QSFP-SFP25G-CU-XM-AO

Cisco® Compatible TAA Compliant 25GBase-CU QSFP28 to 1xSFP28 Direct Attach Cable (Passive Twinax, Up to 5m)

Features

- QSFP28 End: Compliant with QSFP28 MSA specifications
- SFP28 End: Compliant with SFP28 MSA specifications
- 1 independent duplex channels operating at 25Gbps
- AC coupled inputs and outputs
- 100 Ohm differential impedance
- 26AWG to 30AWG Wire Gauge
- All-metal housing for superior EMI performance
- Single power supply 3.3V, low power consumption
- Operating Temperature: 0°C to 70°C
- ROHS Compliant

Applications

- Serial Data Transmission Storage
- Fiber Channel

Product Description

This is a Cisco® compatible 25GBase-CU QSFP28 to 1xSFP28 direct attach cable that operates over passive copper with a maximum reach up to 5.0m (16.4ft). It has been programmed, uniquely serialized, and data-traffic and application tested to ensure it is 100% compliant and functional. This direct attach cable is TAA (Trade Agreements Act) compliant, and is built to comply with MSA (Multi-Source Agreement) standards. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

AddOn's direct attach cables are RoHS compliant and lead free.

TAA refers to the Trade Agreements Act (19 U.S.C. & 2501-2581), which is intended to foster fair and open international trade. TAA requires that the U.S. Government may acquire only "U.S. – made or designated country end products."

Order Information

Part Number	Description
QSFP-SFP25G-CU-0-5M-AO	Cisco® QSFP-SFP25G-CU-0-5M Compatible TAA Compliant 25GBase-CU QSFP28 to 1xSFP28 Direct Attach Cable (Passive Twinax, 0.5m)
QSFP-SFP25G-CU-1M-AO	Cisco® QSFP-SFP25G-CU-1M Compatible TAA Compliant 25GBase-CU QSFP28 to 1xSFP28 Direct Attach Cable (Passive Twinax, 1m)
QSFP-SFP25G-CU-1-5M-AO	Cisco® QSFP-SFP25G-CU-1-5M Compatible TAA Compliant 25GBase-CU QSFP28 to 1xSFP28 Direct Attach Cable (Passive Twinax, 1.5m)
QSFP-SFP25G-CU-2M-AO	Cisco® QSFP-SFP25G-CU-2M Compatible TAA Compliant 25GBase-CU QSFP28 to 1xSFP28 Direct Attach Cable (Passive Twinax, 2m)
QSFP-SFP25G-CU-2-5M-AO	Cisco® QSFP-SFP25G-CU-2-5M Compatible TAA Compliant 25GBase-CU QSFP28 to 1xSFP28 Direct Attach Cable (Passive Twinax, 2.5m)
QSFP-SFP25G-CU-3M-AO	Cisco® QSFP-SFP25G-CU-3M Compatible TAA Compliant 25GBase-CU QSFP28 to 1xSFP28 Direct Attach Cable (Passive Twinax, 3m)
QSFP-SFP25G-CU-4M-AO	Cisco® QSFP-SFP25G-CU-4M Compatible TAA Compliant 25GBase-CU QSFP28 to 1xSFP28 Direct Attach Cable (Passive Twinax, 4m)
QSFP-SFP25G-CU-5M-AO	Cisco® QSFP-SFP25G-CU-5M Compatible TAA Compliant 25GBase-CU QSFP28 to 1xSFP28 Direct Attach Cable (Passive Twinax, 5m)

Regulatory Compliance

- ESD to the Electrical PINs: compatible with MIL-STD-883E Method 3015.4
- ESD to the LC Receptacle: compatible with IEC 61000-4-3
- EMI/EMC compatible with FCC Part 15 Subpart B Rules, EN55022:2010
- Laser Eye Safety compliant with FDA 21CFR, EN60950-1& EN (IEC) 60825-1,2
- RoHS compliant with EU RoHS 2.0 directive 2015/863/EU

General Specifications

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Bit Error Rate	BER			10^{-12}		
Operating Temperature	T_C	0		70	$^\circ$C	1
Storage Temperature	T_{STO}	-40		85	$^\circ$C	2
Input Voltage	V_{CC}	3.14	3.3	3.46	V	

Notes:

1. Case temperature
2. Ambient temperature

Insertion Loss Level and Wire Gauge

Cable Length	Wire Gauge	Insertion Loss Level
0.5m	30AWG	CA-25G-N
1m	30AWG	CA-25G-N
1.5m	30AWG	CA-25G-N
2m	30AWG	CA-25G-N
2.5m	28AWG	CA-25G-N
3m	28AWG	CA-25G-S
4m	26AWG	CA-25G-L
5m	26AWG	CA-25G-L

Notes:

1. Cable insertion loss classification standard: IEEE 802.3by 110-10

Weight

Parameter	Symbol	Typ Max	Unit	Notes
30AWG Product Weight	G_{D30}	96	g/PCS	1
28AWG Product Weight	G_{D28}	105	g/PCS	1
26AWG Product Weight	G_{D26}	110	g/PCS	1
30AWG Cable Weight	G_{C30}	32	g/M	2
28AWG Cable Weight	G_{C28}	38	g/M	2
26AWG Cable Weight	G_{C26}	43	g/M	2
SFP28 END Dust CapWeight	G_S	0.80	g/PCS	
QSFP28 END Dust CapWeight	G_Q	1.40	g/PCS	

Notes:

1. The weight of the product.
2. The weight of unit length cable (two sticks). For example: the weight of 26AWG cable is: 110+43*(5-1)+0.80+1.40=284.2g

Cable Specifications

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Wire Gauge		30		26	AWG	
Cable Impedance	Z	90	100	110	Ohm	

Cable Dimension

Serial number	Standard Wire Gauge(AWG)	Cable diameter OD(mm)	Minimum bendingradius R (mm)
1	30	4.6	26
2	28	5.0	28
3	26	5.6	30

Nominal Length

Serial number	Module nominal length L1 (cm)	Tolerance range ±(cm)
1	L1≤3	2
2	3<L1≤4	4
3	4<L1≤5	6

Electrical Pin-out Details (QSFP28 END)

Top of Board		Bottom of Board	
GND	20	GND	1
RX2n	21	TX2n	2
RX2p	22	TX2p	3
GND	23	GND	4
RX4n	24	TX4n	5
RX4p	25	TX4p	6
GND	26	GND	7
ModPrsL	27	ModSelL	8
IntL	28	ResetL	9
$V_{cc}T_x$	29	$V_{cc}R_x$	10
$V_{cc}1$	30	SCL	11
LPMode	31	SDA	12
GND	32	GND	13
TX3p	33	RX3p	14
TX3n	34	RX3n	15
GND	35	GND	16
TX1p	36	RX1p	17
TX1n	37	RX1n	18
GND	38	GND	19

Top of Board   Bottom of Board

Top
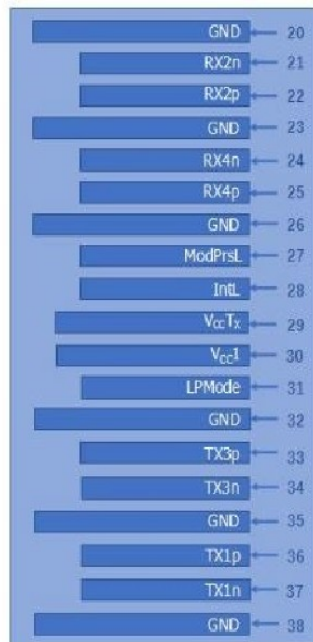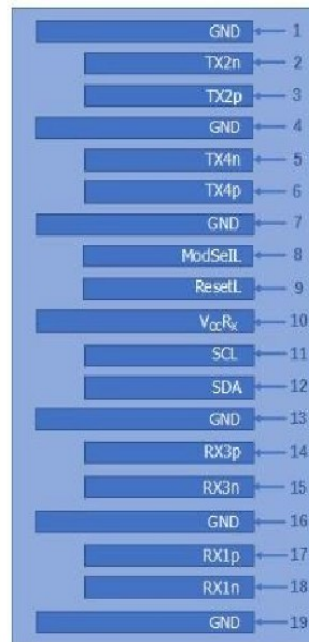
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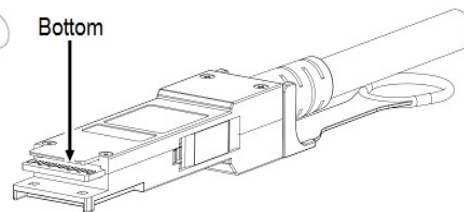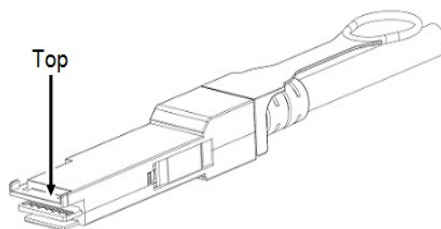
Pin Descriptions (QSFP28 END)

Pin	Symbol	Descriptions	Notes
1	GND	Ground	5
2	Tx2n	Transmitter Inverted Data Input, LAN2	
3	Tx2p	Transmitter Non-Inverted Data Input, LAN2	
4	GND	Ground	5
5	Tx4n	Transmitter Inverted Data Input, LAN4	
6	Tx4p	Transmitter Non-Inverted Data Input, LAN4	
7	GND	Ground	5
8	ModSelL	Module select pin, the module responds to two-wire serialcommunication when low level	1
9	ResetL	Module Reset	2
10	$V_{CC}RX$	+3.3V Power Supply Receiver	
11	SCL	2-wire serial interface clock	
12	SDA	2-wire serial interface data	
13	GND	Ground	5
14	Rx3p	Receiver Non-Inverted Data Output, LAN3	
15	Rx3n	Receiver Inverted Data Output, LAN3	
16	GND	Ground	5
17	Rx1p	Receiver Non-Inverted Data Output, LAN1	
18	Rx1n	Receiver Inverted Data Output, LAN1	
19	GND	Ground	5
20	GND	Ground	5
21	Rx2n	Receiver Inverted Data Output, LAN2	
22	Rx2p	Receiver Non-Inverted Data Output, LAN2	
23	GND	Ground	5
24	Rx4n	Receiver Inverted Data Output, LAN4	
25	Rx4p	Receiver Non-Inverted Data Output, LAN4	
26	GND	Ground	5
27	ModPrsL	The module is inserted into the indicate pin and grounded inthe module.	3
28	IntL	Interrupt	4
29	$V_{CC}TX$	+3.3V Power Supply transmitter	
30	$V_{CC}1$	+3.3V Power Supply	
31	LPMode	Low Power Mode	5
32	GND	Ground	5
33	Tx3p	Transmitter Non-Inverted Data Input, LAN3	
34	Tx3n	Transmitter Inverted Data Input, LAN3	
35	GND	Ground	5
36	Tx1p	Transmitter Non-Inverted Data Input, LAN1	
37	Tx1n	Transmitter Inverted Data Input, LAN1	
38	GND	Ground	5

Notes:

1. ModSelL is the input pin. The module responds to 2-wire serial communication commands when it is held low by the host. ModSelL allows multiple QSFP modules to be used on a single 2-wire interface bus. If ModSelL is High, the module will not respond to any 2-wire interface communication from the host. ModSelL has internal pull-up resistors in the module

2. The module restart pin, when the low level on the ResetL pin lasts longer than the minimum pulse length, resets the module and restores all user modules to their default state. When performing reset device, the host should ignore all status bits. Until the module reset interrupt is completed, please note that during hot plugging, the module will issue this information to complete the reset interrupt without resetting

3. This pin is active high, indicating that the module is running under a low power module. The signal has no effect on the functionality of this product.

4. IntL is the output pin, which is the open collector output and must be pulled up to Vcc with a 4.7kΩ-10kΩ resistor on the motherboard. When it is low, it indicates that the module may malfunction. The host uses a 2-wire serial interface to identify the interrupt source

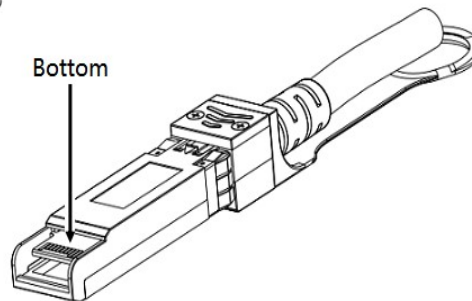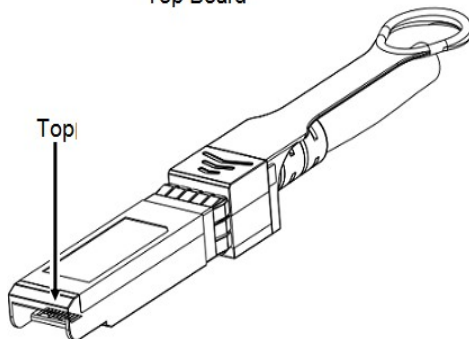5. Circuit ground is internally isolated from chassis ground.

Electrical Pin-out Details (SFP28 END)

Top Board		Bottom Board	
20 →	TX GND	1 →	TX GND
19 →	TD- TX DATA IN-	2 →	TX FAULT
18 →	TD+ TX DATA IN+	3 →	TX DISABLE
17 →	TX GND	4 →	SDA
16 →	Vcc TX	5 →	SCL
15 →	Vcc RX	6 →	MOD_ABS
14 →	RX GND	7 →	RS0
13 →	RD+ RX DATA OUT+	8 →	RX_LOS
12 →	RD- RX DATA OUT-	9 →	RS1
11 →	RX GND	10 →	RX GND
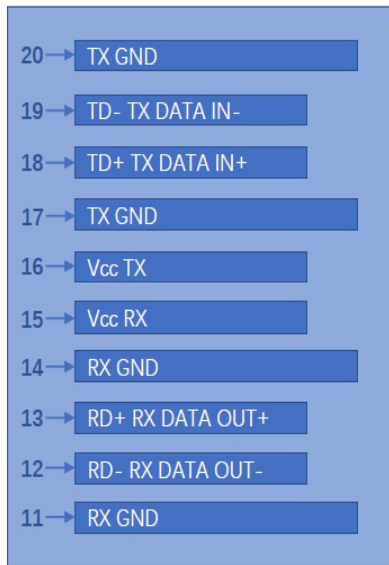
Top Board   Bottom Board

Top   Bottom

Pin Descriptions (SFP28 END)

Pin	Symbol	Descriptions	Notes
1	V$_{EET}$	Transmitter ground (common with receiver ground)	1
2	TX_FAULT	Transmitter failure alarm, not used	
3	TX_DISABLE	The signal turns off the module transmitter when it is high oropen, not used.	
4	SDA	Data line for serial ID	2
5	SCL	Clock line for serial ID	2
6	MOD_ABS	Module Absent. Grounded within the module	2
7	RS0	No connection required	
8	LOS	Loss of Signal indication. Logic 0 indicates normal operation	
9	RS1	No connection required	
10	V$_{EER}$	Receiver ground (common with transmitter ground)	1
11	V$_{EER}$	Receiver ground (common with transmitter ground)	1
12	RD-	Receiver Inverted DATA out. AC coupled	
13	RD+	Receiver Non-inverted DATA out. AC coupled	
14	V$_{EER}$	Receiver ground (common with transmitter ground)	1
15	V$_{CCR}$	Receiver power supply	
16	V$_{CCT}$	Transmitter power supply	
17	V$_{EET}$	Transmitter ground (common with receiver ground)	1
18	TD+	Transmitter Non-Inverted DATA in. AC coupled	
19	TD-	Transmitter Inverted DATA in. AC coupled	
20	V$_{EET}$	Transmitter ground (common with receiver ground)	1

Notes:

1. Circuit ground is isolated from chassis ground
2. Should Be pulled up with 4.7k - 10k ohm on host board to a voltage between 2V and 3.6V

Mechanical Specifications
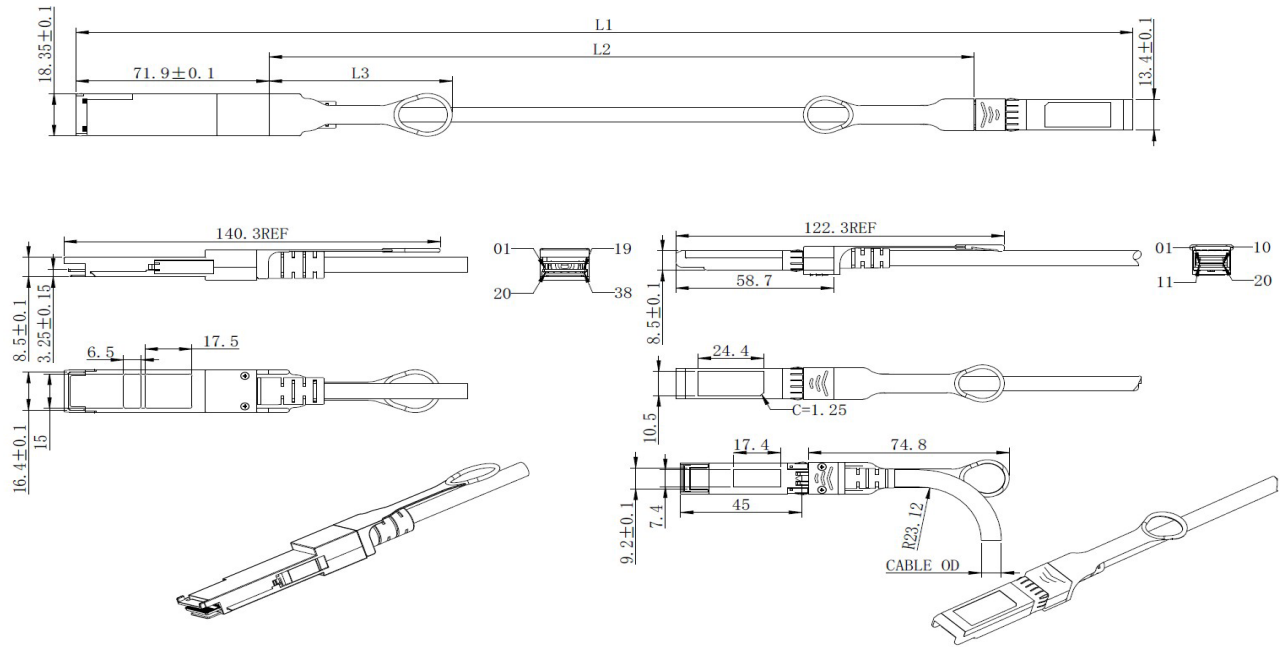
ALL DIMENSIONS ARE ±0.2mm UNLESS OTHERWISE SPECIFIED

UNIT: mm

About AddOn Networks

In 1999, AddOn Networks entered the market with a single product. Our founders fulfilled a severe shortage for compatible, cost-effective optical transceivers that compete at the same performance levels as leading OEM manufacturers. Adhering to the idea of redefining service and product quality not previously had in the fiber optic networking industry, AddOn invested resources in solution design, production, fulfillment, and global support.

Combining one of the most extensive and stringent testing processes in the industry, an exceptional free tech support center, and a consistent roll-out of innovative technologies, AddOn has continually set industry standards of quality and reliability throughout its history.

Reliability is the cornerstone of any optical fiber network and is in engrained in AddOn's DNA. It has played a key role in nurturing the long-term relationships developed over the years with customers. AddOn remains committed to exceeding industry standards with certifications from ranging from NEBS Level 3 to ISO 9001:2005 with every new development while maintaining the signature reliability of its products.

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