PRODUCT DATASHEET

RLKW114-50CPR

1-1/4" RADIAFLEX® RLKW 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 1950 MHz
- For applications in tunnels and buildings
- Low coupling loss variations

Technical Features

STRUCTURE

Cable Type	RLKW
Size	1-1/4
Inner Conductor Material	Corrugated Copper Tube
Outer Conductor Material	Overlapping Copper Foil
Jacket	CPR, EN50575:2014 + A1:2016 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
Indication of Slot Alignment	Guides opposite to slots

MECHANICAL SPECIFICATION

Diameter Inner Conductor	13.9mm (0.55in)
Diameter Outer Conductor	34mm (1.34in)
Minimum Bending Radius	500mm (20in)
Cable Weight	0.87kg/m (0.58lb/ft)
Tensile Force	2,000N (440lb)
Recommended / Maximum Clamp Spacing	1.3m (4.25ft)
Minimum Distance to Wall	80mm (3.15in)

All values nominal unless tolerances provided; information contained in the present datasheet is subject to confirmation at time of ordering

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ELECTRICAL SPECIFICATION

Impedance	50 +/- 2 Ω		
Max. Operating Frequency	1,950 MHz		
Velocity	89 %		
Capacitance	75pF/m (22.9pF/ft)		
Inductance	0.188µH/m (0.057µH/ft)		
DC-resistance inner conductor	0.84Ω/km (0.26Ω/kft)		
DC-resistance outer conductor	1.85Ω/km (0.56Ω/kft)		
Stop bands	115-135, 235-255, 360-375, 475-505, 600-630, 720-750, 970-1075, 1340-1460, 1590-1700		
Frequency Selection	600	900	1800/1900

TESTING AND ENVIRONMENTAL

Operation Temperature	-40 - 85 °C (-40 - 185°F)
Installation Temperature	-15 - 60 °C (5 - 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 CPR: EN50575:2014 + A1:2016 class B2ca s1b do a1

ATTENUATION AND COUPLING LOSS

Frequency, MHz	Longitudinal Loss, dB/100 m (dB/100 ft)	Coupling Loss 50%, dB	Coupling Loss 95%, dB
75	0.74 (0.23)	53 (56)	64 (67)
150	1.08 (0.33)	60 (63)	68 (71)
450	1.99 (0.61)	61 (64)	64 (67)
800	2.93 (0.90)	60 (63)	64 (67)
870	3.13 (0.95)	58 (61)	62 (65)
900	3.21 (0.98)	58 (61)	61 (64)
960	3.37 (1,03)	57 (60)	61 (64)
1800	7.98 (2.43)	53 (56)	59 (62)
1900	8.65 (2.64)	50 (53)	58 (61)

@ 20°C (68°F)

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 or parallel (125-800 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 +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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Related Documents

Construction Products Reg
Other Documents

Solution Overview_4.pdf
Other Documents

roduct related information available on RFS webpage.

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