



# 1-1/4" 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.



RLK cable, A-series

**FEATURES / BENEFITS**

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

## Technical Features

**GENERAL SPECIFICATIONS**

<b>Size</b>	1-1/4"
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**ELECTRICAL SPECIFICATIONS**

<b>Max. Operating Frequency</b>	MHz	980
<b>Cable Type</b>		RLK
<b>Impedance</b>	Ohm	50 +/- 2
<b>Velocity</b>	%	89
<b>Capacitance</b>	pF/m (pF/ft)	74 (22.6)
<b>Inductance</b>	μH/m (μH/ft)	0.1875 (0.057)
<b>DC-resistance inner conductor</b>	Ω/km (Ω/1000ft)	2.4 (0.74)
<b>DC-resistance outer conductor</b>	Ω/km (Ω/1000ft)	1.95 (0.59)
<b>Stop bands</b>	MHz	300-375, 650-750

**MECHANICAL SPECIFICATIONS**

<b>Jacket</b>		JFL
<b>Jacket Description</b>		Halogen free, non corrosive, flame and fire retardant, low smoke, polyolefin + flame barrier tape above outer conductor for lowest cable loss
<b>Slot Design</b>		Groups of vertical slots at short intervals
<b>Inner Conductor Material</b>		Corrugated Copper Tube
<b>Outer Conductor Material</b>		Overlapping Embossed Copper Foil
<b>Diameter Inner Conductor</b>	mm (in)	13.9 (0.55)
<b>Diameter Outer Conductor</b>	mm (in)	34 (1.34)
<b>Diameter over Jacket</b>	mm (in)	38.1 (1.5)
<b>Minimum Bending Radius, Single Bend</b>	mm (in)	325 (13)
<b>Cable Weight</b>	kg/m (lb/ft)	0.75 (0.51)
<b>Tensile Force</b>	N (lb)	2000 (440)
<b>Indication of Slot Alignment</b>		Guides opposite to slots
<b>Recommended Clamp Spacing</b>	m (ft)	1.3 (4.25)
<b>Minimum Distance to Wall</b>	mm (in)	80 (3.15)

**TEMPERATURE SPECIFICATIONS**

<b>Storage Temperature</b>	°C(°F)	-70 to 85 (-94 to 185 )
<b>Installation Temperature</b>	°C(°F)	-25 to 60 (-13 to 140 )
<b>Operation Temperature</b>	°C(°F)	-40 to 85 (-40 to 185 )



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**ATTENUATION AND POWER RATING**

Frequency MHz	Longitudinal loss dB/100m (dB/100ft)	Coupling Loss	
		50%, dB	95%, dB
75	0.73 (0.22)	50 (54)	61 (65)
150	1.05 (0.32)	59 (63)	69 (73)
380	1.84 (0.56)	51 (54)	56 (59)
400	1.90 (0.58)	51 (54)	56 (59)
420	1.97 (0.60)	51 (54)	56 (59)
450	2.07 (0.63)	51 (54)	56 (59)
470	2.14 (0.65)	51 (54)	56 (59)
500	2.24 (0.68)	51 (54)	56 (59)
800	3.83 (1.17)	51 (54)	61 (64)
870	4.29 (1.31)	51 (54)	61 (64)
900	4.58 (1.40)	51 (54)	61 (64)
960	4.93 (1.50)	51 (54)	61 (64)

**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  
 NFPA130 (ed. 2014) Ch.12 (NFPA70 ) via  
 UL-1685/FT4/IEEE1202

**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 measured with a radial (below 330 MHz) or parallel (above 330 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%.
- ➔ 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.