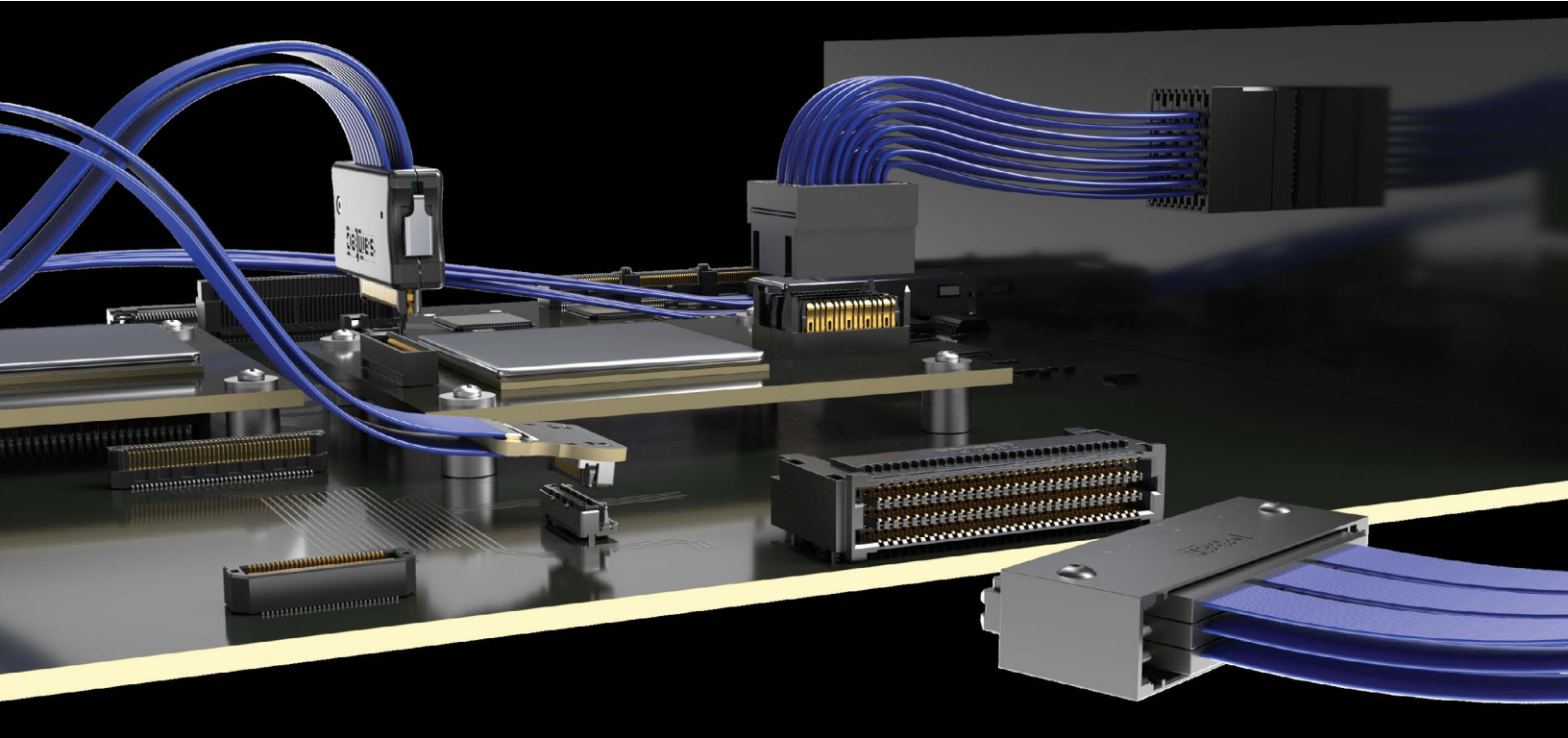




HIGH-SPEED CABLE ASSEMBLIES



HIGH-SPEED CABLE ASSEMBLIES



14
Gbps

MICRO COAX & TWINAX CABLE ASSEMBLIES

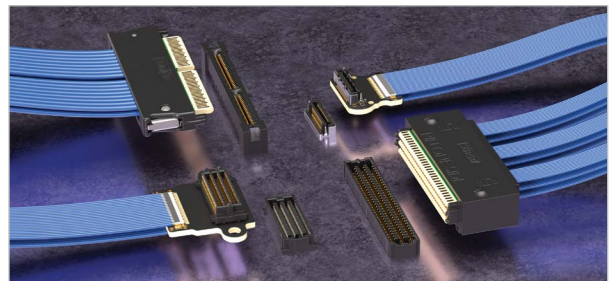
- Ability to mix-and-match end options for application-specific requirements with extensive customizing capabilities
- Single-ended 50 Ω & differential 100 Ω standards
- Rugged features and options including strain relief, plastic housings, screw downs, latches, locks, etc.
- Many non-cataloged standards available including 75 Ω micro coax and high-density twinax solutions



EYE[®]
SPEED
CABLE

EYE SPEED[®] CABLE TECHNOLOGY

- Excellent signal integrity performance with individual copper serve or tape 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; 20 Ω , 50 Ω , 85 Ω & 100 Ω



Samtec's Eye Speed[®] cable supports a wide variety of assemblies and applications

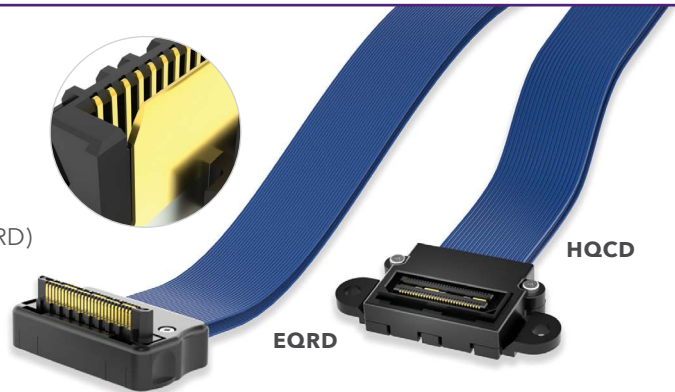
HIGH-DENSITY ASSEMBLIES

- 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 and 32 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

- 30 AWG twinax (ECDP); mates with Generate™ 0.80 mm pitch edge cards (HSEC8)
- PCI Express® twinax assemblies support 3.0/4.0/5.0 data transfer rates (PCIEC)
- FireFly™ copper available as standard (14 Gbps), optimized (56 Gbps PAM4) and PCIe® 4.0; Evaluation Kit available, visit samtec.com/kits
- 34 AWG ultra low skew twinax (FEDP); mates with 0.50 mm pitch edge card (FCDP)



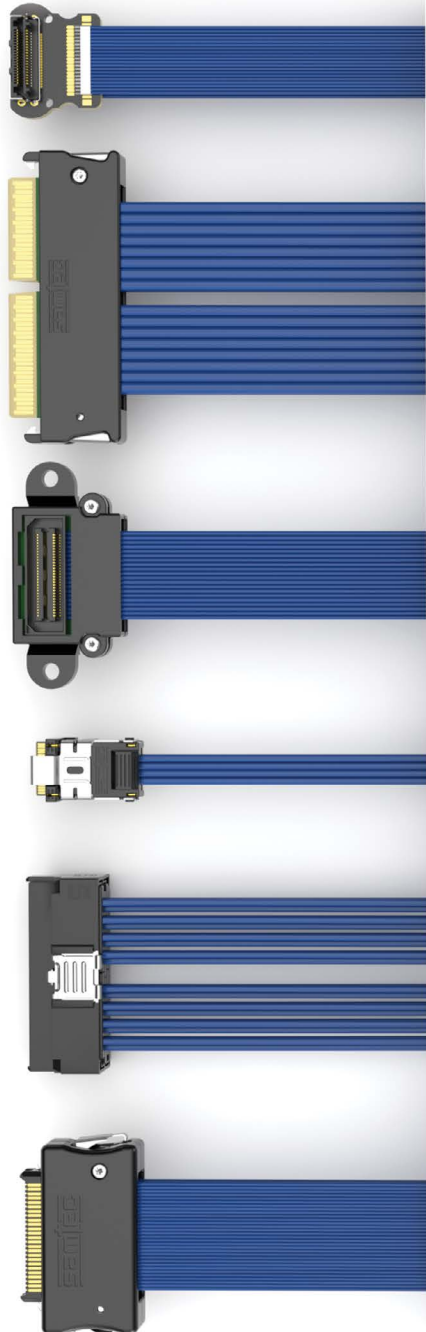
HIGH-SPEED ASSEMBLIES

- Ultra-micro hermaphroditic Razor Beam™ coax assemblies with rugged shielding (HLCD)
- 0.80 mm pitch Edge Rate® coax and twinax assemblies (ERCD, ERDP)
- 38 AWG coax & 30 AWG twinax assemblies



HIGH-SPEED CABLE

DESIGN FLEXIBILITY



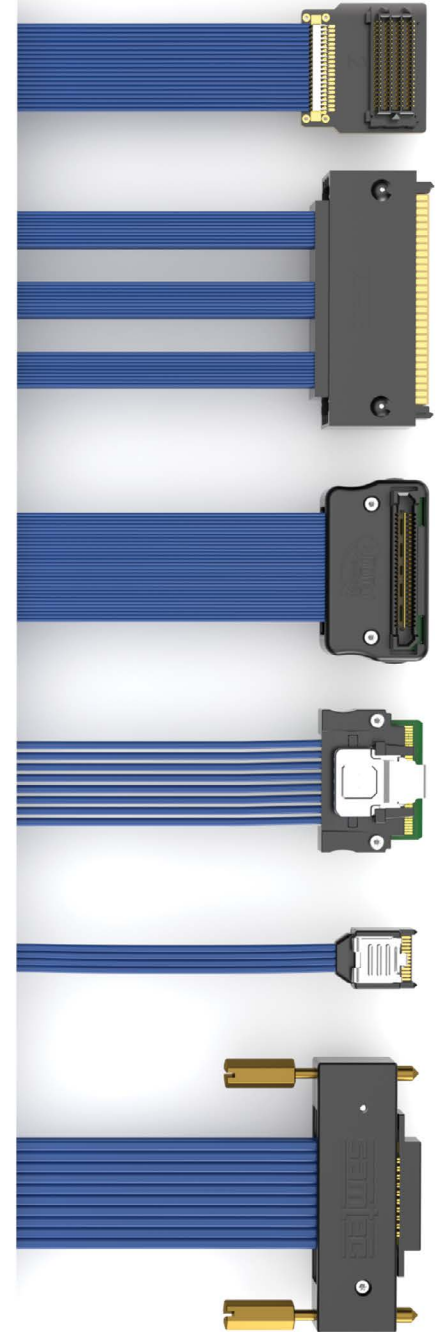
ANY
high-speed
connector

ANY
break-out
configuration

ANY
high-speed
precision cable

... to create a solution for
any specific application.

HDR@samtec.com



Visit samtec.com/custom for additional information.

WILLINGNESS, SUPPORT & EXPERTISE

Industry-Leading Customer Service

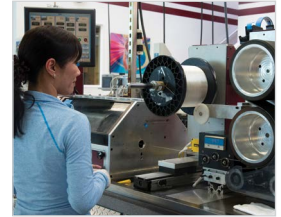
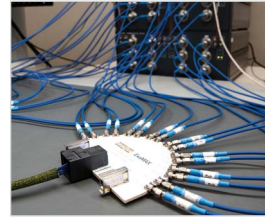
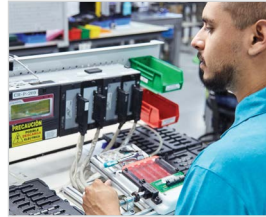
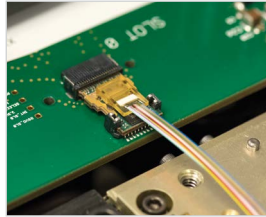
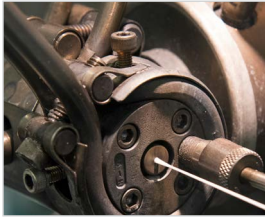
- Quotes and samples in 24 hours
- Prototype and processing assistance
- Dedicated Application Specific Product engineers and technicians

Flexible, In-House Manufacturing

- Global Operations, including multiple cable fabrication & assembly facilities
- Quick-turn samples and prototypes
- Custom & modified product support

Signal Integrity Expertise

- Industry-leading engineering support for high-performance system design
- Full system optimization assistance, including simulation, testing, analysis and evaluation



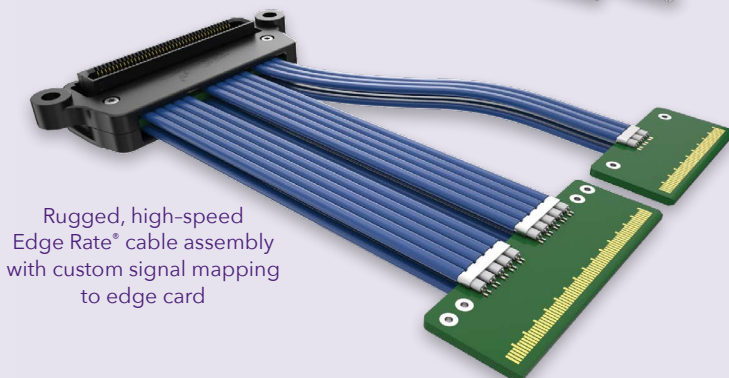
CUSTOMS & EXPRESS MODIFICATIONS

Samtec is able to support completely new and/or custom designs, as well as common simple modifications to cable assemblies and board-to-board products - often with low or no NRE charges, short lead times, quick-turn samples, and low or no MOQ's. Capabilities include:

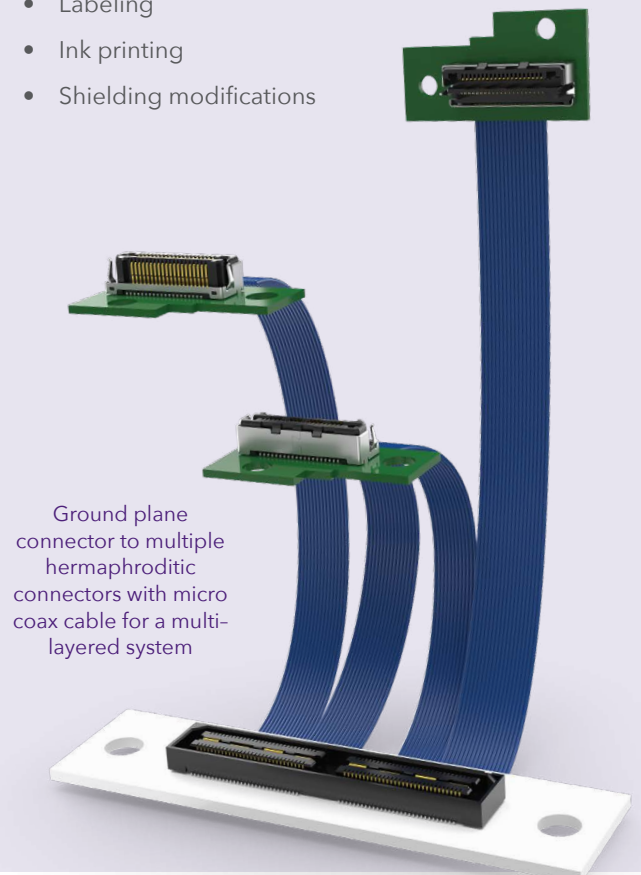
- Contacts
- Bodies
- Stamping
- Ruggedizing features
- Wiring
- Molding
- Plating
- Polarization
- Packaging
- Labeling
- Ink printing
- Shielding modifications



Double-ended micro coax cable assembly with two panel mount ground plane connectors



Rugged, high-speed Edge Rate[®] cable assembly with custom signal mapping to edge card



Ground plane connector to multiple hermaphroditic connectors with micro coax cable for a multi-layered system

EYE SPEED® CABLE TECHNOLOGY



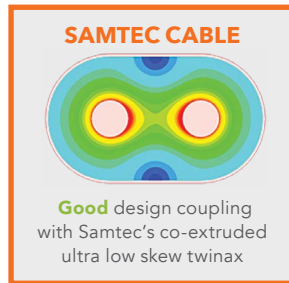
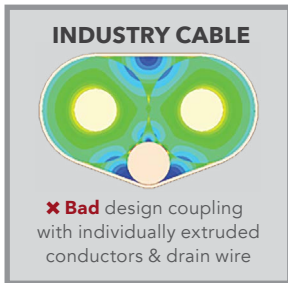
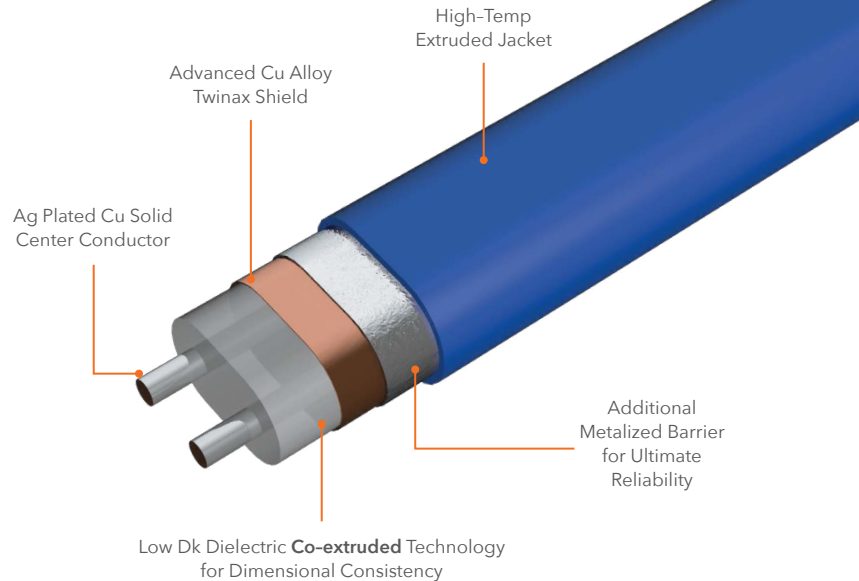
ULTRA LOW SKEW TWINAX CABLE

Samtec's proprietary 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 (28-112+ Gbps) and reach
- Improved signal integrity and eye pattern opening
- Ultra low skew (< 3.5 ps/meter) over extended lengths
- Supports Samtec Flyover® technology

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



Eye Speed® Ultra Low Skew Twinax			28 AWG	30 AWG	32 AWG	34 AWG	36 AWG	
Nominal Performance Specifications								
14 GHz (28G NRZ/ 56G PAM4)	0.25 m	IL (dB)	-1.0	-1.2	-1.5	-1.8	-2.2	
			1.00 m	-4.1	-4.7	-5.9	-7.5	-8.9
	28 GHz (56G NRZ/ 112G PAM4)		0.25 m	-1.5	-1.8	-2.2	-2.7	-3.2
			1.00 m	-6.1	-7.1	-8.7	-10.9	-13.0
Density/Flexibility			Good	Good	Better	Best	Best	

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

MICRO COAX CABLE

- 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
- 26 - 38 AWG cable available
- Choice of signal conductor, shield and FEP dielectric to meet performance and cost specifications



NOMINAL PERFORMANCE SPECIFICATIONS			30 AWG	32 AWG	34 AWG	36 AWG	38 AWG
5 GHz (10 Gbps)	0.25 m	IL (dB)	-0.9	-1.0	-1.3	-2.2	-2.6
	1.00 m		-3.4	-3.3	-6.0	-6.9	-8.5
10 GHz (20 Gbps)	0.25 m		-1.4	-1.6	-2.2	-3.5	-4.0
	1.00 m		-5.1	-5.5	-9.0	-10.7	-12.7
Density / Flexibility			Good	Better	Better	Best	Best

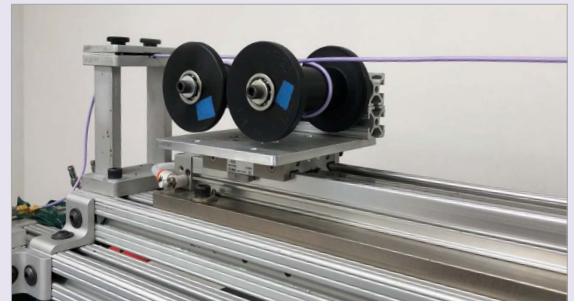
* Eye Speed® micro coax cable is available in engineered impedance configurations of 50 Ω and 75 Ω.

DYNAMIC TESTING

Samtec Eye Speed® Ultra Low Skew Twinax cable underwent Dynamic Insertion and Return Loss testing, proving the cable to be rugged with stable electrical performance after 250 flex/bend cycles.

This arduous flex and bend test determined that the performance of Samtec Eye Speed® ultra low skew twinax is essentially indistinguishable from the original raw, unbent cable.

Ultra low skew twinax provides the lowest insertion loss in the industry, controlled performance across temperature, and robust insertion loss in any assembly and operation environment. Contact HDR@samtec.com for higher cycle results.



Six feet of ultra low skew twinax cable on mandrels was coiled/uncoiled moving back and forth on a slide at a rate of 20-25 cycles per minute.

CABLE MANAGEMENT

- Samtec works with system architects in the early stages to optimize the architecture for cable management while keeping signal integrity and thermals in mind
- Complimentary service using mockups with accurate cable lengths
- Minimize number of SKUs within one system
- Minimize pressure drop





samtec
SUDDEN SERVICE®

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GERMANY • FRANCE • ITALY • NORDIC/BALTIC • BENELUX • ISRAEL • INDIA • AUSTRALIA / NEW ZEALAND
SINGAPORE • JAPAN • CHINA • TAIWAN • HONG KONG • KOREA

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