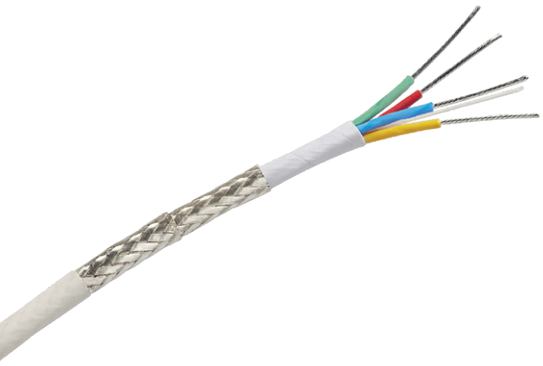
GORE® Quad Cables (100 Ohms)



Gore offers quad cables with tighter skew requirements that are perfectly aligned with today's high-speed serial data and video protocols in advanced systems (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 airborne and land conditions such as rigorous routing and extreme temperature and weather changes (Figure 1).

As the original architect of this innovative quad design, Gore's cables are significantly smaller — by approximately 40% — when compared to dual twisted pair constructions (Figure 2). These smaller cable diameters are also up to 30% lighter for considerable weight savings in aircraft and armored vehicles.

Table 1: Cable Properties

Electrical

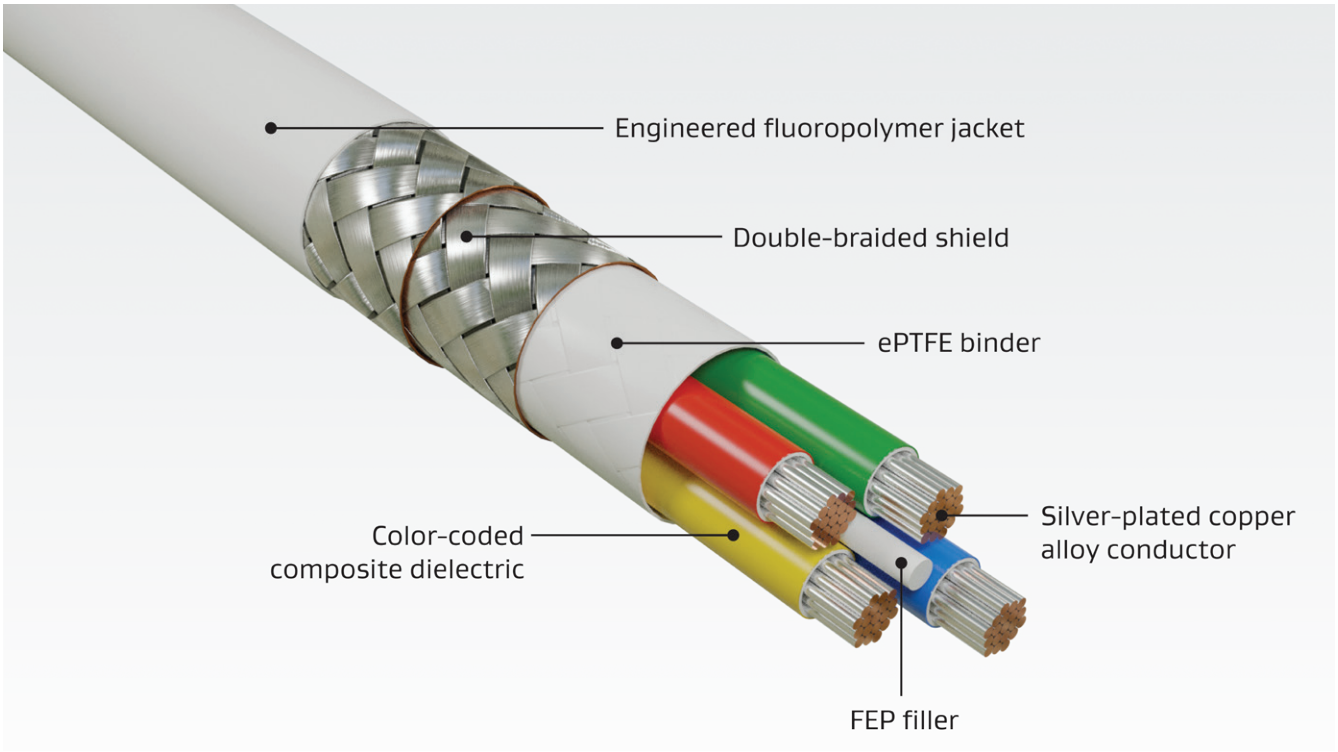
Property	Value		
	RCN8752 (24 AWG)	**RCN8982 (26 AWG)**	**RCN8973 (28 AWG)**
Signal Transmission Speed GHz	Up to 1	Up to 1	Up to 1
Standard Impedance Ohms	100 ± 5	100 ± 10	100 ± 10
Typical Operating Voltage V	< 15	< 15	< 15
Nominal Velocity of Propagation %	> 80	> 80	> 80
Nominal Time Delay ns/m (ns/ft)	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 100 MHz	 50.0 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 Conductor-to-Shield	 1500	 1500	 1500

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	Expanded PTFE/PTFE		
Temperature Range °C	-55 to +200	-55 to +200	-55 to +200

GORE® Ethernet Cables (Cat5e)

Figure 1: Remarkably Strong Cable Materials



Typical Applications

- Avionics/vectronics digital networks
- Box-to-box systems
- Digital video interface (DVI)
- EO/IR (electro-optical infrared) sensors
- Ethernet backbone
- Flight/propulsion control
- HD streaming camera/video systems
- Mission systems

Standards Compliance

- ABD0031 (AITM 2.0005); BSS7230; FAR Part 25, Appendix F, Part I: Flammability
- ABD0031 (AITM 3.0005); BSS7239: Toxicity
- ABD0031 (AITM 3.0008B); BSS7238; 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

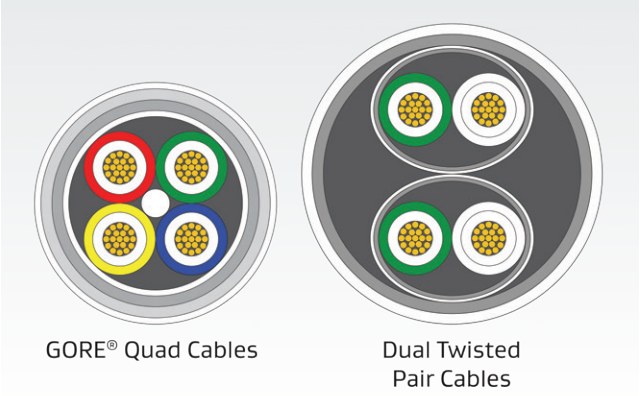


Table 2: Cable Characteristics

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

Samples & Ordering Information

GORE® Quad Cables are available in standard sizes (Table 2). To place an order, contact an authorized distributor for in-stock availability at **gore.com/cable-distributors.** To view our full inventory and order complimentary samples of selected products for prototyping and evaluation in your application, visit **gore.com/hsdc-sample-inventory-air-defense.**

For more information or to discuss specific characteristic limits and application needs, contact a Gore representative today at **gore.com/aerospace-defense-contact.**

Gore's quad cables are perfect for optronics systems in unmanned aircraft and military vehicles that use high-speed serial data and video protocols.

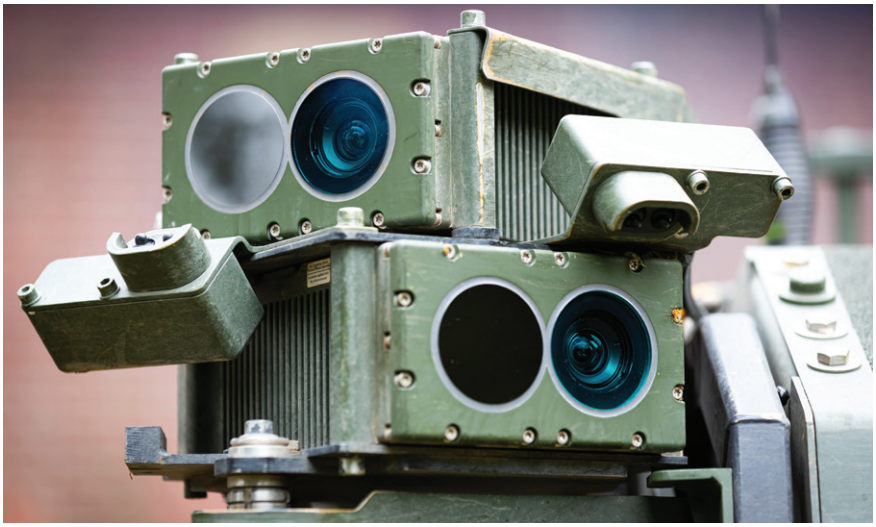


Image courtesy of Rheinmetall©

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, contact a Gore representative.

Connector Systems & Backshells

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. Contact the specific manufacturer such as Amphenol® and Glenair® for exact part numbers, tooling information, and termination instructions.

Figure 3: Peel-Back Method

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gore.com

ACS1016-DSH-US-JUN23