GORE® Coaxial Cables (50 Ohms)

For commercial and military aircraft systems requiring controlled impedance at 50 ohms, Gore offers a direct replacement for standard RG400 cables. Our aviation coaxial cables are proven to optimize signal transmission at speeds up to 3 GHz with 10% lower loss than RG400 cables (Table 1).

These low-loss cables yield substantial size and weight savings without losing mechanical robustness or electrical stability. Our downsized cable design is 30% smaller and 60% lighter than RG400 cables.

By replacing the RG400 version with Gore's lightweight cables in an IFE system on an Airbus 330/340 passenger airliner, the weight savings is 22 kg (48 lb). If all of the RG400 cables were replaced with our cables in a typical large cabin business jet, the expected weight savings would be approximately 19 kg (42 lb).

Typical Applications

- Box-to-antennas
- Communications systems
- In-flight entertainment (IFE) systems
- Navigation systems

Standards Compliance

- EN4604-003: Cable Characteristics for Signal Transmission
- FAR Part 25, Appendix F, Part I: Flammability
- MIL-C-17/128: Electrical Performance Requirements for Radio Frequency, Flexible RG400 Coaxial Cable, 50 Ohms

Table 1: Cable Properties

Electrical

Property	Value
Signal Transmission Speed GHz	Up to 3
Standard Impedance Ohms	50 ± 2
Maximum Transfer Impedance mOhm/m from 1 to 3 GHz	30
Test Voltage V AC Jacket Material Dielectric Material	 2000 4000
Typical Operating Voltage Vrms	250
Nominal Velocity of Propagation %	> 80
Nominal Time Delay ns/m (ns/ft)	4.0 (1.26)
Capacitance pF/m (pF/ft)	80.0 (24.4)

Mechanical / Environmental

Property	Value
Jacket Material	Extruded FEP
Jacket Color	White (Laser Markable)
Conductor	Silver-Plated Copper
Dielectric Material	FEP over Expanded PTFE
Temperature Range °C	-65 to +200

Table 2: Cable Characteristics

Insertion loss values are based on the maximum recommended use length.

Gore Part Number	AWG Size (Stranding)	Maximum Outer Diameter mm (in)	Minimum Bend Radius mm (in)	Nominal Weight kg/km (lb/1000 ft)	Typical Insertion Loss dB/30 m (100 ft)		
					200 MHz	400 MHz	3 GHz
GSC-03-81748-00	19 (01)	3.60 (0.14)	35.0 (1.38)	2.60 (1.75)	5.1	7.5	24.0

Ordering Information

The 50-ohm version of GORE® Coaxial Cables is available in a standard size (Table 2). To place an order, contact an authorized distributor for in-stock availability at **gore.com/cable-distributors**. For more information or to discuss specific characteristic limits and application needs, contact a Gore representative today at **gore.com/aerospace-defense-contact.**

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