HIGH-SPEED CABLE
INTERCONNECT SOLUTIONS GUIDE
**FLEXIBILITY & CUSTOMIZATION**

- Mix-and-match connector end options
- Extensive customizing capabilities
- Interchangeable FireFly™ copper and optical

**MANUFACTURING & CAPABILITIES**

- R&D/manufacturing of precision extruded cable
- Co-extruded, ultra low skew twinax cable technology
- Flyover designs route signals over lossy PCB

**FLYOVER ARCHITECTURE**

Flexibility to improve signal integrity reach at higher data rates
In-house high level design and engineering support
Expertise in full system signal integrity optimization

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The Problem
PCB Reach at Next Gen Speeds

As bandwidth requirements rapidly increase, routing signals through lossy PCBs, vias and other components has become a complex challenge.

The Solution
Samtec Flyover Systems

Samtec’s “flyover” design breaks the constraints of traditional signaling substrate and hardware offerings, resulting in a cost-effective, high-performance answer to the challenges of 56 Gbps bandwidths and beyond.

Ultra Low Skew Cable Technology

Samtec’s proprietary co-extruded, low loss twinax cable technology eliminates the performance limitations and inconsistencies of individually extruded dielectric twinax cabling, improving signal integrity, bandwidth and reach.

- Ideal for 28-56+ Gbps applications
- Tight coupling between signal conductors
- Ultra low skew twinax < 3.5 ps/meter
- See page 22-23 for cable specifications

Bandwidth vs. Traditional & High-Speed Materials

<table>
<thead>
<tr>
<th>BRAND</th>
<th>FR408</th>
<th>EMTRON 6</th>
<th>MICRO TWINAX</th>
<th>OPTICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 Gbps</td>
<td>&lt;10&quot;</td>
<td>10&quot;+</td>
<td>10&quot;+</td>
<td>10&quot;+</td>
</tr>
<tr>
<td>14 Gbps</td>
<td>&lt;5&quot;</td>
<td>&lt;10&quot;</td>
<td>10&quot;+</td>
<td>10&quot;+</td>
</tr>
<tr>
<td>28 Gbps</td>
<td>&lt;2&quot;</td>
<td>&lt;5&quot;</td>
<td>10&quot;+</td>
<td>10&quot;+</td>
</tr>
<tr>
<td>56 Gbps</td>
<td>0.0&quot;</td>
<td>&lt;2&quot;</td>
<td>10&quot;+</td>
<td>10&quot;+</td>
</tr>
<tr>
<td>112 Gbps</td>
<td>0.0&quot;</td>
<td>0.0&quot;</td>
<td>&lt;10&quot;</td>
<td>10&quot;+</td>
</tr>
</tbody>
</table>

(-5 dB Loss Target, Reach Estimate. For OIF VSR applications.)

The next generation performance and cost advantages

High-performance, low loss twinax cable systems support 56+ Gbps speeds for extended reach and system architecture design flexibility – without adding cost to the overall system.

Performance Advantages
- Reduced Thermal Challenges
- Simplified Board Layout
- 28-56 Gbps NRZ & Beyond

Cost Advantages
- Eliminate Expensive Re-timers
- Fewer PCB Layers
- Less Expensive PCB Materials

Support

Fully integrated, complimentary and cross-functional Technology Centers for full system interconnect performance and cost optimization from Silicon-to-Silicon. See page 20-21 for more about Samtec’s High-Speed Cable Group.
## DIRECT ATTACH QSFP28 SYSTEMS
Flyover QSFP28 systems utilize Samtec’s flyover technology to fly data over lossy PCB, simplifying board layout and extending signal reach. The modular design enables optimized systems that improve heat management, increase signal integrity performance, build in scalability for future upgrades and reduce costs by creating a multifunction board.

<table>
<thead>
<tr>
<th>Feature</th>
<th>4 Channels</th>
<th>8 Channels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Channels</td>
<td>x4 bidirectional, 8 differential pairs</td>
<td>x8 bidirectional, 16 differential pairs</td>
</tr>
<tr>
<td>Aggregate Rate (NRZ)</td>
<td>~100 Gbps</td>
<td>~200 Gbps</td>
</tr>
<tr>
<td>Aggregate Rate (PAM4)</td>
<td>(~200 Gbps)</td>
<td>(~400 Gbps)</td>
</tr>
<tr>
<td>Compatible with all QSFP cable assemblies</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Heat Dissipation</td>
<td>~3.5 W/cable</td>
<td>~7 W/cable</td>
</tr>
<tr>
<td>Eye Speed® 30 AWG twinax cable</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>(See page 22 for specifications)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiple end options for design flexibility</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

## DOUBLE DENSITY FLYOVER QSFP28 SYSTEM

<table>
<thead>
<tr>
<th>Feature</th>
<th>8 Channels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Channels</td>
<td>x8 bidirectional, 16 differential pairs</td>
</tr>
<tr>
<td>Aggregate Rate (NRZ)</td>
<td>~200 Gbps</td>
</tr>
<tr>
<td>Aggregate Rate (PAM4)</td>
<td>(~400 Gbps)</td>
</tr>
<tr>
<td>Belly-to-belly mating for maximum density</td>
<td>Yes</td>
</tr>
<tr>
<td>Backward compatible with QSFP modules</td>
<td>Yes</td>
</tr>
<tr>
<td>No retimers required for reduced cost and power consumption</td>
<td>Yes</td>
</tr>
<tr>
<td>Heat Dissipation</td>
<td>~7 W/cable</td>
</tr>
<tr>
<td>Variety of end 2 options</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Notes:**
- Standard 1U rack tray with side stackable configurations
- Increases panel density and optimizes airflow
- Localized press-fit control and power contacts eliminate the need for a secondary cable and connector
- High-speed contacts directly soldered to Eye Speed® ultra low skew twinax
- Sideband signals are routed through press-fit contacts for increased airflow
- High-speed contacts directly soldered to Eye Speed® ultra low skew twinax
EXTREME HIGH–SPEED, HIGH–DENSITY CABLE

Industry leading aggregate data rate density – 2x the data rate in 60% of the space

Proprietary pin to ground configuration enables very low crosstalk (to 40 GHz) and very tight impedance control

Aggregate Data Rate (NRZ)

<table>
<thead>
<tr>
<th>448 Gbps</th>
<th>672 Gbps</th>
<th>896 Gbps</th>
<th>1344 Gbps</th>
<th>1792 Gbps</th>
<th>4032 Gbps*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Bank</td>
<td>2 Bank</td>
<td>3 Bank*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Row</td>
<td>3 Row</td>
<td>4 Row</td>
<td>2 Row</td>
<td>3 Row</td>
<td>4 Row</td>
</tr>
<tr>
<td>8 Pairs</td>
<td>12 Pairs</td>
<td>16 Pairs</td>
<td>24 Pairs</td>
<td>32 Pairs</td>
<td>72 Pairs*</td>
</tr>
</tbody>
</table>

*In development

DIRECT CONNECT™ PLUGGABLE HORIZONTAL CABLE

Easily removable for plug/unplug mating

Ultra-low 3 mm profile saves space for high-density applications

4 and 8 pair configurations

Rugged metal cage for a more secure connection

MICRO EDGE CARD CABLE ASSEMBLY

Micro 0.50 mm pitch

16 differential pairs

Eye Speed® 34 AWG ultra low skew twinax (See page 22 for specifications)

.R062* (1.60 mm) thick card

Rugged metal latching and shielding

SLIM BODY CABLE ASSEMBLY

Slimmest cable assembly in the industry – 7.6 mm body width

High-density 2-row design

8 and 16 pair configurations (32 pair in development)

Rugged metal latching & shielding

Eye Speed® 34 AWG ultra low skew twinax (See page 22 for specifications)
HIGH-SPEED BACKPLANE CABLE

Utilizes Samtec’s Eye Speed® ultra low skew twinax cable technology for improved signal integrity, increased flexibility and routability

Highly customizable with modular flexibility

Reduced cost due to lower layer counts

See page 22 for co-extruded twinax cable specifications

Industry’s lowest mating force with excellent contact normal force

Wafer design increases isolation for reduced crosstalk

Two reliable points of contact with a 2.4 mm wipe

Staggered differential pairs provide higher data rates

28, 30 and 34 AWG ultra low skew twinax cable to support various cable lengths

Vertical and right-angle

4 and 6 pairs; 8, 10 and 12 columns

Intermateable with all ExaMAX® connectors (EBTM/EBTF-RA)

Integrated guidance and keying options

Cable-to-DMO (Direct Mate Orthogonal) in development

*ExaMAX® is a registered trademark of AFCI.
**FIREFLY™ OPTICAL TECHNOLOGY**

- **Data “flies” over lossy PCB, simplifying board layout and enhancing signal integrity from IC to faceplate**
- **Interchangeable with FireFly™ copper using the same micro connector system**
- **Industry leading miniature footprint allows for higher density close to the data source**
- **Rugged, simple to use system with easy insertion/removal and trace routing**

**FIREFLY™ OPTICAL SYSTEMS**

- **x4 and x12 configurations**
- **Up to 28 Gbps per channel**
- **Surface mount connector system with no screws required and rugged tabs (UEC5/UCC8)**
- **PCIe®, Over-FireFly™ (PCUO) supports PCIe® protocol for low latency, power savings and guaranteed transmission; Gen 4 in development**
- **-40 °C to +85 °C extended temperature system (ETUO); PCIe® Gen 3 version in development (PTUO)**
- **PCIe®-over-Fiber adaptor card available in x4, x8 or x16 configurations (PCOA) supports Gen 3 platform and transparent or non-transparent bridging**
- **Optical FireFly™ to ARIB BNC-type interface with MT ferrule for broadcast video applications**
- **Extended temperature FireFly™ with Amphenol® Aerospace’s bulkhead interconnects for rugged applications**

**FIREFLY™ COPPER SYSTEMS**

- **Finest 0.50 mm pitch copper flyover solution**
- **Pin compatible with FireFly™ optical using the same connector system**
- **x4, x8 and x12 configurations**
- **Variety of end 2 options**
- **Low-cost solution for seamless integration of new or existing designs**
- **PCIe® Gen 3 protocol compatible system (PCUE)**

**PASSIVE & ACTIVE OPTICAL SOLUTIONS**

- **FireFly™ is compatible with optical backplane systems in multiple configurations**
- **Evaluation Kit (FIK-FIREFLY-XX) and 14 Gbps FireFly™ FMC Development Kit (REF-193429-01) available for system testing**
- **PCIe® Active Optical assemblies for Gen 3 speeds up to 100 m (PCIEO)**
- **High-density solutions for front panel or backplane applications with MXC® connectors**
- **Industry standard passive MPO-to-MPO panel adaptor (OPA) and optical patch cable (FOPC)**

*PCI-SIG®, PCI Express® and the PCIe® design marks are registered trademarks and/or service marks of PCI-SIG. **MXC® is a registered trademark of US Conec Ltd.**
HIGH-SPEED CABLE ASSEMBLIES

MICRO COAX & TWINAX CABLE ASSEMBLIES

Ability to mix-and-match end options for application-specific requirements with extensive customizing capabilities

Single-ended 50 Ω and differential 100 Ω standards

Rugged features and options including strain relief, plastic housings, screw downs, latches, locks, etc.

Many non-cataloged standards available including 75 Ω micro coax and high-density twinax solutions

EYE SPEED® CABLE TECHNOLOGY

Excellent signal integrity performance with individual copper serve or braid shielding

Stranded conductor for small bend radii and dynamic high flexing cycle applications

Cost-effective ribbonizing eliminates discrete wires

26-38 AWG coax and twinax construction (See page 22-23 for specifications)

20 Ω, 50 Ω, 85 Ω and 100 Ω

HIGH-DENSITY ASSEMBLIES

1.27 mm (SEAC) and 0.80 mm pitch (ESCA)

34 or 36 AWG coax; 32 AWG twinax

Mates with SEARAY™ and SEARAY™ 0.80 mm arrays

Optional rugged latching

GROUND PLANE ASSEMBLIES

Integral power/ground plane

34 and 38 AWG coax; 30 AWG twinax

0.50 mm (HQCD/HQDP) and 0.80 mm pitch (EQCD/EQDP/EQRD)

Mates with Q Series® and Q Rate® connectors

EDGE CARD ASSEMBLIES

Edge Rate® contacts for reduced broadside coupling and increased signal integrity performance

30 AWG twinax

Available without housing for cost savings

Mates with 0.80 mm edge card connectors (HSEC8)

HIGH-SPEED ASSEMBLIES

Ultra-micro hermaphroditic Razor Beam® coax assemblies with rugged shielding (HLCD)

0.80 mm pitch Edge Rate® coax and twinax assemblies (ERCD, ERDP)

PCI Express® twinax assemblies support 1, 4, 8 and 16 links (PCIEC)

34 or 38 AWG coax and 30 AWG twinax assemblies
CUSTOMIZED HIGH-SPEED ASSEMBLIES

EXTREME FLEXIBILITY

ANY high-speed connector

ANY break-out configuration

ANY high-speed precision cable

... to create a solution for any specific application

HDR@samtec.com

WILLINGNESS, SUPPORT & EXPERTISE

Engineering, design and prototype support

Design, simulation and processing assistance

Quotes and samples turned around in 24 hours

Flexible, quick-turn manufacturing

Dedicated Application Specific Product engineers and technicians

Modified or custom options for cable assemblies and board level connectors include: contacts, bodies, stamping, plating, wiring, molding, ruggedizing features and much more

HIGH-SPEED I/O SYSTEMS

HIGH-DENSITY I/O ASSEMBLIES

Industry’s densest I/O cable system

HyperTransport™ HT 3.1 performance

32 AWG low skew pair twinax cable

Mates with HD66 (connector) and HDC (cage)

RUGGED I/O ASSEMBLIES

Space saving 0.80 mm pitch

High-cycle two-piece system

Shielded for EMI protection

32 AWG low skew pair twinax cable

Mates with ER88 (connector) & ERC (cage)

SF+ PASSIVE JUMPERS

Up to 10 Gbps data transmission

Compliant to SFP+, SFP, XFP and XENPAK

32 AWG low skew pair twinax cable

Mates with MECT (connector) and SFPC (cage)
**RF CABLE SYSTEMS**

**SERVICE & TECHNICAL SUPPORT**
- RF Technical Group: RFTechnicalGroup@samtec.com
- Signal Integrity Group: SIG@samtec.com

Dedicated RF engineers and Signal Integrity experts provide personal support for meeting your specific challenges.

**Launch Optimizations** • Simulations • Test & Measurements • Customs

Go to samtec.com/catalog to order or view the RF Interconnect Catalog

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**PRECISION RF**

- Bulls Eye* to 50 GHz; 65 GHz in development
- Significantly saves space on the board compared to traditional test point systems
- Precision interconnects for high-performance testing (see chart)
- Single cable with Precision 2.92 mm and 2.4 mm interconnects available to 50 GHz
- 23 AWG solid dielectric microwave cable with copper foil shield
- Phase matched pairs, 50 Ω impedance
- BE40A is backward compatible with BDRA

**50 & 75 Ω CABLE SOLUTIONS**

Wide variety of industry standard cables and components with mix-and-match flexibility

Mating cables available for 12G-SDI optimized connectors

High-speed U.FL to 500 cycles/10 GHz (RF047)

High-vibration and 75 Ω MMCX cable end options (MMCX4 & MMCX7)

IsoRate® isolated signal systems for 90% performance at 50% of the cost (IJ5C and IJ5H)

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**HIGH-FREQUENCY MICROWAVE**

<table>
<thead>
<tr>
<th>CABLE</th>
<th>APP</th>
<th>END OPTIONS</th>
<th>SERIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMCX-23</td>
<td>23</td>
<td>2.92 mm, 2.4 mm</td>
<td>RF235</td>
</tr>
<tr>
<td>MMCX-23D</td>
<td>23</td>
<td>SMA, SMP</td>
<td>RF235</td>
</tr>
<tr>
<td>CCG-907</td>
<td>46</td>
<td>SMA, SMA</td>
<td>RF047</td>
</tr>
<tr>
<td>RG 605</td>
<td>24</td>
<td>SMA, SMP</td>
<td>RF605</td>
</tr>
<tr>
<td>RG 622</td>
<td>19</td>
<td>SMA</td>
<td>RF622</td>
</tr>
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</table>

**50 Ω RF CABLES**

<table>
<thead>
<tr>
<th>CABLE</th>
<th>APP</th>
<th>END OPTIONS</th>
<th>SERIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>RG 179</td>
<td>20</td>
<td>MMCX, MMCXV, SMA, BNC, TNC, N Type</td>
<td>RF179</td>
</tr>
<tr>
<td>RG 178</td>
<td>20</td>
<td>MMCX, MMCXV, SMA, BNC, TNC, N Type</td>
<td>RF178</td>
</tr>
<tr>
<td>RG 176</td>
<td>26</td>
<td>MMCX, MMCXV, SMA, BNC, TNC, N Type</td>
<td>RF176</td>
</tr>
<tr>
<td>RG 214</td>
<td>24</td>
<td>MMCX, MMCXV, SMA, BNC, TNC, N Type</td>
<td>RF214</td>
</tr>
<tr>
<td>RG 30</td>
<td>20</td>
<td>SMA, TNC, N Type</td>
<td>RF30</td>
</tr>
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</table>

**75 Ω RF CABLES**

<table>
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<tr>
<th>CABLE</th>
<th>APP</th>
<th>END OPTIONS</th>
<th>SERIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>RF179</td>
<td>20</td>
<td>MMCX, MMCXV, SMA, BNC, TNC, N Type</td>
<td>RF179</td>
</tr>
<tr>
<td>RF178</td>
<td>20</td>
<td>MMCX, MMCXV, SMA, BNC, TNC, N Type</td>
<td>RF178</td>
</tr>
<tr>
<td>RF176</td>
<td>26</td>
<td>MMCX, MMCXV, SMA, BNC, TNC, N Type</td>
<td>RF176</td>
</tr>
<tr>
<td>RF214</td>
<td>24</td>
<td>MMCX, MMCXV, SMA, BNC, TNC, N Type</td>
<td>RF214</td>
</tr>
<tr>
<td>RF50</td>
<td>18</td>
<td>SMA, TNC, N Type</td>
<td>RF50</td>
</tr>
</tbody>
</table>

---

**50 & 75 Ω CABLE SOLUTIONS**

Wide variety of Precision interconnects for high-performance testing

**MWC-2350CU–01 23 3.5 mm, 2.92 mm, 2.4 mm RF23C
CCA–047 46 HMHF1, SMA RF047**

**MWC-2550–01 25 SMA, SMP RF25S**

**Ganged micro scale isolated signal systems (GRF1 & GRF7)**

**C285/CJT**

**IsoRate** isolated signal systems for 90% performance at 50% of the cost (IJ5C and IJ5H)

Circular RF 100 Ω shielded twisted pair system

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**BE40A**

- Microstrip or Stripline compression interface to the board
- Wide variety of Precision interconnects

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**BE40A**

- BE40A cable features pogo style pins with both signal and ground

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**Precision Interconnects**

<table>
<thead>
<tr>
<th>Performance (GHz)</th>
<th>3.5</th>
<th>2.92 mm, SMP</th>
<th>2.4 mm</th>
<th>1.85 mm, SMP/MM</th>
<th>1.00 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wide variety of Precision interconnects for high-performance testing</strong></td>
<td>34 40 50 65 110</td>
<td><strong>Wide variety of Precision interconnects for high-performance testing</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Samtec’s state-of-the-art High-Speed Cable Plant is focused on R&D and manufacturing of precision extruded micro coax and twinax cable. Being vertically integrated allows Samtec to offer full system solutions, which creates the ideal combination of design flexibility and customer service to develop truly differentiated products.

NEW CAPABILITIES ENABLE NEW TECHNOLOGY

Manufacturing Technology & Support
• World-class in-house expertise
• Internally developed proprietary processes
• Extensive customization capabilities
• Procurement and test of new materials
• Quick-turn design and manufacturing
• Shorter, controlled lead times
• Unparalleled pricing and delivery

As one of Samtec’s six Technology Centers, the High-Speed Cable Group is aggressively pursuing next generation micro coax and twinax products that solve existing and future signal integrity challenges for 56 Gbps and beyond.

Next Generation Innovation
• Real-time closed-loop control to adjust parameters
• Microcellular dielectric extrusion
• Co-extruded, low loss twinax cable
• Extreme density twinax cable
• High frequency microwave coax with phase stability
• Halogen-free materials
• Thermal capabilities

By integrating specialized Technology Centers led by industry experts working side-by-side, Samtec fosters a unique environment conducive to true innovation and collaboration, along with the ability to provide the most complete level of service and support for interconnect system design, development and production in the industry.
**Ultra Low Skew Twinax**

Samtec’s Eye Speed® co-extruded twinax cable technology eliminates the performance limitations and inconsistencies of individually extruded dielectric twinax cabling, improving signal integrity, bandwidth and reach for high-performance system architectures.

- Tight coupling between signal conductors
- Improved bandwidth and reach
- Improved signal integrity and eye pattern opening
- Low skew over extended lengths
- Supports Samtec’s flyover technology

**Micro Coax**

Samtec’s foamed dielectric cable technology reduces dielectric constant and overall cable size for higher speeds and higher densities at lower costs.

- Foaming introduces air voids for signal to travel faster
- Solid extrusion of foamed dielectric provides a constant and more durable construction
- Lighter weight and smaller size with higher bandwidth capabilities at longer lengths
- Incredible flexibility with mix and match end options to create application specific solutions
- 26 – 38 AWG cable available
- Choice of signal conductor, shield and FEP dielectric to meet performance and cost specifications

**Micro Cellular Dielectric Extrusion**

- Critical dimensions measured at every dielectric spool
- Inline laser and CAPAC devices for capacitance monitoring and diameter control
- In-process stats summary sheet for Cpk acceptance

**NOMINAL PERFORMANCE SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Eye Speed® Ultra Low Skew Twinax Cable</th>
<th>28 AWG</th>
<th>30 AWG</th>
<th>32 AWG</th>
<th>34 AWG</th>
<th>36 AWG</th>
</tr>
</thead>
<tbody>
<tr>
<td>14 GHz (28G NRZ/56G PAM4) 0.25 m</td>
<td>-1.0</td>
<td>-1.2</td>
<td>-1.5</td>
<td>-1.8</td>
<td>-2.2</td>
</tr>
<tr>
<td>1.00 m</td>
<td>-3.9</td>
<td>-4.7</td>
<td>-5.9</td>
<td>-7.2</td>
<td>-8.7</td>
</tr>
<tr>
<td>28 GHz (56G NRZ/112G PAM4) 0.25 m</td>
<td>-1.5</td>
<td>-1.8</td>
<td>-2.2</td>
<td>-2.6</td>
<td>-3.2</td>
</tr>
<tr>
<td>1.00 m</td>
<td>-6.0</td>
<td>-7.0</td>
<td>-8.7</td>
<td>-10.6</td>
<td>-12.7</td>
</tr>
<tr>
<td>Density/Flexibility</td>
<td>Good</td>
<td>Good</td>
<td>Better</td>
<td>Best</td>
<td>Best</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Eye Speed® Micro Coax Cable</th>
<th>30 AWG</th>
<th>32 AWG</th>
<th>34 AWG</th>
<th>36 AWG</th>
<th>38 AWG</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 GHz (10 Gbps) 0.25 m</td>
<td>-0.9</td>
<td>-1.0</td>
<td>-1.3</td>
<td>-2.2</td>
<td>-2.6</td>
</tr>
<tr>
<td>1.00 m</td>
<td>-3.4</td>
<td>-3.3</td>
<td>-6.0</td>
<td>-6.9</td>
<td>-8.5</td>
</tr>
<tr>
<td>10 GHz (20 Gbps) 0.25 m</td>
<td>-1.4</td>
<td>-1.6</td>
<td>-2.2</td>
<td>-3.5</td>
<td>-4.0</td>
</tr>
<tr>
<td>1.00 m</td>
<td>-5.1</td>
<td>-5.5</td>
<td>-9.0</td>
<td>-10.7</td>
<td>-12.7</td>
</tr>
<tr>
<td>Density/Flexibility</td>
<td>Good</td>
<td>Better</td>
<td>Better</td>
<td>Best</td>
<td>Best</td>
</tr>
</tbody>
</table>

Eye Speed® Ultra Low Skew Twinax Cable is available in engineered impedance configurations of 85 Ω, 92 Ω and 100 Ω.

Eye Speed® Micro Coax Cable is available in engineered impedance configurations of 50 Ω and 75 Ω.