GORE® Space Cables and Assemblies

Symmetrical Interconnects

Improve Signal Transmission for Spacecraft Electronics

Signal speed and integrity are essential for effective communication among spacecraft components. Cables are the lifeline of data transmission and are often run through very tight spaces in the spacecraft. Meeting the stringent requirements of ESCC-3902/002, GORE® Symmetrical Interconnects are small, lightweight, and extremely flexible. These balanced, single-twinax cables maintain outstanding signal integrity at data transmission rates as high as 1 Gbit/s. GORE® Symmetrical Interconnects offer the best combination available for spacecraft component connections — solid mechanical durability and excellent signal integrity.

The Science Behind the Cables

The key to the outstanding performance of GORE® Symmetrical Interconnects is the proprietary material used in the cable insulation — expanded polytetrafluoroethylene (ePTFE). By incorporating ePTFE into the cables, Gore is able to provide tight impedance control to reduce interference, with balanced transmission between separate lines within the cable. The microstructure of the ePTFE material makes GORE® Symmetrical Interconnects lighter than other cables with comparable performance and minimizes the problems associated with balancing difficult mass budgets.

Typical Uses

- Digital signal processors
- High-resolution cameras and sensors
- High-speed subsystem interconnects

Sample Applications

- European Remote Sensing Satellite (ERS1/ERS2)
- Polar Platform
- ENVISAT
- XMM
- International Space Station (ISS)
- INMARSAT

International Space Station
Image: ESA

Realize the Benefits of GORE® Symmetrical Interconnects

Key Features

- High signal speed up to 1 Gbit/s
- High density/reduced mass
- Balanced, shielded lines
- High-speed link among units

Key Benefits

- Excellent compatibility among system components
- Reduced costs for system integration and maintenance
- Design flexibility of a modular system
- Improved reliability from rugged materials used in construction
- Valued reliability delivered from an ESA-qualified and a DIN EN ISO 9001:2000-certified manufacturing facility
- Superior sales and technical support from Gore's worldwide engineering team

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Technical Specifications

All GORE® Symmetrical Interconnects meet the following technical specifications **according to ESCC 3902/002** and are **listed on the ESA QPL**. See the ordering information for the technical data specific to each cable.

Property	Value
Operating temperature range	–200°C to +180°C
Maximum temperature for short periods	260°C
Dielectric material	Expanded PTFE
Outer jacket	PFA
Conductor construction	Concentric silver-plated copper
Operating voltage	100 V RMS
Maximum weight	36 g/m
Maximum diameter	5.2 mm
Bending radius	10 x outer diameter (repeated) or 6 x outer diameter (once)
Transmission rate	Up to 1 Gbit/s
Maximum capacitance: conductor to conductor	68 pF/m

Ordering Information

Part Number	Gauge Size (AWG)	Impedance (ohm)
GBL-075-24	24	75
GBL-100-22	22	100 (with drain wire)
GBL-120-30	30	120
GBL-120-28	28	120
GBL-120-26	26	120
GBL-120-24	24	120

Gore Experience and Expertise

With approximately $2.5 billion in annual sales and more than 8,000 employees around the world, W. L. Gore & Associates provides diverse, high-performance solutions in consumer, industrial, electronic, medical, and surgical markets. As well-known for its unique corporate culture as for its products, Gore's 50-year success story rests equally on product and organizational innovation. With a reputation for providing the highest-quality products, Gore is ready to assist in developing cost-effective solutions for your electronics applications.

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

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