

## 7/8" RADIAFLEX® RCF 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 corrugated copper outer conductor which offers a combination of remarkable flexibility, high strength and excellent electrical performance.

#### **FEATURES / BENEFITS**

- Broadband radiating cable supporting all wireless application between 30 MHz to 2750 MHz
- Ideally suited for application that require low bending radii
- •
- Robust radiating cable operational under all environmental conditions as e.g. harsh tunnels or mines



RCF cable, A-series

# Technical features GENERAL SPECIFICATIONS

GENERAL SPECIFICATIONS					
Size		7/8			
ELECTRICAL SPECIFICATIONS					
Max. Operating Frequency	MHz	3800			
Cable Type		RCF			
Impedance	Ohm	50 +/- 2			
Velocity, percent	%	89			
Capacitance	pF/m (pF/ft)	75 (22.9)			
Inductance, uH/m (uH/ft)	μH/m (μH/ft)	0.188 (0.057)			
DC-resistance inner conductor, ohm/km (ohm/1000ft)	Ω/km (Ω/1000ft)	1.54 (0.47)			
DC-resistance outer conductor, ohm/km (ohm/1000ft)	Ω/km (Ω/1000ft)	1.74 (0.53)			
Stop bands	MHz	None			
Frequency Selection	MHz	600, 900, 1800/1900, 2200, 2400, 2500, 2700			

RCF78-50JFNA REV : A REV DATE : 22 Oct 2020 www.rfstechnologies.com



Jacket		JFN		
Jacket Color		Standard Black, other colors on request		
Jacket Description		Halogen free, non corrosive, flame retardant, low smoke, polyolefin		
Slot Design		Milled (Two-Row)		
Inner Conductor Material		Copper Tube		
Outer Conductor Material		Corrugated Copper Tube		
Diameter Inner Conductor	mm (in)	9.3 (0.37)		
Diameter Outer Conductor	mm (in)	25.2 (0.99)		
Diameter over Jacket Nominal	mm (in)	27.8 (1.09)		
Minimum Bending Radius, Single Bend	mm (in)	250 (10)		
Cable Weight	kg/m (lb/ft)	0.6 (0.4)		
Tensile Force	N (lb)	1440 (317)		
Indication of Slot Alignment		None		
Recommended / Maximum Clamp Spacing	m (ft)	0.9 (3)		
Minimum Distance to Wall	mm (in)	50 (1.97)		
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		
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 )		

RCF78-50JFNA REV : A REV DATE : 22 Oct 2020 www.rfstechnologies.com



#### **ATTENUATION**

Frequency, MHz	Longitudinal Loss, dB/100 m (dB/100 ft)	Coupling Loss 50%, dB	Coupling Loss 95%, dB	
75	1.20 (0.37)	56	66	
150	1.75 (0.53)	66	75	
450	3.05 (0.93)	75	86	
800	4.20 (1.28)	73	83	
870	4.30 (1.31)	73	83	
900	4.40 (1.34)	73	83	
960	4.60 (1.40)	73	83	
1800	6.80 (2.07)	70	81	
1900	7.00 (2.13)	70	81	
2000	7.30 (2.23)	71	82	
2200	7.80 (2.38)	70	81	
2400	8.30 (2.53)	68	80	
2600	8.80 (2.68)	68	80	
2700	9.20 (2.80)	70	81	
3200	10.5 (3.2)	69	79	
3300	10.7 (3.26)	69	79	
3400	10.9 (3.32)	69	79	
3500	11.1 (3.38)	68	78	
3600	11.3 (3.45)	67	77	
3700	11.5 (3.51)	67	77	
3800	11.7 (3,57)	67	77	

### **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 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%. Note: Measured values below nominal are better. They are not limited by any tolerance-range.
- As with any radiating cable, the performance in building or tunnel environments may deviate from figures based on free space method.

RCF78-50JFNA REV : A REV DATE : 22 Oct 2020 www.rfstechnologies.com