

## 1/2" RADIAFLEX® RLK 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**

- Wideband from 30 MHz to 980 MHz
- For applications in tunnels and buildings
- Low coupling loss variations



# **Technical features**

## **GENERAL SPECIFICATIONS**

Size		1/2			
ELECTRICAL SPECIFICATIONS					
Max. Operating Frequency	MHz	980			
Cable Type		RLK			
Impedance	Ohm	50 +/- 2			
Velocity, percent	%	87			
Capacitance	pF/m (pF/ft)	75 (22.9)			
Inductance, uH/m (uH/ft)	μH/m (μH/ft)	0.188 (0.057)			
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	300-375, 675-685			
Frequency Selection	MHz	600, 900			

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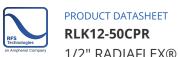
MECHANICAL SPECIFICATIONS				
Jacket		CPR, EN50575:2014 + A1:2016 classified cable		
Jacket Description		Halogen free, non corrosive, flame and fire retardant, low smoke, polyolefin + flame barrier to above outer conductor for lowest cable loss		
Slot Design		Groups of vertical slots at short intervals		
Inner Conductor Material		Copper Clad Aluminum Wire		
Outer Conductor Material		Overlapping Copper Strip		
Diameter Inner Conductor	mm (in)	4.4 (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				
		Test methods for fire behaviour of cable :		
		IEC 60754-1/-2 smoke emission: halogen free, non corrosive		
		IEC 61034 low smoke		
Jacket Testing Methods		IEC 60332-1 flame retardant		
		IEC 60332-3-24 fire retardant		
		UL1666, ASTM E 662, NES711 and NES713		

## **TEMPERATURE SPECIFICATIONS**

Storage Temperature	°C(°F)	-70 to 85 (-94 to 185 )
Installation Temperature	°C(°F)	-15 to 60 (5 to 140 )
Operation Temperature	°C(°F)	-40 to 85 (-40 to 185 )

CPR: EN50575:2014 + A1:2016 classified cable, class B2ca s1a do a1

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## **ATTENUATION**

Frequency, MHz	Longitudinal Loss, dB/100 m (dB/100 ft)	Coupling Loss 50%, dB	Coupling Loss 95%, dB
75	2,17 (0,66)	46(50)	58(60)
150	3,11 (0,95)	54(58)	66(69)
400	5,59 (1,70)	53(55)	57(59)
450	5,88 (1,79)	52(55)	56(59)
470	6,01 (1,83)	52(55)	56(59)
500	6,20 (1,89)	52(55)	56(59)
800	8,50 (2,59)	55(58)	59(62)
870	9,07 (2,76)	56(59)	61(64)
900	9,41 (2,87)	57(60)	62(65)
960	10,51(3,20)	57(60)	62(65)

## **External Document Links**

Construction Products Regulation (CPR) classification and product related information available on RFS Technologies webpage.

#### 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 measured with a radial (below 470 MHz) or parallel (above 470 MHz) orientated dipole antenna.
- The coupling loss values given in brackets 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.
- In case of a conflict of operational and stop band, please contact RFS Technologies for further assistance.
- As with any radiating cable, the performance in building or tunnel environments may deviate from figures based on free space method.

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