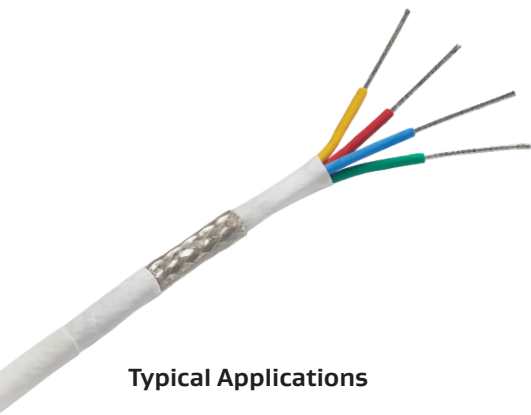


# GORE® Ethernet Cables (Cat5e)



## Typical Applications

- Avionics/vectronics digital networks
- Box-to-box systems
- Digital video interface (DVI)
- Ethernet backbone
- Flight/propulsion control
- HD streaming camera/video systems
- Mission systems
- Radio/radar/communications systems
- Tactical links
- Vehicle management 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 100BASE-T / 1000BASE-T (2 cables)
- SAE AS4373™: Test Methods for Insulated Electric Wire (Contact Gore for available data)

To meet Cat5e requirements in advanced avionics and vectronics, Gore offers an Ethernet quadrx version as a reliable substitute for dual twisted pairs (Table 1). These dual differential pairs transmit continuous bi-directional, high-speed signals up to 100 MHz at lengths up to 70 m (230 ft) using size 24 AWG and 50 m (164 ft) using size 26 AWG. Also, positioning two of these cables side by side can achieve Ethernet 1000BASE-T performance for more system design options.

Gore is the original inventor of this pioneering cable geometry that is approximately 40% smaller and up to 30% lighter than dual twisted pair constructions. (Figure 1). Our cable's lightweight build is also proven to save more than 5.0 kg (11 lb) on aircraft such as the fifth-generation F-35.

**Table 1: Cable Properties**

### Electrical

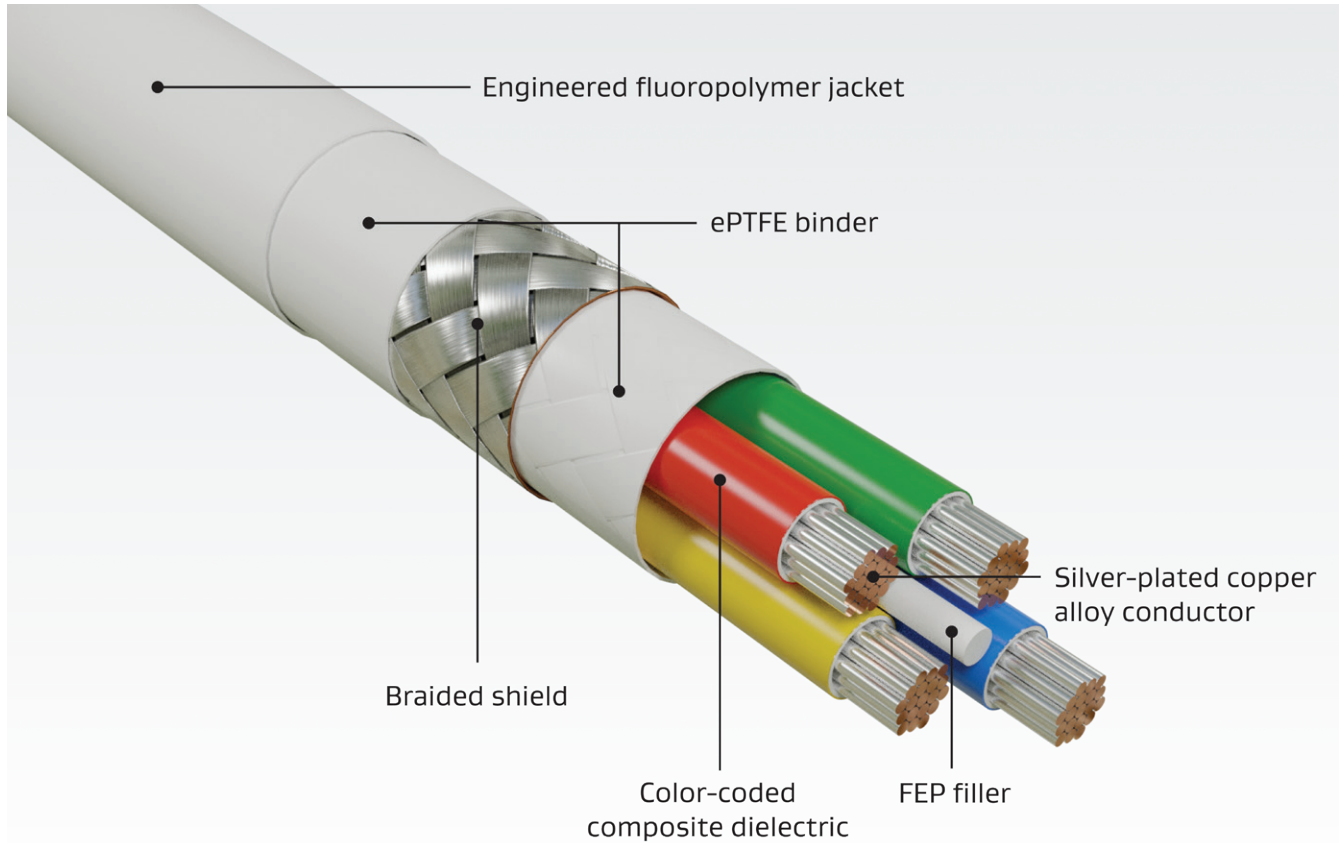
Property	Value
Signal Transmission Speed MHz	Up to 100
Standard Impedance Ohms	100 ± 10
Typical Operating Voltage V	< 15
Nominal Velocity of Propagation %	80
Nominal Time Delay ns/m (ns/ft)	4.10 (1.25)
Capacitance pF/m (pF/ft)	45.0 (13.7)
Minimum Near-End Crosstalk (NEXT) dB	
10 MHz	50.0
100 MHz	35.0
Dielectric Withstanding Voltage Vrms	
Conductor-to-Conductor	1500
Conductor-to-Shield	1000

### 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
Dielectric Material	Expanded PTFE/PTFE
Temperature Range °C	-65 to +200

## GORE® Ethernet Cables (Cat5e)

Figure 1: Lightweight Build



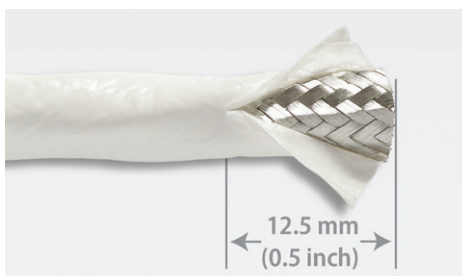
### Cable Preparation

Laser stripping is the ideal method to prep GORE® Ethernet 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 2). For more information regarding cable preparation, contact a Gore representative.

### Connector Systems & Backshells

GORE® Ethernet 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 2: Peel-Back Method



**Table 2: Cable Characteristics**

Typical insertion loss values are based on the maximum recommended Cat5e use lengths.

Gore Part Number	AWG Size (Stranding)	Nominal Outer Diameter mm (in)	Minimum Bend Radius mm (in)	Nominal Weight kg/km (lb/1000 ft)	Maximum Insertion Loss dB/30 m (100 ft)	
					10 MHz	100 MHz
GSC-03-84608-00	24 (19/36)	4.1 (0.16)	20.0 (0.79)	33.0 (22.0)	2.8	9.4
GSC-03-84820-00	26 (19/38)	3.3 (0.13)	15.0 (0.59)	23.0 (15.0)	3.9	13.2

## Samples & Ordering Information

The quadrax version of GORE® Ethernet Cables is available in standard sizes (Table 2). To place an order, contact an authorized distributor for in-stock availability at [gore.com/cable-distributors](https://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](https://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](https://gore.com/aerospace-defense-contact).

The quadrax version of Gore's Ethernet cables is proven to save more than 5.0 kg (11 lb) on aircraft such as the fifth-generation F-35.



Information in this publication corresponds to W. L. Gore & Associates' current knowledge on the subject. It is offered solely to provide possible suggestions for user experimentations. It is NOT intended, however, to substitute for any testing the user may need to conduct to determine the suitability of the product for the user's particular purposes. Due to the unlimited variety of potential applications for the product, the user must BEFORE production use, determine that the product is suitable for the intended application and is compatible with other component materials. The user is solely responsible for determining the proper amount and placement of the product. Information in this publication may be subject to revision as new knowledge and experience become available. W. L. Gore & Associates cannot anticipate all variations in actual end user conditions, and therefore, makes no warranties and assumes no liability in connection with any use of this information. No information in this publication is to be considered as a license to operate under or a recommendation to infringe any patent right.

NOTICE — USE RESTRICTIONS APPLY. Not for use in food, drug, cosmetic or medical device manufacturing, processing, or packaging operations.

Amphenol is a registered trademark of Amphenol Corporation. Glenair is a registered trademark of Glenair, Inc.

GORE, *Together, improving life*, and designs are trademarks of W. L. Gore & Associates. © 2023 W. L. Gore & Associates, Inc.

