



GORE™ 1394b Military Firewire

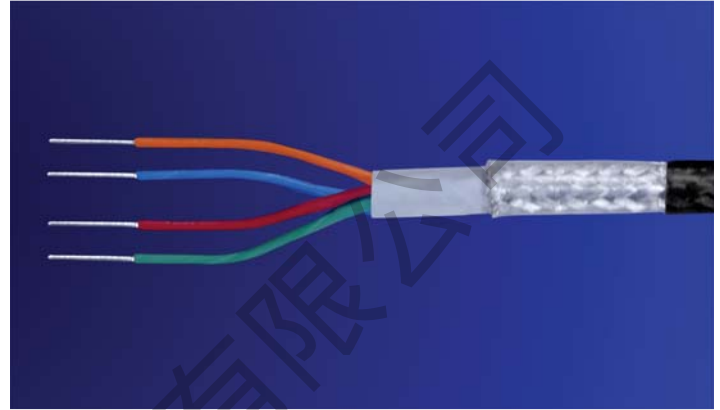
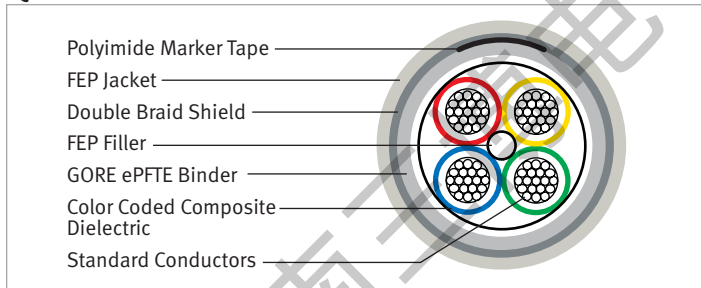
Description

W. L. Gore & Associates, Inc., a 46-year provider of high performance wire and cable products is pleased to offer the premier cable solution for copper based Military Firewire (MIL-1394*) data links. This cable provides high fidelity signal links for interconnect solutions up to 75 ft at S400 data rates; when coupled with Gore’s military high data rate assembly techniques, the cable can sustain even higher 1394 data rates.

Gore’s exclusive design geometry offers significant size and weight savings when compared with conventional constructions such as twisted pair cables. In addition, the combination of materials in this construction supports a wide temperature range and meets the most demanding Military environments. This design is engineered to provide greater flexibility and ease of installation in challenging environments. Gore’s proven quad cable design is the highest performing cable currently in use in both military airframe and spaceflight certified applications.

*MIL-1394 is currently under development in SAE ASD AS-1A-3

CROSS-SECTIONAL VIEW OF QUAD CABLE CONSTRUCTION



Gore's patented quad cable design

FEATURES

- Quad design is approximately 40% smaller than common dual twisted pair constructions
- Two differential pair transmission lines (Pair 1=Blue and Orange, Pair 2=Red and green)
- Highly uniform PTFE dielectric materials with ultra low loss tangent
- Composite dielectric offers best compromise between low dielectric constant for small size and firm outer layer to prevent pushback during termination
- Available in AWG 30 to 22 sizes

MILITARY STANDARD COMPLIANCE

- MIL-STD-461: Electromagnetic Compatibility
- RTCA/DO-160D: Lightning Strike
- NEMA-WC27500: Environmental Testing, Jacket and Marking

PRODUCT CHARACTERISTICS FOR AWG 24 CABLE

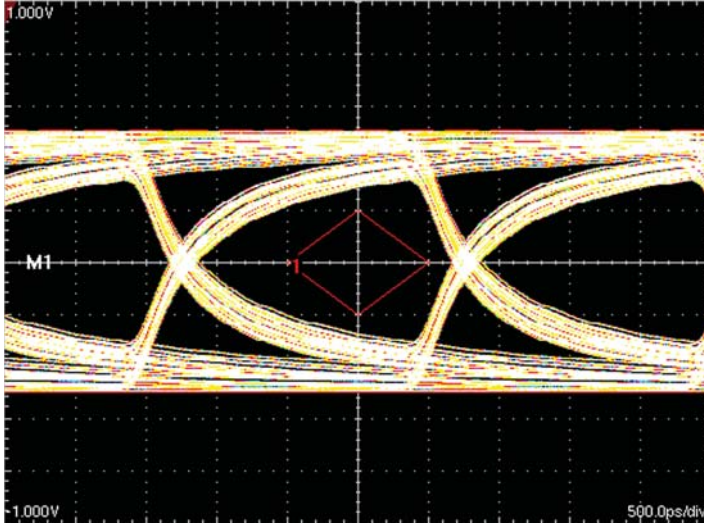
Parameter	Min	Typ	Max	Units
Characteristic Impedance	104	110	116	Ohms
Capacitance	—	12.0	—	pF/Ft
Attenuation @ 100 MHz	—	—	6.8	dB/100 Ft
Attenuation @ 500 MHz	—	—	15.5	dB/100 Ft
Attenuation @ 1 GHz	—	—	22.	dB/100 Ft
Time Delay	—	1.25	—	ns/Ft
Skew (Within Pair)	—	2.0	3.5	ps/Ft
Dielectric Withstand (Conductor/Conductor)	—	1500	—	Vrms
Dielectric Withstand (Conductor/Shield)	—	1000	—	Vrms
Operating Temperature	-55	—	200	Degrees C
Weight	—	35	—	Lbs/1000 Ft
Overall Diameter	—	0.190	0.200	Inches



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Performance Data

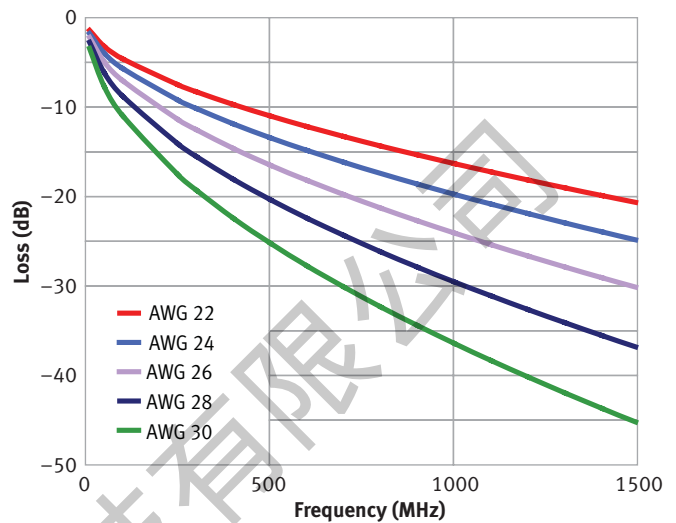
EYE PATTERN – AWG 24



Eye Pattern test of 50 Ft of cable transmitting 500 Mbps of data. The diamond shaped Eye Mask indicates the minimum receiver sensitivity as specified by IEEE 1394b-2002. The Eye Mask test passes with margin indicating greater length transmission is possible with this cable.

Input Signal: 1.1 V_{pp}, 2⁷⁻¹ PSRB Pattern

ATTENUATION



Attenuation is measured on 50 ft. test sample of 110 ohm quad cable.

Part Number	AWG Size	OD- in. (mm)	Weight- lbs/1000ft (kg/300m)	Feature	Typical Attenuation dB/100ft or dB/30m			Maximum Link Length – ft (m)	
					@100 MHz	@250 MHz	@500 MHz	@100 Mbit/s	@500 Mbit/s
RCN8513	22	0.220 (5.6)	47 (21.0)	FEP jacket, double braid shield	4.9	7.9	11.2	75-175 (22.8-53.5)	35-100 (10.7-30.5)
RCN8686	22	0.195 (4.9)	41 (18.6)	High flex life design, HSTF jacket	4.9	7.9	11.2	75-175 (22.8-53.5)	35-100 (10.7-30.5)
RCN8422	24	0.190 (4.8)	35 (15.6)	FEP jacket, double braid shield	6.2	9.8	14	50-150 (15.2-45.7)	20-75 (6.1-22.9)
RCN8687	24	0.176 (4.5)	31 (14.1)	High flex life design, HSTF jacket	6.2	9.8	14	50-150 (15.2-45.7)	20-75 (6.1-22.9)
RCN8487	26	0.138 (3.5)	25 (11.1)	High strength alloy conductors, HSTF jacket	7.7	12.3	17.5	40-110 (12.2-33.5)	16-60 (4.9-18.3)
RCN8476	30	0.097 (2.5)	14 (6.3)	High strength alloy conductors, HSTF jacket	12.2	19.3	27.4	25-70 (7.6-21.3)	11-30 (3.4-9.1)

W. L. Gore & Associates, Inc.

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