

# 1/2" RADIAFLEX® RLKU 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 2700 MHz

For applications in tunnels and buildings

Low coupling loss variations



Techni	cal	Feat	ures
CENEDAL	CDE	CIFIC	TIONS

GENERAL SPECIFICATIONS				
Size		1/2"		
ELECTRICAL SPECIFICATIONS	ELECTRICAL SPECIFICATIONS			
Max. Operating Frequency	MHz	2700.0		
Cable Type		RLKU		
Impedance	Ohm	50 +/- 2		
Velocity	%	88.0		
Capacitance	pF/m (pF/ft)	76 (23.2)		
Inductance	μH/m (μH/ft)	0.19 (0.058)		
DC-resistance inner conductor	Ω/km (Ω/1000ft)	1.97 (0.6)		
DC-resistance outer conductor	Ω/km (Ω/1000ft)	4.84 (1.48)		
Stop bands	MHz	650-750, 1330-1430, 2025-2100		
MECHANICAL SPECIFICATIONS				
Jacket		CPR, EN50575:2017 classified cable		
Jacket Description		Halogen free, non corrosive, flame and fire retardant, low smoke, polyolefin + flame barrier tape 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	mm (in)	14.7 (0.58)		
Minimum Bending Radius	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 Clamp Spacing	m (ft)	0.5 (1.6)		
Minimum Distance to Wall	mm (in)	80 (3.15)		
TEMPERATURE SPECIFICATIONS	TEMPERATURE SPECIFICATIONS			

TEMPERATUR	E SPECIFI	CATIONS
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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 )

RLKU12-50CPR REV: A **REV DATE: 19.Jul.2017** www.rfsworld.com



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#### ATTENUATION AND POWER RATING

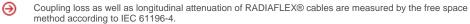
Frequency	Longitudinal loss	Coupling Loss	
MHz	dB/100m (dB/100ft)	50%, dB	95%, dB
75	2.17 (0.66)	49 (53)	59 (63)
150	3.10 (0.94)	57 (61)	68 (72)
450	5.74 (1.75)	65 (68)	76 (79)
800	8.75 (2.67)	57 (59)	63 (65)
870	9.21 (2.81)	58 (60)	64 (66)
900	9.40 (2.86)	58 (60)	63 (66)
960	9.73 (2.97)	58 (60)	64 (66)
1800	21.97 (6.70)	55 (57)	65 (67)
1900	22.71 (6.92)	55 (57)	65 (67)
2000	23.48 (7.16)	53 (56)	65 (66)
2200	25.47 (7.76)	52 (55)	60 (63)
2400	27.93 (8.51)	52 (54)	60 (63)
2600	30.50 (9.30)	52 (54)	60 (63)

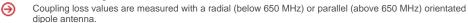
TESTING AND ENVIRONMENTAL			
Jacket Testing Methods	Test methods for fire behaviour of cable: IEC 60754-1/-2 smoke emission: halogen free, non corrosive IEC 61034 low smoke IEC 60332-1 flame retardant IEC 60332-3-24 fire retardant UL1666, ASTM E 662, NES711 and NES713 CPR: EN50575:2017 class Cca s1 do a1		

### **External Document Links**

Web URL to CPR ressources with DoP and CE-label download folders

### **Notes**





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

Ocupling loss values are given with a tolerance of +5 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 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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