

200G QSFP56 Active Direct Attach Copper Twinax Cable



Application

- 200 Gigabit Ethernet
- InfiniBand HDR
- Data Centre, High Performance Computing(HPC)
- Router, Server, Storage, Switch

Features

- Fully Compliant with the Latest SFF-8665 QSFP MSA
- EEPROM in Cable Assembly
- Enables 200Gb/s Transmission
- Operating Temperature Range: 0°C to 70°C
- Single +3.3V Power Supply
- Maximum Link Length: up to 7m
- Selectable: 26AWG, 28AWG, 30AWG

Standards Compliance

- IEEE 802.3cd
- SFF-8665
- QSFP MSA
- SFF-8679
- SFF-8636
- InfiniBand HDR

Description

The 200G QSFP56 Active Direct Attach Copper Twinax Cable is designed for use in 200GBASE Ethernet and HDR InfiniBand systems. This cable is compliant with IEEE 802.3cd by Ethernet standard, QSFP MSA Compliant and InfiniBand HDR. Each QSFP56 connector comprises an EEPROM providing product information which can be read by the host system. They are suitable for very short links and offer a cost-effective way to establish a 200G-Gigabit link between QSFP56-200G ports of switches/routers/servers/storages within racks and across adjacent racks.

Product Specification

I. Absolute Maximum Ratings

Parameter	Unit	Min.	Typical	Max.
Storage Temperature	°C	-45		80
Operating Relative Humidity	%			85
Power Supply Working Voltage	V	-0.5		3.6

II. Recommended Operating Conditions

Parameter	Unit	Min.	Typical	Max.
Operating Case Temperature	°C	0		70
Power Supply Working Voltage	V	3.135	3.3	3.465
Bit Rate	Gbps		200	

III. Electrical Characteristics

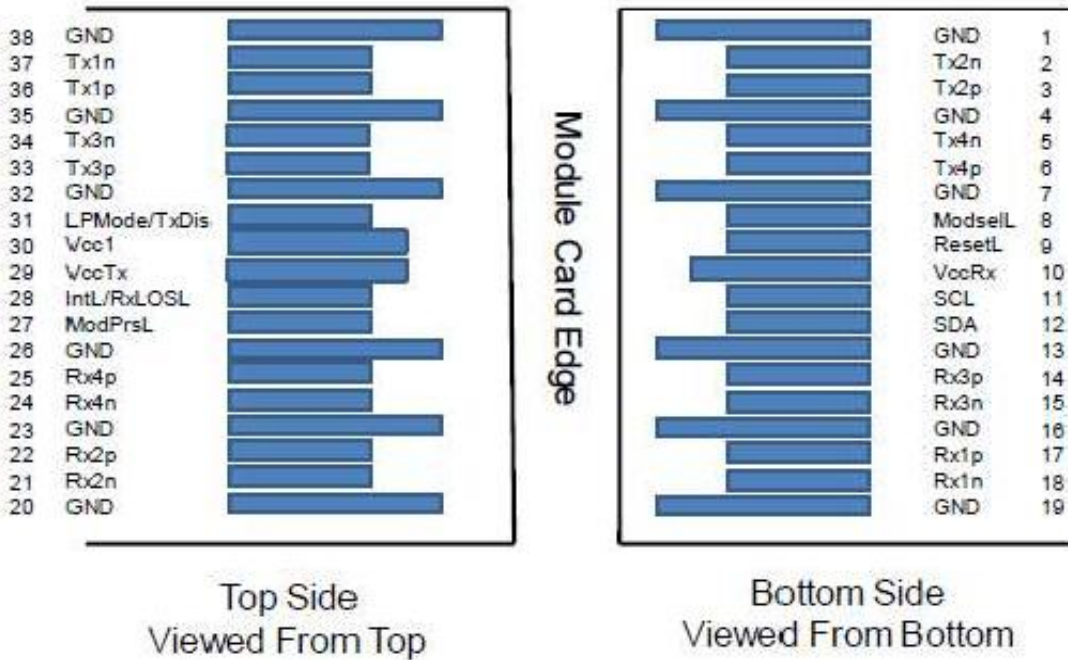
All performance is defined over the recommended operating environment unless otherwise specified.

Item	Parameter	Reference
SDD21	8dB<X<17.16dB@13.28 GHz	IEEE802.3cd, Clause 136.11.2
SDD11/22	-16.5+2*sqrt(f)dB Max. @0.05GHz~4.1GHz -10.66+14*log(f/5.5) dB Max.@4.1GHz~19GHz	
SCD11/22	-22+(20/25.78)*f dB Max.@0.01GHz~12.89GHz -15+(6/25.78)*f dB Max.@12.89GHz~19GHz	IEEE802.3cd, Clause 136.11.4

Item	Parameter	Reference
SCD21-SDD21	-10dB Max.@0.01GHz~12.89GHz -27+(29/22)*f dB Max. @12.89GHz~15.7GHz	IEEE802.3cd, Clause 136.11.5
	-6.3dB Max. @15.7GHz~19GHz	
SCC11/22	-2dB Max. @0.2GHz~19GHz	IEEE802.3cd, Clause 136.11.6
ICN	3 ≤ IL ≤ 7.65: 5 mV Max. 7.65 ≤ IL ≤ 26: 12.75 - 0.49 *f mV Max. IL is the Value @13.28GHz, f is in GHz	
COM	3dB Min.	
NEXT	-40dB Max.	

IV. PIN Definitions

For detail mechanical information, please refer to the related document of SFF-8679.



V. Pin Descriptions

Pin No.	Symbol	Level / Logic	Description
1	GND		Module Ground
2	Tx2n	CML-I	Transmitter Inverted Data Input
3	Tx2p	CML-I	Transmitter Non-Inverted Data Input
4	GND		Module Ground
5	Tx4n	CML-I	Transmitter Inverted Data Input
6	Tx4p	CML-I	Transmitter Non-Inverted Data Input
7	GND		Module Ground
8	ModSelL	LVTTTL-I	Module Select
9	ResetL	LVTTTL-I	Module Reset
10	V _{CC} Rx		+3.3V Power Supply for Receiver
11	SCL	LVTTTL-I	2-Wire Serial Interface Clock
12	SDA	LVTTTL-I/O	2-Wire Serial Interface Data Line
13	GND		Module Ground
14	Rx3p	CML-O	Receiver Non-Inverted Data Output
15	Rx3n	CML-O	Receiver Inverted Data Output
16	GND		Module Ground
17	Rx1p	CML-O	Receiver Non-Inverted Data Output
18	Rx1n	CML-O	Receiver Inverted Data Output
19	GND		Module Ground

Pin No.	Symbol	Level / Logic	Description
20	GND		Module Ground
21	Rx2n	CML-O	Receiver Inverted Data Output
22	Rx2p	CML-O	Receiver Non-Inverted Data Output
23	GND		Module Ground
24	Rx4n	CML-O	Receiver Inverted Data Output
25	Rx4p	CML-O	Receiver Non-Inverted Data Output
26	GND		Module Ground
27	ModPrsL	LVTTTL-O	Module Present
28	IntL/RxLOSL	LVTTTL-O	Interrupt. Optionally Configurable as RxLOSL via the Management Interface (SFF-8636).
29	V _{CC} Tx		+3.3V Power Supply for Transmitter
30	V _{CC} 1		+3.3V Power Supply
31	LPMode/TxDis	LVTTTL-I	Low Power Mode. Optionally Configurable as TxDis via the Management Interface (SFF-8636).
32	GND		Module Ground
33	Tx3p	CML-I	Transmitter Non-Inverted Data Input
34	Tx3n	CML-I	Transmitter Inverted Data Input
35	GND		Module Ground
36	Tx1p	CML-I	Transmitter Non-Inverted Data Input
37	Tx1n	CML-I	Transmitter Inverted Data Input
38	GND		Module Ground

VI. Digital Diagnostic Functions

2-Wire Serial Address 1010000x	
Lower Page 00h	
0	Identifier
1- 2	Status
3- 21	Interrupt Flags
22- 33	Free Side Device Monitors
34- 81	Channel Monitors
82- 85	Reserved
86- 98	Control
99	Reserved
100-104	Hardware Interrupt Pin Masks
105-106	Vendor Specific
107	Reserved
108-110	Free Side Device Properties
111-112	Assigned for use by PCI Express
113	Free Side Device Properties
114-118	Reserved
119-122	Password Change Entry Area (Optional)
123-126	Password Entry Area (Optional)
127	Page Select Byte

Upper Page 00h	Optional Page 01h	Optional Page 02h	Optional Page 03h	
128 Identifier	128 CC_APPS	128-255 User EEPROM Data	128-175 Free Side Device Thresholds	
129-191 Base ID Fields	129 AST Table Length (TL)		176-223 Channel Thresholds	224 Tx EQ & Rx Emphasis Magnitude ID
	130-131 Application Code Entry 0			
	132-133 Application Code Entry 1			
134-253 other entries	225 RX output amplitude indicators			
192-223 Extended ID	254-255 Application Code Entry TL	226-241 Channel Controls		
224-255 Vendor Specific ID		242-251 Channel Monitor Masks		
			252-255 Reserved	

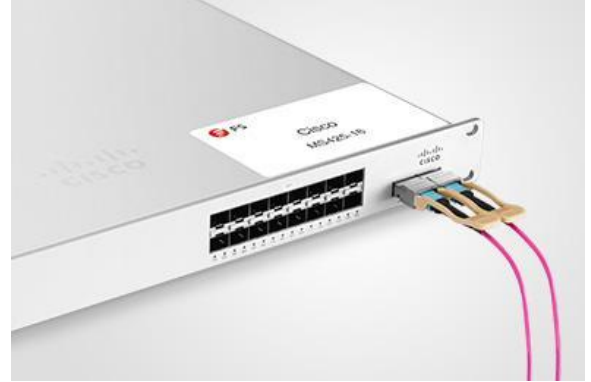
Test Center

I. Compatibility Testing

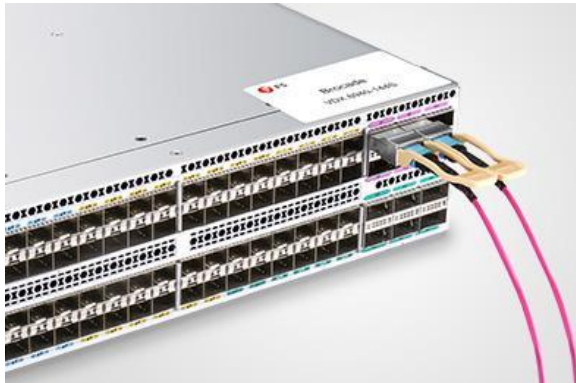
Each fiber optical transceiver has been tested in host device on site in FS Assured Program to ensure full compatibility with over 200 vendors.



Cisco Catalyst C9500-24Y4C



Cisco MS425-16



Brocade VDX 6940-144S



Dell EMC Networking Z9100-ON



Force@tm S60-44T

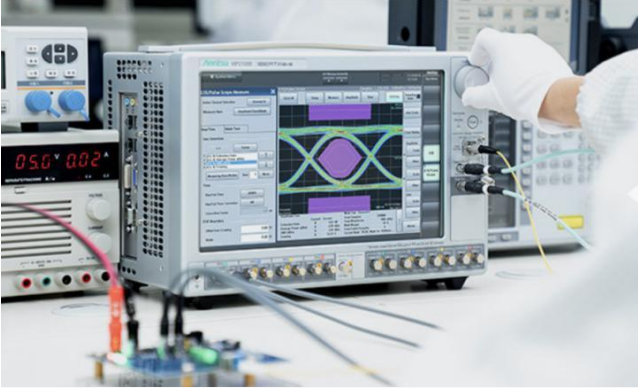


HUAWEI S6720-30L-HI-24S

Above is part of our test bed network equipment. For more information, please click the Test Bed PDF. It will be updated in real time as we expand our portfolio.

II. Performance Testing

Each fiber optical transceiver has been fully tested in FS Assured Program equipped with world's most advanced analytical equipment to ensure that our transceivers work perfectly on your device.



1. TX/RX Signal Quality Testing

Equipped with the all-in-one tester integrated 4ch BERT & sampling oscilloscope, and variable optical attenuator to ensure the input and output signal quality.

- Eye Pattern Measurements: jitter, Mask Margin, etc
- Average Output Power
- OMA
- Extinction Ratio
- Receiver Sensitivity
- BER Curve

2. Reliability and Stability Testing

Subject the transceivers to dramatic changes in temperature on the thermal shock chamber to ensure reliability and stability of the transceivers.

- Commercial: 0 °C to 70 °C
- Extended: -5 °C to 85 °C
- Industrial: -40 °C to 85 °C



3. Transfer Rate and Protocol Testing

Test the actual transfer data rate and the transmission ability under different protocols with Network Master Pro.

- Ethernet
- Fibre Channel
- SDH/SONET
- CPRI



4. Optical Spectrum Evaluation

Evaluate various important parameters with the Optical Spectrum Analyzer to meet the industry standards.

- Center Wavelength, Level
- OSNR
- SMSR
- Spectrum Width



Ordering Information

Part Number	Data Rate	Length	Wire Gauge	Connector Type	Temp. Range	Cable Jacket
Q56-AC03	200G	3m	30AWG	Active Copper	0-70°C	PVC
Q56-AC05	200G	5m	28AWG	Active Copper	0-70°C	PVC
Q56-AC07	200G	7m	26AWG	Active Copper	0-70°C	PVC



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