

**RLKAX12-50JFNA**

1/2" RADIAFLEX® RLKAX Cable, A-series



- 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

Technical Features**STRUCTURE**

Cable Type	RLKAX
Size	1/2
Inner Conductor Material	Copper Clad Aluminum Wire
Outer Conductor Material	Overlapping Copper Foil
Jacket	JFN
Jacket Description	Halogen free, non corrosive, flame and fire retardant, low smoke, polyolefin
Slot Design	Groups of vertical slots at short intervals
Indication of Slot Alignment	Bulge atop slots

MECHANICAL SPECIFICATION

Diameter Inner Conductor	4.37mm (0.17in)
Diameter Outer Conductor	11.4mm (0.45in)
Minimum Bending Radius	200mm (7.9in)
Cable Weight	0.23kg/m (0.16lb/ft)
Tensile Force	1,300N (292lb)
Recommended / Maximum Clamp Spacing	0.5m (1.6ft)
Minimum Distance to Wall	80mm (3.15in)



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ELECTRICAL SPECIFICATION

Impedance	50 +/- 2 Ω							
Max. Operating Frequency	7,200 MHz							
Velocity	88 %							
Capacitance	75pF/m (22.86pF/ft)							
DC-resistance inner conductor	1.97Ω/km (0.6Ω/kft)							
DC-resistance outer conductor	4.84Ω/km (1.48Ω/kft)							
Stop bands	1900-2190							
Frequency Selection	2400	2600	3500	3800	4200	4900	5800	7000

TESTING AND ENVIRONMENTAL

Operation Temperature	-40 - 85 °C (-40 - 185°F)
Installation Temperature	-25 - 60 °C (-13 - 140°F)
Storage Temperature	-70 - 85 °C (-94 - 185°F)
Compliance	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 UL1666, ASTM E 662, NES711 and NES713 EN50575:2014 + A1:2016 (Hannover production) class Cca s1a d1 a1

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ATTENUATION AND COUPLING LOSS

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)

@ 20°C (68°F)

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 nomila are better. They are not limited by any tolerance range



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- 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