



- 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

- Ultra-wideband from 30 MHz to 7200 MHz
- Support of 4G and 5G wireless bands and WLAN standards
- Suitable for a wide range of applications in tunnels and buildings
- Low coupling loss variations for balanced system design throughout the overall supported spectrum



RLKAX12-50JFNA

Technical features

GENERAL SPECIFICATIONS

Size		1/2
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ELECTRICAL SPECIFICATIONS

Max. Operating Frequency	MHz	7200
Cable Type		RLKAX
Impedance	Ohm	50 +/- 2
Velocity, percent	%	88
Capacitance	pF/m (pF/ft)	75 (22.86)
DC-resistance inner conductor, ohm/km (ohm/1000ft)	Ω /km (Ω /1000ft)	1.97 (0.6)
DC-resistance outer conductor, ohm/km (ohm/1000ft)	Ω /km (Ω /1000ft)	4.84 (1.48)
Stop bands	MHz	1900-2190
Frequency Selection	MHz	2400, 2600, 3500, 3800, 4200, 4900, 5800, 7000



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		Copper Clad Aluminum Wire
Outer Conductor Material		Overlapping Copper Foil
Diameter Inner Conductor	mm (in)	4.37 (0.17)
Diameter Outer Conductor	mm (in)	11.4 (0.45)
Diameter over Jacket Nominal	mm (in)	14.7 (0.58)
Minimum Bending Radius, Single Bend	mm (in)	200 (7.9)
Cable Weight	kg/m (lb/ft)	0.23 (0.16)
Tensile Force	N (lb)	1300 (292)
Indication of Slot Alignment		Bulge atop slots
Recommended / Maximum Clamp Spacing	m (ft)	0.5 (1.6)
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> <p>EN50575:2014 + A1:2016 (Hannover production) class Cca s1a d1 a1</p>
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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	2.09 (0.64)	62 (65)	72 (75)
150	2.96 (0.90)	72 (75)	81 (85)
450	5.25 (1.60)	75 (78)	86 (89)
700	6.60 (2.01)	74 (78)	85 (88)
900	7.57 (2.31)	74 (77)	84 (87)
1500	10.0 (3.05)	79 (82)	90 (92)
1700	10.8 (3.29)	73 (76)	84 (86)
1800	11.1 (3.38)	75 (77)	86 (88)
2200	12.8 (3.90)	64 (68)	73 (77)
2400	13.4 (4.08)	68 (70)	75 (77)
2600	14.1 (4.30)	66 (69)	71 (75)
2700	14.5 (4.42)	68 (70)	74 (77)
3200	15.8 (4.82)	68 (72)	74 (79)
3400	16.4 (5.00)	67 (71)	72 (76)
3600	17.0 (5.18)	68 (72)	72 (77)
3800	17.7 (5.39)	66 (70)	70 (75)
4000	18.5 (5.64)	69 (73)	74 (78)
4200	19.1 (5.82)	64 (68)	68 (73)
4800	21.1 (6.43)	66 (70)	71 (76)
5000	21.8 (6.64)	65 (69)	70 (75)
5200	22.5 (6.86)	65 (69)	70 (75)
5400	23.3 (7.10)	65 (69)	69 (73)
5600	24.2 (7.38)	66 (69)	70 (75)
5800	25.1 (7.65)	66 (70)	72 (76)
6000	26.0 (7.92)	64 (68)	69 (73)
6200	26.8 (8.17)	65 (68)	69 (74)
6400	28.0 (8.53)	64 (68)	70 (74)
6600	29.1 (8.87)	63 (67)	68 (72)
6800	30.5 (9.30)	63 (67)	69 (73)
7000	32.1 (9.78)	63 (67)	69 (73)
7200	33.9 (10.3)	63 (66)	68 (72)

External Document Links

Notes

- 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
- Coupling loss values are measured with dipole (75 - 4200MHz) and biconical antenna (4400-7200MHz). Values are normalized to half-



wave dipole. The coupling loss values given in brackets are average values of all three spatial orientations (radial, parallel and orthogonal)

- Coupling loss values are given with tolerances of +5dB and longitudinal loss values with a tolerance of +5%
- Measured values below nominal are better. Note: measured values below nominal are better. They are not limited by any tolerance range
- Coupling as well as longitudinal loss of RFS RADIAFLEX® cables are measured by free-space method according to IEC 61196-4
- In case of a conflict of operational and stop band, please contact RFS for further assistance
- As with any radiating cable, the performance in building or tunnel environments may deviate from figures based on free-space method