RADIO FREQUENCY SYSTEMS
The Clear Choice®

1-5/8" RADIAFLEX® RAYA 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.**

RAY cables, A-series

FEATURES / BENEFITS

- Ultra wideband from 75 MHz to 2700 MHz
- Support of all commercial and mission critical wireless services between 75 and 2700 MHz
- Future proof: Supports frequency spectrum re-banding/re-farming
- Unconditionally 4G ready in all 3GPP bands
- Homogeneous (balanced) system loss over frequency
- Designed for a variety of in-tunnel applications

Technical Features

GENERAL SPECIFICATIONS		
Size		1-5/8"
ELECTRICAL SPECIFICATIONS		
Max. Operating Frequency	MHz	2700.0
Cable Type		RAY
Impedance	Ohm	50 +/- 2
Velocity	%	91.0
Capacitance	pF/m (pF/ft)	72 (21.9)
Inductance	µH/m (µH/ft)	0.18 (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)
Stop bands	MHz	No Stop bands
MECHANICAL SPECIFICATIONS		
Jacket		JFL
Jacket Color		black
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 slope slots at short intervals
Inner Conductor Material		Corrugated Copper Tube
Outer Conductor Material		Overlapping Copper Foil
Diameter Inner Conductor	mm (in)	17.6 (0.69)
Diameter Outer Conductor	mm (in)	44.2 (1.74)
Diameter over Jacket	mm (in)	48.2 (1.9)
Minimum Bending Radius	mm (in)	700 (28)
Cable Weight	kg/m (lb/ft)	1.01 (0.68)
Tensile Force	N (lb)	1200 (270)
Indication of Slot Alignment		Guides opposite to slots
Recommended Clamp Spacing	m (ft)	1.5 (5)
Minimum Distance to Wall	mm (in)	80 (3.15)
TEMPERATURE SPECIFICATIONS		
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)

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ATTENUATION AND POWER RATING

Frequency	Longitudinal loss	Coupling Loss	
MHz	dB/100m (dB/100ft)	50%, dB	95%, dB
75	0,54 (0,16)	64 (68)	74 (77)
150	0,76 (0,23)	76 (80)	85 (90)
450	1,42 (0,43)	75 (79)	80 (84)
610	1,68 (0,51)	73 (77)	78 (82)
700	1,84 (0,56)	74 (76)	79 (81)
800	1,99 (0,60)	72 (75)	76 (79)
900	2,15 (0,66)	73 (77)	77 (82)
960	2,26 (0,69)	71 (75)	76 (79)
1700	3,30 (1,01)	66 (71)	72 (77)
1800	3,49 (1,06)	67 (69)	74 (77)
1900	3,69 (1,12)	67 (69)	73 (77)
2000	3,85 (1,17)	64 (68)	71 (75)
2100	4,08 (1,24)	64 (68)	70 (75)
2200	4,26 (1,30)	64 (68)	70 (74)
2300	4,54 (1,38)	62 (66)	68 (73)
2400	4,85 (1,48)	62 (66)	68 (72)
2500	5,23 (1,59)	61 (65)	67 (72)
2600	5,68 (1,73)	60 (64)	65 (70)
2700	6,62 (2,02)	59 (63)	66 (71)

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

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 400 MHz) or orthogonal (above 400 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.