

Aircell[®] 5

thin, low-loss, and stray radiation resistant



Aircell 5 is a flexible and thin coaxial cable with a 5 mm outer diameter designed for the frequency range from DC to 10 GHz. Its low-loss characteristics in relation to its diameter and compatibility with standard RG 58 connectors make it the preferred choice not only for Wireless LAN applications but also for general RF communications.

The low attenuation of Aircell 5 is achieved through advanced manufacturing techniques and a low-loss PE-LLC dielectric with a foaming rate of more than 70%. This unique dielectric not only ensures low attenuation but also provides water resistance and long-term stability. Aircell 5 features a solid inner conductor extruded from low-oxygen copper (OFC). Additional advantages of this cable include double shielding, consisting of overlapping 100% tight copper foil and an additional shield braiding of bare copper wires with 70% coverage. The copper foil is coated with PE to prevent cracking due to short radius bends. The black PVC jacket of Aircell 5 is UV-stabilized.

As Aircell 5 shares the same dimensions as RG 58 type cables (5 mm outer diameter), it is compatible with almost all standard coaxial connectors designed for 5 mm coaxial cables. Aircell 5 is the ideal choice when a thin, low-loss, and microwave-rated cable is required, suitable for numerous RF applications.

Key features

Diameter	5.0 ± 0.2 mm
Impedance	50 ± 2 Ω
Attenuation at 1 GHz/100 m	29.54 dB
f max	10 GHz
Euroclass according to EN 50575	Eca

Characteristics

- Insulation material according to DIN EN 50290-2-23 (VDE 0819), Tab. 2/A (HD 624.3)
- Jacket material according to DIN EN 50290-2-22 (VDE 0819), compound type TM 52 (HD 624.2)
- Flame-retardant according to IEC 60332-1-2
- Flame-retardant according to UN/ECE-R 118:2019-06 § 6.2.6, ISO 6722-1:2011-10 § 5.22
- RoHS compliant (Directive 2011/65/EC & 2015/863/EU RoHS 3)
- UV-resistant

Technical Data

Inner conductor	bare copper wire
Inner conductor Ø	1 × 1.13 mm
Dielectric	foamed cellular polyethylene (PE) with skin
Dielectric Ø	3.1 mm
Outer conductor 1	overlapping copper (Cu) foil
Shielding factor	100 %
Outer conductor 2	Copper (Cu) shield braiding of bare copper wires
Shielding factor	70 %
Outer conductor Ø	3.7 mm
Jacket	PVC black, UV-stabilized
Weight	35 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	100 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	≤ 20.5 Ω/km
DC-resistance outer conductor	22 Ω/km
Insulation resistance	≥ 10 GΩ*km
Test Voltage DC (wire/screen)	4 kV
Max. voltage	2.5 kV

Aircell 5 RG 58/U RG 213/U

Capacitance	78 pF/m	102 pF/m	101 pF/m
Velocity factor	0.85	0.66	0.66
Attenuation (dB/100m)			
10 MHz	2.78	5.00	2.00
100 MHz	8.93	17.00	7.00
500 MHz	20.49	39.00	17.00
1000 MHz	29.54	54.60	22.50
3000 MHz	53.57	118.00	58.50

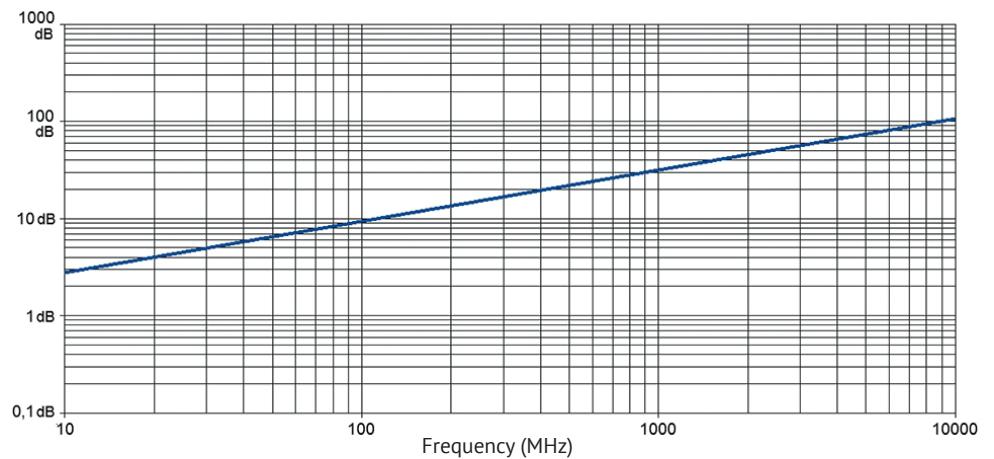
Typ. Attenuation (dB/100 m at 20 °C)

5 MHz	1.97	1000 MHz	29.54
10 MHz	2.78	1296 MHz	33.92
50 MHz	6.28	1500 MHz	36.70
100 MHz	8.93	1800 MHz	40.50
144 MHz	10.76	2000 MHz	42.88
200 MHz	12.74	2400 MHz	47.38
300 MHz	15.70	3000 MHz	53.57
432 MHz	18.99	4000 MHz	62.88
500 MHz	20.49	5000 MHz	71.30
800 MHz	26.24	6000 MHz	78.85
		10000 MHz	106.40

Max. Power Handling (W at 40 °C)

10 MHz	1.885	3000 MHz	98
100 MHz	587	4000 MHz	83
500 MHz	256	5000 MHz	74
1000 MHz	178	6000 MHz	66
2000 MHz	122	10000 MHz	49

Typ. Attenuation (dB/100 m at 20 °C)



Typ. Return Loss

