



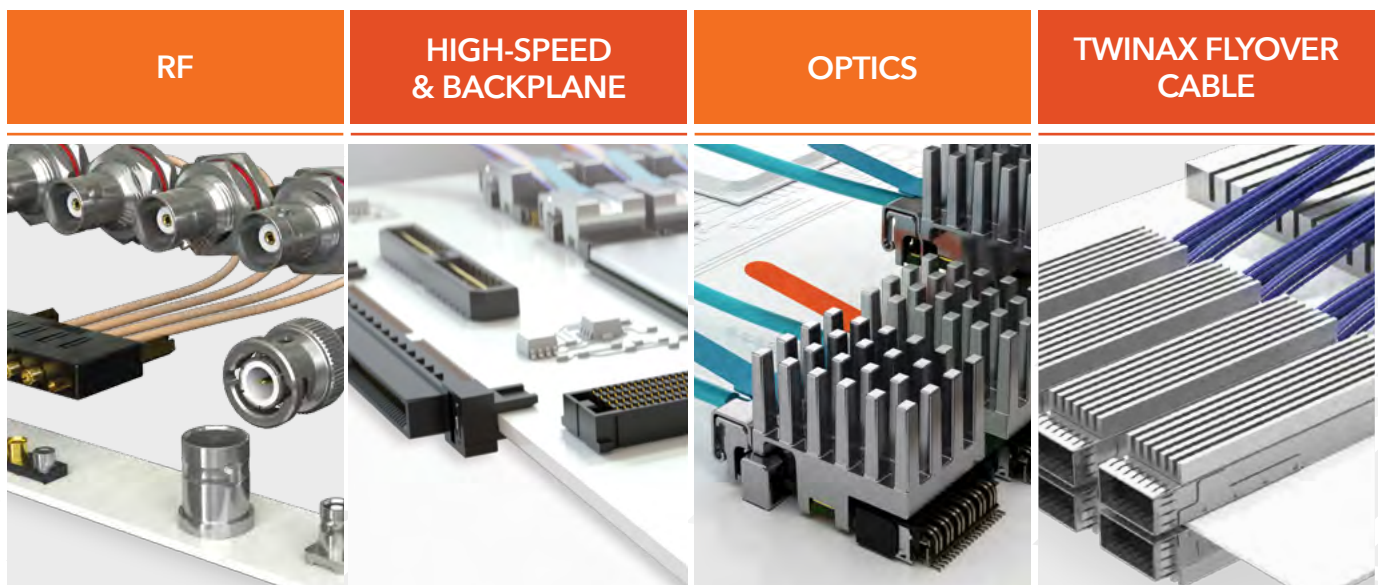
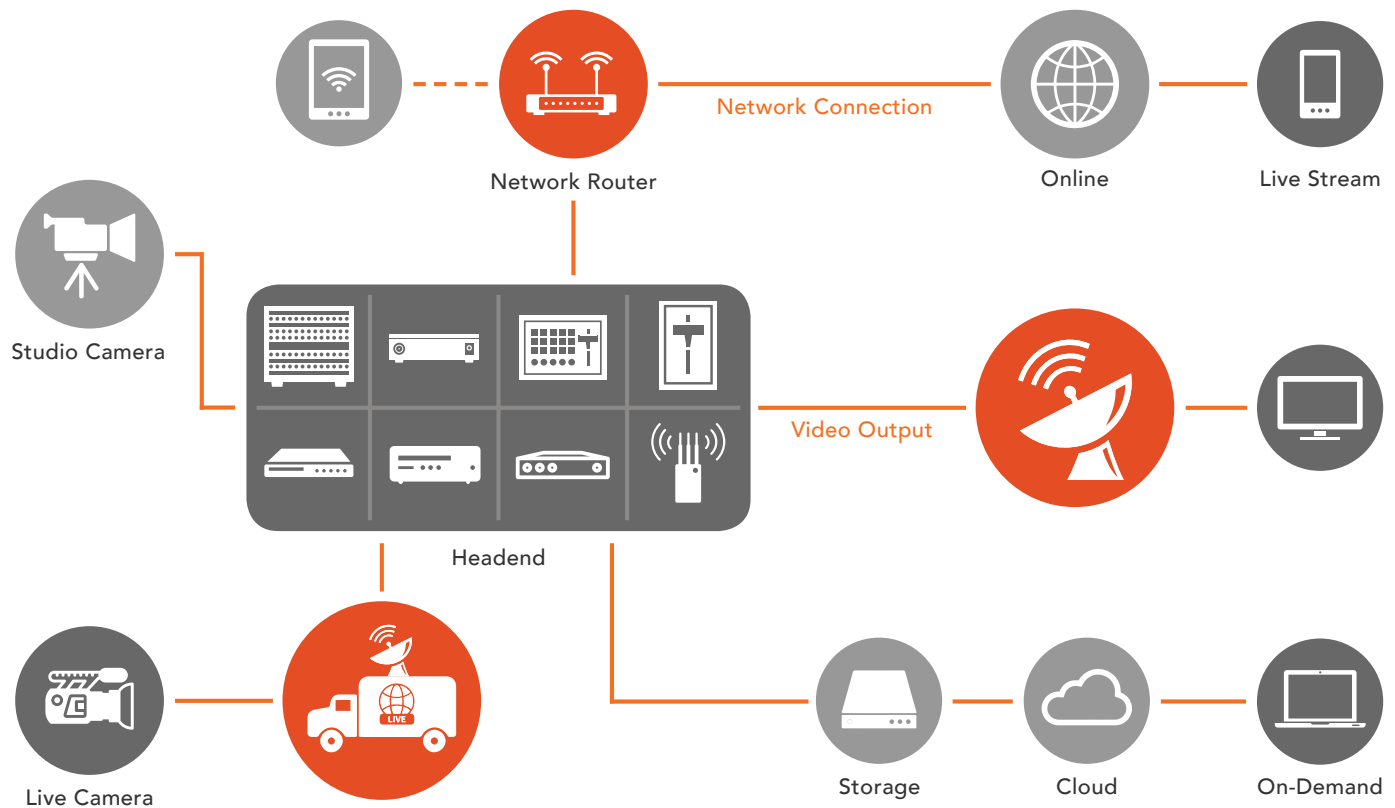
BROADCAST VIDEO SOLUTIONS

HIGH-PERFORMANCE INTERCONNECT SYSTEMS FOR **HD & BEYOND**



SOLUTIONS

The broadcast video ecosystem is changing, resulting in increased demands for high-capacity HD and UHD digital transmission through today's SDI infrastructures and the emerging video-over-IP infrastructures. This requires expanded capabilities throughout the broadcast video chain, from camera to consumer. Samtec offers a full line of high-performance solutions for each of these applications.



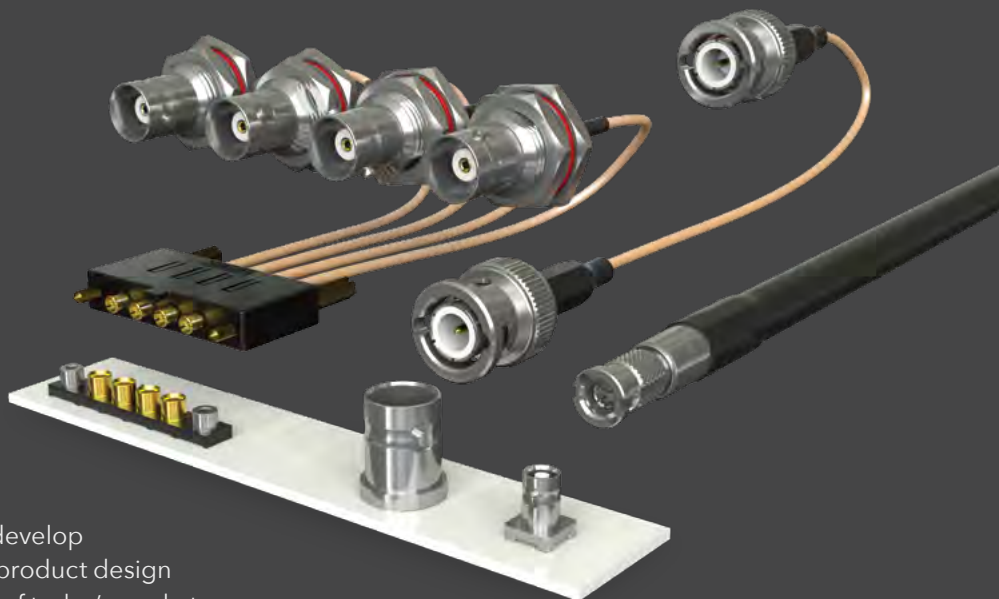
RF TECHNICAL GROUP

RFTECHNICALGROUP@SAMTEC.COM

Samtec's dedicated RF engineers provide personal support for meeting your specific RF challenges, at any level.



- Simulations and physical test and measurement verifications
- 12G-SDI analysis and launch optimization
- Quick-turn modifications to standards
- Design for fully engineered custom products
- Prototype support



CUSTOMS

Our RF Technical Group, together with our Full System Signal Integrity Engineers, can develop application-specific solutions and optimize product design to meet the 12G-SDI transmission demands of today's market.



FULL SYSTEM SIGNAL INTEGRITY

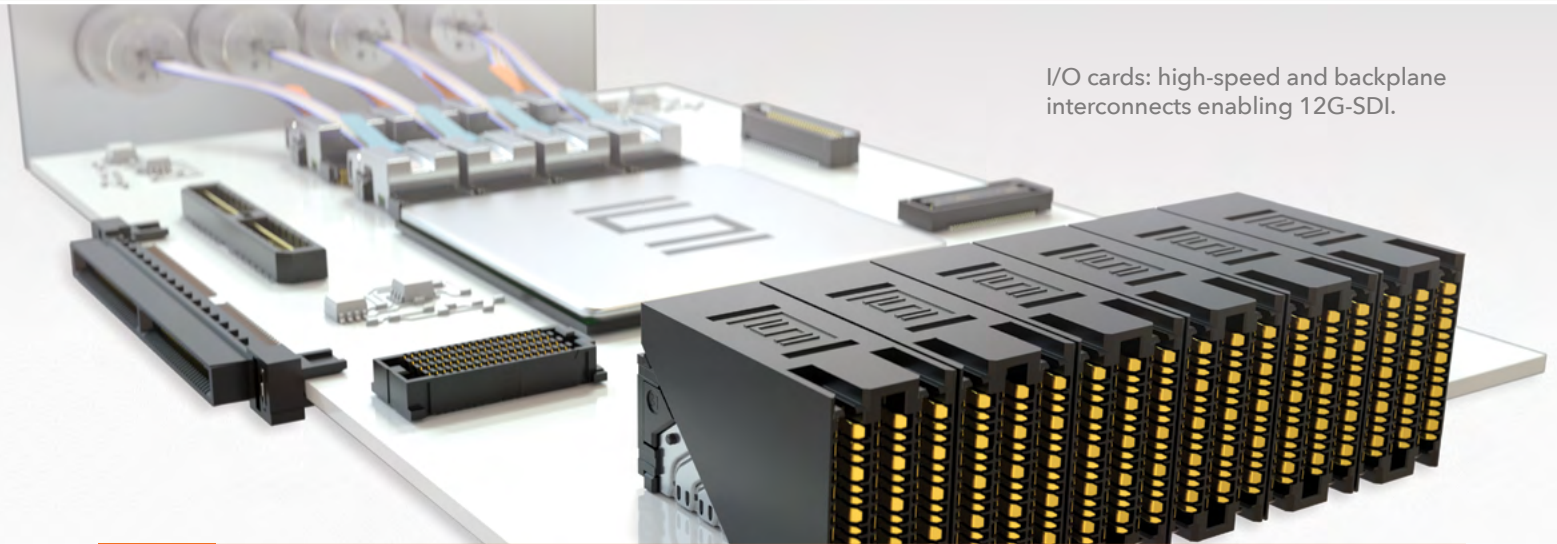
Samtec's Teraspeed Consulting and Signal Integrity Group engineers help optimize and validate high-performance systems. Services are available at any level: from the early stages of the design process through in-depth analysis, modeling and simulation, with measurement validation services available to 67 GHz.

PACKAGE DESIGN & MATERIALS	MODELING	SIMULATION
Bumpout / Ballout Optimization Layout & Routing Ballout Transition Structures Material Recommendations	High Bandwidth Full-Wave Custom & Commercial Software	Design Rules for Package & PCB Designs Validate Implementation and Signaling Requirements for Critical Channels Simulations via High-Performance Computing
ANALYSIS	TESTING	VALIDATION
Package, PCB and System-Level Power Integrity Package, PCB and System-Level Signal Integrity	Post Design Simulation & Measurements Measurement of Test Structures for Signal Integrity / Power Integrity Optimization Material Characterization	Validation Platform Engineering Connectors, Packages & Devices Characterization at Frequencies to 67 GHz

75 Ω , 12 Gbps TRANSPORT



Video has transformed from being an analog 6 MHz bandwidth signal to a 12 Gbps digital data stream. As signaling transitioned to 12 Gbps 4K UHD-SDI standards, the demand for meeting stringent return loss requirements up to 12 GHz emerged. Samtec has the largest variety of 12G-SDI products available, including right-angle orientations. To learn more contact RFTechnicalGroup@samtec.com.



I/O cards: high-speed and backplane interconnects enabling 12G-SDI.



Samtec offers a full line of high-speed board-to-board and RF interconnects to support high-performance broadcast video system integration:

TRUE75™ 75 Ω RF SYSTEMS samtec.com/RF

- Industry standard cables, components, board-level interconnects
- Mix-and-match flexibility
- 12G-SDI optimized interconnects
- Original Samtec solutions

BACKPLANES HSBP@samtec.com

- ExaMAX® to 28 Gbps
- Developing: direct-mate orthogonal, backplane cable, coplanar headers
- XCede® HD for extreme density
- Guidance, keying and end wall options

HIGH-SPEED 28+ Gbps Solutions

- High-performance interconnects that meet 12G-SDI system requirements
- SEARAY® open-pin-field arrays
- High-speed edge cards
- Dual and multi-row strips

BNCs (low profile, right-angle, and more) for 12G-SDI rack applications.

Visit samtec.com for more information.

12G-SDI, 75 Ω RF*				LOWER-FREQ., 75 Ω RF*			BACKPLANES		
	High-density BNC	DIN 1.0/2.3	BNC	SMB	MCX	Micro-Mini (MMCX)	XCede® HD	ExaMAX®	
Density	4x the panel density (vs. BNC)		Traditional Solution				Density	84 pairs/linear in.	51 pairs/linear in.
Return Loss	12 GHz			4 GHz	6 GHz		Performance	12 Gbps	28 Gbps
Series	HDBNC	DIN7A	BNC7T	SMB7H	MCX7	MMCX7	Series	HDTF/HDTM	EBTM/EBTF-RA

HIGH-SPEED			
	SEARAY®	High-Speed Edge Cards	Dual & Multi-Row Strips
Density	40 to 500 I/Os (SE)	18 to 200	20 to 240
Performance	28 Gbps	13 to 40 Gbps	28 Gbps
Series	SEAM/SEAF, SEAM8/SEAF8	HSEC8, HSEC1, MEC1, MEC2, MEC5, MEC6, MEC8, MECF	QTH/QSH, QTS/QSS, QTE/QSE, QMS/QFS, ERM5/ERF5, ERM8/ERF8, EDM6/EDF6

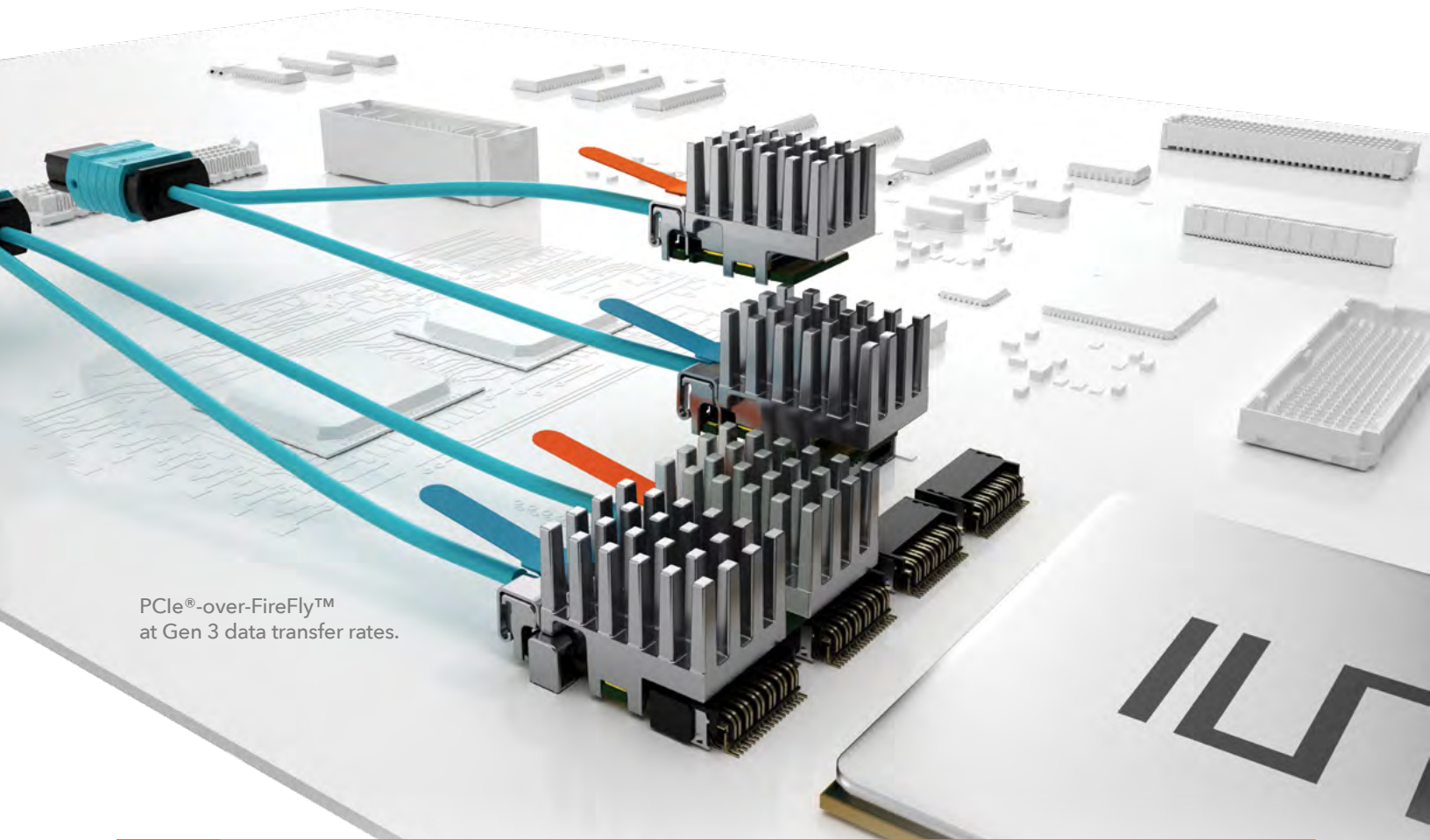
* Cable options available: RG 179, RG 6, 1694A, 1855A

* Learn more at samtec.com/RF

OPTICS & TWINAX FLYOVER



As bandwidth requirements rapidly increase, routing signals through lossy PCBs, vias and other components has become one of the most complex challenges designers face. Samtec's approach of flying signals over the board breaks the constraints of traditional routing and results in cost-effective, high-performance solutions.



PCIe®-over-FireFly™
at Gen 3 data transfer rates.



Samtec's high-speed, flyover copper twinax and optical cables support the high-speed, high-capacity demands of broadcast video signal transmission.

OPTICS

samtec.com/FireFly

- Allows for closer proximity to the IC, simplifies board layout with 28+ Gbps speeds
- Miniature footprint for greater density
- Supports data center and HPC protocols, including Ethernet

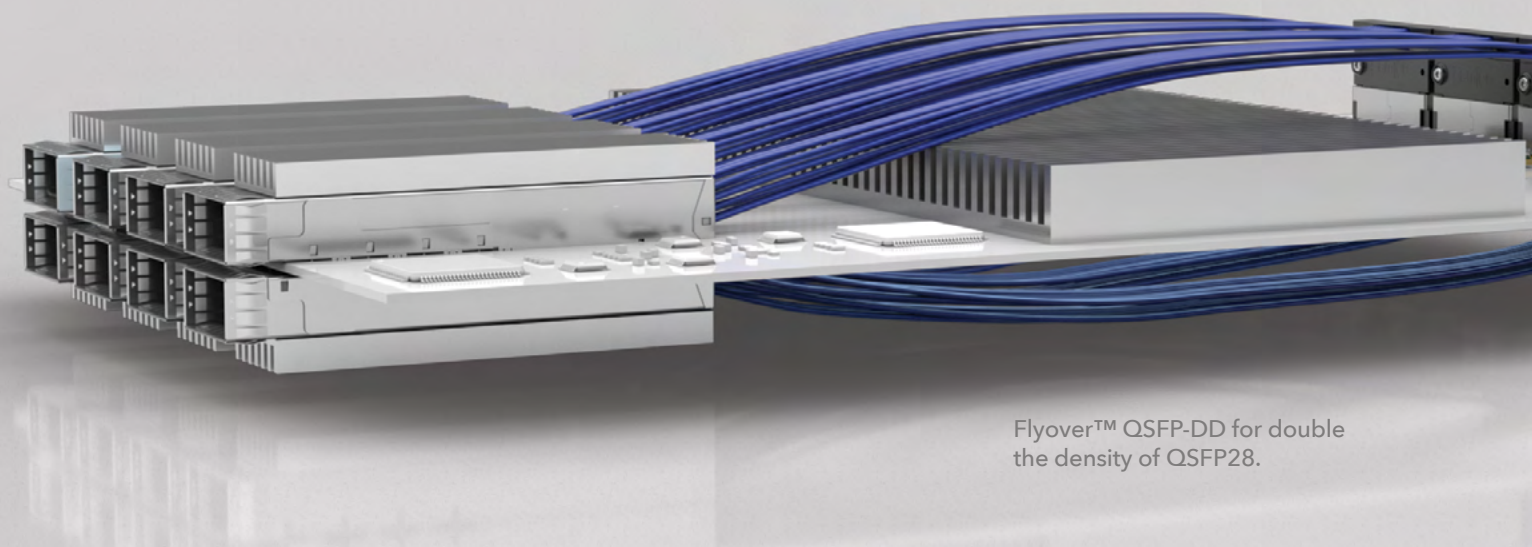
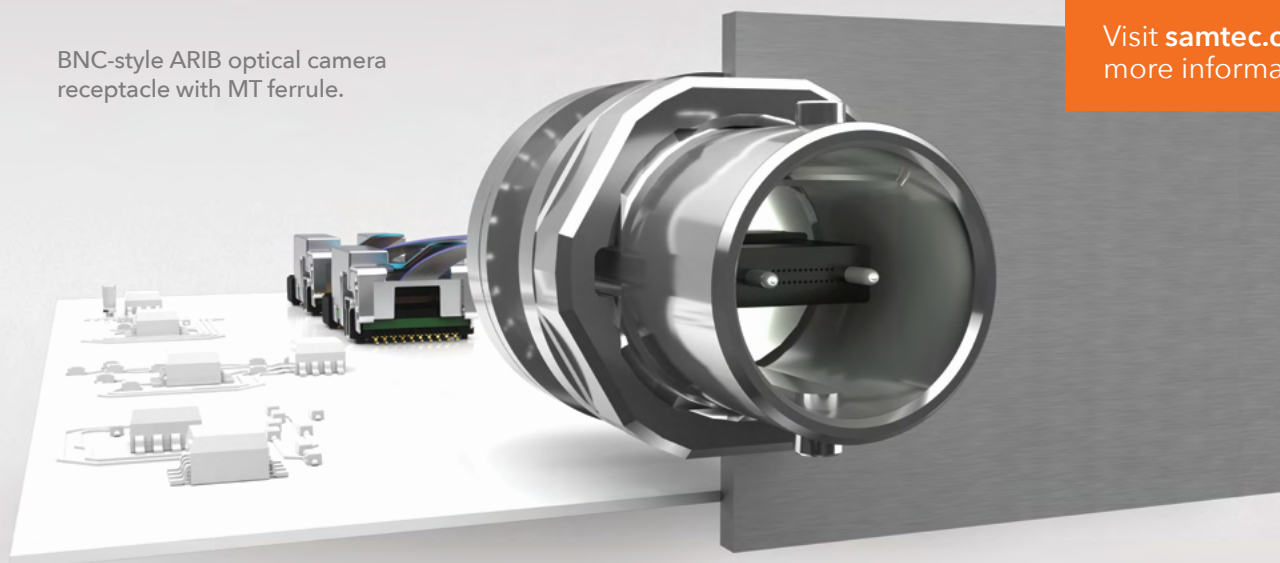
TWINAX FLYOVER

HDR@samtec.com

- 28 Gbps using Samtec's ultra-low-skew, co-extruded twinax that improves bandwidth and reach
- Variety of termination options
- Enables system architecture design flexibility

BNC-style ARIB optical camera
receptacle with MT ferrule.

Visit samtec.com for
more information.



Flyover™ QSFP-DD for double
the density of QSFP28.

OPTICS

	Optical FireFly™	Extended Temperature FireFly™	PCle®-over-FireFly™	Extended Temperature PCle®-over-FireFly™
Density	~30.85 mm x 11.25 mm keepout (contact FireFly@samtec.com)			
Performance	28 Gbps	10 Gbps	8 GTps	8 GTps
Series	ECUO	ETUO	PCUO	PTUO

COPPER / TWINAX FLYOVER™

	Flyover QSFP28	Double-Density Flyover QSFP	FireFly™	PCle® protocol compatible	Direct Attach Cable
Performance	28 Gbps (Per channel)	28 Gbps, 56 Gbps PAM-4 (Per channel)	28 Gbps		
Series	FQSFP (4 channels)	FQSFP-DD (8 channels)	ECUE	PCUE	DCH

PCI-SIG®, PCI Express® and the PCIe® design marks are registered trademarks and/or service marks of PCI-SIG.



samtec

SUDDEN SERVICE®

SAMTEC.COM

UNITED STATES • NORTHERN CALIFORNIA • SOUTHERN CALIFORNIA • SOUTH AMERICA • UNITED KINGDOM
 GERMANY • FRANCE • ITALY • NORDIC/BALTIC • BENELUX • ISRAEL • INDIA • AUSTRALIA / NEW ZEALAND
 SINGAPORE • JAPAN • SHANGHAI • SHENZHEN • TAIWAN • HONG KONG • KOREA

APRIL 2017