19) |
| Diameter Outer Conductor | mm (in) | 13.8 (0.54) |
| Diameter over Jacket Nominal | mm (in) | 16 (0.63) |
| Minimum Bending Radius, Single Bend | mm (in) | 125 (4.9) |
| Cable Weight | kg/m (lb/ft) | 0.22 (0.15) |
| Tensile Force | N (lb) | 1000 (225) |
| Indication of Slot Alignment | | None |
| Recommended / Maximum Clamp Spacing | m (ft) | 0.6 (2) |
| Minimum Distance to Wall | mm (in) | 50 (1.97) |

TESTING AND ENVIRONMENTAL

| | | |
|------------------------|--|---|
| Jacket Testing Methods | | Test methods for fire behaviour of cable : IEC 60754-1/-2 smoke emission, halogen free, non corrosive IEC 61034 low smoke IEC 60332-1 flame retardant IEC 60332-3-24 fire retardant |
|------------------------|--|---|

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 AND POWER RATING

| Frequency, MHz | Longitudinal Loss, dB/100 m (dB/100 ft) | Coupling Loss 50%, dB | Coupling Loss 95%, dB |
|----------------|---|-----------------------|-----------------------|
| 75 | 2.20 (0.67) | 50 | 62 |
| 150 | 3.15 (0.96) | 59 | 71 |
| 450 | 5.70 (1.74) | 67 | 79 |
| 800 | 7.83 (2.39) | 67 | 79 |
| 870 | 8.25 (2.51) | 66 | 79 |
| 900 | 8.40 (2.56) | 66 | 78 |
| 960 | 8.65 (2.64) | 66 | 78 |
| 1800 | 13.1 (3.99) | 68 | 80 |
| 1900 | 13.6 (4.15) | 69 | 81 |
| 2000 | 14.0 (4.27) | 72 | 84 |
| 2200 | 14.7 (4.48) | 70 | 82 |
| 2400 | 15.3 (4.66) | 70 | 82 |
| 2600 | 15.9 (4.85) | 70 | 82 |
| 5000 | 24.8 (7.56) | 75 | 87 |
| 5200 | 25.7 (7.83) | 75 | 87 |
| 5800 | 27.6 (8.41) | 75 | 87 |
| 6000 | 29.9 (8.81) | 75 | 87 |

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 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.
- As with any radiating cable, the performance in building or tunnel environments may deviate from figures based on free space method.