



- 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) | 3.48 (1.06)                                       |
| Stop bands   | MHz             | None  |
| Frequency Selection                                | MHz             | 600, 900, 1800/1900, 2200, 2400, 2500, 2700, 6000 |



**MECHANICAL SPECIFICATIONS**

|                                     |              |   |
|-------------------------------------|--------------|---|
| Jacket                              |              | JFN   |
| Jacket Color                        |              | Standard Black, other colors on request                             |
| Jacket Description                  |              | Halogen free, non corrosive, flame retardant, low smoke, polyolefin |
| 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)       | 1100 (247)  |
| 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 :<br>IEC 60754-1/-2 smoke emission, halogen free, non corrosive<br>IEC 61034 low smoke<br>IEC 60332-1 flame 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.