

QSFP56

EQ5DP20X-330CNxx 200Gbps QSFP56 Passive High Speed Cable

- Compliant with SFF-8636
- Compliant with IEEE802.3bj& IEEE802.3cd
- Support I2C two - line string interface, easy to control
- Support for hot plugging
- Low crosstalk
- Low power



Applications

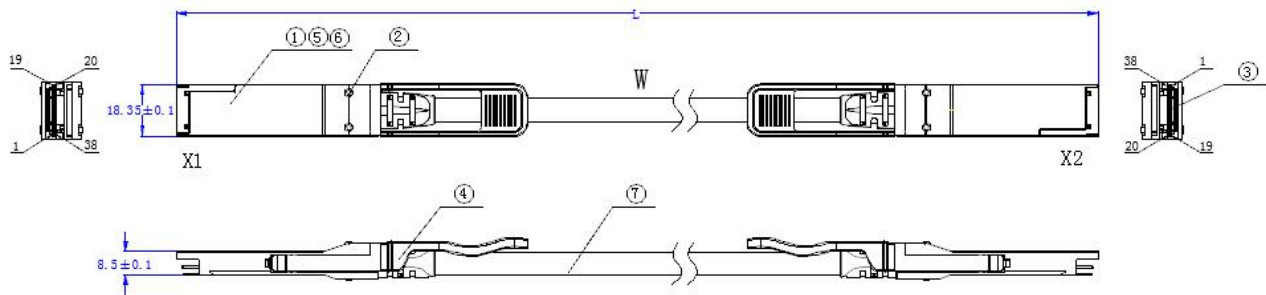
- 10G/40G /100G/200G Ethernet
- Infiniband SDR, DDR, QDR,FDR,EDR,HDR
- SWITCH
- Router
- Concentrator
- Data center, cloud server

Description

200G QSFP56 passive cable assembly products, based on 4X25G/4X28G or 4*50G/4*56G(pam-4) /2*100Gstructure, this product can well meet the next generation of 200G switches, servers, routers and other products application needs.

The QSFP56 cable assembly is optimally designed to reduce crosstalk and plug loss, providing excellent signal integrity and fully compliant with next generation Ethernet and InfiniBand standards.

Outline drawing



Wiring Diagram

X1	X2	REMARKS	X1	X2	REMARKS
18 (RX1-)	37 (TX1-)	pair	37 (TX1-)	18 (RX1-)	pair
17 (RX1+)	36 (TX1+)		36 (TX1+)	17 (RX1+)	
15 (RX3-)	34 (TX3-)	pair	34 (TX3-)	15 (RX3-)	pair
14 (RX3+)	33 (TX3+)		33 (TX3+)	14 (RX3+)	
6 (TX4+)	25 (RX4+)	pair	25 (RX4+)	6 (TX4+)	pair
5 (TX4-)	24 (RX4-)		24 (RX4-)	5 (TX4-)	
3 (TX2+)	22 (RX2+)	pair	22 (RX2+)	3 (TX2+)	pair
2 (TX2-)	21 (RX2-)		21 (RX2-)	2 (TX2-)	
1, 4, 7, 13, 16, 19, 20, 23, 26, 32, 35, 38	1, 4, 7, 13, 16, 19, 20, 23, 26, 32, 35, 38	GND	8, 9, 10, 11, 12, 27, 28, 29, 30, 31	8, 9, 10, 11, 12, 27, 28, 29, 30, 31	EEPROM point at both ends

Electrical Performance

1.Signal Integrity

ITEM		REQUIREMENT						TEST CONDITION	
Differential Impedance	Cable Impedance	105+5/-10Ω						Rise time of 25ps (20 % - 80 %).	
	Paddle Card Impedance	100±10Ω							
	Cable Termination Impedance	100±15Ω							
Differential (Input/Output)Return loss S_{DD11}/S_{DD21}		$\text{Return_loss}(f) \geq \left\{ \begin{array}{ll} 16.5-2\sqrt{f} & 0.05 \leq f < 4.1 \\ 10.66-14\log_{10}(f/5.5) & 4.1 \leq f \leq 19 \end{array} \right\}$ Where f is the frequency in GHz Return loss(f) is the return loss at frequency f						10MHz≤ f ≤19GHz	
Differential to common-mode (Input/Output)Return loss S_{CD11}/S_{CD21}		$\text{Return_loss}(f) \geq \left\{ \begin{array}{ll} 22-(20/25.78)f & 0.01 \leq f < 12.89 \\ 15-(6/25.78)f & 12.89 \leq f \leq 19 \end{array} \right\}$ Where f is the frequency in GHz Return_loss(f) is the Differential to common-mode return loss at frequency f						10MHz≤ f ≤19GHz	
Common-mode to Common-mode (Input/Output)Return loss S_{CC11}/S_{CC21}		$\text{Return_loss}(f) \geq 2\text{dB} \quad 0.2 \leq f \leq 19$ Where f is the frequency in GHz Return_loss(f) is the common-mode to common-mode return loss at frequency f						10MHz≤ f ≤19GHz	
Differential Insertion Loss (S_{DD21} Max.)		(Differential Insertion Loss Max. For TPa to TPb Excluding Test fixture)						10MHz≤ f ≤19GHz	
		F AWG	1.25GHz	2.5GHz	5.0GHz	7.0GHz	10GHz		12.89GHz
		30(1m)Max.	4.5dB	5.4dB	6.3dB	7.5dB	8.5dB		10.5dB
		30/28(3m)Max.	7.5dB	9.5dB	12.2dB	14.8dB	18.0dB	21.5dB	

	26(3 m)M ax.	5.7dB	7.2dB	9.9 dB	11.9d B	14.1d B	16.5d B	
	26/2 5(5m)Max	7.8dB	10.0d B	13.5d B	16.0d B	19.0d B	22.0dB	
Insertion Loss Deviation	$-0.176*f - 0.7 \leq \text{ILD} \leq 0.176* f + 0.7$							50MHz≤f ≤19GHz
Differential to common-mode Conversion Loss-Differential Insertion Loss($S_{CD21}-S_{DD21}$)	$\text{Conversion_loss}(f) - \text{IL}(f) \geq \begin{cases} 10 & 0.01 \leq f < 12.89 \\ 27 - (29/22)f & 12.89 \leq f < 19 \end{cases}$ <p>Where f is the frequency in GHz Conversion_loss(f) is the cable assembly differential to common-mode conversion loss IL(f) is the cable assembly insertion loss</p>							10MHz≤f ≤19GHz
MDNEXT(multiple disturber near-end crosstalk)	≥26dB @12.89GHz							10MHz≤f ≤19GHz
Intra Skew	15ps/m,							10MHz≤f ≤19GHz

2.Other Electrical Performance

ITEM	REQUIREMENT	TEST CONDITON
Low Level Contact Resistance	70milliohms Max. From initial.	EIA-364-23:Apply a maximum voltage of 20mV And a current of 100 mA.
Insulation Resistance	10Mohm(Min.)	EIA364-21:AC 300V 1minute
Dielectric Withstanding Voltage	NO disruptive discharge.	EIA-364-20:Apply a voltage of 300 VDC for 1minute between adjacent terminals And between adjacent terminals and ground.

Environment Performance

ITEM	REQUIREMENT	TEST CONDITON
Operating Temp. Range	-20°C to +75°C	Cable operating temperature range.
Storage Temp. Range (in packed condition)	-40°C to +80°C	Cable storage temperature range in packed condition.
Thermal Cycling Non-Powered	No evidence of physical damage	EIA-364-32D, Method A, -25 to 90C, 100 cycles, 15 min. dwells
Salt Spraying	48 hours salt spraying after shell corrosive area less than 5%.	EIA-364-26
Mixed Flowing Gas	Pass electrical tests per 3.1 after stressing. (For connector only)	EIA-364-35 Class II,14 days.
Temp. Life	No evidence of physical damage	EIA-364-17C w/ RH, Damp heat 90°C at 85% RH for 500 hours then return to ambient
Cable Cold Bend	4H, No evidence of physical damage	Condition: -20°C±2°C, mandrel diameter is 6 times the cable diameter.

Mechanical and Physical Characteristics

ITEM	REQUIREMENT	TEST CONDITON
Vibration	Pass electrical tests per 3.1 after stressing.	Clamp & vibrate per EIA-364-28E, TC-VII, test condition letter – D, 15 minutes in X, Y & Z axis.
Cable Flex	No evidence of physical damage	Flex cable 180° for 20 cycles (±90° from nominal position) at 12 cycles per minute with a 1.0kg load applied to the cable jacket. Flex in the boot area 90° in each direction from vertical. Per EIA-364-41C
Cable Plug Retention in Cage	90N Min. No evidence of physical damage	Force to be applied axially with no damage to cage. Per SFF 8661 Rev 2.1 Pull on cable jacket approximately 1 ft behind cable plug. No functional damage to cable plug below 90N. Per SFF-8432 Rev 5.0
Cable Retention in Plug	90N Min. No evidence of physical damage	Cable plug is fixtured with the bulk cable hanging vertically. A 90N axial load is applied (gradually) to the cable jacket and held for 1 minute. Per EIA-364-38B

Mechanical Shock	Pass electrical tests Per 3.1 after stressing.	Clamp and shock per EIA-364-27B, TC-G,3 times in 6 directions, 100g, 6ms.
Cable Plug Insertion	40N Max.(QSFP28)	Per SFF8661 Rev 2.1
Cable plug Extraction	30N Max. (QSFP28)	Place axial load on de-latch to de-latch plug.Per SFF8661 Rev 2.1
Durability	50 cycles,No evidence of physical damage	EIA-364-09, perform plug &unplug cycles:Plug and receptacle mate rate: 250times/hour. 50times for QSFP28/SFP28 module (CONNECTOR TO PCB)

Compatibility Test

In order to ensure the product compatibility, our products will be tested on the switch before shipment. Our modules can compatible with many mainstream brand switches, such as Cisco, Juniper, Extreme, Brocade, IBM, H3C, HP, Huawei, D-Link, Mikrotik, ZTE, TP-Link...

Our test equipment: VOLKTEK MEN-4110, HP 2530-8G, CRS226-24G-25+RM, Catalyst 2960G Series, Catalyst 3850 XS 10G SFP+, Catalyst 3750-E Series, HUAWEI S5700Series, H3C S3100V2 Series, Juniper-EX4200, etc.



Cisco Catalyst 3850



HUAWEI S5700



H3C S3100V2



HP J9264AR



Juniper EX 4200



Alcatel 6850E-U24X



Mikrotik CR5226-24G-25+RM



Cisco Catalyst 2960G



Volktek MEN-4110

Product Production Process

Quality Assurance

Continuous introduction of new equipment, produced by strict standards, strict quality inspection, to guarantee the high quality standard of each product.



**Standardized
Production Line**



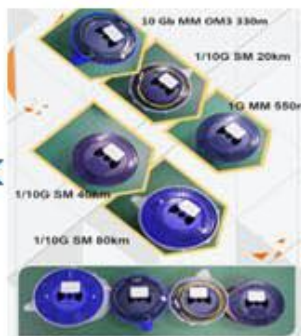
**Professional
Welding**



Assembling



Aging Testing



Distance Testing



Cleaning end face



Product Initial Test



Switch Testing



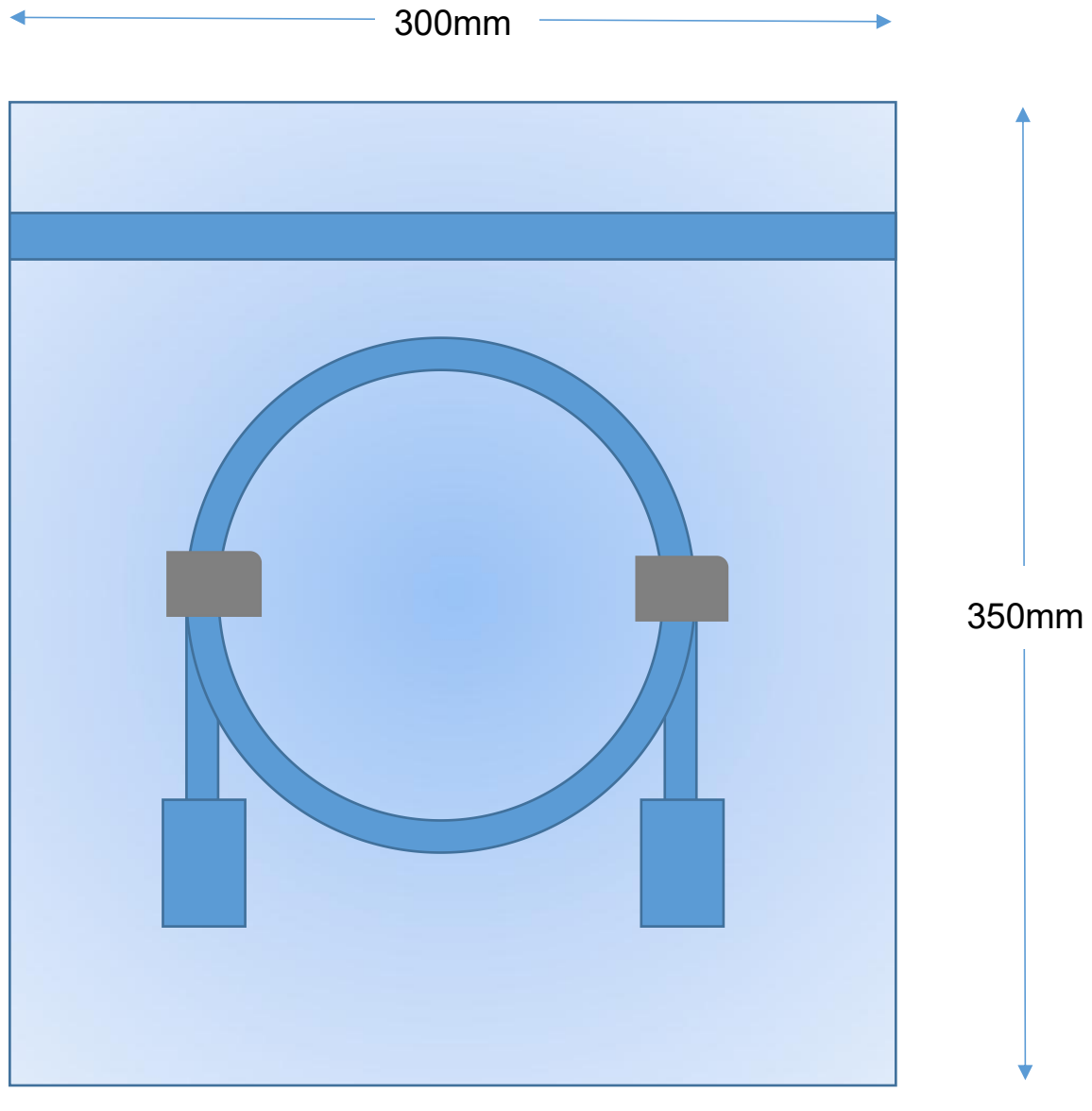
Product Final Test

Packaging diagram

Both ends of the connector use protective sleeve protection, each into a separate anti - static bag.

<=2m : 200mm*300mm

>2m: 300mm*350mm



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