Aircom® Premium FRNC

ultra low-loss up to 12 GHz and halogen-free

Aircom Premium FRNC is an ultra-low attenuation coaxial cable with an upper frequency limit of 12 GHz. It is characterized by its low weight and very low attenuation. The highly precise-shaped aluminium inner conductor is surrounded by a copper foil that is applied and welded to the inner conductor. The skin effect ensures a high-performance RF transmission. The precise shapeability of the aluminium core is responsible for virtually no disturbances throughout the entire frequency range. Additionally, this new cable from the Aircom family is highly suitable for digital modulation methods, being very low in intermodulation.

The extremely low attenuation of Aircom Premium FRNC is achieved through a low attenuation PE dielectric. The material is also resistant to moisture. To achieve good shielding attenuation with low losses, the outer conductor of Aircom Premium FRNC is made of two layers of copper: a thin, overlapping copper foil is applied with a shielding braid covering 75 %. The foil is PE-coated on the inside, protecting against cracking in case of a one-time too small bending radius. The jacket of the cable is made of a special thermoplastic copolymer, the halogen-free, flame-retardant material FRNC (Flame Retardant Non Corrosive). This gives Aircom Premium FRNC a low fire load, low fire spread, and minimal smoke development.

Aircom Premium FRNC is a coaxial cable for most applications in telecommunications and radio technology: it is flexible, low in attenuation, and secure against radiation interference.

Key features

Diameter	10.2 ± 0.2 mm
Impedance	50 ± 2 Ω
Attenuation at 1 GHz/100 m	11.88 dB
f max	**12 GHz**
Euroclass according to EN 50575	**Fca**

Characteristics

- Jacket material according to DIN EN 50290-2-27 (HD 624.7)
- Flame-retardant according to IEC 60332-1-2
- Manufactured according to DIN EN 45545-2 Table 5 R15 HL2
- RoHS compliant (Directive 2011/65/EC & 2015/863/EU RoHS 3)
- Fire-resistant, low smoke, halogen-free (LSZH)
- Corrosivity of the combustion gases according to IEC 60754-2
- Smoke density according to IEC 61034
- UV-resistant

Technical Data

Inner conductor	Hybrid CCA – bare copper-clad aluminium wire
Inner conductor Ø	1 × 2.75 mm
Dielectric	blue foamed cellular polyethylene (PE) with skin
Dielectric Ø	7.2 mm
Outer conductor 1	overlapping copper (Cu) foil
Shielding factor	100 %
Outer conductor 2	Copper (Cu) shield braiding of bare copper wires
Shielding factor	75 %
Outer conductor Ø	7.9 mm
Jacket	thermoplastic copolymer (FRNC) black
Weight	108 kg/km
Min. Bending radius	4 × Ø single, 8 × Ø repeated
Temperature range	-55 to +85 °C transport & fixed installation -40 to +85 °C mobile application
Pulling strength	650 N

Electrical Data at 20 °C

Capacitance (1 kHz)	78 nF/km
Velocity factor	0.85
Shielding attenuation 1 GHz	≥ 90 dB
DC-resistance inner conductor	≤ 5.0 Ω/km
DC-resistance outer conductor	7.3 Ω/km
Insulation resistance	≥ 10 GΩ*km
Test Voltage DC (wire/screen)	9 kV
Max. voltage	7 kV

	Aircom Premium FRNC	RG 213/U	RG 58/U
Capacitance	78 pF/m	101 pF/m	102 pF/m
Velocity factor	0.85	0.66	0.66
Attenuation (dB/100m)			
10 MHz	1.05	2.00	5.00
100 MHz	3.42	7.00	17.00
500 MHz	8.08	17.00	39.00
1000 MHz	11.88	22.50	54.60
3000 MHz	21.85	58.50	118.00

Typ. Attenuation (dB/100 m at 20 °C)

5 MHz	1.03	1500 MHz	14.28
10 MHz	1.05	1800 MHz	16.16
50 MHz	2.09	2000 MHz	17.29
100 MHz	3.42	2400 MHz	19.00
144 MHz	3.90	3000 MHz	21.85
200 MHz	4.51	4000 MHz	25.65
300 MHz	5.70	5000 MHz	29.45
432 MHz	7.22	6000 MHz	33.25
500 MHz	8.08	8000 MHz	42.75
800 MHz	10.55	10000 MHz	57.00
1000 MHz	11.88	12000 MHz	71.25

Max. Power Handling (W at 40 °C)

10 MHz	4.700	3000 MHz	230
100 MHz	1400	4000 MHz	190
500 MHz	620	5000 MHz	170
1000 MHz	420	6000 MHz	150
2000 MHz	290	8000 MHz	130
2400 MHz	260	10000 MHz	100
		12000 MHz	80

Typ. Attenuation (dB/100 m at 20°C)