

FIBERSTAMP Bandwidth POST

Optical Transceivers for
Data Center and Telecom&5G



Intergrated Solutions For Different Application Field



Data Center & AI
Computing



Metro Telecom & 5G



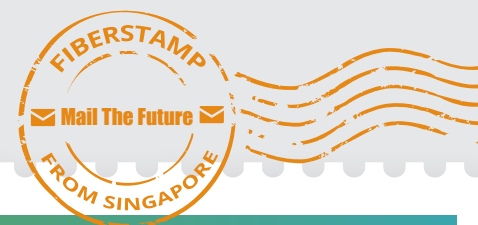
Lab Testing Equipment



UHD SDI Video
Transmission



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Optical Transceivers
For DCI



AOC For DCI



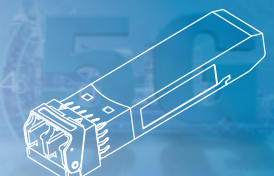
DAC For DCI



Immersion Cooling
Optics For DCI



Optical Transceiver
For 5G and Metro
Telecom



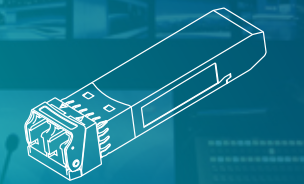
HAOC for 5G
Front-Haul Base
Station



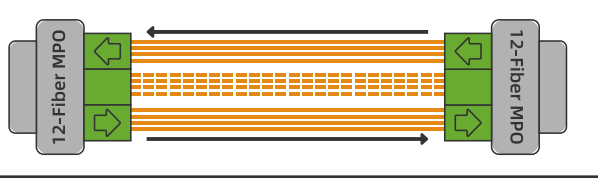
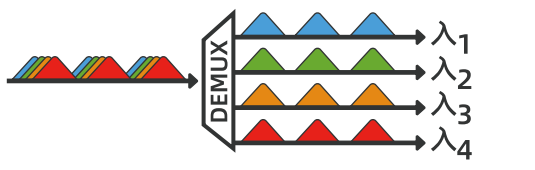
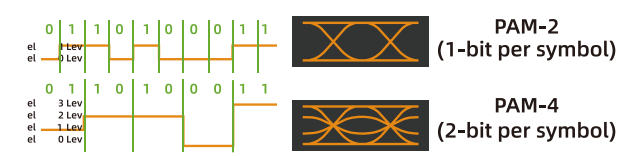
Transceiver Checkers
& Loopback



SDI Optical
Interconnect
Products



For Utmost Economy — Technologies to Lower Cost!

Increase Baud Rate (10G-25G-50G)		SR, LR, ER etc.
Increase Number of Fibers (Parallel)		SR4, PSM4, DR4, SR8, PSM8, DR8
Increase Number of Wavelengths (xWDM)		LR4, ER4, BiDi, CWDM4, LR8
Modulation Format Upgrade (NRZ to PAM4)		100G DR1/FR1/LR1, 100G BiDi, 400G DR4, 400G CWDM4, 800G DR8, 800G FR8, 800G 2xFR4 etc.

Perfect Quality Management System

Perfect Reliability Verification Capability Rigorous testing and verification capabilities Mature ESD and safety testing and analysis	Original Triangle CSD Quality Management Teams DQE: R & D Quality improvement SQE: Supplier management and evaluation CQE: Timely consumer problems handling	Quality Assuare for Underlayer Units and Chips Accurate product service life evaluation Lean component selection and evaluation system Timely response to market feedback
		
		
		
	TÜV Rheinland® Precisely Right.	

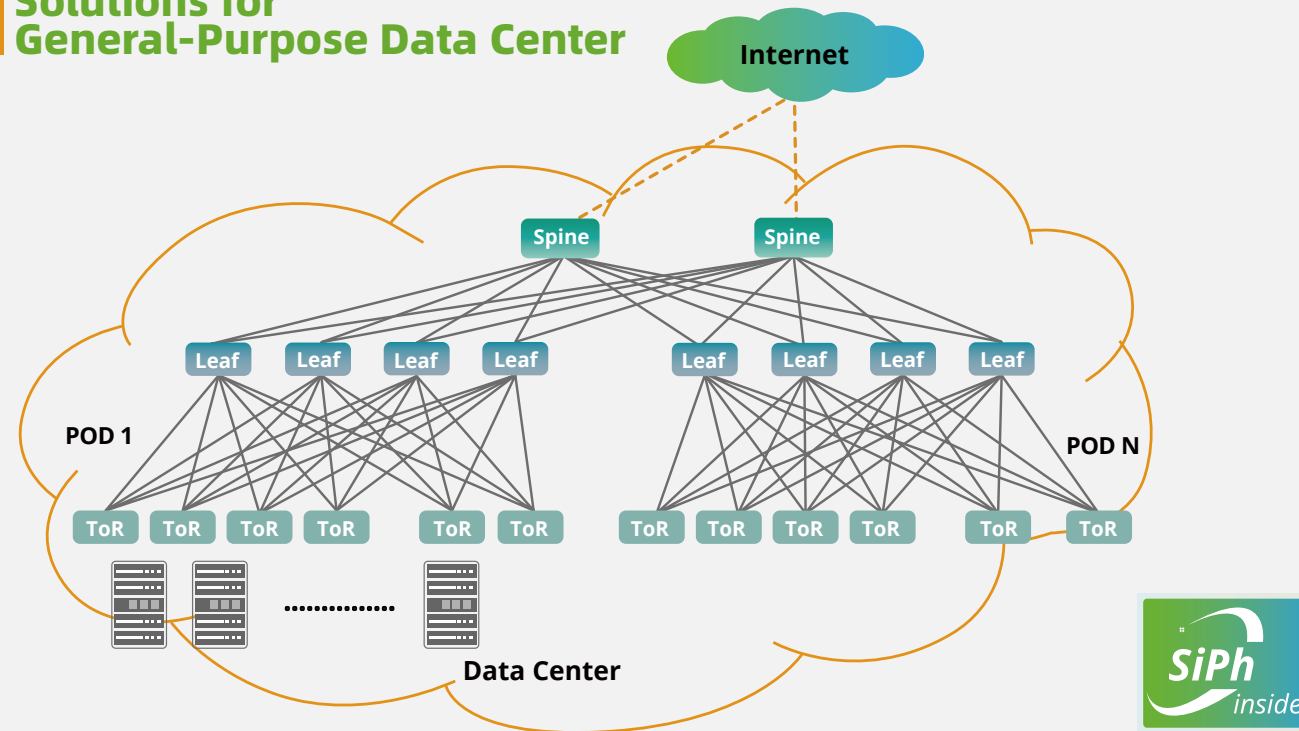
PRODUCT INFRASTRUCTURE—10GE ~ 800GE

Flexible scale paths for different fiber options

Data Rate	SMF		MMF		Twinax
	Duplex Simplex	Parallel	Duplex	Parallel	
10G	LR/LRM/ER/ZR BR10/20/40/80 CWDM DWDM		SR/AOC		CR
25G	LR/ER BR10/20/40 CWDM (O-band) LWDM DWDM (C-band)		SR/eSR/AOC		CR
40G	LR4/ER4/ZR4	PSM4 (2km/10km/30km)	SR-BD (2x 20G NRZ)	SR4/AOC	CR4
50G	LR/ER BR10/20/30 DWDM (C-band)				CR
100G	DR1/FR1 (SiPh) LR1/ER1 CWDM4/CLR4/4WDM-10 4WDM-40/ER4 Lite ER4/eER4/ZR4	DWDM4 80km DWDM1 40km PSM4 (2km/10km/20km)	SR-BD (2x 50G PAM4) SWDM4	SR4/eSR4/AOC SR10 SR12/AOC (120G CXP)	CR4
200G	FR4/LR4/ER4 2x CWDM4 LR8	DR4(DML) PSM8 (2km/10km/20km)		SR4/AOC SR8/AOC	CR4 CR8
400G	CWDM4 (FR4/LR4) FR8/LR8/2xFR4	DR4/DR4+/DR4++(SiPh) PSM8 (2km/10km/20km)		SR4/AOC SR8/AOC	CR4 CR8
800G	CWDM8 (FR8/LR8) 2xCWDM4 (2xFR4/LR4 SiPh)	DR8/DR8+/DR8++(SiPh)		SR8/AOC	CR8

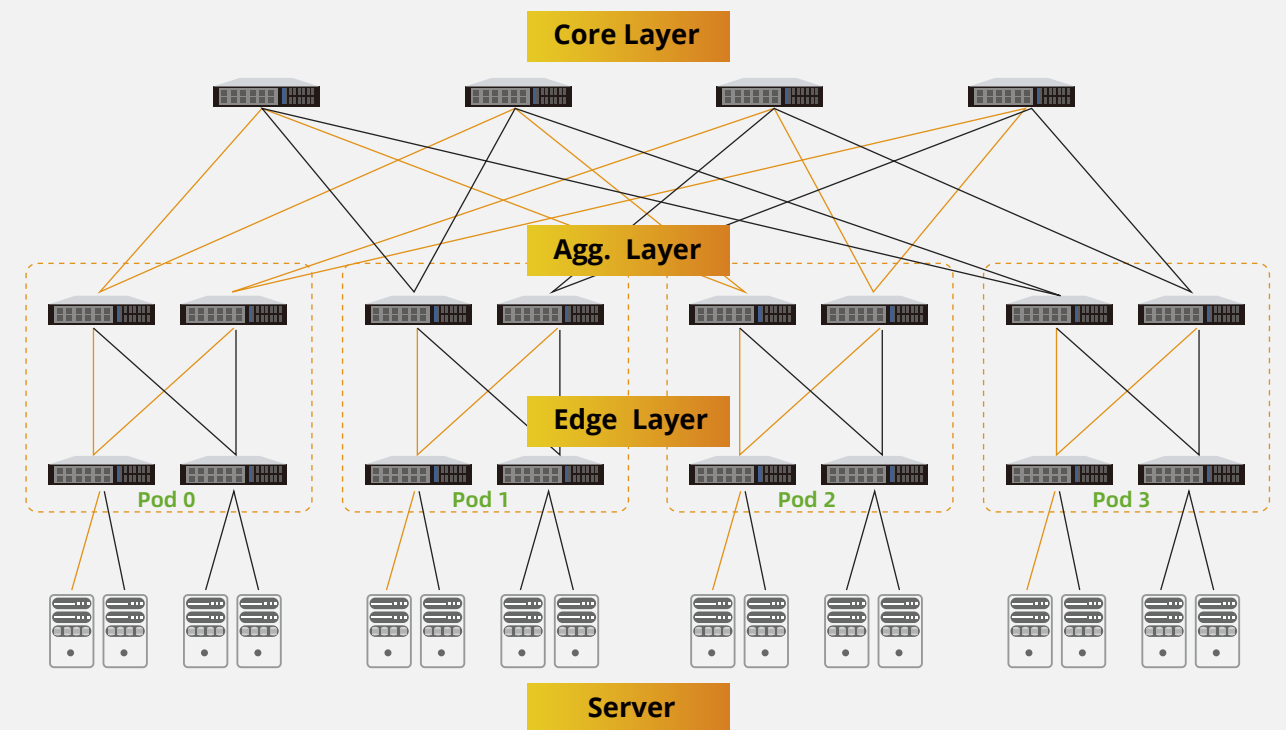
Solutions for Data Center & AI Computing

Solutions for General-Purpose Data Center



Data Rate	100G	200G		400G		800G
DCI	100G/200G CFP2 DCO	200G CFP2 DCO	200G /400G CFP2 DCO	400G CFP2 / QSFP-DD OpenZR+ DCO		800G ZR/ZR+ DCO
Spine - Spine (≤10km)	100G LR4	200G LR8	200G LR4 / 400G LR4	400G LR4	400G CWD4M4/LR4 /DR4++(SiPh)	800G 2xFR4/2xLR4/ LR8/DR8++(SiPh)
Leaf - Spine (≤2km)	100G CWD4M4	200G PSM8	200G DR4	400G 2xFR4 to 2x200G FR4	400G DR4/DR4+ (SiPh)	800G DR8/DR8+ (SiPh)
		200G 2xCWD4M4	200G FR4		400G FR4 (SiPh)	800G FR8 (SiPh)
TOR - Leaf (≤100m)	100G SR4	200G SR8	200G SR4	200G SR4	400G SR4/VR4	800G SR8/VR8
Server - TOR (DAC/AOC) (≤20m)	25G	25G	200G to 100G	25G/50G/100G	112G	800G to 4x200G
Serdes	25G NRZ	25G NRZ	50G PAM4	25G NRZ/ 50G PAM4	112G PAM4	100G PAM4
Highlights	Mature Applications	Low Latency	Breakout Access, Hard to Maintain	Point to Point Access, Same Architecture, New Form Factor	Cost/Power Reduction	Multiple Generation, 200G Optical Port

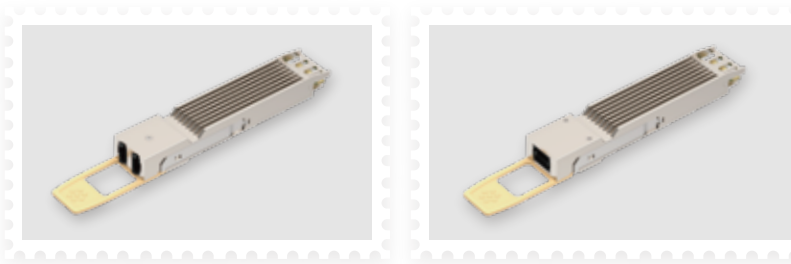
Solutions for AI Computing Data Center



Location	Solution 1	Solution 2	Solution 3
Core Layer	800G 2xFR4/LR4	800G DR8/DR8+/DR8++	800G SR8
Agg. Layer	400G FR4/LR4	400G DR8/DR8+/DR8++	400G SR4
Edge Layer	400G SR4	400G SR4	400G SR4
Edge to Server	400G SR4/AOC 800G to 2x 400G or 4x 200G DAC	400G SR4/AOC 800G to 2x 400G or 4x 200G DAC	400G SR4/AOC 800G to 2x 400G or 4x 200G DAC
Highlight	Speed Up	Great Scalability	Identical Bandwidth

Optical Transceivers

• 800G OSFP/QSFP-DD Series



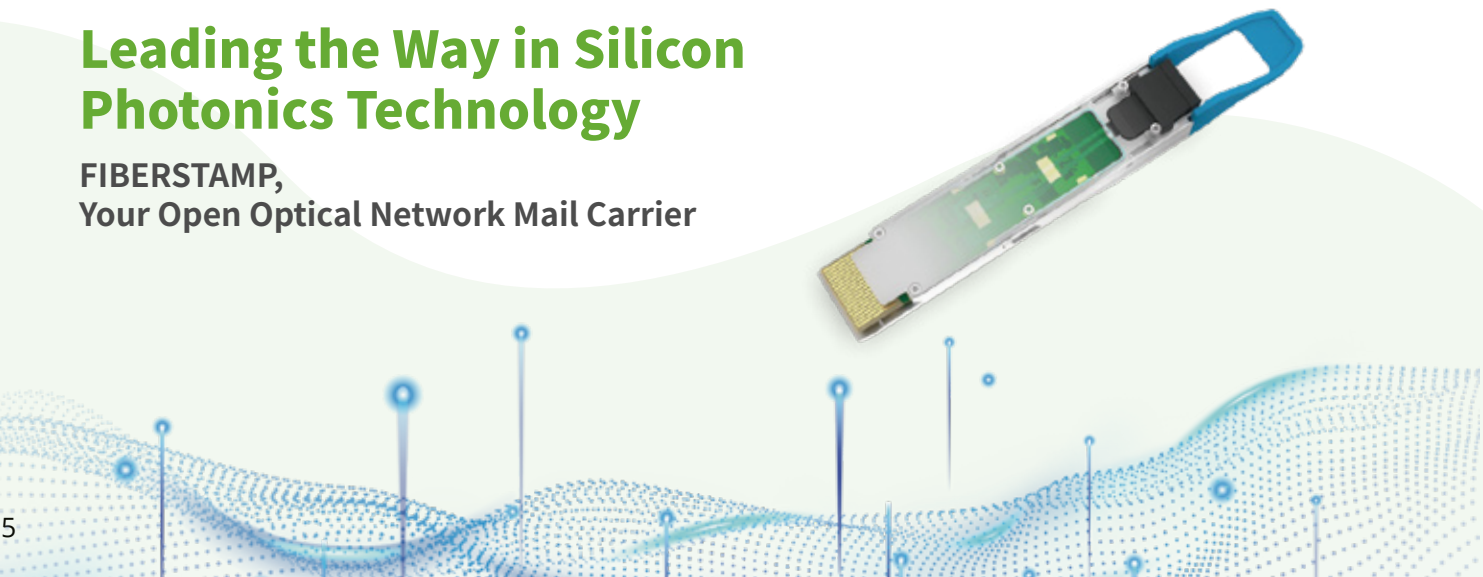
Features

- Hot-pluggable QSFP-DD/OSFP form factor
- 8-channel full-duplex transceiver modules
- Data rate up to 850Gbps
- 8x 106.25Gbps PAM4 optical interface
- 8x 106.25Gbps PAM4 electrical interface
- Compliant with QSFP-DD/OSFP MSA and CMIS

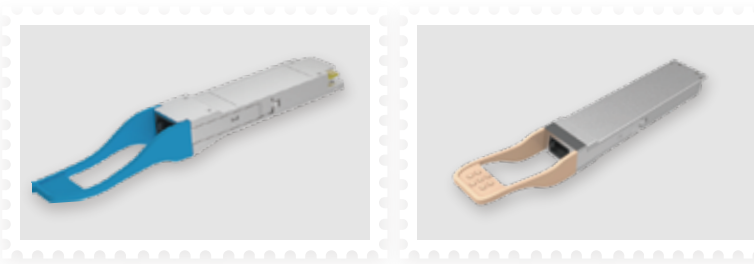
Product Name	Wavelength	LD	PD	Max Distance or Length	Optical Interface	Max.Power Consumption	Part Number
800G QSFP-DD SR8	850nm	VCSEL	PIN	70m(OM3)/100m(OM4)	MPO	14W	FEL-800S8M10C
800G OSFP SR8	850nm	VCSEL	PIN	70m(OM3)/100m(OM4)	MPO	14W	FEU-800S8M10C
800G QSFP DD VR8	850nm	VCSEL	PIN	30m(OM3)/50m(OM4)	MPO	14W	FEL-800S8M05C
800G OSFP VR8	850nm	VCSEL	PIN	30m(OM3)/50m(OM4)	MPO	14W	FEU-800S8M05C
800G QSFP-DD DR8	1310nm	SiPh	PIN	500m	MPO	18W	FUL-800P4M50C
800G QSFP-DD DR8+	1310nm	SiPh	PIN	2km	MPO	18W	FUL-800P4K02C
800G QSFP-DD DR8++	1310nm	SiPh	PIN	10km	MPO	18W	FUL-800P4K10C
800G QSFP-DD FR8	CWDM4	EML	PIN	2km	Duplex LC	18W	FUL-800C4K02C
800G QSFP-DD LR8	CWDM4	EML	PIN	10km	Duplex LC	18W	FUL-800C4K10C
800G QSFP DD 2xFR4	2x CWDM4	SiPh	PIN	2km	Dual Duplex LC	18W	FTL-800C4K02C
800G QSFP-DD 2xLR4	2x CWDM4	SiPh	PIN	10km	Dual Duplex LC	18W	FTL-800C4K10C
800G OSFP DR8	1310nm	SiPh	PIN	500m	MPO	18W	FUU-800P4M50C
800G OSFP DR8+	1310nm	SiPh	PIN	2km	MPO	18W	FUU-800P4K02C
800G OSFP DR8++	1310nm	SiPh	PIN	10km	MPO	18W	FUU-800P4K10C
800G OSFP 2xFR4	2x CWDM4	SiPh	PIN	2km	Dual Duplex LC	18W	FTU-800C4K02C
800G OSFP 2xLR4	2x CWDM4	SiPh	PIN	10km	Dual Duplex LC	18W	FTU-800C4K10C
800G OSFP DR8/DR8+ TRO	1310nm CW+MZ	SiPh	PIN	500m	Dual MPO12	8W	TBD
800G QSFP-DD DR8/DR8+ TRO	1310nm CW+MZ	SiPh	PIN	500m	MPO16	8W	TBD

Leading the Way in Silicon Photonics Technology

FIBERSTAMP,
Your Open Optical Network Mail Carrier



• 400G QSPDD/QSFP112/OSFP-RHS Series

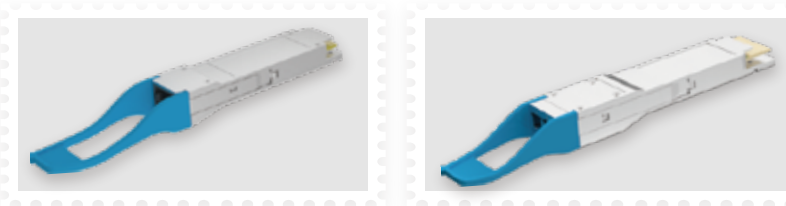


Features

- Hot-pluggable QSFP-DD/QSFP112/OSFP-RHS form factor
- 4/8-channel full-duplex transceiver modules
- Data rate up to 425Gbps
- 8x 53.125Gbps or 4x 106.25Gbps PAM4 optical interface
- 8x 53.125Gbps PAM4 electrical interface
- Compliant with QSFP-DD/QSFP112/OSFP-RHS MSA and CMIS

Product Name	Wavelength	LD	PD	Max Distance or Length	Optical Interface	Max.Power Consumption	Part Number
400G QSFP-DD SR8	850nm	VCSEL	PIN	70m(OM3)/100m(OM4)	MPO	8W	FEL-400S8M10C
400G QSFP-DD FR8	LWDM8	EML	PIN	2km	Dual LC	12.5W	FBL-400C4xK02C
400G QSFP-DD LR8	LWDM8	EML	PIN	10km	Dual LC	12.5W	FBL-400C4K10C
400G QSFP-DD PSM8	1310nm	EML	PIN	2km/10km	MPO	11W	FEL-400P8K20C FEL-400P8K10C
400G QSFP-DD xPSM8	1310nm	EML	PIN	20km	MPO	11W	FEL-400P8K20C
400G QSFP-DD 2x FR4	2x CWDM4	DML	PIN	2km	Dual Duplex LC	9W	FBL-400C4xK02C
400G QSFP-DD SR4	850nm	VCSEL	PIN	60m(OM3)/100m(OM4)	MPO	8W	FEL-400S4M10C
400G QSFP-DD FR4	CWDM4	EML/SiPh	PIN	2km	Dual LC	11W	FTL-400C4K02C
400G QSFP-DD CWDM4	CWDM4	EML/SiPh	PIN	6km	Dual LC	11W	FTL-400C4K06C
400G QSFP-DD LR4	CWDM4	EML/SiPh	PIN	10km	Dual LC	11W	FBL-400P4K10C
400G QSFP-DD DR4	1310nm	SiPh	PIN	500m	MPO	10W	FUL-400P4M50C
400G QSFP-DD DR4+	1310nm	SiPh	PIN	2km	MPO	10W	FUL-400P4K02C
400G QSFP-DD DR4++	1310nm	SiPh	PIN	10km	MPO	10W	FUL-400P4K10C
400G QSFP112 VR4	850nm	VCSEL	PIN	30m(OM3)/50m(OM4)	MPO	8W	FEJ-400S4M05C
400G QSFP112 SR4	850nm	VCSEL	PIN	60m(OM3)/100m(OM4)	MPO	8W	FEJ-400S4M10C
400G QSFP112 DR4	1310nm	SiPh	PIN	500m	MPO	10W	FUJ-400P4M50C
400G QSFP112 DR4+	1310nm	SiPh	PIN	2km	MPO	10W	FUJ-400P4K02C
400G QSFP112 DR4++	1310nm	SiPh	PIN	10km	MPO	10W	FUJ-400P4K10C
400G QSFP112 FR4	CWDM4	EML/SiPh	PIN	2km	Dual LC	11W	FTJ-400C4K02C
400G QSFP112 CWDM4	CWDM4	EML/SiPh	PIN	6km	Dual LC	11W	FTJ-400C4K06C
400G QSFP112 LR4	CWDM4	EML/SiPh	PIN	10km	Dual LC	11W	FTJ-400C4K10C
400G OSFP-RHS VR4	850nm	VCSEL	PIN	30m(OM3)/50m(OM4)	MPO	8W	FER-400S4M05C
400G OSFP-RHS SR4	850nm	VCSEL	PIN	60m(OM3)/100m(OM4)	MPO	8W	FER-400S4M10C
400G OSFP-RHS DR4	1310nm	SiPh	PIN	500m	MPO	10W	FUR-400P4M50C
400G OSFP-RHS DR4+	1310nm	SiPh	PIN	2km	MPO	10W	FUR-400P4K02C
400G OSFP-RHS DR4++	1310nm	SiPh	PIN	10km	MPO	10W	FUR-400P4K10C
400G OSFP-RHS FR4	CWDM4	EML/SiPh	PIN	2km	Dual LC	11W	FTR-400C4K02C
400G OSFP-RHS CWDM4	CWDM4	EML/SiPh	PIN	6km	Dual LC	11W	FTR-400C4K06C
400G OSFP-RHS LR4	CWDM4	EML/SiPh	PIN	10km	Dual LC	11W	FTR-400C4K10C

• 200G QSFP56/QSFP-DD Series

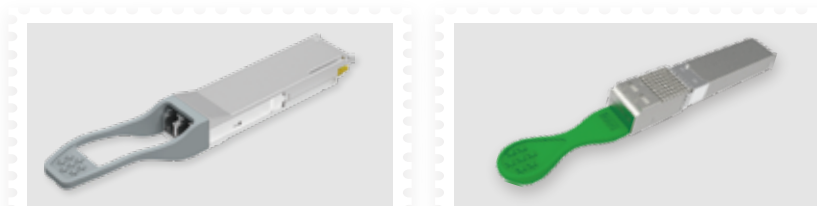


Features

- Hot-pluggable QSFP56/QSFP-DD form factor
- 4/8-channel full-duplex transceiver modules
- Data rate up to 212.5Gbps or 206.25Gbps
- 4x 53.125Gbps or 8x 25.78125Gbps PAM4 optical interface
- 4x 53.125Gbps or 8x 25.78125Gbps PAM4 electrical interface
- Compliant with QSFP56/QSFP-DD MSA and CMIS

Product Name	Wavelength	LD	PD	Max Distance or Length	Optical Interface	Max.Power Consumption	Part Number
200G QSFP56 SR4	850nm	VCSEL	PIN	70m(OM3)/100m(OM4)	MPO	5W	FEH-200S4M10C
200G QSFP56 DR4	1310nm	DML	PIN	500m	MPO	5.5W	FEH-200P4M50C
200G QSFP56 FR4	CWDM4	DML	PIN	2km	Dual LC	6W	FBH-200C4K02C
200G QSFP56 LR4	CWDM4/LWDM4	DML	PIN	10km	Dual LC	7W	FBH-200L4K10C
200G QSFP-DD SR8	850nm	VCSEL	PIN	70m(OM3)/100m(OM4)	MPO	4W	FEL-200S8M10x
200G QSFP-DD PSM8	1310nm	DML	PIN	2km/10km	MPO	6W/6.5W	FBL-200CLK10C
200G QSFP-DD xPSM8	1310nm	DML	PIN	20km	MPO	6.5W	FBL-200CLK20C
200G QSFP-DD LR8	LWDM8	DML	PIN	10km	Dual LC	7.5W	FBL-200L8K10C
200G QSFP-DD 2x CWDM4	2x CWDM4	DML	PIN	2km	Dual Duplex LC	7W	FBL-200CLxK02C

• 100G QSFP28/SFP-DD Series

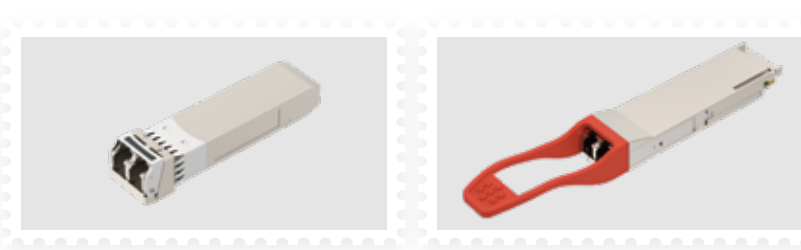


Features

- Hot-pluggable QSFP28/SFP-DD form factor
- 1/4-channel full-duplex transceiver modules
- Data rate up to 103.125/106.25/112.2Gbps
- 4x 25.78125 or 2x 53.125 or 1x106.25 Gbps interface
- EEPROM customized with I²C interface
- RoHS compatible (lead free)

Product Name	Wavelength	LD	PD	Max Distance or Length	Optical Interface	Max.Power Consumption	Part Number
100G QSFP28 SR4	850nm	VCSEL	PIN	70m(OM3)/100m(OM4)	MPO	2W	FEG-100S4M10C
100G QSFP28 eSR4	850nm	VCSEL	PIN	200m(OM3)/300m(OM4)	MPO	2W	FEG-100B2M300C
100G QSFP28 PSM4/xPSM4	1310nm	DML	PIN	2km/10km	MPO	3.5W	FEG-100P4K10C
100G QSFP28 CLR4/CWDM4	CWDM4	DML	PIN	2km/10km	Dual LC	3.5W	FBG-100CLK10C FBG-100C4K10C
100G QSFP28 LR4	LWDM4	DML	PIN	10km/20km	Dual LC	3.5W	FBG-100L4K20x
100G QSFP28 ER4 Lite	LWDM4	DML	APD	30km/40km	Dual LC	3.5W	FBG-100LLK40C FBG-112LLK40C
100G QSFP28 ER4	LWDM4	EML	PIN+SOA	40km	Dual LC	6W	FBG-100L4K40C FBG-112L4K40C
100G QSFP28 ZR4	LWDM4	EML	PIN+SOA	80km	Dual LC	6W	FBG-100L4K80C FBG-112L4K80C
100G QSFP28 SR1.2	850/910nm	VCSEL	PIN	100m(OM4)/150m(OM5)	Dual LC	3W	FBG-100B2M15C
100G QSFP28 DR1	1310nm	EML	PIN	500m	MPO	3.5W	FBG-10031KM50C
100G QSFP28 FR1	1310nm	EML	PIN	2km	Dual LC	3.5W	FBG-10031K02C
100G QSFP28 LR1	1310nm	EML	PIN	20km	Dual LC	4W	FBG-10031K20C
100G QSFP28 ER1	1310nm	EML	APD	40km	Dual LC	4W	FBG-10031K40C
100G QSFP28 BiDi LR1	1271/1331nm	EML	PIN	10km	Single LC	4.5W	FCG-1002733K40C FCG-1003327K40C
100G QSFP28 PSM DWDM4	C-band 100GHz	EML	PIN+SOA	40km	MPO	4.5W	FEG-100D4K40C
100G QSFP28 PSM DWDM4	O-band 150GHz	DML	PIN+EDFA+DCM	80km	MPO	6W	FEG-100x4K80C
100G QSFP28 DR1	1310nm	SiPh	PIN	500m	Dual LC	4W	FTG-10031M50C
100G QSFP28 FR1	1310nm	SiPh	PIN	2km	Dual LC	4W	FTG-10031K02C
100G QSFP28 LR1	1310nm	SiPh	PIN	10km	Dual LC	4W	FTG-10031K10C
100G QSFP28 DWDM1	O-band	SiPh	PIN	25km	Dual LC	4W	FTG-100x4K25C
100G SFP DD FR1	1310nm	EML	PIN	2km	Dual LC	3.5W	FBK-10031K02C
100G SFP DD LR1	1310nm	EML	PIN	10km	Dual LC	3.5W	FBK-10031K10C
100G SFP DD ER1	1310nm	EML	PIN	30km	Dual LC	3.5W	FBK-10031K30C

• 50G/40G/25G Series

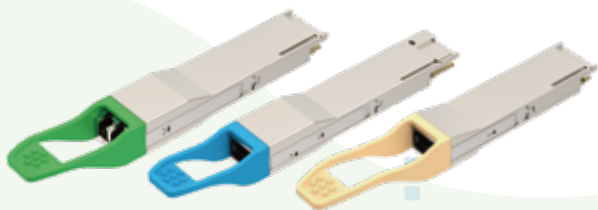


Features

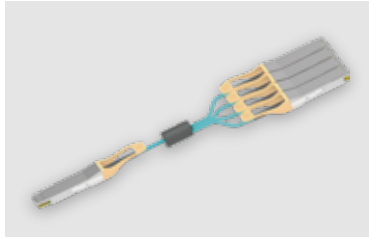
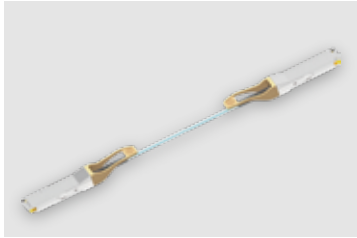
- Including SFP56 50G PAM4, QSFP+ 40G 4x10G NRZ and SFP28 25G NRZ
- Comply with SFP28/SFP56/QSFP+ specification
- Meets SFF-8402, SFF-8431 and SFF-8432 specifications
- The transmission rate is up to 10.3125Gbps~53.125Gbps
- Support EEPROM modify
- RoHS environmental standard

Product Name	Wavelength	LD	PD	Max Distance or Length	Optical Interface	Max.Power Consumption	Part Number
50G SFP56 SR	850nm	VCSEL	PIN	70m(OM3)/100m(OM4)	Duplex LC	2W	FBD-E5085M10C FBD-E5085M10T
50G SFP56 LR	1310nm	EML	PIN	10km	Duplex LC	3W	FBD-E5031K10C FBD-E5031K10T
50G SFP56 ER	1310nm	EML	APD	40km	Duplex LC	3W	FBD-E5031K40C FBD-E5031K40T
40G Q5FP+ SR4	850nm	VCSEL	PIN	70m(OM3)/100m(OM4)	MPO12	1.5W	FEF-E40S4M15C FEF-E40S4M15T
40G QSFP+PSM4	1310nm	DML	PIN	2km/10km	MPO12	3.5W	FEF-E40P4K10C
40G QSFP+ LR4	CWDM4	DML	PIN	2km/10km	Duplex LC	3.5W	FBF-E40C4K10C FBF-E40C4K10T
40G QSFP+ ER4	CWDM4	DML	APD	40km	Duplex LC	3.5W	FBF-N40C4K40C
40G QSFP+ ZR4	LWDM4	EML	APD	80km	Duplex LC	6W	FBF-E40L4K80C
25G SFP28 SR	850nm	VCSEL	PIN	70m(OM3)/100m(OM4)	Duplex LC	1W	FBC-E2585M10C FBC-D2585M10T
25G SFP28 LR	1310nm	DML	PIN	10km/20km	Duplex LC	1.2W	FBC-D2531K20C FBC-D2531K20T
25G SFP28 ER	1310nm	EML	APD	40km	Duplex LC	1.8W	FBC-D2531K40C FBC-D2531K40T
25G SFP28 ZR	1300nm	EML	SOA+PIN	80km	Duplex LC	2.5W	FBC-D2531K80C

FIBERSTAMP
An Influential Player in
200G Optical Modules



800G/400G/200G/100G/25G Active Optical Cables (AOC)



Features

- 1/4/8-channel full-duplex active optical cable
- 850nm VCSEL transmitter and PIN receiver
- Hot-pluggable SFP+/QSFP28/QSFP-DD/OSFP/OSFP-RHS MSA-compliant connectors
- Compliant with CMIS, SFF-8636 and SFF-8665
- OM3, OM4 or OM5 MMF optional
- EEPROM customized with I²C interface
- RoHS compatible (lead free)

Product Name	Wavelength	Max Distance or Length	Max.Power Consumption	Part Number
800G QSFP-DD AOC	850nm	1-100m	13W	FYL-800MxxxC
800G QSFP-DD to 2/4/8x Breakout AOC	850nm	1-100m	13W	FYLxx-800MxxxC
800G OSFP AOC	850nm	1-100m	13W	FYU-800MxxxC
800G OSFP to 2/4/8x Breakout AOC	850nm	1-100m	13W	FYUxx-800MxxxC
400G QSFP-DD AOC	850nm	1-100m	9W	FYL-400MxxxC
400G OSFP AOC	850nm	1-100m	9W	FYU-400MxxxC
400G QSFP-DD to 2/4/8x Breakout AOC	850nm	1-100m	9W (400G) / 5W (200G) / 4.5W (100G) / 2W (50G)	FYLxx-400MxxxC
400G QSFP112 AOC	850nm	1-100m	9W	FYJ-400MxxxC
400G QSFP112 to 2/4x Breakout AOC	850nm	1-100m	9W	FYJxx-400MxxxC
400G OSFP-RHS AOC	850nm	1-100m	9W	FYR-400MxxxC
400G OSFP-RHS to 2/4x Breakout AOC	850nm	1-100m	9W	FYRxx-400MxxxC
200G QSFP-DD AOC	850nm	1-100m	4W	FYL-200MxxxC
200G QSFP-DD to 2/4/8x AOC	850nm	1-100m	4W(200G)/2W(100G)/1.5W(50G) / 1W(25G)	FYLxx-200MxxxC
200G QSFP56 AOC	850nm	1-100m	5W	FYH-200MxxxC
200G QSFP56 to 2/4x AOC	850nm	1-100m	5W(200G) / 4.5W(100G) /2W(50G)	FYH-200MxxxC
100G QSFP28 AOC	850nm	1-100m/300m	2W	FYG-100MxxxC
100G QSFP28 to 2/4x AOC	850nm	1-100m/300m	2W (100G) /1.5W (50G)/1W (25G)	FYGxx-100MxxxC
25G SFP28 AOC	850nm	1-100m/300m	1W	FYC-M25Mxxxx

800G/400G/200G/100G/25G Direct Attach Cables (DAC)

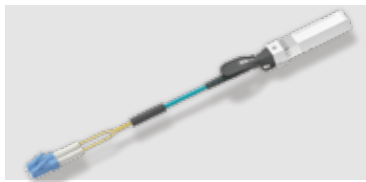


Features

- Hot-pluggable MSA-compliant DAC cables
- Data rate up to 25.78-850Gbps
- 24/26/28/30 AWG optional
- ACC/PCC BER better than 1E-13
- Support immersion liquid cooling
- Commercial case temperature range of 0°C to 70°C
- RoHS compatible (lead free)

Product Name	Length	AWG	Part Number
PCC Series			
800G QSFP-DD PCC	0.5-2m	30/26	FWL-800xxxxxC
800G QSFP-DD to 2/4/8x Breakout PCC	0.5-2m	30/26	FWLxx-800xxxxxC
800G OSFP PCC	0.5-2m	30/26	FWU2J-800xxxxxC
800G OSFP to 2/4/8x Breakout PCC	0.5-2m	30/26	FWU2Jxx-800xxxxxC
400G QSFP-DD PCC	3m	30/28/26	FWL-400xxxxxC
400G QSFP-DD to 2/4/8x Breakout PCC	3m	30/28/26	FWLxx-400xxxxxC
400G QSFP112 PCC	0.5-2m	30/26	FWU-400xxxxxC
400G QSFP112 to 2/4/8x Breakout PCC	0.5-2m	30/26	FWUxx-400xxxxxC
400G OSFP-RHS PCC	0.5-2m	30/26	FWR-400xxxxxC
400G OSFP-RHS to 2/4/8x Breakout PCC	0.5-2m	30/26	FWRxx-400xxxxxC
200G QSFP-DD PCC	0.5-5m	30/26	FWLxx-20030xxxC
200G QSFP-DD to 2/4/8x Breakout PCC	0.5-5m	30/26	FWLxx-20030xxxC
200G QSFP56 PCC	0.5-3m	30/26	FWH-20030xxxC
200G QSFP56 to 2/4x Breakout PCC	0.5-3m	30/26	FWLxx-20030xxxC
100G QSFP28 PCC	0.5-5m	30/26	FWG-10030xxxC
100G QSFP28 to 2/4x Breakout PCC	0.5-5m	30/26	FWGxx-10030xxxC
25G SFP28 PCC	0.5-5m	30/26	FWLxx-20030xxxC
ACC Series			
800G QSFP-DD ACC	5m	30/28/26	FZL-800xxxxxC
800G QSFP-DD to 2/4/8x Breakout ACC	5m	30/28/26	FZLxx-800xxxxxC
800G OSFP ACC	5m	30/28/26	FZU-800xxxxxC
800G OSFP to 2/4/8x Breakout ACC	5m	30/28/26	FZUxx-800xxxxxC
400G QSFP-DD ACC	0.5-7m	30/28/26	FZL-400xxxxxC
400G QSFP-DD to 2/4/8x Breakout ACC	0.5-7m	30/28/26	FZLxx-400xxxxxC
400G QSFP112 ACC	0.5-5m	30/26	FZU-400xxxxxC
400G QSFP112 to 2/4/8x Breakout ACC	0.5-5m	30/26	FZUxx-400xxxxxC
400G OSFP-RHS ACC	0.5-5m	30/26	FZR-400xxxxxC
400G OSFP-RHS to 2/4/8x Breakout ACC	0.5-5m	30/26	FZRxx-400xxxxxC
200G QSFP-DD ACC	0.5-9m	30/26	FZL-200xxxxxC
200G QSFP-DD to 2/4/8x Breakout ACC	0.5-9m	30/26	FZLxx-200xxxxxC
200G QSFP56 ACC	0.5-7m	30/26	FZH-200xxxxxC
200G QSFP56 to 2/4x Breakout ACC	0.5-7m	30/26	FZHxx-200xxxxxC

Immersion Cooling Optical Transceivers



Features

- Hot-pluggable MSA-compliant pigtailed transceiver assemblies
- Data rate up to 10.315-212.5Gbps
- Support immersion liquid cooling
- Customized pigtails available
- Commercial case temperature range of 0°C to 60°C
- RoHS compliant(lead free)

Product Name	Center Wavelength	Max Distance or Length	Optical Interface	Max.Power Consumption	Part Number
800G OSFP SR8	850nm	100m	MPO/Dual MPO	14W	FQU-800S8M10xxx
800G OSFP DR8 SiPh	1310nm	500m	MPO/Dual MPO	14W	FUU-800S8M10xxx
400G QSFP112 SR4	850nm	100m	MPO	10W	FQJ-400SR4M10xxx
400G QSFP112 DR4 SiPh	1310nm	500m	MPO	10W	FUJ-400P4M50Cxxx
400G OSFP-RHS SR4	850nm	100m	MPO	10W	FQR-400SR4M10xxx
400G OSFP-RHS DR4 SiPh	1310nm	500m	MPO	10W	FQR-400P4K10xxx
200G QSFP56 SR4	850nm	100m	MPO	5W	FQH-200S4M10xxx
100G QSFP28 SR4	850nm	100m/300m	MPO	2W	FQG-100S4M10xxx FQG-100S4M30xxx
100G QSFP28 PSM4	1310nm	2km/10km	MPO	3.5W	FQG-100P4K02xxx FQG-100P4K10xxx
40G QSFP+ SR4	850nm	70m/100m	MPO	2W	FQF-M4085M07xxx FQF-M4085M10xxx
25G SFP28 SR	850nm	100m/300m	MPO	1W	FMC-M2585M10xxx FMC-M2585M30xxx
25G SFP28 LR	1310nm	10km	Dual LC	1.8W	FMC-M2531K10xxx
25G SFP28 BiDi LR	1270/1330nm	10km	Single LC	1.6W	FRC-M2523K10xxx FRC-M2532K10xxx
10G SFP+ LR	1310nm	10km	Dual LC	0.8W	FMC-M1031K10xxx
10G SFP+ BiDi LR	1270/1310nm	10km	Dual LC	1.5W	FMC-M1023K10xxx FMC-M1032K10xxx

Immersion Cooling Active Optical Cable (AOC)



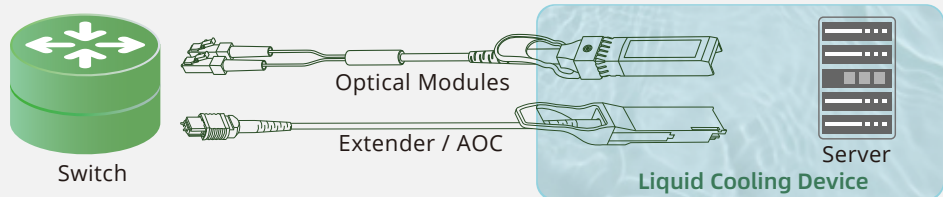
Features

- Submersible version AOC
- Hot-pluggable SFP/SFP28/QSFP+/QSFP28/QSFP56/QSFP-DD/QSFP112/OSFP MSA-compliant form factor
- Compliant with CMIS, SFF-8636 and SFF-8665
- Data rate up to 10.31-800Gbps
- Case operating temperature range from 0 to 60°C

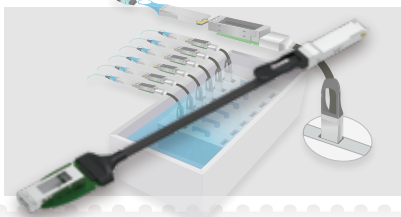
Product Name	Standard	LD	PD	Reach	Max. Power Consumption(W)
800G QSFP-DD AOC	800GBase-SR8	850nm VCSEL	PIN	1-100m	15
800G QSFP-DD to 2/4/8x Breakout AOC	800GBase-SR8	850nm VCSEL	PIN	1-100m	15/10/5/4.5
800G OSFP AOC	800GBase-SR8	850nm VCSEL	PIN	1-100m	15
800G OSFP to 2/4/8x Breakout AOC	800GBase-SR8	850nm VCSEL	PIN	1-100m	15/10/5/4.5
400G QSFP-DD AOC	400GBase-SR8/ 200GBase-SR4	850nm VCSEL	PIN	1-100m	9
400G QSFP-DD to 2/4/8x Breakout AOC	400GBase-SR8/ 200GBase-SR4	850nm VCSEL	PIN	1-100m	9/5/4.5/2
400G OSFP-RHS AOC	400GBase-SR8	850nm VCSEL	PIN	1-100m	10
400G OSFP-RHS to 2/4/8x Breakout AOC	400GBase-SR8	850nm VCSEL	PIN	1-100m	10/5/4.5/2
400G QSFP112 AOC	400GBase-SR4	850nm VCSEL	PIN	1-100m	10
400G QSFP112 to 2/4/8x Breakout AOC	400GBase-SR4	850nm VCSEL	PIN	1-100m	10/5/4.5/2
200G QSFP-DD AOC	100GBase-SR4	850nm VCSEL	PIN	1-100m	4
200G QSFP-DD to 2/4/8x Breakout AOC	100GBase-SR4	850nm VCSEL	PIN	1-100m	4/2/1.5/1
200G QSFP56 AOC	100G/200GBase-SR4	850nm VCSEL	PIN	1-100m	5
200G QSFP56 to 2/4x Breakout AOC	100G/200GBase-SR4	850nm VCSEL	PIN	1-100m	5/4.5/2
100G QSFP28 AOC	100GBase-SR4	850nm VCSEL	PIN	1-100m/300m	2
100G QSFP28 to 2/4x Breakout AOC	100GBase-SR4	850nm VCSEL	PIN	1-100m/300m	2/1.5/1
40GQSFP+ AOC	40GBase-SR4	850nm VCSEL	PIN	1-300m/400m	1.5
25G SFP28 AOC	25GBase-SR	850nm VCSEL	PIN	1-100m	1
10G SFP+ AOC	10GBase-SR	850nm VCSEL	PIN	1-100m/400m	0.8

Immersion Liquid Cooling Solutions

- Remain ordinary optical modules above TOR of typical data center
- Server connected to TOR with immersion cooling optics



Immersion Cooling Extender



Features

- Significant CAPEX savings for immersion liquid-cooling data centers
- Support 40G/100G/200G QSFP transceivers or AOC with QSFP-QSFP flat cage
- 30AWG twinax copper cable with length up to 50cm
- Simple deployment and fast connection
- Ultra-high reliability with simple structure
- Commercial case temperature range of 0°C to 60°C

Product Name	Package Type	AWG	Length	Temperature°C
Immersible 200G QSFP56 Extender	QSFP56 to QSFP56 Flat Cage	30AWG	Up to 50cm	0~60
Immersible 100G QSFP28 Extender	QSFP28 to QSFP28 Flat Cage	30AWG	Up to 50cm	0~60
Immersible 40G QSFP+ Extender	QSFP+ to QSFP+ Flat Cage	30AWG	Up to 50cm	0~60
PERLIMIANRY				
Immersible 800G QSFP-DD Extender	QSFP-DD to QSFP-DD Flat Cage	30AWG	Up to 50cm	0~60
Immersible 400G QSFP-DD Extender	QSFP-DD to QSFP-DD Flat Cag	30AWG	Up to 50cm	0~60
Immersible 200G QSFP-DD Extender	QSFP-DD to QSFP-DD Flat Cag	30AWG	Up to 50cm	0~60

Immersion Cooling Direct Attach Cable (DAC)



Features

- Special design for liquid immersion environment
- Data rate up to 10.31-212.2Gbps
- Compatible to SFP28/QSFP28/QSFP56/QSFP-DD/QSFP112/OSFP MSA
- Copper link length up to 7m
- Operating Temperature: 0~ 70°C

Product Name	Rate	Reach	Temperature°C
800G QSFP-DD DAC	850Gbps	2m	0~70
800G OSFP DAC	850Gbps	2m	0~70
400G QSFP-DD DAC	425Gbps	3m	0~70
400G OSFP-RHS DAC	425Gbps	3m	0~70
400G QSFP112 DAC	425Gbps	3m	0~70
200G QSFP56 DAC	212.5Gbps	3m	0~70
200G QSFP-DD DAC	206.25Gbps	3m	0~70
100G QSFP28 DAC	103.12Gbps	5m	0~70
40G QSFP+ DAC	41.25Gbps	5m	0~70
25G SFP28 DAC	25.78125Gbps	5m	0~70
10G SFP+ DAC	10.52Gbps	7m	0~70

Solutions for Metro Telecom & 5G



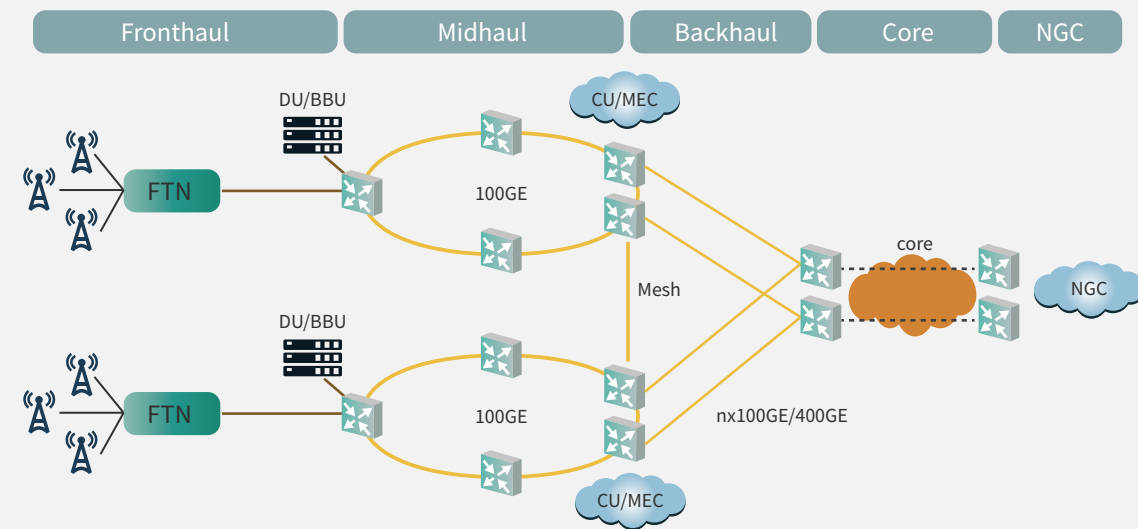
Innovative connectivity solution in industrial temperature and Immersion Liquid Cooling Environment



Significant cost savings of using short/long reach optics to maximize the solution design

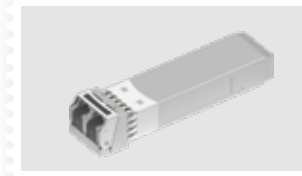


Scalable Fronthaul Solution with CWDM/DWDM Optics



Network Layer	Urban Access Layer		Urban Convergence Layer	Urban Core Layer
	5G Front-Haul	5G Middle-Haul	5G Back-Haul + DCI	5G Back-Haul + DCI
Distance	<10/20km	<40km	<40-80km	<40-80km
Network Topology	Main: Star Network Back-up: Ring Network	Main: Ring Network Back-up: Chain or Ring Chain Network	Ring Network or Dual Uplink Link	Ring Network or Dual Uplink Link
Client Interface Data Rate	eCPRI: 25Gb/s CPRI: N×10/25Gb/s or 1×100Gb/s	Early 5G: 10/25Gb/s Commercial Scale: N×25/50Gb/s	Early 5G: 10/25Gb/s Commercial Scale: N×25/50/100Gb/s	Early 5G: 25/50/100Gb/s Commercial Scale: N×100/200/400Gb/s
Line Interface Data Rate	10/25/100Gb/s Gray Optics or N×25G/50Gb/s WDM Color	25/50/100Gb/s Gray Optics or N×25/50Gb/s WDM Color Optics	100/200Gb/s Gray Optics or N×100Gb/s WDM Color Optics	200/400Gb/s Gray Optics or N×100/200/400Gb/s WDM Color Optics

Gray Light Transceivers and Parallel Transceivers

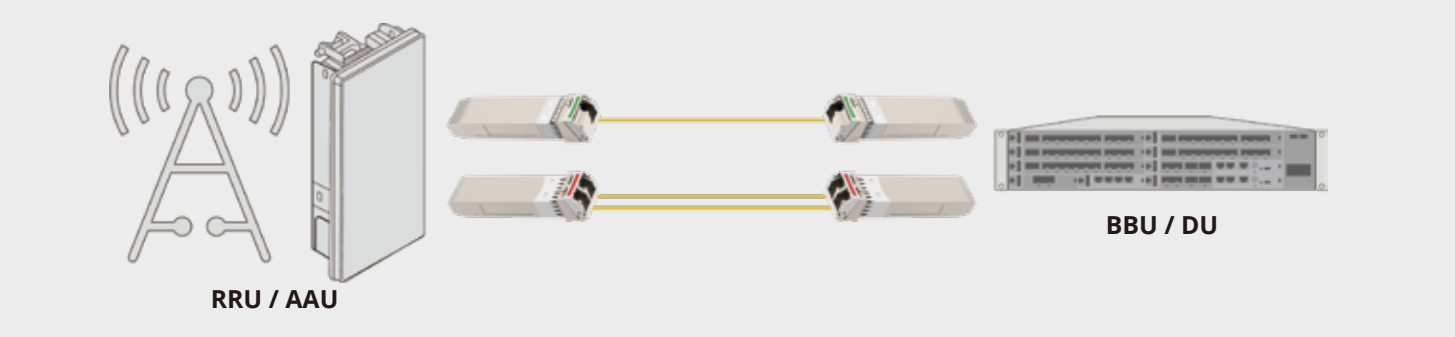


Features

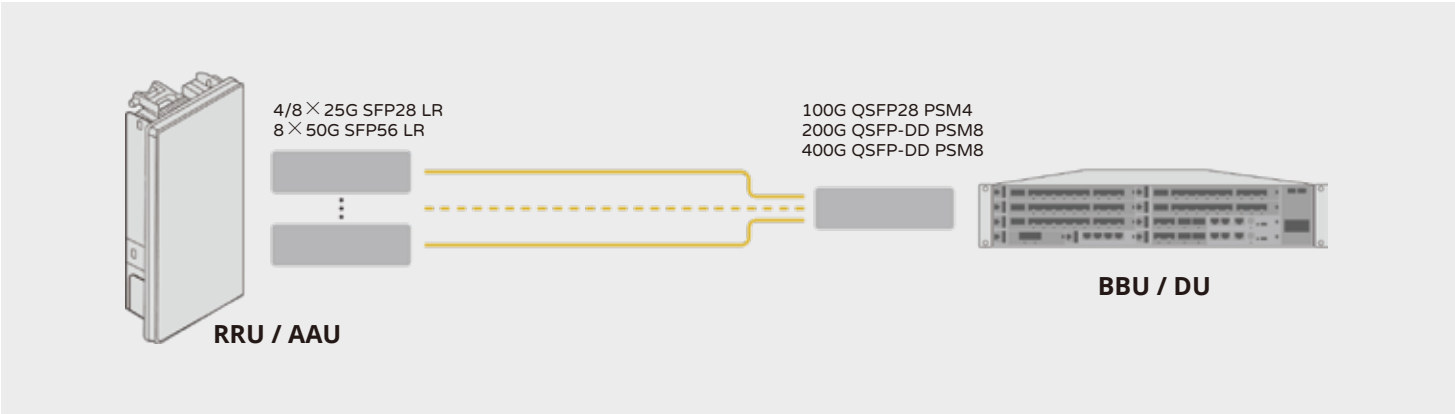
- Support Ethernet and CPRI or eCPRI or OTN to meet telecommunication requirements
- Adopt high-quality components and mature packaging
- Technology to ensure reliable quality
- Adopt the airtight package with high stability and high reliability

Product Name	Application	Max. Distance	Center Wavelength	LD	PD	Optical Interface	Max. Power Consumption	Operating Temp Range	Part Number
25G SFP28 SR/eSR	10GE/25GE/CPRI	100m	850nm	VCSEL	APD	PIN	1W	C/I	FBC-M2585M10x FBC-M2585M30x
25G SFP28 LR	10GE/25GE/CPRI	10km	1310nm	DML	PIN	Dual LC	1.8W	C/I	FBC-M2531K10x
25G SFP28 ER	25GE/CPRI	40km	1310nm	EML	APD	Dual LC	2W	C/I	FBC-D2531K40x
25G SFP28 ZR	25GE/CPRI	80km	1310nm	EML	SOA+PIN	Dual LC	2.5W	C	FBC-D2531K80C
25G SFP28 BiDi LR	10GE/25GE/CPRI	10km	1270/1330nm	DML	PIN	Dual LC	1.6W	C/I	FCC-M252733K10x FCC-M253327K10x
25G SFP28 BiDi eLR	10GE/25GE/CPRI	20km	1270/1330nm	DML	APD	Dual LC	1.8W	C/I	FCC-M252733K20x FCC-M253327K20x
25G SFP28 BiDi ER	10GE/25GE/CPRI	40km	1270/1330nm 1270/1310nm	EML	APD	Dual LC	1.9W	C/I	FCC-M25273xK40x FCC-M253x27K40x
50G SFP56 SR	50GE	100m	850nm	VCSEL	PIN	Dual LC	2W	C/I	FBD-E5085M10x
50G SFP56 LR	50GE	2km/10km	1310nm	DML	PIN	Dual LC	3W	C/I	FBD-E5031K02x FBD-E5031K10x
50G SFP56 ER	50GE	10km	1310nm	EML	PIN	Dual LC	3W	C/I	FBD-E5031K10x
50G SFP56 ER	50GE	40km	1310nm	EML	APD	Dual LC	3W	C/I	FBD-E5031K40x
50G SFP56 BiDi LR	50GE	10km	1270/1330nm	EML	PIN	Dual LC	3W	C/I	FCD-E502733K30x FCD-E503327K30x
50G SFP56 BiDi eLR	50GE	30km	1270/1310nm	EML	APD	Dual LC	3W	C/I	FCD-E502731K30x FCD-E503127K30x
100G QSFP28 LR1	100GE	20km	1310nm	EML	PIN	Dual LC	4W	C	FTG-10031K10C
100G QSFP28 LR1(Siph)	100GE	10km	1310nm	CW+MZ	PIN	Dual LC	4W	C	FCC-1002733K40C FCG-1003327K40C
100G QSFP28 BiDi LR1	100GE	10km	1271nm / 1331nm	EML	PIN	Dual LC	4.5W	C	FBG-10031K40C
100G QSFP28 ER1	100GE	40km	1310nm	EML	PIN	Single LC	4W	C	FBD-10031K20C
100G SFP56-DD LR1	100GE	20km	1310nm	EML	APD	Dual LC	3.5W	C	FBD-10031K30C
100G SFP56-DD ER1 Lite	100GE	30km	1310nm	EML	PIN	Dual LC	5.5W	C	FBW-100S1M10C
100G QSFP28 SR4	100G/EDR	100m	850nm	VCSEL	PIN	MPO	2W	C/I	FEG-100S4M10x
100G QSFP28 eSR4	100G/EDR	300m	850nm	VCSEL	PIN	MPO	2W	C/I	FEG-100S4M30x
100G QSFP28 PSM4	100G/EDR	2km	1310nm	DML	PIN	MPO	3.5W	C/I	FEG-100P4K02x
100G QSFP28 CWDM4	100GE	2km/10km	CWDM4	DML	PIN	Dual LC	3.5W	C/I	FEG-100C4K10C
100G QSFP28 LR4	100GE	10km/20km	LWDM4	DML	PIN	Dual LC	3.5W	C/I	FBG-100L4K40CL
100G QSFP28 ER4 Lite	100GE/OTU4	30km	LWDM4	DML	APD	Dual LC	3.8W	C	FBG-112L4K40C
100G QSFP28 ER4	100GE/OTU4	40km	LWDM4	EML	PIN + SOA	Dual LC	6W	C	FBG-112L4K80C
100G QSFP28 ZR4	100GE/OTU4	80km	LWDM4	EML	PIN + SOA	Dual LC	6W	C	FEG-100x4K40C
200G QSFP-DD SR8	200GE/EDR	100m	850nm	VCSEL	PIN	MPO24	4W	C/I	FEL-200S8M10x
200G QSFP-DD PSM8	200GE/EDR	2km/10km	1310nm	DML	PIN	MPO24	6W/6.5W	C/I	FEL-200P8K02x FEL-200P8K10x
200G QSFP-DD xPSM8	200GE/EDR	20km	1310nm	DML	PIN	MPO24	6.5W	C/I	FEL-200P8K20x
200G QSFP DD SR4	200GE/HDR	100m	850nm	VCSEL	PIN	MPO12	5W	C	FEH-200S4M10C
200G QSFP-DD PSM4	200GE/HDR	2km/10km	1310nm	EML	PIN	MPO12	6W	C	FEL-200P4K02C FEL-200P4K10C
200G QSFP-DD LR8	200GE	10km	LWDM8	DML	PIN	Dual LC	7.5W	C	FBL-200L8K10C
200G QSFP-DD LR4	200GE/HDR	10km	LWDM4	EML	PIN	Dual LC	7.5W	C	FBL-200L4K10C
200G QSFP-DD ER4	200GE	40km	LWDM4	EML	APD	Dual LC	7.5W	C	FBL-200L4K40C
400G QSFP-DD SR8	400GE	100m	850nm	VCSEL	PIN	MPO	8.5W	C	FEL-400S8M10C
400G QSFP-DD PSM8	400GE	2km/10km	1310nm	EML	PIN	MPO	11W	C	FEL-400P8K02C FEL-400P8K10C
400G QSFP-DD xPSM8	400GE	20km	1310nm	EML	PIN	MPO	11W	C	FEL-400P8K20C
400G QSFP-DD FR8	400GE	10km	LWDM4	EML	PIN	Dual LC	12.5W	C	FBL-400L8K10C
400G QSFP-DD LR8	400GE	2km	LWDM4	EML	PIN	Dual LC	12.5W	C	FBL-400L8K02C
400G QSFP-DD SR4	400GE	100m	850nm	VCSEL	PIN	MPO	8.5W	C	FBL-400S4M10C
400G QSFP-DD LR4	400GE	10km	CWDM4	EML	PIN	Dual LC	12W	C	FBL-400C4K10C
400G QSFP112 SR4	400GE	60m(OM3)/100m(OM4)	850nm	VCSEL	PIN	MPO	8W	C	FEJ-400S4M10C
400G QSFP112 LR4	400GE	10km	1310nm	EML/SiPh	PIN	Dual LC	11W	C	FTJ-400C4K10C
800G QSFP-DD SR8	800GE	60m(OM3)/100m(OM4)	850nm	VCSEL	PIN	MPO	13.5W	C	FEL-800S8M10C
800G QSFP-DD PSM8	800GE	2km/10km	1310nm	SiPh	PIN	MPO	16W	C	FUL-800P4K10C
800G QSFP-DD FR8	800GE	2km	1310nm	EML	PIN	Dual LC	18W	C	FUL-800C4K02C
800G QSFP-DD LR8	800GE	10km	1310nm	EML	PIN	Dual LC	18W	C	FUL-800C4K02C

Application



Application



Color Light Transceivers



- Features**
- Support Ethernet and eCPRI to meet telecommunication requirements
 - Adopt high-quality components and mature packaging technology to ensure reliable quality
 - Adopt airtight package with high stability and high reliability

Product Name	Application	Max . Distance	Center Wavelength	LD	PD	Optical Interface	Max. Power Consumption	Operating Temp Range	Part Number
25G SFP28 LWDM LR (12CH)	10GE/25GE/CPRI	10km	1269-1318nm	DML	PIN	Dual LC	2W	C/I	FBC-M25LxxK10x
25G SFP28 LWDM eLR (12CH)	10GE/25GE/CPRI	20km	1269-1318nm	DML	APD	Dual LC	2W	C/I	FBC-M25LxxK20x
25G SFP28 LWDM ER (9CH)	10GE/25GE/CPRI	40km	1273-1309nm	EML	APD	Dual LC	2W	C/I	FBC-M25LxxK40x
25G SFP28 CWDM (First 6CH)	25GE/CPRI	10km/15km	1271-1371nm	DML	PIN/APD	Dual LC	1.8W	C/I	FBC-D25CxxK10x FBC-D25CxxK15x
25G SFP28 CWDM (Last 6CH)	25GE/CPRI	10km	1471-1571nm	EML	APD	Dual LC	1.8W	C/I	FBC-D25CxxK10x
25G SFP28 DWDM (C-band 48CH)	25GE/CPRI	10km	1528-1563nm	EML	APD	Dual LC	2W	C/I	FBC-D25DxxK10x
25G SFP28 DWDM (O-band 16CH)	25GE/CPRI	10km/40km	O-Band	DML	PIN/APD	Dual LC	2W	C/I	FBC-D25OxxK10c
50G SFP56 DWDM	50GE/CPRI	5km	C-Band	EML	PIN	Dual LC	3W	C/I	FBD-E50OxxK05x
100G QSFP28 PSM DWDM4	100GE	80km	C - band 100GHZ	EML	PIN TEDFA + DCM	MPO	4.5W	C	FEG-100DCK80C
100G QSFP28 PSM DWDM4	100GE	40km	O - BAND	DML	PIN+SOA	MPO	4.5W	C	FTG-100DO4K40C
100G QSFP28 DWDM1(SiPh)	100GE	25km	O - BAND	CW+MZ	PIN	MPO	4W	C	FBG-10031K20C

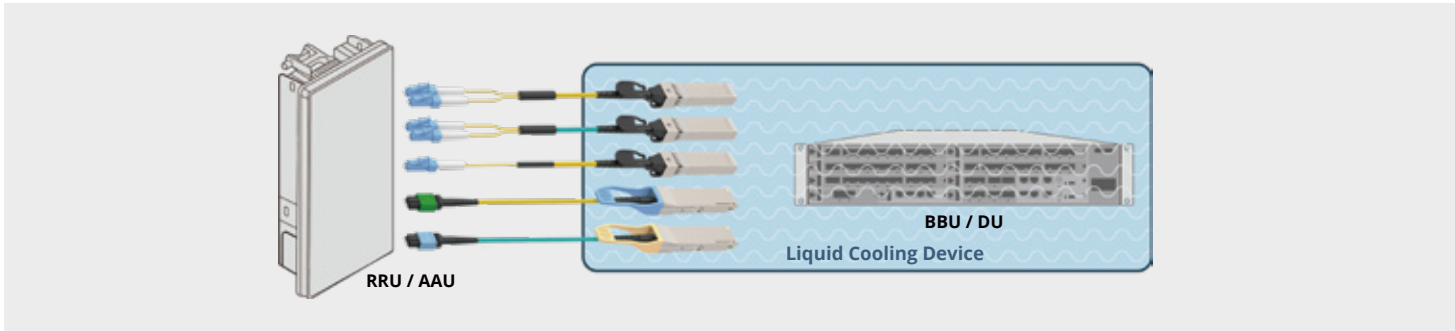
Immersion Cooling Optical Modules



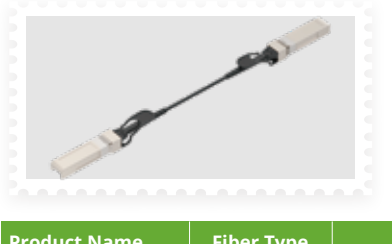
- Features**
- Hot-pluggable MSA-compliant pigtailed transceiver assemblies
 - Data rate up to 10.3125-800Gbps
 - Support immersion liquid cooling
 - Customized pigtail length up to 99m
 - Commercial case temperature range of 0°C to 60°C RoHS compliant

Product Name	Application	Max . Distance	Center Wavelength	LD	PD	Optical Interface	Max . Power Consumption	Part Number
100G QSFP28 SR4	100GE/HDR	100m/300m	1310nm	VCSEL	PIN	MPO12	2W	FQG-100S4M10xxx FQG-100S4M30xxx
100G QSFP28 PSM4	100GE/HDR	2km/10km	850nm	DML	PIN	MPO12	3.5W	FQG-100P4K02xxx FQG-100P4K10xxx
25G SFP28 LR	10GE/25GE/CPRI	10km	1310nm	DML	PIN	Dual LC	1W	FMC-M2531K10xxx
25G SFP28 BiDi LR	10GE/25GE/CPRI	10km	1270/1330nm	DML	PIN	Single LC	1.6W	FRC-M2523K10xxx FRC-M2532K10xxx

Application



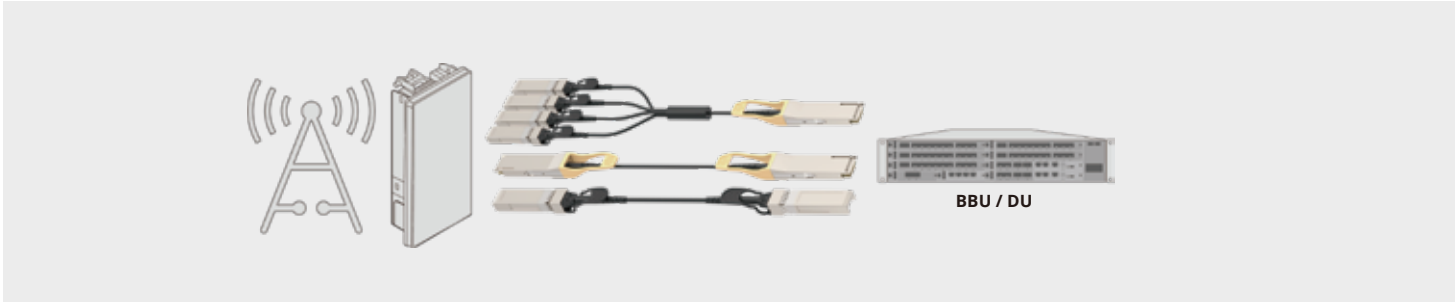
Hardened Active Optical Cables



- Features**
- Tailored for 5G Open RAN fronthaul in industrial scenarios.
 - Supports CPRI/eCPRI protocols.
 - Transmission range: 100m to 20km.
 - Replaces some gray module fiber direct-drive applications.

Product Name	Fiber Type	Length (Customizable)	From Factor	TX	RX	Max.Power Consumption	Temp(°C)	
10G SFP+ HAOC	MMF	300m	SFP+ SFP+	850nm VCSEL	PIN	0.8W/0.8W	-40~+85	FYB-E10MxxxTH
25G SFP28 HAOC	MMF	70m/100m	SFP28 SFP28	850nm VCSEL	PIN	1W/1W	-40~+85	FYC-D25MxxxTH
100G QSFP28 HAOC	MMF	70m/100m	QSFP28 QSFP28	850nm VCSEL	PIN	2W/2W	-40~+85	FYG-100MxxxTH
100G QSFP28 to 4x25G SFP28 HAOC	MMF	1m~100m	QSFP28 4xSFP28	850nm VCSEL	PIN	2W/4x1W	-40~+85	FYG4C-100MxxxTH

Application



Coherent Optical Modules

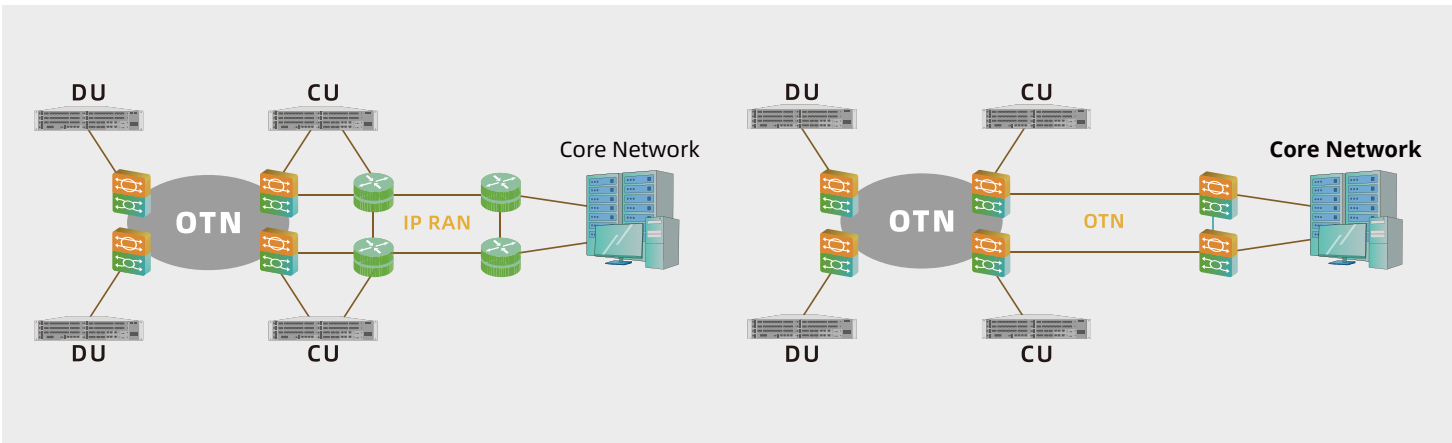


Features

- Hot-pluggable CFP/CFP2, QSFP-DD and QSFP28 form factor
- Full C-band tunable ultra-narrow linewidth laser (75GHz channel spacing)
- Up to 400G DP-16QAM modulation mode
- 22W typical (24W maximum) power consumption
- Duplex LC receptacle
- 0°C to 70°C operating case temperature range
- 3.3V power supply voltage
- RoHS compliant (lead free)

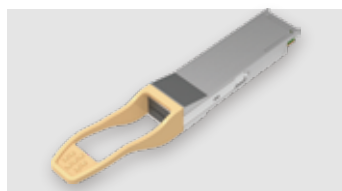
Product Name	Modulation	QSNR_Min (dB/0.1nm)	Max.Power Consumption	Reach	Temp	P/N
100G CFP DCO	100G PM-QPSK	13dB/0.1nm	21W/22W/28W	120km/600km/2000km	0~70	FVM-100T50CxxCx
100G CFP2 DCO	100G PM-QPSK	11.5dB/0.1nm	22W	800km/2000km	0~70	FVN-100T50CxxCx
200G CFP2 DCO	200G PM-16QAM	17.5dB/0.1nm	22W	800km/2000km	0~70	FVN-200T50C12CY FVN-200T50W10CN
400G CFP2 DCO	400G PM-16QAM	23dB/0.1nm	22W	400km	0~70	FVN-400T75C60CY
400G QSFP-DD ZR	400G PM-16QAM	26dB/0.1nm	16.5W	120km	0~70	FVL-400T75C12CY
400G QSFP-DD ZR+	400G PM-16QAM	24dB/0.1nm	22W	400km	0~70	FVL-400T75C40CY
100G QSFP28 ZR DCO	100G DP-(d)QPSK	16.5dB SC-FEC 21.5dB GFEC	8W	120km/600km	0~70	FVL-100T75C60CY

Application



Electrical Loopback Modules & Transceiver Checkers

Electrical Loopback Modules



Features

- Hot-pluggable MSA-compliant active electrical loopback modules
- Data rate up to 25.78125-425Gbps
- Low power consumption
- Commercial case operating temperature range of 0°C to 70
- Single 3.3V power supply
- RoHS compliant

Product Name	Application	Modulation	Number of Channels	Max. Data Rate per Channel	Max. Power Consumption	Part Number
800G OSFP Loopback	800GE	PAM4	8	106.25Gbps	7W	FLPU-800
800G QSFP-DD Loopback	800GE	PAM4	8	106.25Gbps	7W	FLPL-800
400G QSFP-DD Loopback	400GE	PAM4	8	53.125Gbps	5W	FLPL-400
200G QSFP56 Loopback	200GE	PAM4	4	53.125Gbps	2.5W	FLPH-200
200G QSFP-DD Loopback	200GE	NRZ	8	25.78125Gbps	5W	FLPL-200
100G QSFP28 Loopback	100GE	NRZ	4	25.78125Gbps	1W	FLPG-100
25G SFP28 Loopback	25GE	NRZ	1	25.78125Gbps	1W	FLPC-E25

Transceiver Checkers



Features

- Support 8.5-100Gbps bit error rate test
- Updating and maintaining compatible codes from cloud database
- Friendly Graphic User Interface (GUI)
- Robust and slim design with compact and portable full-metal case
- Support working independently without PC
- RoHS compliant

Product Name	Port Type	Compatible Module Types	BERT Rates	Power Supply	GUI Operating Environment	Part Number
800G QSFP-DD+OSFP-RHS Checker	1xQSFP-DD 1xOSFP-RHS	800G QSFP112-DD/400G QSFP112 400G QSFP56-DD/200G QSFP56 800G OSFP-RHS/400G OSFP-RHS	8x100G PAM4/4x100G PAM4 8x50G PAM4/4x50G PAM4	12V DC	Win XP/7/8/10	FCKL-800
800G QSFP-DD+OSFP Checker	1xQSFP-DD 1xOSFP	800G QSFP112-DD/400G QSFP112 400G QSFP56-DD/200G QSFP56 800G OSFP/400G OSFP	8x100G PAM4/4x100G PAM4 8x50G PAM4/4x50G PAM4	12V DC	Win XP/7/8/10	FCKU-800
400G QSFP112+OSFP-RHS Checker	1xQSFP112 1xOSFP-RHS	400G QSFP112 200G QSFP56 400G OSFP-RHS	4x100G PAM4 4x50G PAM4	12V DC	Win XP/7/8/10	FCKU-800
400G QSFP-DD Checker	1x QSFP-DD	400G QSFP56-DD/200G QSFP28-DD 200G QSFP56/100G QSFP28	8x 50G PAM4/8x 25G NRZ 4x 50G PAM4/4x 25G NRZ	12V DC	Win XP/7/8/10	FCKL-400
200G QSFP56 Checker	1x QSFP56	200G QSFP56 100G QSFP28	4x 50G PAM4 4x 25G NRZ	12V DC	Win XP/7/8/10	FCKH-200
200G QSFP-DD Checker	1x QSFP-DD	200G QSFP28-DD 100G QSFP28	8x 25G NRZ 4x 25G NRZ	12V DC	Win XP/7/8/10	FCKL-200
40G/100G QSFP Checker	1x QSFP+ (Port-1) 1x QSFP28 (Port-2)	112G QSFP28/100G QSFP28 40G QSFP+	4x 28G NRZ/4x 25G NRZ 4x 10G NRZ	12V DC	Win XP/7/8/10	FCKG-112
25G SFP28 Checker	2x SFP28	28G SFP28/25G SFP28 10G SFP+	1x 28G NRZ/1x 25G NRZ 1x 10G NRZ	12V DC	Win XP/7/8/10	FCKC-F28
10G SFP+ Checker	1x SFP+ TR (Port-1) 1x SFP+ Tx (Port-2)	8.5G/10G SFP+	1x 10G NRZ 1x 8.5G NRZ	5V DC	Win XP/7/8/10	FCKB-E10

SDI Optical Interconnect Products

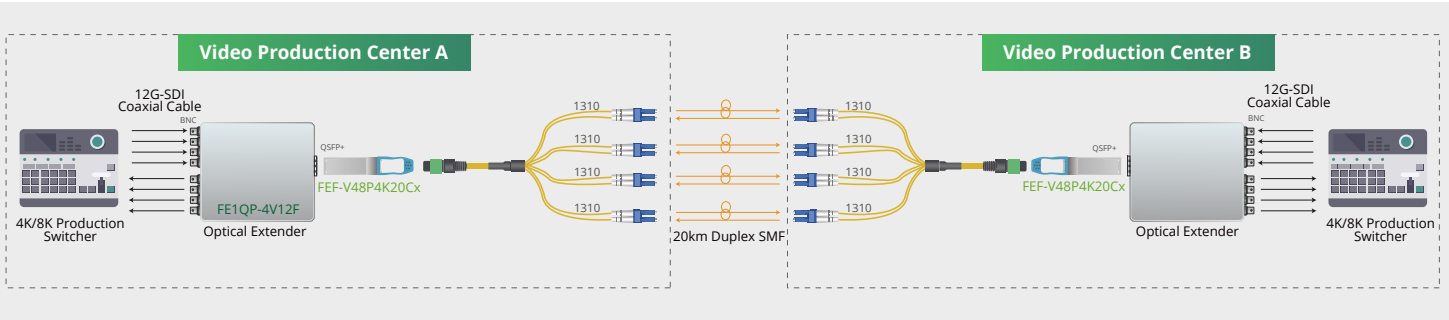
3G/12G/48G SDI Optical Extenders



- Features**
- Support 4K/8K video over fiber transmission up to 40km
 - Compliant with SMPTE SD/HD/3G/6G/12G-SDI standards
 - Tx&Rx, Rx-only, and Tx-only optional
 - SDI signal connecting status indicated by LED
 - All-metal housing for superior EMI performance
 - Commercial case temperature range of -10°C to +55°C
 - RoHS compliant

Product Name	Application	Max. Distance	Center Wavelength	Optical Interface	Electrical Interface	Part Number
48G SDI PSM Optical Extender (TRx w/ CDR)	4x 12G-SDI	20km	N/A	1x QSFP+ (TRx)	4x BNC Input 4x BNC Output	FE1QP-4V12F
4x12G SDI CWDM Optical Extender (Tx/Rx)	4x 12G-SDI	20km	CWDM4	Simplex FC	4x BNC Input/Output	FE1FC-4V12T FE1FC-4V12R
2x12G SDI Optical Extender (TRx)	2x 12G-SDI	20km	N/A	2x SFP+ (TRx)	2x BNC Input 2x BNC Output	FE2SP-2V12F
1x12G SDI Optical Extender (TRx)	1x 12G-SDI	20km	N/A	1x SFP+ (TRx)	1x BNC Input 1x BNC Output	FE1SP-1V12F
1x12G SDI Optical Extender (Tx)	1x 12G-SDI	20km	N/A	1x SFP+ (Tx)	1x BNC Input	FE1SP-1V12T
1x12G SDI Optical Extender (Rx)	1x 12G-SDI	20km	N/A	1x SFP+ (Rx)	1x BNC Output	FE1SP-1V12R
4x3G SDI Optical Extender (Tx)	4x 3G-SDI	40km	N/A	2x SFP (2Tx)	4x BNC Input	FE4SP-4V3GT
4x3G SDI Optical Extender (Rx)	4x 3G-SDI	40km	N/A	2x SFP (2Rx)	4x BNC Output	FE4SP-4V3GR

Application



3G/12G/48G SDI Optical Modules



- Features**
- Hot-pluggable SFP/SFP+/QSFP+ form factor
 - 1/2/4-channel video optical modules
 - Data rate up to 2.97-47.52Gbps
 - Tx&Rx, Rx-only, and Tx-only optional
 - MSA and Non-MSA pinout optional
 - Commercial case temperature range of 0°C to 70°C
 - RoHS compliant

Product Name	Application	Max. Distance	Center Wavelength	LD	PD	Optical Interface	MSA/Non-MSA Pinout	Part Number
48G SDI QSFP+ PSM4 TRx	4x 12G-SDI	20km	1310nm	DFB	PIN	MPO12 (8F)	MSA Non-MSA	FEF-V48P4K20CM FEF-V48P4K20CN
48G SDI QSFP+ PSM CWDM4 TRx	4x 12G-SDI	10km	CWDM4	DFB	PIN	MPO12 (8F)	MSA Non-MSA	FEF-V48C4K10CM FEF-V48C4K10CN
12G SDI SFP+ TRx	1x 12G-SDI	20km	1310nm	DFB	PIN	Dual LC	MSA Non-MSA	FBB-V1231K20CM FBB-V1231K20CN
12G SDI SFP+ BiDi TRx	1x 12G-SDI	20km	1270/1330nm	DFB	PIN	Single LC	MSA Non-MSA	FCB-V122733K20CM FCB-V122733K20CN
12G SDI SFP+ CWDM TRx	1x 12G-SDI	10km	1271-1571nm	DFB	PIN	Dual LC	MSA Non-MSA	FBB-V12CxxK10CM FBB-V12CxxK10CN
12G SDI SFP+ 2Tx	2x 12G-SDI	20km	1310nm	DFB	N/A	Dual LC	Non-MSA	FJB-V123131K20N
12G SDI SFP+ CWDM 2Tx	2x 12G-SDI	10km	1271-1571nm 1271-1571nm	DFB	N/A	Dual LC	Non-MSA	FJB-V12xxxK10CN
12G SDI SFP+ 2Rx	2x 12G-SDI	20km	N/A	N/A	PIN	Dual LC	Non-MSA	FHB-V12K20CN
12G SDI SFP+ Tx	1x 12G-SDI	20km	1310nm	DFB	N/A	Single LC	MSA Non-MSA	FGB-V1231K20CM FGB-V1231K20CN
12G SDI SFP+ CWDM Tx	1x 12G-SDI	10km	1271-1571nm	DFB	N/A	Single LC	MSA Non-MSA	FGB-V12CxxK10CM FGB-V12CxxK10CN
12G SDI SFP+ Rx	1x 12G-SDI	20km	N/A	DFB	PIN	Single LC	MSA Non-MSA	FFB-V12K20CM FFB-V12K20CN
3G SDI SFP TRx	1x 3G-SDI	2km/20km/ 40km/80km	1310nm 1550nm	DFB	PIN/APD	Dual LC	MSA	FBA-V3GxxKxxCM
3G SDI SFP CWDM TRx	1x 3G-SDI	40km/80km	1271-1611nm	DFB	PIN/APD	Dual LC	MSA	FBA-V3GCxxK40CM FBA-V3GCxxK80CM
3G SDI SFP 2Tx	2x 3G-SDI	2km/20km/ 40km	1310nm 1550nm	DFB	N/A	Dual LC	Non-MSA	FJA-V3GxxxKxxCN
3G SDI SFP CWDM 2Tx	2x 3G-SDI	40km	1271-1611nm 1271-1611nm	DFB	N/A	Dual LC	Non-MSA	FJA-V3GxxxK40CN
3G SDI SFP 2Rx	2x 3G-SDI	2km/20km/ 40km	N/A	N/A	PIN	Dual LC	Non-MSA	FHA-V3GKxxCN
3G SDI SFP Tx	1x 3G-SDI	2km/20km/ 40km	1310nm 1550nm	DFB	N/A	Single LC	MSA Non-MSA	FGA-V3G31K20CM FGA-V3GxxKxxCN
3G SDI SFP CWDM Tx	1x 3G-SDI	40km	1271-1611nm	DFB	N/A	Single LC	Non-MSA	FGA-V3GCxxK40CN
3G SDI SFP Rx	1x 3G-SDI	2km/20km/ 40km	N/A	N/A	PIN	Single LC	MSA Non-MSA	FFA-V3GKxxCM FFA-V3GKxxCN

Application

