



### RCF12-50JFNL

1/2" RCF RADIAFLEX Cable, Halogen Free, Flame/Fire Retardant, Low Smoke, Aluminum Outer Conductor

- 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 aluminum 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 or aluminum 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 radius
- Robust radiating cable operational under all enviromental conditions as e.g. harsh tunnels or mines
- Ideal for In-train, Vehicle-to-Everything communication and In aircraft to wireless/satellite networks



RCF cable

## Technical features

### GENERAL SPECIFICATIONS

Size		1/2
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### ELECTRICAL SPECIFICATIONS

Max. Operating Frequency	MHz	6000
Cable Type		RCF
Impedance	Ohm	50 +/- 2
Velocity, percent	%	86
Capacitance	pF/m (pF/ft)	76 (23.2)
DC-resistance inner conductor, ohm/km (ohm/1000ft)	$\Omega$ /km ( $\Omega$ /1000ft)	1.57 (0.48)
DC-resistance outer conductor, ohm/km (ohm/1000ft)	$\Omega$ /km ( $\Omega$ /1000ft)	3.2 (0.98)
Stop bands	MHz	None
Frequency Selection	MHz	600, 900, 1800/1900, 2200, 2400, 2500, 2700, 6000



**MECHANICAL SPECIFICATIONS**

<b>Jacket</b>		Flame Retardant
<b>Jacket Color</b>		Standard Black, other colors on request
<b>Jacket Description</b>		Halogen free, non corrosive, flame retardant, low smoke
<b>Slot Design</b>		Milled (Two-Row)
<b>Inner Conductor Material</b>		Copper Clad Aluminum Wire
<b>Outer Conductor Material</b>		Annularly Corrugated Aluminum
<b>Diameter Inner Conductor</b>	mm (in)	4.8 (0.19)
<b>Diameter Outer Conductor</b>	mm (in)	13.8 (0.54)
<b>Diameter over Jacket Nominal</b>	mm (in)	16 (0.63)
<b>Minimum Bending Radius, Single Bend</b>	mm (in)	125 (5)
<b>Cable Weight</b>	kg/m (lb/ft)	0.21 (0.14)
<b>Tensile Force</b>	N (lb)	1100 (247)
<b>Recommended / Maximum Clamp Spacing</b>	m (ft)	0.6 (2)
<b>Minimum Distance to Wall</b>	mm (in)	50 (2)

**TESTING AND ENVIRONMENTAL**

<b>Jacket Testing Methods</b>		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
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**TEMPERATURE SPECIFICATIONS**

<b>Storage Temperature</b>	°C(°F)	-10 to 50 (14 to 122 )
<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	2.32 (0.71)	62.2	72.9
150	3.31 (1.01)	67.9	77.5
450	5.87 (1.79)	73.2	84.4
800	7.93 (2.42)	80.7	91.8
870	8.31 (2.53)	77.6	88.9
900	8.46 (2.58)	77	89.2
960	8.75 (2.67)	71.7	84.4
1800	12.38 (3.77)	81.5	92.5
1900	12.75 (3.89)	79.7	91.5
2000	13.12 (4)	77.5	89.4
2200	13.86 (4.22)	75.8	88.3
2400	14.71 (4.48)	70.3	85.1
2600	15.2 (4.63)	77.8	90
5000	22.93 (6.99)	70.2	81.8
5200	23.54 (7.17)	71.3	84.9
5800	25.72 (7.84)	72.8	86.3
6000	26.29 (8.01)	75.5	87.8

[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.