Product Data Sheet **RAYT158-50JFNA**

1-5/8" RADIAFLEX® RAYT Cable, A-series

Product Description

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.

RAY cable, A-series

PERFORMANCE			
Frequency, MHz	Longitudinal Loss, dB/100 m (dB/100 ft)	Coupling Loss 50%, dB	Coupling Loss 95%, dB
2400	4,4 (1,34)	64 (67)	67 (71)
2500	4,8 (1,46)	64 (67)	67 (71)

Standard conditions

Features/Benefits

- **Superio electrical performance in 2400 to 2500 MHz**
- **Optimized for mission critical runs (track-to-train / signaling radio) and WiFi-based services**
- **Lowest system loss for long radiating cable runs, lowest total cost of solution**
- **Low coupling loss variations, very smooth spatial coverage**
- **Optimized for high data throughput (bandwidth) digital transmission**
- **Designed for a variety of in-tunnel applications in unlicensed ISM band 2400-2500 MHz**

Technical Specifications

Size:	[in]	1-5/8"
Max. operating frequency:	[MHz]	2500
Cable Type:		RAY
Jacket	JFN	
Jacket Description	Halogen free, non corrosive, flame and fire retardant, low smoke, polyolefin 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	
Slot Design		Groups of slope slots at short intervals
Impedance	[Ω]	50 +/-2
Relative propagation velocity	[%]	91
Capacitance	[pF/m (pF/ft)]	72 (21.9)
Inductance	[µH/m (µH/ft)]	0.180 (0.055)
DC-resistance inner conductor	[Ω/km (Ω/1000ft)]	1.62 (0.49)
DC-resistance outer conductor	[Ω/km (Ω/1000ft)]	1.47 (0.45)
Outer Conductor Material		Overlapping Copper Foil
Inner Conductor Material		Corrugated Copper Tube
Diameter over Jacket	[mm (in)]	48.2 (1.90)
Diameter Outer Conductor	[mm (in)]	44.2 (1.74)
Diameter Inner Conductor	[mm (in)]	17.6 (0.69)
Minimum Bending Radius, Single Bend	[mm (in)]	700 (28.0)
Cable Weight	[kg/m (lb/ft)]	1.01 (0.68)
Max. tensile force	[N (lb)]	1200 (270)
Indication of Slot Alignment		Guides opposite to slots
Storage temperature	[°C (°F)]	-70 to +85 (-94 to +185)
Installation temperature	[°C (°F)]	-25 to +60 (-13 to +140)
Operation temperature	[°C (°F)]	-40 to +85 (-40 to +185)
Stop bands	[MHz]	No stop bands in operational band 2400-2500
Recommended / maximum clamp spacing	[m (ft)]	1.5 (5)
Minimum Distance to Wall	[mm (in)]	80 (3.15)
Length	[m (ft)]	

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 an orthogonal (vertical) 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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All information contained in the present datasheet is subject to confirmation at time of ordering