

# High Speed Backplane



- Fibre Channel
- Ethernet: 10 Base-T, 100 Base-T, 1000 Base-T
- Firewire: IEEE 1394a and 1394b
- USB, DVII, HDMI and Infiniband

Smiths Interconnect offers a complete line of differential Twinax and Quadrx connectors, contacts and cable assemblies for high speed Ethernet, Firewire, and Fibre Channel applications. Differential pair quadrx and twinax connectors and cable assemblies offer superior performance in high speed matched impedance data-on-demand applications. The signal to signal and signal to shield characteristic impedance is maintained throughout the connector pair. A true twinaxial connector interface ensures signal integrity while minimizing jitter and data rate errors.

## Testing Capabilities

Smiths Interconnect Quadrx and Twinax interconnects are characterized for testing eye pattern, jitter, skew, and insertion loss on differential pair 100 Ohm high speed Gigabit Ethernet applications with a wide variety of testing protocols. We utilize the Agilent E5071C 4 port network analyzer to measure the differential pair TDR impedance between Twinax connectors, cable assemblies, and quad cable Ethernet and Fibre Channel interconnect systems ensuring the most accurate acquired signal for high speed communications testing. The E5071C 4 port network analyzer is capable of highly accurate 100 Ohm differential measurements up to 20 GHz and can measure Eye Diagrams up to 16 Gbps.

## Technical Characteristics

### Specifications

<b>Temperature Rating</b>	-55°C to + 125°C
<b>Corrosion</b>	MIL-STD-202 Method 101, Test Condition B
<b>Shock</b>	MIL-STD-202 Method 213, Test Condition B
<b>Vibration</b>	MIL-STD-202 Method 204, Test Condition B
<b>Thermal Shock</b>	MIL-STD-202 Method 107, Test Condition B
<b>Durability</b>	500 Mate/Unmate cycles/min
<b>Dielectric Withstand Voltage</b>	250 VDC
<b>Insulation Resistance</b>	5.000 megaOhm min
<b>Contact Current Rating</b>	3.0 Amps D.C. max
<b>Bandwidth</b>	Up to 3 GHz
<b>Data Rates</b>	Contacts designed to exceed 6 Gbps; assembly dependent upon type and length of cable used
<b>Differential Pair Cable Impedance</b>	150 Ohm $\pm$ 15 Ohm and 100 Ohm $\pm$ 10 Ohm
<b>Signal to Shield Cable Impedance</b>	75 Ohm $\pm$ 10 Ohm and 50 Ohm $\pm$ 7 Ohm

## Material & Finishes

<b>Shells &amp; Inner Contacts</b>	Brass per ASTM-B16, alloy UNS C3600 or BeCu per ASTM-B196, alloy UNS C17200, C17300 or leaded nickel copper, alloy UNS C19500, C19600 Gold plate per MIL-DTL-45204 Type II, Class 1
<b>Insulators</b>	PTFE per ASTM-D1710 or Ultem 1000
<b>Connector Plug/ Receptacle Shells</b>	Aluminum per ASTM-B211/221, 6061-T6 Electroless nickel plate per SAE AMS-C-26074 or Cadmium plate per SAE AMS QQ-P-416
<b>Gasket/Seal</b>	Silicone rubber per A-A-59588