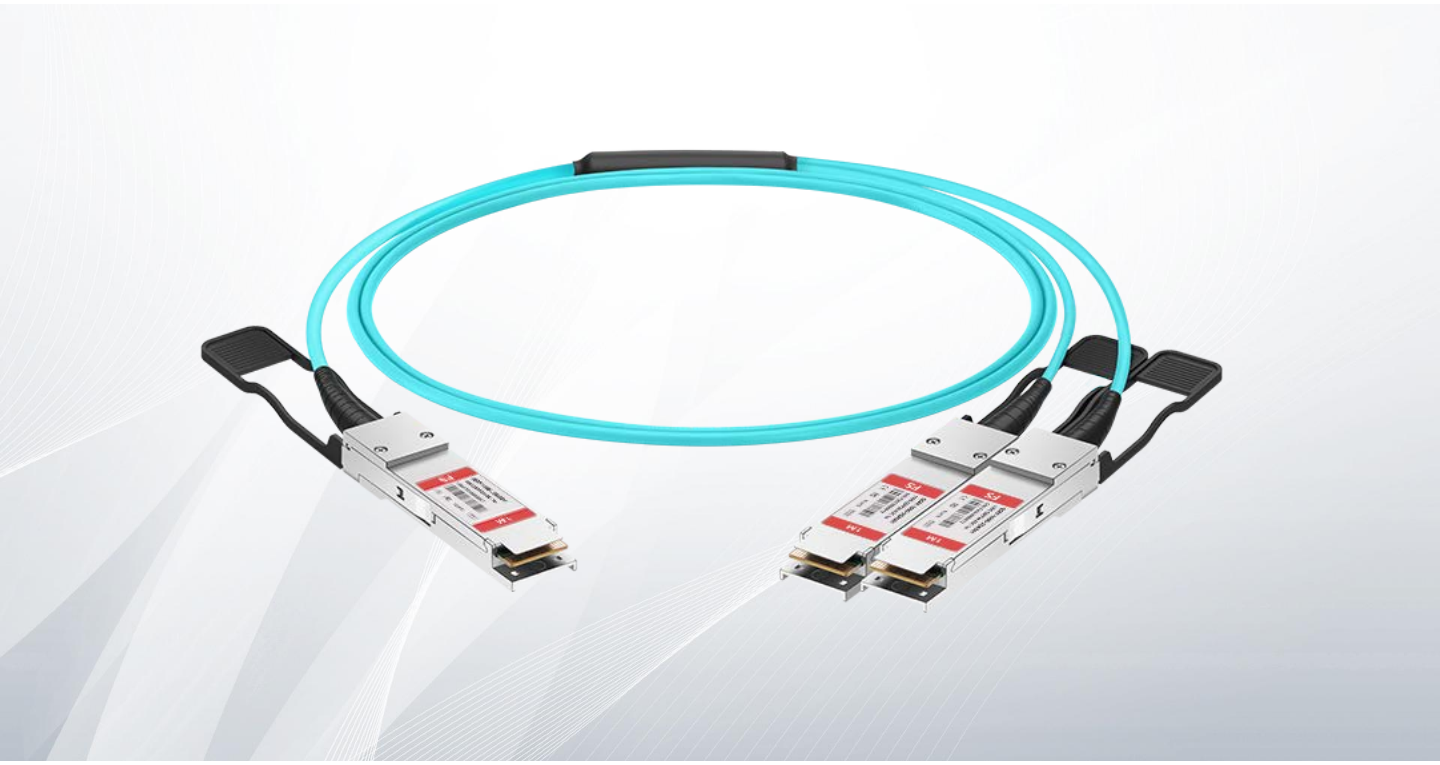
100G QSFP28 to 2x50G QSFP28 Active Optical Breakout Cable



Application

- 100GbE to 2x 50GbE at 25.78125Gbps per Lane
- Other Optical Links

Standards

- QSFP28 Electrical MSA
- SFF-8636
- SFF-8665

Features

- Support 100GbE to 2x50GbE Application
- Multirate of Up to 25.78125Gbps
- 3.3V Single Power Supply
- Low Power Consumption ≤1.65W
- Operating Temperature Range: 0~70℃

Description

The 100G QSFP28 to 2x50G QSFP28 Active Optical Breakout Cable operates over Multi-Mode Fiber (MMF). This breakout cable is compliant with SFF-8636, QSFP28 Electrical MSA standards. It provides a connection of a 100G QSFP28 port on one end and to two 50G QSFP28 ports on the other end and is suitable for quick and simple connections within racks and across adjacent racks.

Product Specifications

I. Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit	Notes
Signaling Speed per Lane		25.78125 ± 100ppm		Gb/s	
Storage Temperature	T_S	-20	85	℃	
Relative Humidity	RH	0	85	%	
Case Operating Temperature	TCase	0	70	℃	
Supply Voltage	V_{CC}	-0.5	3.6	V	

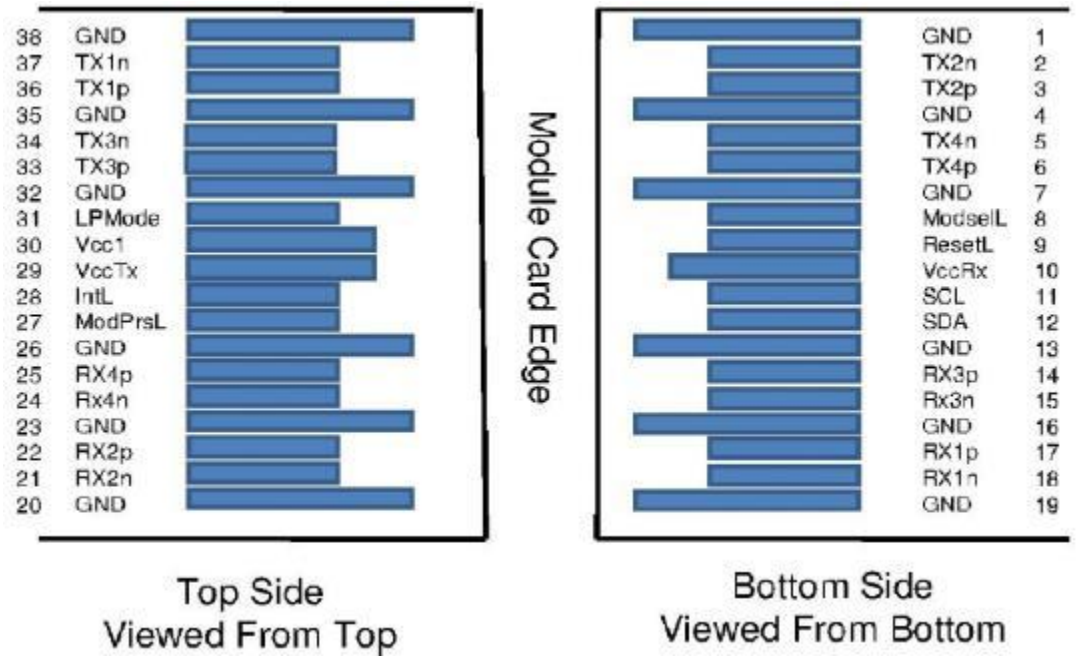
II. Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit
Power Supply Voltage	V_{CC}	3.135	3.300	3.465	V
Operating Case Temperature	T_C	0	25	70	℃

III. Electrical Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit
Transmitter					
Signaling Speed per Lane			25.78125 ± 100ppm		Gb/s
Center Wavelength	C	840	850	860	nm
Differential Input Impedance	Zin	90	100	110	Ohm
Differential Input Voltage	V_{in}	300		1100	mVp-p
Average Launch Power per Lane	PAVG	-7.5	-1	+2.5	dBm
Extinct Ratio	ER	3.0			dB
Receiver					
Signaling Speed per Lane			25.78125 ± 100ppm		Gb/s
Center Wavelength	C	840	850	860	nm
Damage Threshold	DT	3.4			dBm
Differential Output Impedance	Z_{out}	90	100	110	Ohm
Differential Output Voltage	V_{out}	400		800	mVp-p
Receiver Sensitivity	SEN	2.5			dBm
Bit Error Rate	BER			10^{-12}	

IV. Pin Definition



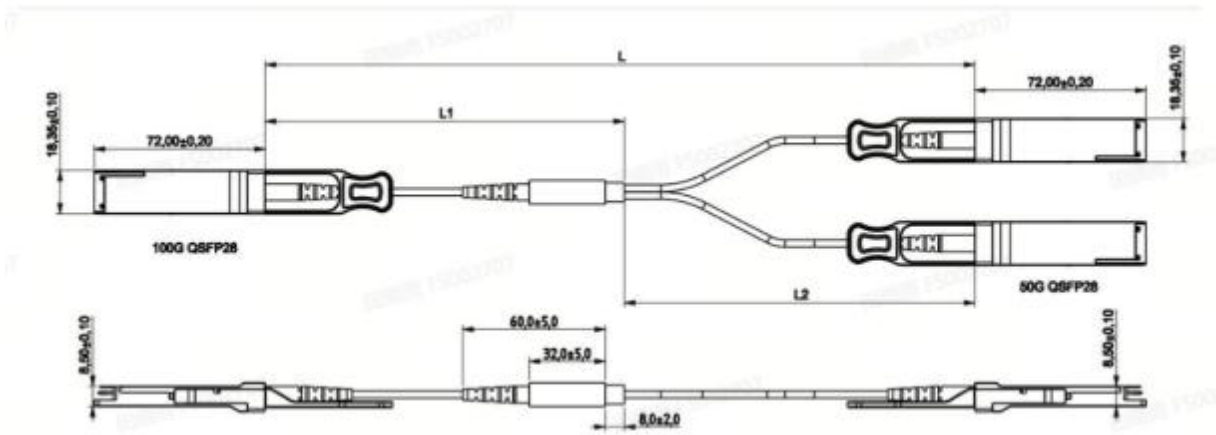
PIN	Symbol	Description
1	GND	Ground
2	Tx2n	Transmitter Inverted Data Input
3	Tx2p	Transmitter Non-Inverted Data Output
4	GND	Ground
5	Tx4n	Transmitter Inverted Data Input
6	Tx4p	Transmitter Non-Inverted Data Output
7	GND	Ground
8	ModSelL	Module Select
9	ResetL	Module Reset

PIN	Symbol	Description
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
14	Rx3p	Receiver Non-Inverted Data Output
15	Rx3n	Receiver Inverted Data Output
16	GND	Ground
17	Rx1p	Receiver Non-Inverted Data Output
18	Rx1n	Receiver Inverted Data Output
19	GND	Ground
20	GND	Ground
21	Rx2n	Receiver Inverted Data Output
22	Rx2p	Receiver Non-Inverted Data Output
23	GND	Ground
24	Rx4n	Receiver Inverted Data Output
25	Rx4p	Receiver Non-Inverted Data Output
26	GND	Ground
27	ModPrsL	Module Present
28	IntL	Interrupt

PIN	Symbol	Description
29	V_{CC}Tx	3.3 V Power Supply Transmitter
30	V_{CC}1	3.3 V Power Supply
31	LPMode	Low Power Mode
32	GND	Ground
33	Tx3p	Transmitter Inverted Data Input
34	Tx3n	Transmitter Non-Inverted Data Output
35	GND	Ground
36	Tx1p	Transmitter Inverted Data Input
37	Tx1n	Transmitter Non-Inverted Data Output
38	GND	Ground

VI. Diagram Mechanial Drawing

Unit: mm



VII. Connectivity Schematic

100Gb/sSide	50Gb/sSide
	Port1
Tx1	Rx1
Rx1	Tx1
Tx2	Rx2
Rx2	Tx2
	Port2
Tx3	Rx1
Rx3	Tx1
Tx4	Rx2
Rx4	Tx2

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



Force⑩tm S60-44T

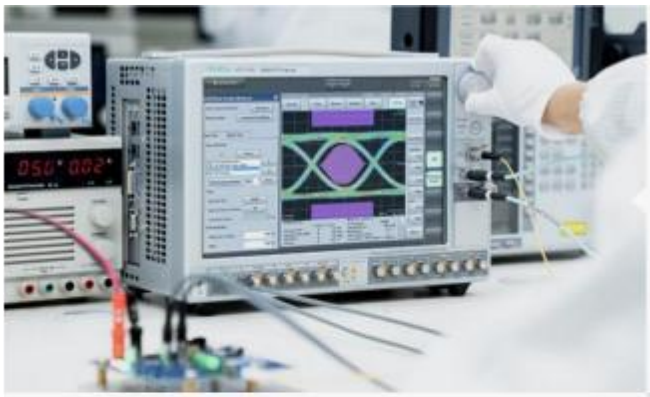


HUAWEI S6720-30L-HI-24S

Above is part of our test bed network equipment. For more information, please click the Test Bed PDF. It will be updated in realtime 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



Order Information

Part Number	Data Rate	Length	Wire Gauge	Connector Type	Temp. Range	Cable Jacket
QSFP-100G-2QAO01	100G	1M	AOC Cable	Q28 to 2Q28	0-70 ℃	OFNP
QSFP-100G-2QAO03	100G	3M	AOC Cable	Q28 to 2Q28	0-70 ℃	OFNP
QSFP-100G-2QAO05	100G	5M	AOC Cable	Q28 to 2Q28	0-70 ℃	OFNP
QSFP-100G-2QAO07	100G	7M	AOC Cable	Q28 to 2Q28	0-70 ℃	OFNP
QSFP-100G-2QAO10	100G	10M	AOC Cable	Q28 to 2Q28	0-70 ℃	OFNP
QSFP-100G-2QAO20	100G	20M	AOC Cable	Q28 to 2Q28	0-70 ℃	OFNP
QSFP-100G-2QAO30	100G	30M	AOC Cable	Q28 to 2Q28	0-70 ℃	OFNP
QSFP-100G-2QAO50	100G	50M	AOC Cable	Q28 to 2Q28	0-70 ℃	OFNP
QSFP-100G-2QAO70	100G	70M	AOC Cable	Q28 to 2Q28	0-70 ℃	OFNP
QSFP-100G-2QAO100	100G	100M	AOC Cable	Q28 to 2Q28	0-70 ℃	OFNP