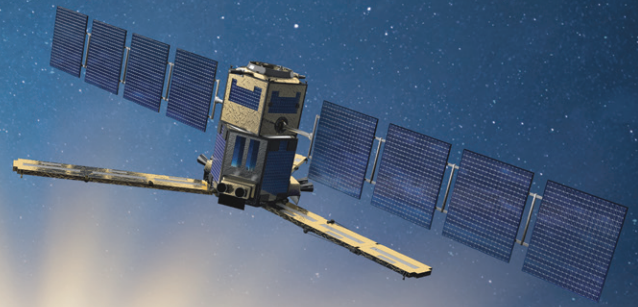


## GORE® High Speed Data Cables

For XAUI RapidIO™ Protocol  
in Traditional Space  
Applications



# RELIABLE HIGH-SPEED DATA TRANSMISSION WITH ULTRA-LOW SKEW FOR MISSION ASSURANCE

The industry requires cables to keep up with ever-increasing data transmission speeds in critical space communications systems. High-speed data cables are a vital component of these systems and must deliver reliable performance over extended distances while meeting strict industry requirements to ensure mission success.

### Superior Signals

GORE® High Speed Data Cables for XAUI RapidIO™ protocol in traditional space applications deliver superior signals with ultra low skew up to 6 GHz (Figures 1 and 2). These shielded parallel pairs reliably transfer data from 1 to 12 GB at link distances up to 7 meters per lane for the duration of the mission. Gore's unique Twinax technology meets stringent industry requirements such as IEEE 802.3 10G-BASE-CX4 for XAUI RapidIO™ protocol and ASTM-E595 for outgassing (Table 1).

Our unique materials provide durable protection against challenging environments such as extreme temperatures, radiation exposure, and outgassing. Typical low-mass, high-density applications include command and data handling (C&HD); communications systems; high-resolution cameras; radar sensor equipment; Earth observation and scientific exploration instrumentation; and sensor, mass memory unit, and telemetry subsystem interconnections.

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Gore's durable cables for XAUI RapidIO™ protocol transmit signals and data quickly without failure, ensuring the success of every mission.

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### Benefits

- Superior signals with ultra-low skew up to 6 GHz
- Shielded parallel pairs reliably transfer data up to 12 GB at link distances up to 7 meters per lane
- Durable protection against extreme temperatures, radiation exposure, outgassing
- Meet IEEE 802.3 10G-BASE-CX4 and ASTM-E595 strict requirements
- Decades of proven performance with 100% success rate in hundreds of global spaceflight programs

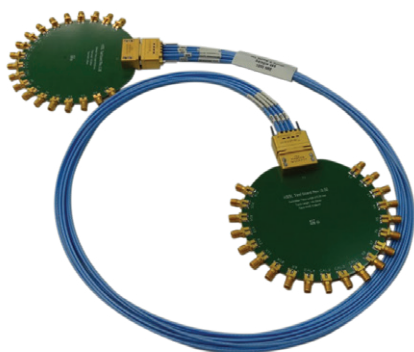
*Together, improving life*



**Figure 1: Gore's Cable with MIL-DTL-38999/Modified D connectors**



**Figure 2: Gore's low-mass, high-density cable with adaptor boards**



**Table 1: Cable Properties**

### Electrical

| Property                               | Value                     |
|----------------------------------------|---------------------------|
| Data Rate (Gb/s)                       | 3.125                     |
| Standard Impedance (Ohms)              | 100                       |
| Max Voltage Peak-to-Peak ( $V_{pp}$ )  | 1.75 <sup>a</sup>         |
| Max Signal Skew ps/m (ps/ft)           |                           |
| Within Pair                            | 10.0 (3.0)                |
| Lane-to-Lane                           | 130.0 (39.6) <sup>a</sup> |
| Differential Return Loss               |                           |
| dB Min @ 0 – 1.5 GHz                   | 12.0 <sup>b</sup>         |
| dB Min @ 1.5 – 2.0 GHz                 | 10.0 <sup>b</sup>         |
| Near-End Crosstalk (NEXT)              |                           |
| dB Min @ 1.5625 GHz                    | 31.8 <sup>a,b</sup>       |
| Equal Level Far-End Crosstalk (ELFEXT) |                           |
| dB Min @ 1.5625 GHz                    | 26.3 <sup>a,b</sup>       |

### Mechanical / Environmental

| Property                            | Value                    |
|-------------------------------------|--------------------------|
| Jacket Material                     | Engineered Fluoropolymer |
| Temperature Range (°C)              | -55 to +150              |
| Radiation Resistance (MRad)         | 200+                     |
| Outgassing tested per ASTM-E595 (%) |                          |
| Volatile Condensable Mass (VCM)     | < 0.1                    |
| Total Mass Loss (TML)               | 1.0                      |

a. Informative for reference only.

b. Tested per IEEE 802.3, Section 4, Clause 54.7.2.

Max differential insertion loss also tested and met requirements.

### Ordering Information

GORE® High Speed Data Cables for XAUI RapidIO™ protocol are available through several distributors. Visit [gore.com/cable-distributors](http://gore.com/cable-distributors) for the list of distributors. For more information or to discuss higher data rate options and specific application needs, please contact a Gore representative.

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