



# RLKU114-50JFLAH-BAA

## 1-1/4" RADIAFLEX® RLKU Cable, A-series

- BAA Compliant. RFS Technologies is proud to announce that the product of RLK114-50JFLA-BAA manufactured by RFS Technologies Meriden Factory in CT, U.S. is BAA compliant with Federal Transit Administration's requirements.
- 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.



picture shows generic slot pattern

### FEATURES / BENEFITS

- BAA Compliant
- Ultra wideband from 30 MHz to 2700 MHz
- For applications in tunnels and buildings
- Low coupling loss variations

## Technical features

### GENERAL SPECIFICATIONS

Size		1-1/4
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### ELECTRICAL SPECIFICATIONS

Max. Operating Frequency	MHz	2700
Cable Type		RLKU
Impedance	Ohm	50 +/- 2
Velocity, percent	%	90
Capacitance	pF/m (pF/ft)	74 (22.6)
DC-resistance inner conductor, ohm/km (ohm/1000ft)	$\Omega$ /km ( $\Omega$ /1000ft)	0.83 (0.253)
DC-resistance outer conductor, ohm/km (ohm/1000ft)	$\Omega$ /km ( $\Omega$ /1000ft)	1.75 (0.534)
Stop bands	MHz	540-610
Frequency Selection	MHz	600, 900, 1800/1900, 2200, 2400, 2500, 2700



**MECHANICAL SPECIFICATIONS**

<b>Jacket</b>		JFL, EN50575:2017 classified cable
<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 Copper Strip
<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 Nominal</b>	mm (in)	38.1 (1.5)
<b>Minimum Bending Radius, Single Bend</b>	mm (in)	500 (20)
<b>Cable Weight</b>	kg/m (lb/ft)	0.87 (0.58)
<b>Tensile Force</b>	N (lb)	2000 (440)
<b>Indication of Slot Alignment</b>		Guides opposite to slots
<b>Recommended / Maximum Clamp Spacing</b>	m (ft)	1.3 (4.3)
<b>Minimum Distance to Wall</b>	mm (in)	80 (3.15)

**TESTING AND ENVIRONMENTAL**

<b>Jacket Testing Methods</b>		<p>Test methods for fire behaviour of cable :</p> <p>IEC 60754-1/-2 smoke emission: halogen free, non corrosive</p> <p>IEC 61034 low smoke</p> <p>IEC 60332-1 flame retardant</p> <p>IEC 60332-3-24 fire retardant</p> <p>NFPA130 (ed. 2014) Ch.12 (NFPA70 ) via UL-1685/FT4/IEEE1202</p> <p>UL1666, ASTM E 662, NES711 and NES713</p> <p>EN50575:2017 (Hannover production) class Dca s1 d2 a1</p>
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**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 )



ATTENUATION

Frequency, MHz	Longitudinal Loss, dB/100 m (dB/100 ft)	Coupling Loss 50%, dB	Coupling Loss 95%, dB
75	0.71 (0.23)	58 (61)	68 (71)
150	1.08 (0.33)	64 (67)	75 (78)
500	2.03 (0.62)	69 (73)	81 (84)
700	2.55 (0.78)	62 (65)	66 (69)
800	2.75 (0.84)	62 (65)	67 (70)
860	2.88 (0.88)	67 (70)	73 (76)
870	2.90 (0.89)	68 (71)	74 (77)
900	2.97 (0.91)	64 (67)	67 (70)
1900	5.39 (1.64)	62 (65)	67 (70)
2000	5.69 (1.64)	63 (66)	69 (72)
2100	5.96 (1.82)	62 (65)	67 (70)
2200	6.37 (1.94)	61 (64)	66 (69)
2300	6.79 (2.07)	62 (65)	67 (70)
2400	7.32 (2.23)	61 (64)	67 (70)
2700	9.12 (2.78)	61 (64)	67 (70)

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 550 MHz) or parallel (above 550 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 Technologies 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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