Passive and Active Copper Cables

800G PAM4 OSFP Straight Throughs and Breakouts

Regional Availability — Global

Siemon's 800G (100G per lane) PAM4 Ethernet or InfiniBand™ OSFP-FT (Finned Top) passive and active copper cables are designed to exceed industry standard performance offering a cost-effective, low latency, lowest power option for high-speed data center network equipment direct point-to-point connections. The industry's smallest minimum bend radius is achieved with our mesh sleeves.

Passive DACs[1] are available up to 3 meters with the lowest power consumption. Active copper offers longer lengths up to 5 meters. ACCs[2] are only available in InfiniBand, while AECs[3] are only Ethernet. All are available in 0.5 meter increments in 1:1 straight-throughs and 1:2, 1:4, and 1:8 breakouts.

1: DAC – **Direct Attach Copper** *Passive cable assembly with limited lenghts and lowest power consumption requirement*
2: ACC – **Active Copper Cable** *Analog re-driver based active cable assembly with longer lengths than DACs*
3: AEC – **Active Electrical Cable** *Digital re-timer based active cable assembly with longer lengths than DACs*

1. LSZH Compliant UL94 VW-1 Mesh Available for Global use
2. Ultra-Low Crosstalk for Enhanced Performance
3. Positive Retention Pull-Release Latch System
4. MSA Compliant Connectors

Breakout Options

Numbered Breakouts

Mesh Sleeve Provides Best-in-Class Cable Routing

STANDARDS COMPLIANCE	OSFP-FT	OSFP-RHS	QSFP-DD	QSFP	SFP-DD	SFP
CONNECTOR SPECIFIC	OSFP MSA CMIS	OSFP MSA CMIS	QSFP-DD MSA CMIS	SFF-8661 SFF-8672 SFF-8679 QSFP112 MSA CMIS	SFP-DD MSA CMIS	SFF-8071 SFF-8402 SFF-8419 SFF-8024 CMIS
ETHERNET	IEEE 802.3ck					
INFINIBAND	IEEE8 02.3ck NDR	IEEE 802.3ck NDR	N/A	IEEE 802.3ck NDR	N/A	N/A

Applications

- Ethernet 800G-BASE CR8
- InfiniBand NDR 800G
- Top-of-Rack
- Rack-to-Rack
- Switch-to-Switch
- Switch-to-Server
- Network Interface Adapter
- Accelerator Cards
- Storage
- Routers
- Servers

PHYSICAL PROPERTIES – CONNECTOR

CONNECTOR TYPE		OSFP-FT	QSFP-DD	OSFP-RHS	QSFP	OSFP-RHS	QSFP	SFP-DD	SFP
LANES UTILIZED		CR8	CR8	CR4	CR4	CR2	CR2	CR2	CR1
CONNECTOR SIDE(S)		A/B	B	B	B	B	B	B	B
CABLE ASSEMBLY CONFIGURATION		1:1	1:1	1:2	1:2	1:4	1:4	1:4	1:8
POWER CONSUMPTION PER END (Max)	DAC ETHERNET	0.1 W	0.1 W	0.1 W	0.1 W	0.1 W	0.1 W	0.1 W	0.1 W
	DAC INFINIBAND	0.1 W		0.1 W	0.1 W	0.1 W	0.1 W		
	ACC INFINIBAND	1.5 W		0.85 W	0.85 W	0.6 W	0.6 W		
	AEC ETHERNET	8 W	8 W	4 W	4 W	2.1 W	2.1 W	2.1 W	1.2 W
SUPPLY VOLTAGE		3.3VDC	3.3VDC	3.3VDC	3.3VDC	3.3VDC	3.3VDC	3.3VDC	3.3VDC
INSERTION FORCE (Max)		40N	90N	55N	60N	55N	60N	40N	18N
EXTRACTION FORCE (Max)		30N	50N	45N	30N	45N	30N	30N	12.5N
RETENTION FORCE (Max)		125N	90N	125N	90N	125N	90N	90N	90N
DURABILITY (Min)		50 cycles	50 cycles	50 cycles	250 cycles	50 cycles	250 cycles	50 cycles	250 cycles
OPERATING TEMPERATURE		0 to 70°C (32 to 158°F)							
STORAGE TEMPERATURE		-40 to 85°C (-40 to 185°F)							

PHYSICAL PROPERTIES – CABLE

JACKET TYPE		MESH/VW-1			LSZH/AWM		
JACKET MATERIAL		PET Plastic Mesh			LSZH		
FLAMMABILITY RATING		UL94 VW-1			UL94 V-0 (AWM)		
TWINAX PAIRS PER CABLE LEG		16	8	4	8	4	2
CABLE ASSEMBLY CONFIGURATION		1:1	1:2	1:4	1:2, 1:1	1:4	1:8
CABLE CONFIGURATION		CR8/CR8	CR8/CR4	CR8/CR2	CR8/CR4, CR8/CR8 *	CR8/CR2	CR8/CR1
CABLE O.D.	30AWG	9.5 mm (0.37 in)	5.7 mm (0.22 in)	5.1 mm (0.20 in)	7.5 mm (0.30 in)	6.0 mm (0.24 in)	4.6 mm (0.18 in)
	28AWG	10.2 mm (0.40 in)	7.0 mm (0.28 in)	5.8 mm (0.23 in)	–	–	–
	26AWG	12.1 mm (0.48 in)	8.3 mm (0.33 in)	6.8 mm (0.27 in)	9.8 mm (0.39 in)	7.4 mm (0.29 in)	5.6 mm (0.22 in)
	25AWG	12.1 mm (0.48 in)	8.3 mm (0.33 in)	6.8 mm (0.27 in)	–	–	–
MINIMUM BEND RADIUS		2.2X O.D.			7X O.D.		
CONSTRUCTION		Twinaxial			Twinaxial		
SHIELD		Braid/Foil			Braid/Foil		
CONDUCTOR		Solid			Solid		
IMPEDANCE		100± 5 ohms			100± 5 ohms		
GREEN FEATURES		RoHS, Lead-Free and REACH			RoHS, Lead-Free and REACH		

*The 1:1 straight-through LSZH/AWM conventionally jacketed cable assembly is constructed with two parallel 8-pair cables.

		DAC MAX LENGTH				ACC MAX LENGTH		AEC MAX LENGTH	
		MESH/VW-1		LSZH/AWM		MESH/VW-1	LSZH/AWM	MESH/VW-1	LSZH/AWM
		Ethernet	InfiniBand	Ethernet	InfiniBand	InfiniBand	InfiniBand	Ethernet	Ethernet
MAX LENGTH	30AWG	-	-	-	-	2 m	2 m	2 m	2 m
	28AWG	1 m	1 m	-	-	3 m	-	3 m	-
	26AWG	2 m	2 m	2 m	2 m	4 m	4 m	3.5 m	3.5 m
	25AWG		3 m			5 m		5 m	

Ordering Information

800G PAM4 OSFP

(XXX) (XXX) (X) (XX.X) -8 (X) (X)

CONNECTOR TYPE	Side A	Side B	PROTOCOL	CABLE TYPE	LENGTH*	JACKET TYPE	JACKET COLOR
F1F F2R F4R F1D F2Q F4Q FSD F8S	OSFP-FT (CR8) OSFP-FT (CR8) OSFP-FT (CR8) OSFP-FT (CR8) OSFP-FT (CR8) OSFP-FT (CR8) OSFP-FT (CR8) OSFP-FT (CR8)	OSFP-FT (CR8) 2OSFP-RHS (CR4) 4OSFP-RHS (CR2) QSFP-DD (CR8) 2QSFP (CR4) 4QSFP (CR2) 4SFP-DD (CR2) 8SFP (CR1)	112 = 100G/Lane PAM4 Ethernet	P = DAC *Direct Attach Copper* E = AEC *Active Electrical Cable*	00.5 = 0.5 m 01.0 = 1.0 m 01.5 = 1.5 m 02.0 = 2.0 m 02.5 = 2.5 m 03.0 = 3.0 m 03.5 = 3.5 m 04.0 = 4.0 m 04.5 = 4.5 m 05.0 = 5.0 m	Z = Mesh/VW-1	B = Black W = White R = Red U = Blue S = Silver N = Orange
			-N- = 100G/Lane NDR Infiniband	P = DAC *Direct Attach Copper* A = ACC *Active Copper Cable*		L = LSZH/AWM	B = Black

**See Max Lengths Table for appropriate lengths per cable configuration.*

Please contact our Technical Sales Group if you require connectivity or cable configurations that are not listed above, for example, a length or color not listed.
Please contact our Technical Sales Group if you require connectivity solutions specifically for NVIDIA or Mellanox active equipment to ensure proper product selection.
Siemon is a provider of InfiniBand™ compliant cabling solutions and is a member of the InfiniBand Trade Association (IBTA).

Part Number Examples:

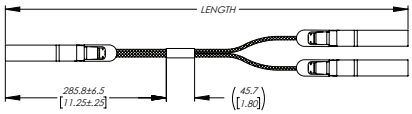
Part Number	Description
F1F112P01.0-8ZB	DAC, 800G PAM4, CR8/CR8, OSFP-FT, 1m, Mesh/VW-1, Black
F2Q-N-P03.0-8ZR	DAC, 800G NDR, CR8/CR4, OSFP-FT/2QSFP112, 3m, Mesh/VW-1, Red
F4R-N-A05.0-8ZW	ACC, 800G NDR, CR8/CR2, OSFP-FT/4OSFP-RHS, 5m, Mesh/VW-1, White
F8S112E03.5-8LB	AEC, 800G PAM4, CR8/CR1, OSFP-FT/8SFP112, 3.5m, LSZH/AWM, Black

Notes:

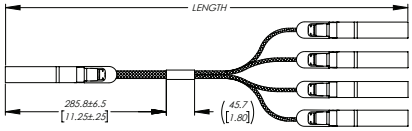
OSFP-FT is OSFP Finned Top.
OSFP-RHS is OSFP Riding Heat Sink (also called Flat Top).
SFP, SFP-DD, and QSFP-DD are not supported by InfiniBand™.
RS-FEC is always on.

Straight Through

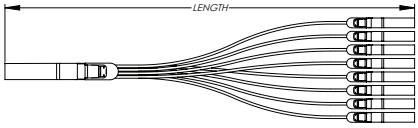
1:2 Breakout

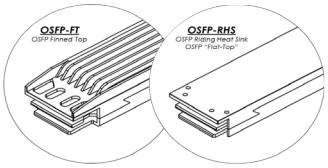


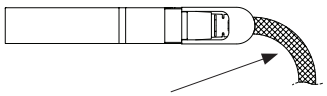
1:4 Breakout



1:8 Breakout







Minimum Bend Radius

SCAN TO DOWNLOAD SPEC SHEET

Because we continuously improve our products, Siemon reserves the right to change specifications and availability without prior notice.

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P: (61) 2 8977 7500

Siemon OEM Technologies
P: (1) 860 945 4213
www.siemon.com/OEM

China
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