

产品手册【2014-2015】

PRODUCT MANUAL

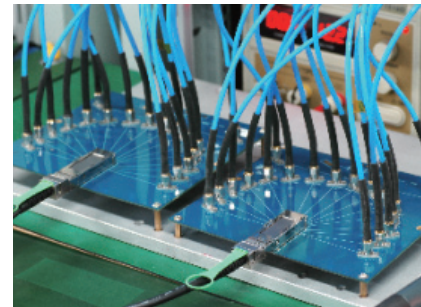


INFINIBAND 万兆通光电 TOR HBA 40GBASE BigData Driving Your Next Generation Networks FDR
ETHERNET BigData AOC 万兆通光电 DAC NIC TOR SUPPER COMPUTER
10Gtek 万兆通光电 HPC DATA CENTER 10Gtek 10GBASE Infiniband FDR QDR TOR 10Gtek DAC
Driving Your Next Generation Networks 10Gtek 10GBASE BigData 10Gtek 10GBASE
Transceivers 万兆通 10Gtek 万兆通光电 HBA
Driving Your Next Generation Networks Driving Your Next Generation Networks SUPPER COMPUTER DATACENTER

About Us 公司介绍

10Gtek Transceivers Co., Ltd is a leading high speed cable and transceiver supplier in China, who researches, designs, builds and markets the best high-end direct attach cables and optical transceivers (10G/40G/100G). We focus on the development of high-speed interconnect solution with characteristics of large capacity, small size, low power and low cost, providing the best-of-breed copper or optical modules for customers in areas such as cloud computing, data centers, data communication, long-distance transmission, wireless access, etc. Our valued proposition is our leading-edge optical component and packaging technology, high speed cable design know-how and unique low-cost testing capability.

10Gtek was founded in Jun 2008, Shenzhen, China and is ISO14001 and ISO9001 certified. We offer a complete line of 10G SFP+, 10G XFP and 40~56G QSFP+ products, covering over 100 product categories, to meet various application requirements. Our customers can benefit from the real value-added portfolio of products and service we provide. We continue to expand the product line, redefining new features of the products or market new discovery while entering a new market for each product.



ISO 14001



ISO 9001



FCC



CE



RoHS

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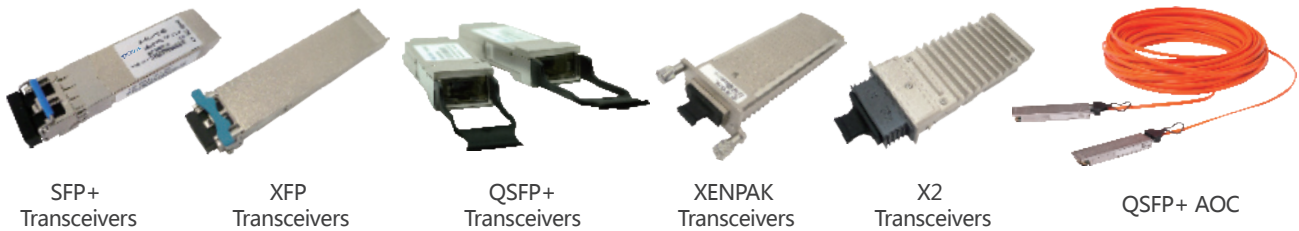
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High Speed Cables & Transceivers

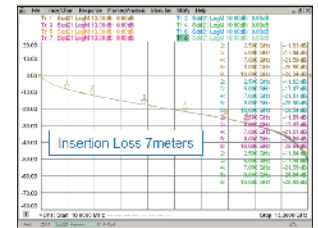
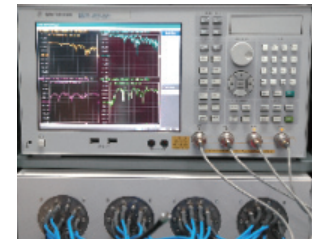
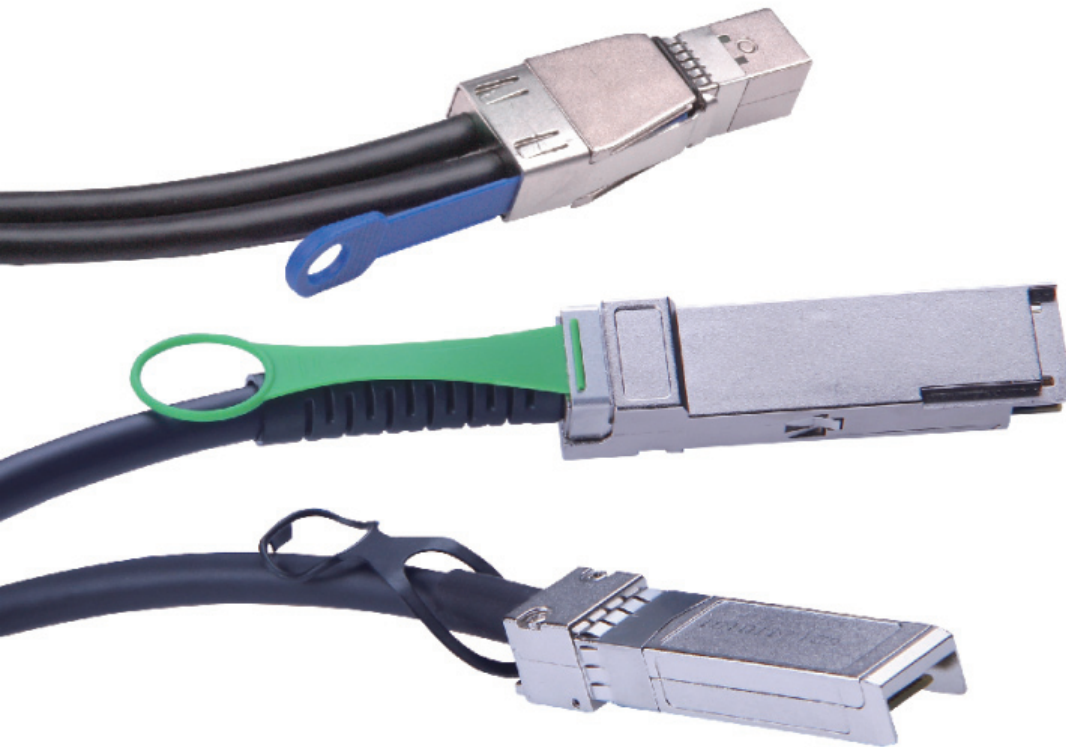
高速电缆和光模块

	DAC		AOC	Transceiver			
	0-7 Meter	0-15 Meter	<100 Meter	<300 Meter	<10 KM	<40 KM	<80 KM
SFP+	✓	✓ Active	✓ AOC	✓ SR	✓ LR, LRM	✓ ER	✓ ZR
XFP	✓ Active	/	/	✓ SR	✓ LR	✓ ER	✓ ZR
XENPAK/X2	/	/	/	✓ SR	✓ LR, LRM	✓ ER	✓ ZR
CX4	✓	✓	/	/	/	/	/
MiniSAS	✓	✓	/	/	/	/	/
MiniSAS HD	✓	TBD	TBD	/	/	/	/
QSFP+	✓	/	✓ AOC	✓ SR4	✓ IR4, LR4	TBD	/
CXP	TBD	/	✓ AOC	/	/	/	/



DAC 铜缆

Direct Attach Copper Cable



DAC 10Gb/s SFP+ DAC

DAC 40~56Gb/s QSFP+ DAC

DAC 40Gb/s QSFP+ to 4x SFP+ DAC

DAC 10Gb/s CX4 Cables

DAC 10Gb/s XFP Cables

DAC 6~12G MiniSAS Cables



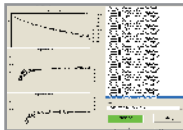
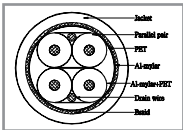
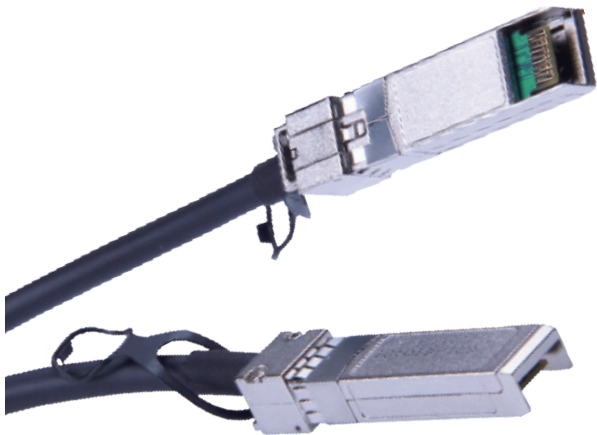
10Gb/s SFP+ DAC (Passive & Active)

APPLICATIONS

- InfiniBand SDR, DDR, QDR
- Ethernet
- Fiber Channel 8G, 10G
- FCoE 10G
- Networking, Storage
- Hubs, switches, routers, servers, NICs

STANDARDS COMPLIANCE

- Electrical: SFF-8431, SFF-8083
- Mechanical: SFF-8432
- EEPROM: SFF-8472
- RoHS



10Gtek SFP+ direct attach copper cable assembly is a high speed, cost-effective alternative to fiber optics in 10Gb Ethernet, 8Gb Fiber Channel and InfiniBand applications. SFP+ copper cable assemblies enable hardware OEMs and data center operators to achieve high port density and configurability at a low cost and reduced power requirement. 10Gtek SFP+ copper assemblies meet the industry MSA for signal integrity performance.

SFP+ Active Copper Cable design has a signal amplification and a class 10G Clock and Data Recovery (CDR) or Equalizer technology to support longer distances than standard passive SFP+ DAC cables.

Ordering Information:

SFP+ Copper Cable Assemblies, Passive

Length	P/N	AWG		
1m	CAB-10GSFP-P1M	24	28	30
2m	CAB-10GSFP-P2M	24	28	30
3m	CAB-10GSFP-P3M	24	28	30
5m	CAB-10GSFP-P5M	24	28	/
7m	CAB-10GSFP-P7M	24	/	/
10m	CAB-10GSFP-P10M	24	/	/

SFP+ Copper Cable Assemblies, Active

Length	P/N	AWG		
1m	CAB-10GSFP-A1M	/	/	30
3m	CAB-10GSFP-A3M	/	/	30
5m	CAB-10GSFP-A5M	/	/	30
7m	CAB-10GSFP-A7M	/	28	30
10m	CAB-10GSFP-A10M	24	28	/
15m	CAB-10GSFP-A15M	24	/	/

DAC

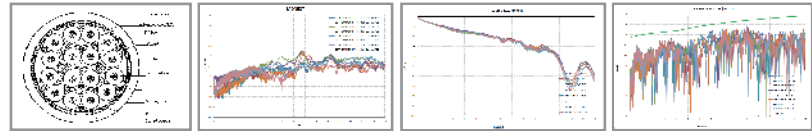
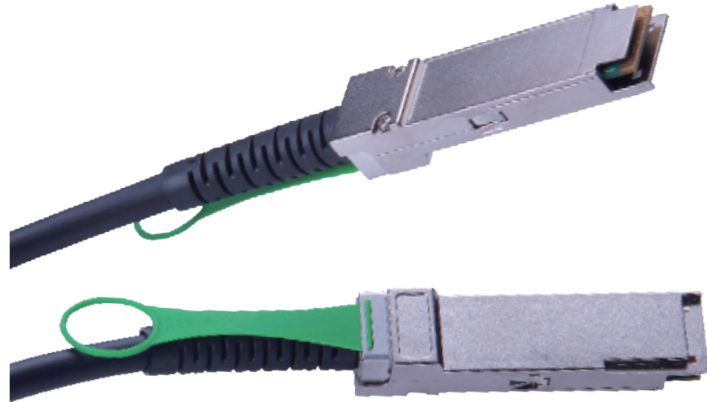
40~56Gb/s QSFP+ DAC

APPLICATIONS

- InfiniBand 4X SDR, DDR, QDR and FDR
- Ethernet 10G, 40G
- FiberChannel 10G, 40G, SAN, 4X16G
- RapidIO
- Rack-to-Rack, Shelf-to-Shelf Interconnect
Top of Rack (TOR) and Core Switch
- Networking, Storage
- Hubs, switches, routers, servers

STANDARDS COMPLIANCE

- Electrical: IBTA V2 Revision 1.2.1 and 1.3
- IEEE 802.3ba
- SFF-8436
- RoHS



10Gtek QSFP+ direct attach copper cable assembly is a high-speed, cost-effective alternative to fiber optics in Ethernet, Fibre Channel and InfiniBand technology applications. These cable assemblies are designed to meet emerging data center and high performance computing application and support the bandwidth transmission requirements as defined by IEEE 802.3ba (40 Gb/s) and Infiniband QDR (4x10 Gb/s per channel) and FDR (4x14 Gb/s per channel) specifications. The QSFP+ copper cable form factor uses 8 differential pairs that provide 4 data transmission channels. The cable assemblies meet or exceed the industry MSA for signal integrity performance.

Ordering Information:

QSFP+ QDR Copper Cable Assemblies, Passive

Length	Data Rate	P/N	AWG
1 m	40Gbps	CAB-QSFP/QSFP-P1M	/ 28 30
3 m	40Gbps	CAB-QSFP/QSFP-P3M	/ 28 30
5 m	40Gbps	CAB-QSFP/QSFP-P5M	/ 28 /
7 m	40Gbps	CAB-QSFP/QSFP-P7M	24 28 /

QSFP+ FDR Copper Cable Assemblies, Passive

Length	Data Rate	P/N	AWG
0 m	56Gbps	CAB-Q14/Q14-P50CM	/ / 30
1 m	56Gbps	CAB-Q14/Q14-P1M	/ / 30
3 m	56Gbps	CAB-Q14/Q14-P3M	/ 28 /
4 m	56Gbps	CAB-Q14/Q14-P4M	26 / /



40Gb/s QSFP+ to 4x SFP+ DAC

APPLICATIONS

- InfiniBand 4X SDR, DDR, QDR and FDR
- Ethernet 10G, 40G
- FiberChannel 10G, 40G, SAN, 4X16G
- RapidIO
- Rack-to-Rack, Shelf-to-Shelf Interconnect
Top of Rack (TOR) and Core Switch
- Networking, Storage
- Hubs, switches, routers, servers

STANDARDS COMPLIANCE

QSFP+ End

- Electrical: IBTA V2 Revision 1.2.1 and 1.3
- IEEE 802.3ba
- SFF-8436

SFP+ End

- SFF-8431
- SFF-8432
- SFF-8472
- RoHS



QSFP+ to 4SFP+ direct-attach assembly is available in standard lengths up to 7 meters with longer custom lengths available. These Interconnect Solutions breakout cables allow users to connect equipment with QSFP+ ports configured to work as four SFP+ ports.

Optimizing systems to operate with 10Gtek's passive copper cables significantly reduces power consumption, EMI emission, eliminating the use of EDC hosts and enlarge the connectivity opportunities of the system.

Ordering Information:

QSFP+ to 4x SFP+ Copper Cable Assemblies, Passive

Length	Data Rate	P/N	AWG		
1 m	40Gbps	CAB-QSFP/4SFP-P1M	/	/	30
3 m	40Gbps	CAB-QSFP/4SFP-P3M	/	28	30
5 m	40Gbps	CAB-QSFP/4SFP-P5M	26	/	/
7 m	40Gbps	CAB-QSFP/4SFP-P7M	26	/	/



QSFP+ to SFP+ converter

For QSFP+ 80KM solution

6~12G MiniSAS Cables

(SFF-8088/ 8087/ 8644/ 8643)

APPLICATIONS

- Servers
- RAID systems
- Storage Systems
- SAS/SATA HBA interfaces
- Direct-attached storage (DAS)

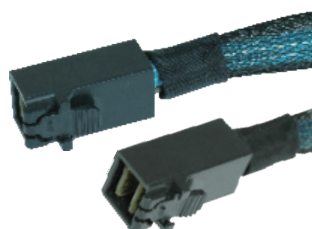
STANDARDS COMPLIANCE

- SAS 3.0
- SAS 2.1
- SAS 1.1
- SFF-8088
- SFF-8087
- SFF-8644
- SFF-8643
- RoHS

External MiniSAS HD (SFF-8644) cables



Internal MiniSAS HD (SFF-8643) cables



External MiniSAS (SFF-8088) Cable



Internal MiniSAS (SFF-8087) Cable



Ordering Information:

External Mini-SAS HD(SFF-8644) to Mini-SAS HD(SFF-8644)

Length	Data Rate	P/N	AWG		
1 m	6/12Gbps	CAB-8644/8644-P1M	30	/	30
3 m	6/12Gbps	CAB-8644/8644-P3M	30	/	30
5 m	6/12Gbps	CAB-8644/8644-P5M	26	26	/

External Mini-SAS(SFF-8088) to Mini-SAS(SFF-8088)

Length	Data Rate	P/N	AWG		
1 m	6Gbps	CAB-8088/8088-P1M	/	28	/
3 m	6Gbps	CAB-8088/8088-P3M	/	28	/
10 m	6Gbps	CAB-8088/8088-P10M	24	/	/

Internal Mini-SAS HD(SFF-8643) to Mini-SAS HD(SFF-8643)

Length	Data Rate	P/N	AWG		
0.5 m	6Gbps	CAB-8643/8643-P50CM	/	/	30
1 m	6Gbps	CAB-8643/8643-P1M	/	/	30

Internal Mini-SAS(SFF-8087) to Mini-SAS(SFF-8087)

Length	Data Rate	P/N	AWG		
0.5 m	3Gbps	CAB-8087/8087-P50CM	/	/	30
1 m	3Gbps	CAB-8087/8087-P1M	/	/	30



10Gb/s CX4 Cables

APPLICATIONS

- 10GBASE-CX4 Applications (up to 15m)
- 10GbE, InfiniBand SDR, DDR
- High Speed Network, Server and Storage connections

FEATURES

- CX4/ Infiniband Cable Assembly
- Passive AWG30/AWG28/AWG26/AWG24



10Gtek CX4 passive copper cables provide robust connections and require no power from the connector. The passive copper cables are compliant with the InfiniBand architecture SFF-8470 specifications and provide connectivity between devices using CX4 ports. 10Gtek high-quality passive copper cable solutions provide a power-efficient replacement for active power connectivity such as fiber optic cables.

Optimizing systems to operate with 10Gtek CX4 passive copper cables significantly reduces power consumption and EMI emission, eliminating the use of EDC hosts.

Ordering Information:

CX4 to CX4 Copper Cable Assemblies

Length	Data Rate	P/N	AWG		
1 m	10Gbps	CAB-CX4/CX4-P1M	/	/	30
5 m	10Gbps	CAB-CX4/CX4-P5M	/	26	/
10 m	10Gbps	CAB-CX4/CX4-P10M	24	/	/
15 M	10Gbps	CAB-CX4/CX4-P15M	24	/	/



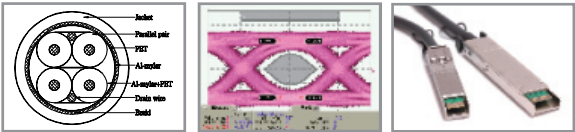
10Gb/s XFP Cables (Passive & Active)

APPLICATIONS

- Rack-to-Rack, Shelf-to-Shelf Interconnect
- Communications: Switches, Routers
- Bridge the gap between your XFP and SFP+

FEATURES

- XFP DAC Cable Assembly
- Low power consumption
- Up to 11.3 Gbps transfer rate
- 10GbE/SONET OC-192/ SDH-64/ Fiber Channel



XFP DAC Cables were developed to provide 10Gb/s serial links for a wide range of applications including standards such as OC192/STM-64, G.709, and 10 Gigabit Ethernet, 10G Fibre Channel, and other industry standards. It is ideally suited for 10 GbE datacom (belly-to-belly for high density applications) and storage area network (SAN/NAS) applications based on the IEEE 802.3ae and Fibre Channel standards.

XFP Active Copper Cable design has a signal amplification and a class 10G Clock and Data Recovery (CDR) in the cable assembly.

Ordering Information:

XFP to XFP Copper Cable Assemblies

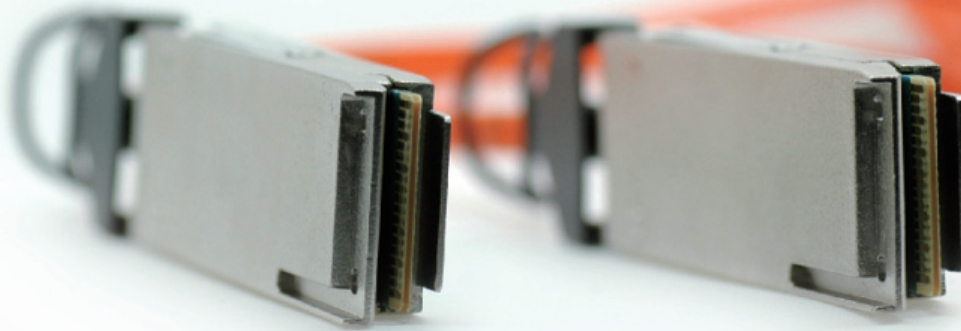
Length	Data Rate	P/N	P/A	AWG
1 m	10Gbps	CAB-XFP-P1M	Passive	24 / /
3 m	10Gbps	CAB-XFP-A3M	Active	/ / 30
5 m	10Gbps	CAB-XFP-A5M	Active	/ / 30

XFP to SFP+ Copper Cable Assemblies

Length	Data Rate	P/N	P/A	AWG
1 m	10Gbps	CAB-XFP/SFP-P1M	Passive	24 / /
3 m	10Gbps	CAB-XFP/SFP-A3M	Active	/ / 30
5 m	10Gbps	CAB-XFP/SFP-A5M	Active	/ / 30

AOC 光缆

Active Optical Cable



AOC 10Gb/s SFP+ AOC

AOC 40Gb/s QSFP+ AOC

AOC 56Gb/s QSFP+ AOC

AOC 40Gb/s QSFP+ to 4x SFP+ AOC

AOC 40Gb/s QSFP+ to 8x Lc AOC

AOC 120Gb/s CXP AOC



10Gb/s SFP+ AOC

APPLICATIONS

- 10 Gigabit Ethernet (10GbE)
- 4G and 8G Fiber Channel ,
Fibre Channel over Ethernet (FCoE)
- InfiniBand (QDR/DDR/SDR)
- Top of Rack (TOR) Switch
- Networked storage systems
- High Performance Computing
- Servers, switches, storage and NIC

STANDARDS COMPLIANCE

- SFF-8431
- SFF-8432
- SFF-8472
- RoHS



10Gtek SFP+ Active Optical Cables are hot-swappable, low-voltage cable assemblies that connect directly into SFP+ modules at both ends. These cables use a 20-position connector with active circuitry to increase distances and to improve EMI and reduce signal loss. 10Gtek's SFP+ Active Optical Cable transmits 10Gbps data in each direction over a loose tube fiber with distance up to 100m.

10Gtek AOC is SFP+ MSA compliance, low power consumption and lightweight, which can be used as an alternative solution to SFP+ passive and active copper cables, while providing improved signal integrity, longer distances, superior electromagnetic immunity and better bit error rate performance.

Ordering Information:

SFP+ Active Optical Cable Assemblies

Length	Data Rate	P/N	Power	BER
5 m	10Gbps	SFP-AOC-5M	<0.35W	<10 ⁻¹⁵
10 m	10Gbps	SFP-AOC-10M	<0.35W	<10 ⁻¹⁵
20 m	10Gbps	SFP-AOC-20M	<0.35W	<10 ⁻¹⁵
50 m	10Gbps	SFP-AOC-50M	<0.35W	<10 ⁻¹⁵



40Gb/s QSFP+ AOC

APPLICATIONS

- InfiniBand 4X SDR, DDR, QDR and FDR
- Ethernet 10G, 40G, 56G
- FiberChannel 40G, SAN, 4x16G
- Rack-to-Rack, Shelf-to-Shelf Interconnect
- Top of Rack (TOR) Switch
- Networking, Storage
- Hubs, switches, routers, servers
- Supercomputer, HPC

STANDARDS COMPLIANCE

QSFP+ End

- Electrical: IBTA V2 Revision 1.2.1 and 1.3
- IEEE 802.3ba
- SFF-8436



10Gtek Interconnect Solutions 40 Gb/s Low Power Active Optical Cable assemblies offer a cost-effective, extended reach option for high-speed data center interconnects. Using 850 nm VCSEL technology, 10Gtek QSFP+ cable is an assembly of 4 full-duplex lanes, where each lane is capable of transmitting data at rates up to 10Gb/s per direction, providing an aggregated rate of 40Gb/s. The cable is available in a number of standard lengths up to 100 meters.

Ordering Information:

QSFP+ Active Optical Cable Assemblies

Length	Data Rate	P/N	Power	BER
5 m	40Gbps	QSFP-AOC-5M	<1.05W	<10 ⁻¹⁵
10 m	40Gbps	QSFP-AOC-10M	<1.05W	<10 ⁻¹⁵
15 m	40Gbps	QSFP-AOC-15M	<1.05W	<10 ⁻¹⁵
20 m	40Gbps	QSFP-AOC-20M	<1.05W	<10 ⁻¹⁵
30 m	40Gbps	QSFP-AOC-30M	<1.05W	<10 ⁻¹⁵
50 m	40Gbps	QSFP-AOC-50M	<1.05W	<10 ⁻¹⁵



40Gb/s QSFP+ to 4x SFP+ AOC

APPLICATIONS

- InfiniBand 4X SDR, DDR, QDR and FDR
- Ethernet 10G, 40G
- FiberChannel 10G, 40G, SAN
- Rack-to-Rack, Shelf-to-Shelf Interconnect
- Top of Rack (TOR) Switch
- Networking, Storage
- Hubs, switches, routers, servers
- Supercomputer, HPC

STANDARDS COMPLIANCE

QSFP+ End

- Electrical: IBTA V2 Revision 1.2.1 and 1.3
- IEEE 802.3ba
- SFF-8436

SFP+ End

- SFF-8431
- SFF-8432
- SFF-8472
- RoHS



The 10Gtek QSFP+ to four SFP+ 40Gbps fanout Active Optical Cable is an adaptor cable which provides connectivity between device using QSFP+ port on one end and SFP+ ports on the other end. The integrated cable transmits 4x10Gbps data on the QSFP+ side and 1x10Gbps data on the SFP+ side in duplex over a loose tube fiber with distance up to 100m. The fanout AOC is SFF-8431 (SFP+ side) and SFF-8436 (QSFP+ side) compliance.

Ordering Information:

QSFP+ to 4x SFP+ Active Optical Cable Assemblies

Length	Data Rate	P/N	Power SFP+	Power QSFP+	BER
5 m	40Gbps	QSFP-4SFP-AOC-5M	<0.35W	<1.05W	<10 ⁻¹⁵
10 m	40Gbps	QSFP-4SFP-AOC-10M	<0.35W	<1.05W	<10 ⁻¹⁵
15 m	40Gbps	QSFP-4SFP-AOC-15M	<0.35W	<1.05W	<10 ⁻¹⁵



40Gb/s QSFP+ to 8x Lc AOC

APPLICATIONS

- InfiniBand 4X SDR, DDR, QDR and FDR
- Ethernet 10G, 40G
- FiberChannel 10G, 40G, SAN
- Rack-to-Rack, Shelf-to-Shelf Interconnect
- Top of Rack (TOR) Switch
- Networking, Storage
- Hubs, switches, routers, servers
- Supercomputer, HPC

STANDARDS COMPLIANCE

QSFP+ End

- Electrical: IBTA V2 Revision 1.2.1 and 1.3
- IEEE 802.3ba
- SFF-8436



10Gtek's QSFP+ to 8LC Active Optical Cable (AOC) QDR is a high data rate parallel cable, which is designed to overcome the bandwidth limitation of traditional copper cable. It offers 4 independent data transmission channels and 4 data receiving channels via the multimode ribbon fibers, each channel is able to achieve the rate of 10Gb/s.

Ordering Information:

QSFP+ to 8x Lc AOC

Length	Data Rate	P/N	Power	BER
5 m	40Gbps	QSFP-8LC-AOC-5M	<1.05W	<10 ⁻¹⁵
10 m	40Gbps	QSFP-8LC-AOC-10M	<1.05W	<10 ⁻¹⁵
15 m	40Gbps	QSFP-8LC-AOC-15M	<1.05W	<10 ⁻¹⁵

AOC

120G CXP AOC

Applications :

- 12.5 Gbps Proprietary Interconnects
- 100 GbE and IB-QDR/IB-DDR/IB-SDR interconnects

FEATURES

- Twelve independent Transmitters, and twelve independent Receivers, all operate at 10Gbps
- Compliant to SFF-8632: Mini Multilane Series: Shielded Integrated Connector
- Compliant to InfiniBand Architecture Specification
- Bi-directional operation, 12 × 10 Gbps per direction
- Support transmission distance up to 100 meters
- Low power consumption: 3W (max)
- Operating case temperature 0 °C to 70 °C
- RoHS 6/6 compliant

STANDARDS COMPLIANCE

- SFF-8632
- RoHS



CXP AOC assemblies are fully duplex 12 channel cable assemblies that supports signal transmission rates up to 10.3 Gb/s per channel for distances from 2 to 100 meters using laser optimized advance high-performance multimode fiber (OM3). The CXP cable interface is based on the SFF-8632, Infiniband SDR, DDR and QDR industry standards and support Fibre Channel 8G per channel transmission. 10Gtek's CXP AOC is Low power consumption: 3W (max).

Ordering Information:

Length	Data Rate	P/N	Power	BER
10m	120Gbps	CXP-AOC-10M	<5.1W	<10 ⁻¹⁵
30m	120Gbps	CXP-AOC-30M	<5.1W	<10 ⁻¹⁵

Transceiver

光模块



TRA
nsceivers

10Gb/s SFP+ Transceivers

TRA
nsceivers

40Gb/s QSFP+ SR4 Transceivers

TRA
nsceivers

40Gb/s QSFP+ LR4 Transceivers

TRA
nsceivers

10Gb/s XFP Transceivers

TRA
nsceivers

10Gb/s X2/ XENPAK Transceivers

TRA
nsceivers

155M~2.5G SFP Transceivers

10Gb/s SFP+ Transceivers

APPLICATIONS

- 10GBASE-ER at 10.31Gbps
- 10GBASE-EW at 9.95Gbps
- 10G Ethernet
- 10G Fiber Channel

FEATURES

- Operating data rate up to 10.3Gbps
- Transmission distance up to 80km
- Single 3.3V Power supply and TTL Logic Interface
- Duplex LC Connector Interface, Hot Pluggable
- Laser Class 1 compliant
- Compliant with MSA SFP+ Specification SFF-8431
- Compliant with 1.0625G~8.5G FC standard
- Operating Case Temperature Standard: 0 °C ~+70 °C



Product Description	Operating Temperature	Data Rate	Tx Power(dBm)		Rx Power S(dBm)		Wavelength
			Max	Min	Max	Min	
SFP+ SR	0 °C -70 °C	10.3Gbps	-1	-11.1	-1	-6	850nm
SFP+ LR	0 °C -70 °C	10.3Gbps	0.5	-12.6	1	-3	1310nm
SFP+ ER	0 °C -70 °C	10.3Gbps	0.5	-14.1	4	-1	1550nm
SFP+ ZR	0 °C -70 °C	10.3Gbps	-8	-23	4	0	1550nm
SFP+ CWDM(80km)	0 °C -70 °C	10.3Gbps	8	-23	4	0	CWDM
SFP+ DWDM(80km)	0 °C -70 °C	10.3Gbps	-6	-24	5	0	DWDM
SFP+ BIDI(20km)	0 °C -70 °C	10.3Gbps	0.5	-14	2	-2	TX1270nm/RX1330nm
SFP+ BIDI(20km)	0 °C -70 °C	10.3Gbps	0.5	-14	2	-2	TX1330nm/RX1270nm
SFP+ BIDI(40km)	0 °C -70 °C	10.3Gbps	0.5	-15	5	1	TX1270nm/RX1330nm
SFP+ BIDI(40km)	0 °C -70 °C	10.3Gbps	0.5	-15	5	1	TX1330nm/RX1270nm

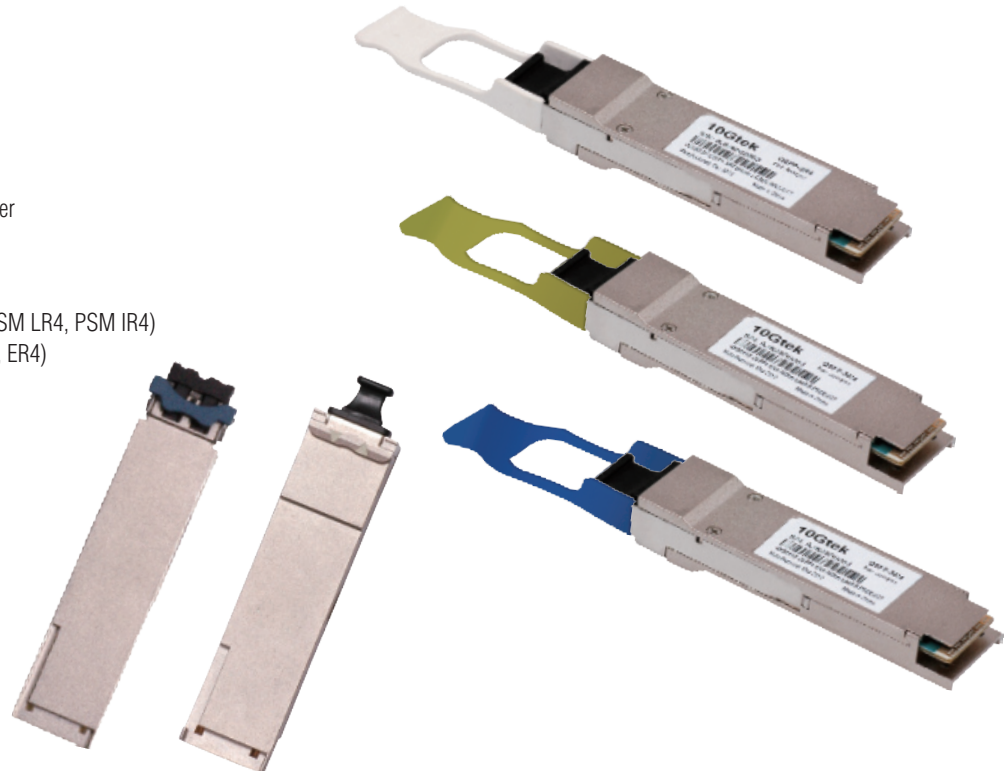
40Gb/s QSFP+ Transceivers

APPLICATIONS

- InfiniBand SDR DDR QDR
- 40G Ethernet
- TOR Switch
- Datacenter, Server and Supercomputer

FEATURES

- 4 Parallel lanes design (SR4, ESR4, PSM LR4, PSM IR4)
- 4 CWDM lanes Mux design (LR4, IR4, ER4)
- QSFP+ MSA compliant
- Low power design
- Operating Temperature: 0~70°C



Ordering Information:

Product Description	Data Rate (Gb/s)	Reach	TX		RX		Power Consumption	Connector & Fiber
			Wavelength	Power(dBm)	RX	Sensitivity(dBm)		
QSFP+ SR4	40Gbps	100m	850nm VCSEL	-7.6 ~ 1	PIN	-9.5	<1.5w	MPO/MMF
QSFP+ ESR4	40Gbps	300m	850nm VCSEL	-7.3 ~ 1	PIN	-9.9	<1.5w	MPO/MMF
QSFP+ IR4	40Gbps	2km	DFB CWDM	-7 ~ 2.3	PIN	-11.7	<3.5w	LC/SMF
QSFP+ LR4	40Gbps	10km	DFB CWDM	-7 ~ 2.3	PIN	-13.7	<3.5w	LC/SMF
QSFP+ ER4	40Gbps	30km	DFB CWDM	-3.7 ~ 4.5	APD	-20.2	<3.5w	LC/SMF
QSFP+ PSM IR4	40Gbps	1.4km	1310nm FP	-5.5 ~ 1.5	PIN	-11.5	<3.5w	MPO/SMF
QSFP+ PSM LR4	40Gbps	10km	1310nm DFB	-5.5 ~ 1.5	PIN	-12.6	<3.5w	MPO/SMF

10Gb/s XFP Transceivers

APPLICATIONS

- SONET OC-192
- SDH STM S-64 at 9.953Gbps
- 10G Ethernet
- 10G Fiber Channel
- 10GE over G.709 at 11.09Gbps OC192 over FEC at 10.709Gbps

FEATURES

- Operating data rate up to 10.3Gbps
- Laser Class 1 compliant
- LC duplex connector
- Fully compliant to XFP MSA Rev.4.5
- Operating Case Temperature Standard: 0°C ~+70°C



Product Description	Operating Temperature	Data Rate	Tx Power(dBm)		Rx Power S(dBm)		Wavelength
			Max	Min	Max	Min	
XFP SR	0°C -70°C	10.3Gbps	-1	-11	-1	-6	850nm
XFP LR	0°C -70°C	10.3Gbps	0.5	-12	1	-3	1310nm
XFP ER	0°C -70°C	10.3Gbps	0	-16	4	-1	1550nm
XFP ZR	0°C -70°C	10.3Gbps	-8	-23	5	0	1550nm
XFP CWDM(80km)	0°C -70°C	10.3Gbps	8	-23	5	0	CWDM
XFP DWDM(80km)	0°C -70°C	10.3Gbps	-6	-24	5	0	DWDM
XFP BIDI(20km)	0°C -70°C	10.3Gbps	0.5	-14	5	0	TX1270nm/RX1330nm
XFP BIDI(20km)	0°C -70°C	10.3Gbps	0.6	-14	5	0	TX1330nm/RX1270nm
XFP BIDI(40km)	0°C -70°C	10.3Gbps	4	1	-15	-	TX1270nm/RX1330nm
XFP BIDI(40km)	0°C -70°C	10.3Gbps	4	1	-15	-	TX1330nm/RX1270nm

10Gb/s X2/ XENPAK Transceivers

APPLICATIONS

- 10G Ethernet

FEATURES

- Transmission distance up to 80km
- Low Power Consumption 2.0 W (typ.)
- Duplex SC connector
- Compatible with X2/ XENPAK MSA Rev.2.0b
- Operating Case Temperature Standard: 0 °C ~+70 °C



Product Description	Operating Temperature	Data Rate	Tx Power(dBm)		Rx Power S(dBm)		Wavelength
			Max	Min	Max	Min	
X2 SR	0 °C -70 °C	10.3Gbps	-1	-11.1	-1	-6	850nm
X2 LR	0 °C -70 °C	10.3Gbps	1.5	-10	0.5	-6.5	1310nm
X2 ER	0 °C -70 °C	10.3Gbps	0	-16	4	-1	1550nm
X2 ZR	0 °C -70 °C	10.3Gbps	-8	-23	5	-	1550nm
X2 DWDM(40km)	0 °C -70 °C	10.3Gbps	2	-1	-14	-	DWDM
X2 DWDM(80km)	0 °C -70 °C	10.3Gbps	-6	-24	5	-	DWDM

Product Description	Operating Temperature	Data Rate	Tx Power(dBm)		Rx Power S(dBm)		Wavelength
			Max	Min	Max	Min	
XENPAK SR	0 °C -70 °C	10.3Gbps	-1	-11.1	-1	-6	850nm
XENPAK LR	0 °C -70 °C	10.3Gbps	0.5	-12.6	1	-3	1310nm
XENPAK ER	0 °C -70 °C	10.3Gbps	0	-16	4	-1	1550nm
XENPAK ZR	0 °C -70 °C	10.3Gbps	-8	-23	5	-	1550nm
XENPAK DWDM(40km)	0 °C -70 °C	10.3Gbps	2	-1	-14	-	DWDM
EXNPAK DWDM(80km)	0 °C -70 °C	10.3Gbps	-6	-24	5	-	DWDM

155M~2.5G SFP Transceivers

APPLICATIONS

- Gigabit Ethernet
- Fiber Channel
- Other Optical Links

FEATURES

- Operating Data Rate up to 2.5Gbps
- Single 3.3V Power Supply and TTL Logic Interface
- Hot-Pluggable SFP Footprint Duplex LC Connector Interface
- Class 1 FDA and IEC60825-1 Laser Safety Compliant
- Compliant with SFP MSA Specification
- Operating Case Temperature Standard: 0°C ~+70°C



SFP Transceiver or Mini-GBIC is a compact, hot-pluggable transceiver used for both telecommunication and data communication applications. It interfaces a network device mother board to a fiber optic or copper networking cable.



Ordering Information:

SFP Transceiver	Part No.	Rate (b/s)	Wavelength	Reach	Tx	Power (dBm)	Rx	Sens.	E.R.	DDM DOM	Fiber
SFP GE	ASF-GE-T	1.25G	-	100m	-	-	-	-	-	NO	CAT5
	ASF85-24-X2	1.25G	850nm	550m	VCSEL	-8~-4	PIN	-18~-0	>9	Optional	MMF
	ASF13-24-10	1.25G	1310nm	10KM	FP	-10~-3	PIN	-22~-3	>9	Optional	SMF
	ASF13-24-20	1.25G	1310nm	20KM	FP	-9~-3	PIN	-22~-3	>9	Optional	SMF
	ASF13-24-40	1.25G	1310nm	40KM	DFB	-4~-0	PIN	-22~-3	>9	Optional	SMF
	ASF15-24-40	1.25G	1550nm	40KM	DFB	-5~-0	PIN	-22~-3	>9	Optional	SMF
	ASF15-24-80	1.25G	1550nm	80KM	DFB	0~4	PIN	-25~-3	>9	Optional	SMF
SFP FE / OC3	ASF15-24-120	1.25G	1550nm	120KM	DFB	1~5	APD	-32~-9	>9	Optional	SMF
	ASF13-03-02	155M	1310nm	2KM	FP	-19~-14	PIN	-32~-5	>10	Optional	SMF
	ASF13-03-15	155M	1310nm	15KM	FP	-15~-8	PIN	-32~-5	>10	Optional	SMF
	ASF13-03-40	155M	1310nm	40KM	FP	-5~-0	PIN	-35~-3	>10	Optional	SMF
	ASF15-03-80	155M	1550nm	80KM	DFB	-3~-2	PIN	-35~-3	>10	Optional	SMF
	ASF15-03-120	155M	1550nm	120KM	DFB	0~5	PIN	-35~-3	>10	Optional	SMF
	ASF13-48-02-D	2.488G	1310nm	2KM	FP	-9~-3	PIN	-18~-3	>8.2	YES	SMF
SFP OC48	ASF13-48-15-D	2.488G	1310nm	15KM	DFB	-5~-0	PIN	-18~-3	>8.2	YES	SMF
	ASF13-48-40-D	2.488G	1310nm	40KM	DFB	-2~-3	APD	-28~-3	>8.2	YES	SMF
	ASF15-48-40-D	2.488G	1550nm	40KM	DFB	-2~-3	PIN	-20~-3	>8.2	YES	SMF
	ASF15-48-80-D	2.488G	1550nm	80KM	DFB	-2~-3	APD	-28~-10	>8.2	YES	SMF
	ASF15-48-100-D	2.488G	1550nm	100KM	DFB	0~5	APD	-28~-10	>8.2	YES	SMF
CWDM SFP	ASFxx-24-40	1.25G	CWDM	40KM	DFB	-5~-0	PIN	-22~-3	>9	Optional	SMF
	ASFxx-24-80	1.25G	CWDM	80KM	DFB	0~4	PIN	-25~-3	>9	Optional	SMF
	ASFxx-24-120	1.25G	CWDM	120KM	DFB	1~5	APD	-32~-9	>9	Optional	SMF
BIDI SFP FE	ABL35-03-02	155M	TX1310	2KM	FP	-15~-8	PIN	-30~-8	>10	Optional	SMF
	ABL53-03-02	155M	TX1550	2KM	FP	-15~-8	PIN	-30~-8	>10	Optional	SMF
	ABL35-03-20	155M	TX1310	20KM	FP	-13~-8	PIN	-34~-5	>10	Optional	SMF
	ABL53-03-20	155M	TX1550	20KM	FP	-13~-8	PIN	-34~-5	>10	Optional	SMF
	ABL35-03-80	155M	TX1310	80KM	DFB	-2~-3	PIN	-35~-3	>10	Optional	SMF
	ABL53-03-80	155M	TX1550	80KM	DFB	-3~-2	PIN	-35~-3	>10	Optional	SMF
BIDI SFP GE	ABL34-24-02	1.25G	TX1310	2KM	FP	-14~-10	PIN	-22~-3	>9	Optional	SMF
	ABL43-24-02	1.25G	TX1490	2KM	FP	-14~-10	PIN	-22~-3	>9	Optional	SMF
	ABL34-24-20	1.25G	TX1310	20KM	FP	-9~-3	PIN	-22~-3	>9	Optional	SMF
	ABL43-24-20	1.25G	TX1490	20KM	DFB	-9~-3	PIN	-22~-3	>9	Optional	SMF
	ABL45-24-80	1.25G	TX1490	80KM	DFB	0~5	PIN	-24~-3	>9	Optional	SMF
	ABL54-24-80	1.25G	TX1550	80KM	DFB	0~5	PIN	-24~-3	>9	Optional	SMF
BIDI SFP OC48	ABL35-48-15-D	2.488G	TX1310	15KM	FP	-3~-8	PIN	-18~-3	>8.2	YES	SMF
	ABL53-48-15-D	2.488G	TX1550	15KM	FP	-3~-8	PIN	-18~-3	>8.2	YES	SMF

For more products or customized services, please contact info@10gtek.com 

For 80KM QSFP+ Solution



QSFP+ Covertor

SFP+ 80KM Transceivers

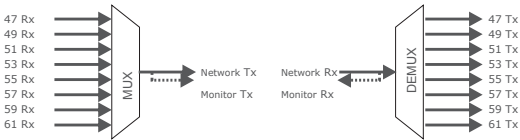
- Unique design
- Up to 80KM reach
- Power inside
- EEPROM

MUX/DEMUX/OADM CWDM/DWDM

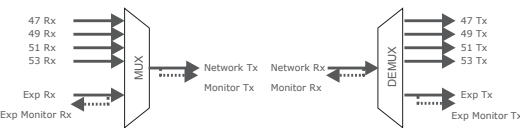


CWDM-CHASSIS-2=C

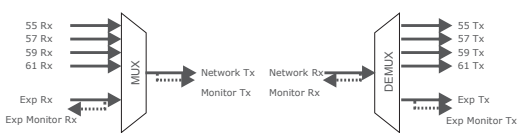
CWDM-MUX-8A=C



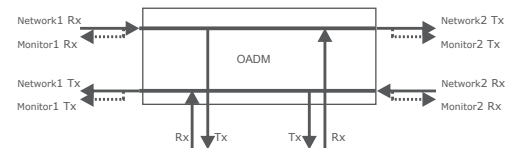
CWDM-OADM4-1=C



CWDM-OADM4-2=C



CWDM-OADM1-XXXX=C

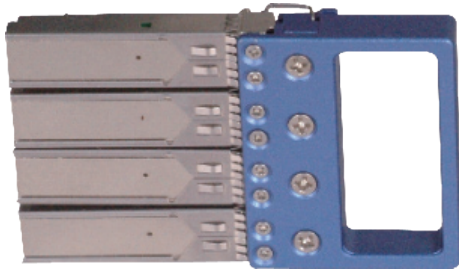


C-SERIES MUX/DEMUX/OADM

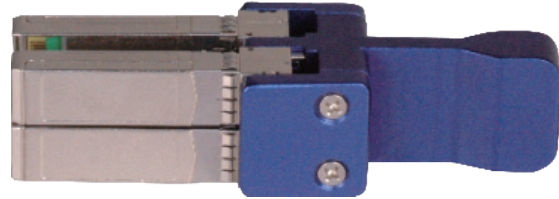
P/N	Description
CWDM-CHASSIS-2=C	2-slot CWDM chassis (Not Sell Along)
CWDM-MUX8A=C	8-channel (1470, 1490, 1510, 1530, 1550, 1570, 1590, and 1610nm) multiplexer/demultiplexer (with monitor ports option), LC connectors
CWDM-OADM4-x=C	4 channels optical add/drop multiplexer (OADM) (with monitor ports option), LC connectors
CWDM-OADM-xxxx=C	Single-wavelength (xxxxnm) dual-channel OADM (with monitor ports option), LC connectors
WDM-1300-1550-S=C	Y-cable WDM filter with a 1300-nm port, a CWDM 1550-nm port, and a network port to multiplex or demultiplex 1300-nm channels with CWDM or any 1550-nm channels



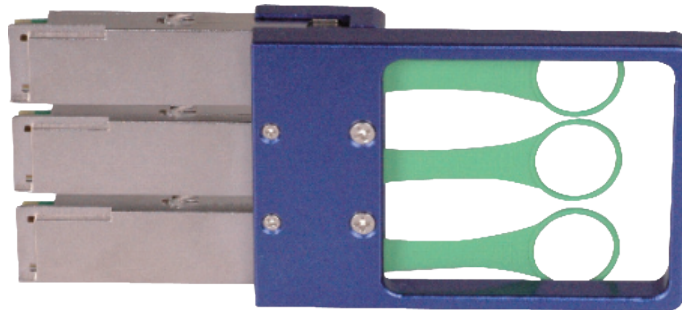
Loopback System



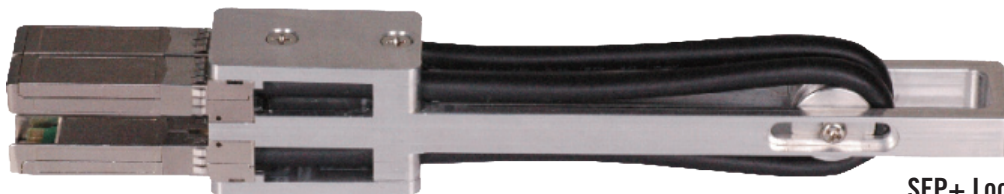
SFP+ Loopback 1x4



SFP+ Loopback 2x2



QSFP+ Loopback 1x3



SFP+ Loopback 2x2



QSFP+ Loopback 2x2

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