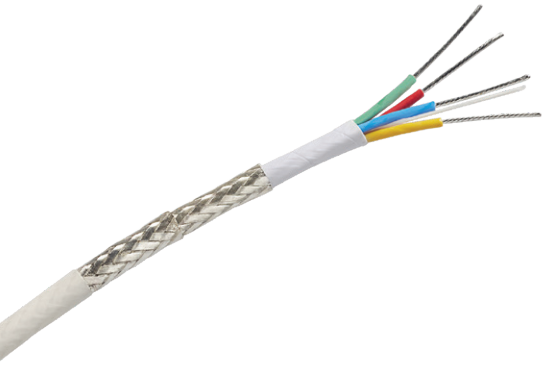


GORE® Quad Cables (Specialty Versions, Controlled Impedance, 100 Ohms)



Gore offers specialty quad coax cables with tighter skew requirements that are perfectly aligned with today’s high-speed serial data and video protocols in modern avionics (Table 1). These dual differential pairs routinely transfer bi-directional signals for data and video at speeds up to 1 GHz at lengths up to 30 m (100 ft).

These cables are constructed with remarkably strong materials and perform without failure in the most difficult aircraft conditions such as rigorous routing and extreme temperatures (Figure 1).

As the original architect of this innovative quad coax design, Gore’s cables are significantly smaller — by approximately 40% — when compared to dual twisted pair constructions (Figure 2). These cables are also proven to save more than 5.0 kg (11 lb) per aircraft.

Table 1: Cable Properties

Electrical

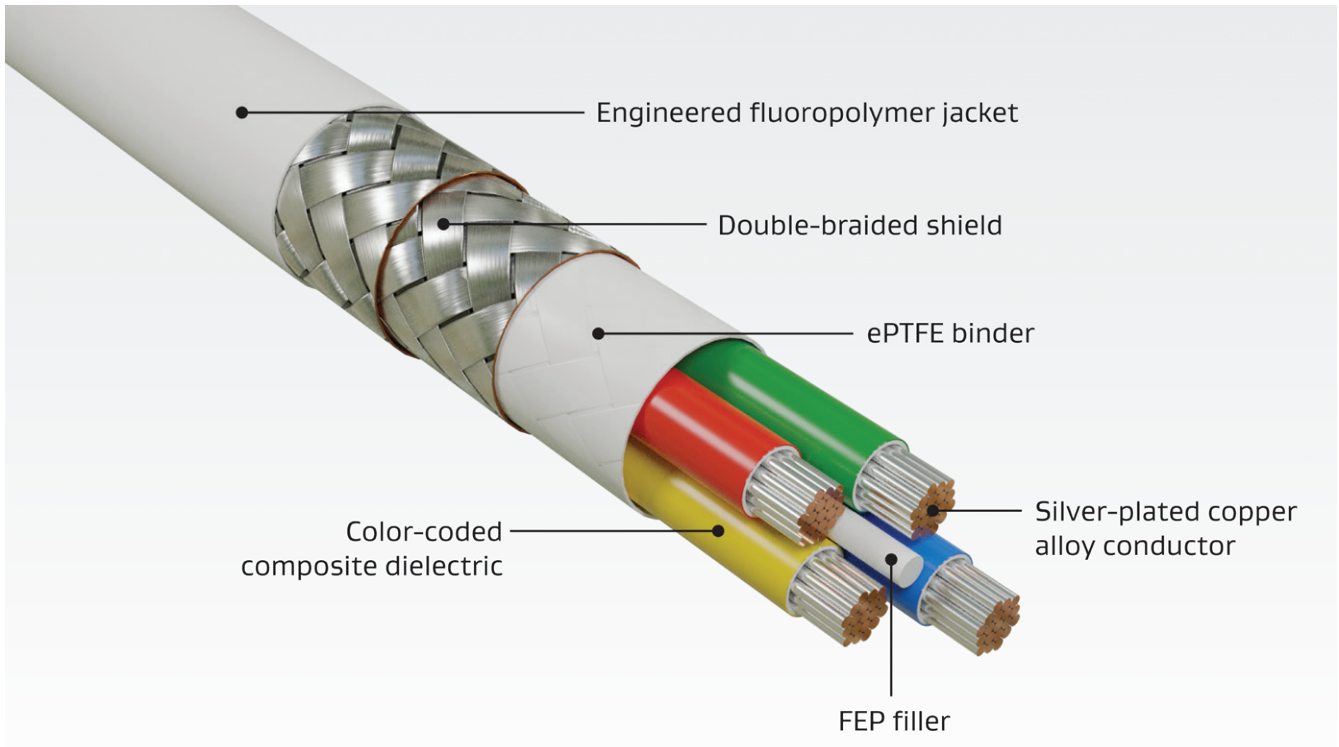
Property	Value		
	RCN8752 (24 AWG)	RCN8982 (26 AWG)	RCN8973 (28 AWG)
Standard Impedance Ohms	100 ± 5	100 ± 10	100 ± 10
Typical Operating Voltage V	< 15	< 15	< 15
Nominal Velocity of Propagation %	> 80	> 80	> 80
Nominal Time Delay ns/m (ns/ft)	4.10 (1.25)	4.23 (1.29)	4.10 (1.25)
Capacitance pF/m (pF/ft)	50.0 (15.2)	39.4 (12.0)	42.7 (13.0)
Minimum Near-End Crosstalk (NEXT) dB			
10 MHz	50.0	—	—
100 MHz	35.0		
Maximum Skew Within Pair ps/m (ps/ft)	13.12 (4.0)	13.12 (4.0)	13.12 (4.0)
Dielectric Withstanding Voltage Vrms			
Conductor-to-Conductor	1500	1500	1500
Conductor-to-Shield			

Mechanical / Environmental

Property	Value		
Jacket Material	Engineered Fluoropolymer		
Jacket Color	White (Laser Markable)		
Conductor	Silver-Plated Copper Alloy		
Conductor Color-Coding	Blue/Red, Green/Yellow	Blue/Orange, Green/Red	Black/Blue, Green/White
Dielectric Material	ePTFE/PTFE	ePTFE/PTFE	ePTFE/PTFE
Temperature Range °C	-55 to +200	-55 to +200	-55 to +200

GORE® Quad Cables (Specialty Versions, Controlled Impedance, 100 Ohms)

Figure 1: Remarkably Strong Materials



Typical Applications

- Avionics networks
- Box-to-box systems
- Digital visual interface (DVI)
- EO/IR (electro-optical infrared) sensors
- Ethernet backbone
- Flight control
- Mission systems
- Propulsion control
- Video networks

Standards Compliance

- ABD0031 (AITM 2.0005); B557230; FAR Part 25, Appendix F, Part I: Flammability
- ABD0031 (AITM 3.0005); B557239: Toxicity
- ABD0031 (AITM 3.0008B); B557238; FAR Part 25, Appendix F, Part V: Smoke Density
- AFDX/ARINC 664, Part 7: Ethernet Networks
- ANSI/NEMA WC 27500: Environmental Testing, Jacket and Marking
- IEEE 802.3: Ethernet 1000BASE-T
- SAE AS4373™: Test Methods for Insulated Electric Wire (Contact Gore for available data)

Figure 2: Reduced Cable Design

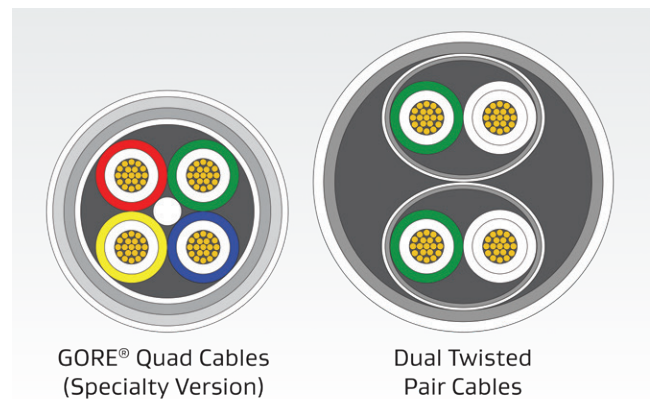


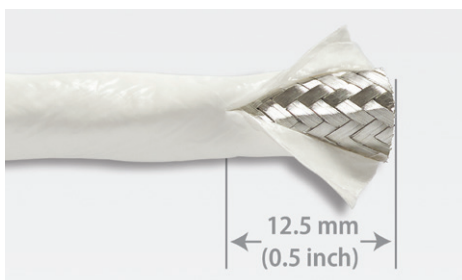
Table 2: Cable Characteristics

Gore Part Number	AWG Size (Stranding)	Nominal Outer Diameter mm (in)	Minimum Bend Radius mm (in)	Typical Weight kg/km (lb/1000 ft)	Typical Insertion Loss dB/30 m (100 ft)			
					100 MHz	250 MHz	500 MHz	1 GHz
RCN8752	24 (19/36)	3.8 (0.15)	19.0 (0.75)	32.4 (21.7)	6.3	10.4	15.3	22.7
RCN8982	26 (19/38)	3.4 (0.14)	17.0 (0.67)	23.6 (15.8)	10.0	15.0	21.0	30.0
RCN8973	28 (19/40)	2.8 (0.11)	14.0 (0.55)	20.6 (13.8)	8.9	20.5	28.9	39.8

Cable Preparation

Laser stripping is the ideal method to prep GORE® Quad Cables. Alternatively, Gore recommends using thermal or sharp mechanical strippers. Also, a unique method is to make a short, horizontal slit in the jacket material, peel it back to allow for contact termination and return the jacket to its original position for a neat closure (Figure 3). For more information regarding cable preparation, please contact a Gore representative.

Figure 3: Peel-Back Method



Contact-Connector Options

GORE® Quad Cables are designed to fit a variety of high-speed aerospace and defense connector systems and backshells such as ARINC and MIL-STD-38999 with size 8 contacts. Please contact the specific manufacturer such as Amphenol® and Glenair® for exact part numbers, tooling information, and termination instructions.

Ordering Information

GORE® Quad Cables are available in standard sizes (Table 2). Visit gore.com/cable-distributors for the list of distributors. In addition, visit gore.com/hdrsamplerflyer regarding Gore’s full inventory of sample products and lead times.

For more information or to discuss specific characteristic limits and application needs, please contact a Gore representative.

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