

LQP100-DAC-xxx

QSFP28 Direct Attach Passive Copper Cables,1m,2m,3m,4m,5m

PRODUCT FEATURES

- Up to 100 Gb/s bi-directional data links
- Compliant with QSFP28 MSA specifications
- Fully Compliant with IEEE 802.3bj
- Fully Compliant with Infiniband EDR specifications
- AC coupled inputs and outputs
- 100 Ohm differential impedance
- All-metal housing for superior EMI performance
- Single power supply 3.3V, low power consumption
- RoHS Compliant
- Operating temperature range: 0°C to 70°C

APPLICATIONS

- 100Gigabit Ethernet
- Serial Data Transmission
- Infiniband

Product Description

QSFP28 passive cable uses shielded high-speed differential cables, Compliant with 100G Ethernet standard and QSFP28 Multi-Source Agreement (MSA) standard, it supports 100G transmission rate and can be backward compatible with various rates. QSFP28 passive cable is the preferred solution for short-distance applications. It is widely used for data transmission between data centers and cabinets or adjacent cabinets. Its biggest feature is low cost, ultra-low power consumption (less than 1.1 watt) and high reliability.

Ordering Information

Part Number	Description	Cable Length (m)	AWG
LQP100-DAC-001	QSFP28 to QSFP28	1	30
LQP100-DAC+001	QSFP28 to QSFP28	1	26
LQP100-DAC-002	QSFP28 to QSFP28	2	30
LQP100-DAC+002	QSFP28 to QSFP28	2	26
LQP100-DAC-003	QSFP28 to QSFP28	3	30
LQP100-DAC+003	QSFP28 to QSFP28	3	26
LQP100-DAC-005	QSFP28 to QSFP28	5	26

I. General Specifications

Parameter	Symbol	Min	Typ	Max	Unit	Remarks
Bit Error Rate	BER			10-12		
Operating Temperature	T _c	0		70	°C	1
Storage Temperature	T _{sto}	-40		85	°C	2
Input Voltage	V _{cc}	3.14	3.3	3.46	V	

Notes:

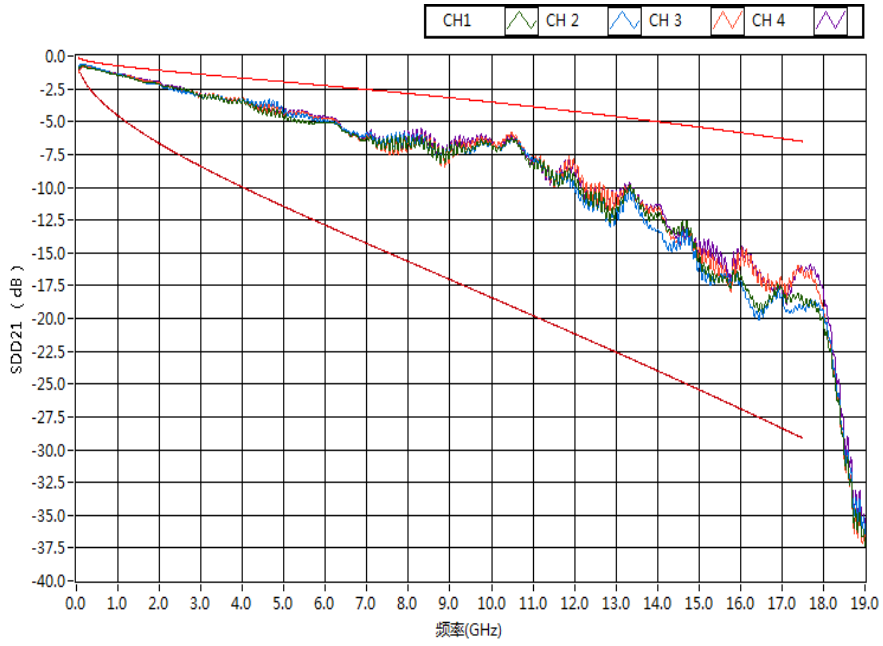
1. Case temperature
2. Ambient temperature

II. Cable Specifications

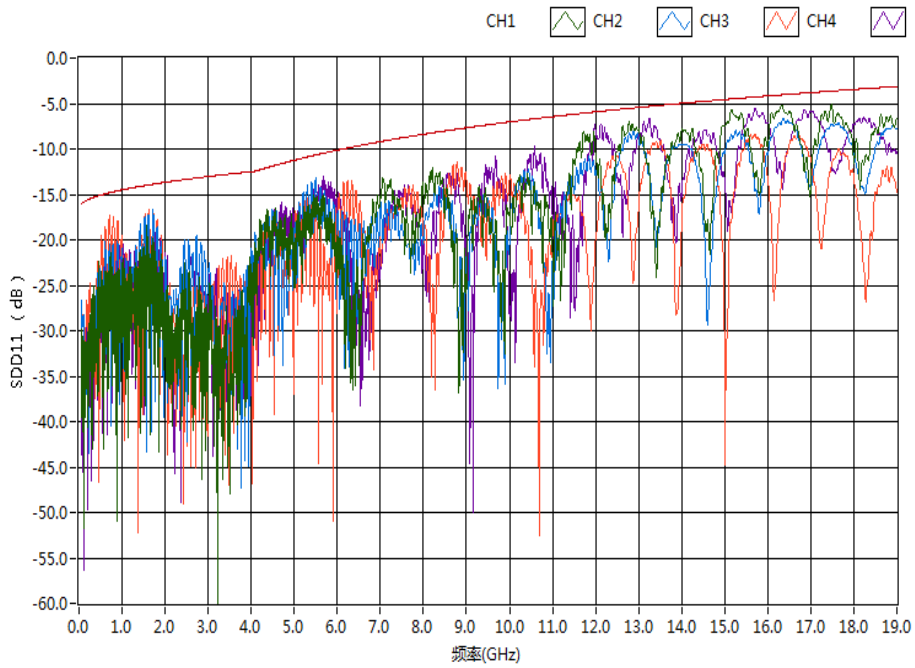
Parameter	Symbol	Min	Typ	Max	Unit	Remarks
Wire Gauge		30		26	AWG	
Cable Impedance	Z	90	100	110	Ohm	

III. Typical S parameter

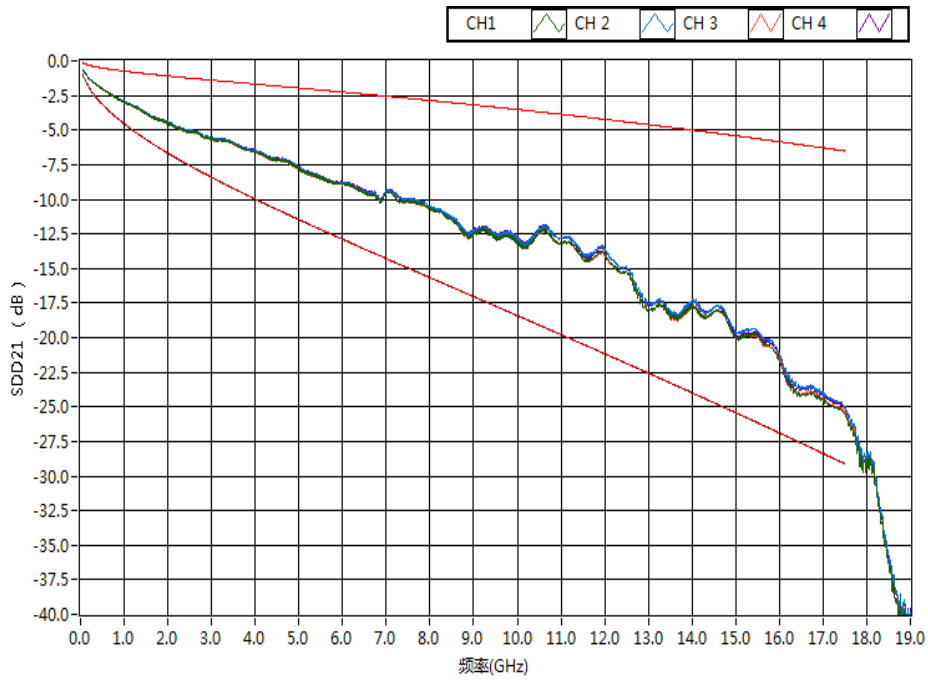
1m 30AWG typical insertion loss curve



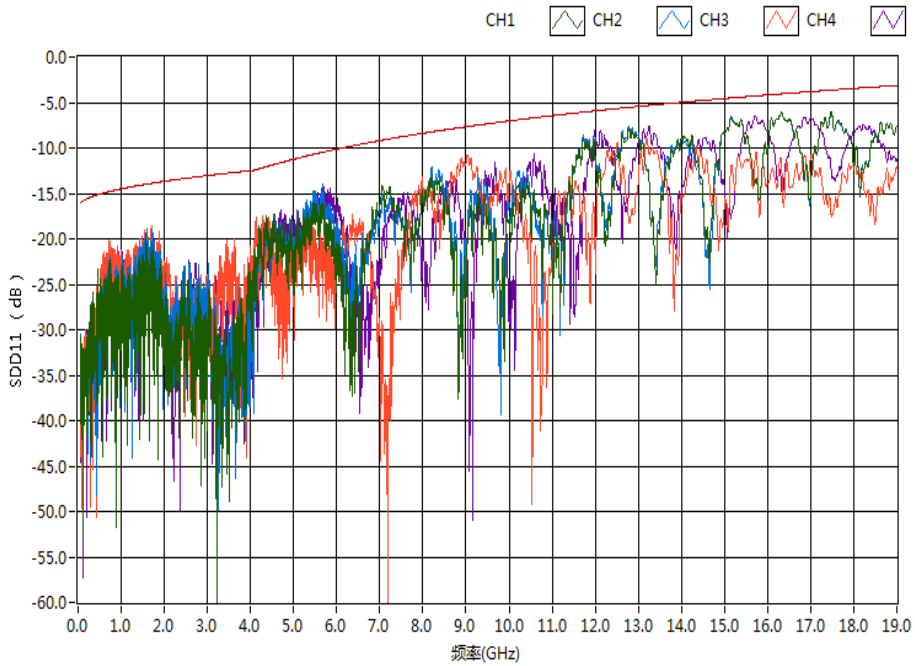
1m 30AWG typical reflection curve



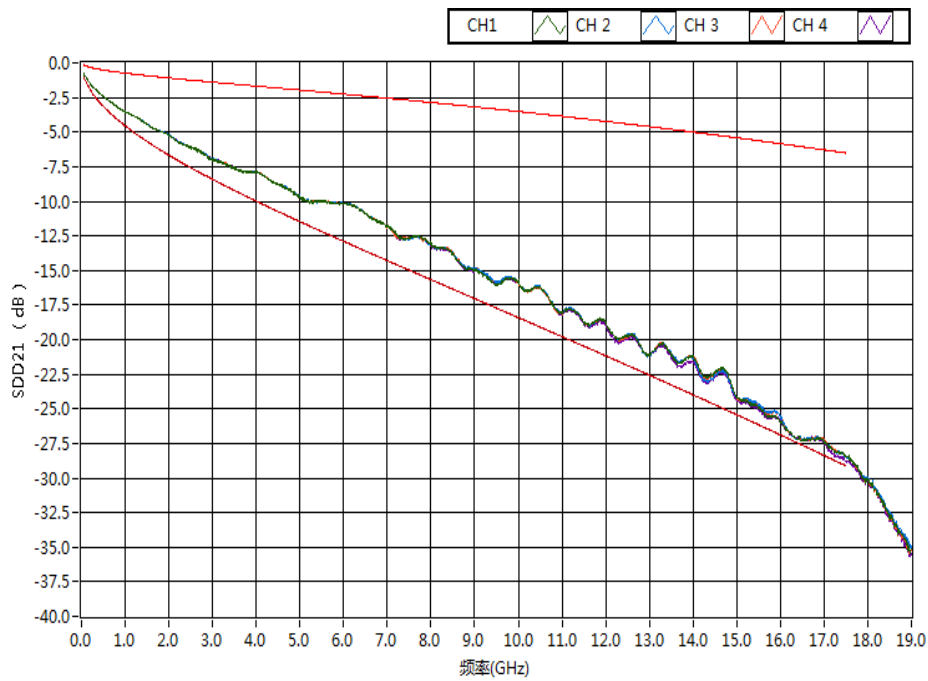
3m 30AWG typical insertion loss curve



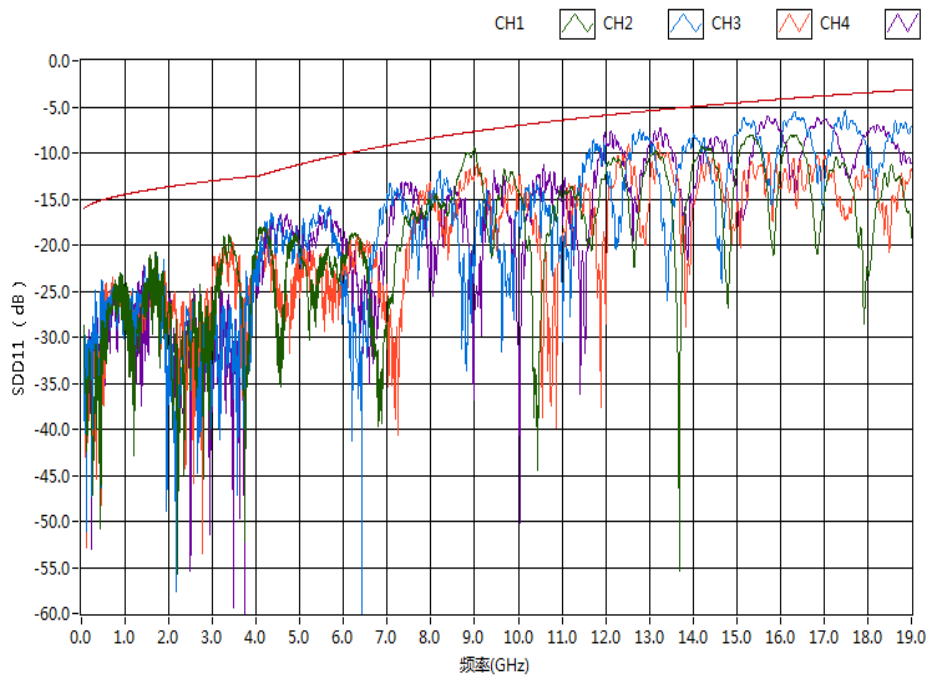
3m 30AWG typical reflection curve



5m 26AWG typical insertion loss curve



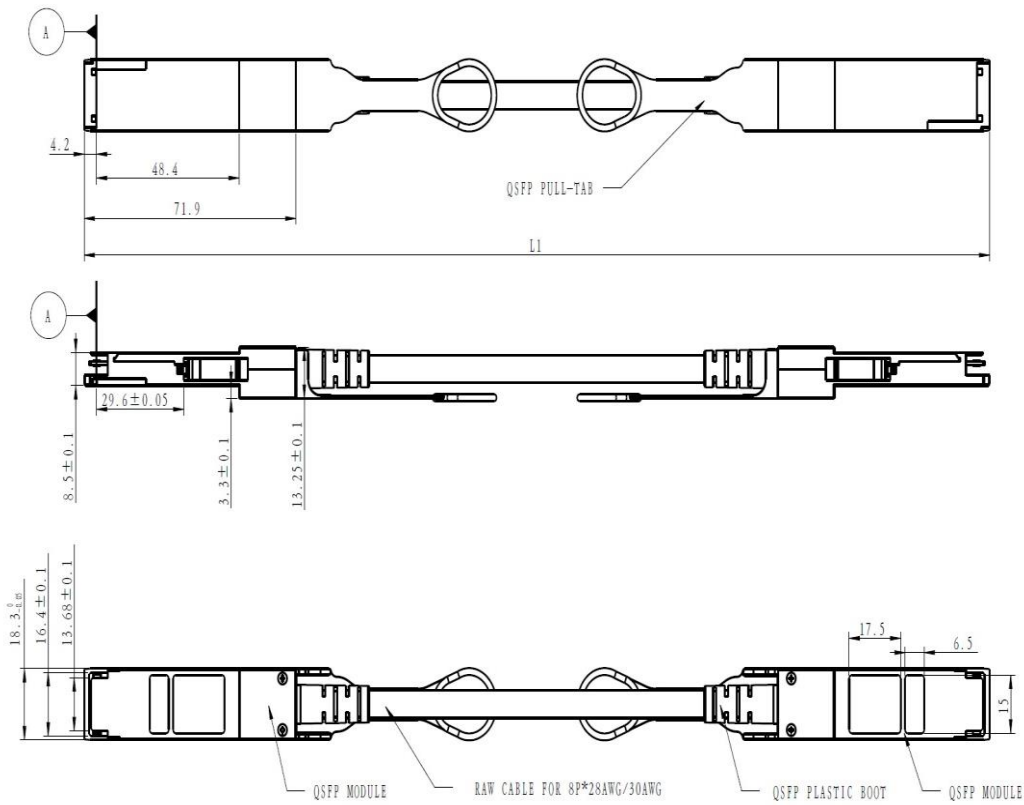
5m 26AWG typical reflection curve



Notes:

1. Insertion loss standard reference IEEE802.3bj 92.10.2: $IL < 22.48 \text{ dB} @ 12.89 \text{ GHz}$
2. Reflection curve standard reference IEEE802.3bj 92.10.3: $SDD_{xx}(\text{dB}) = 16.5 - 2 \times \text{SQRT}(f)$, $0.05 \leq f < 4.1 \text{ GHz}$.
3. Reflection curve standard reference IEEE802.3bj 92.10.3: $SDD_{xx}(\text{dB}) = 10.66 - 14 \times \log_{10}(f/5.5)$, $4.1 \leq f \leq 19 \text{ GHz}$.
4. $4.1 \leq f \leq 19 \text{ GHz}$.

IV. Dimensions(unit :mm)



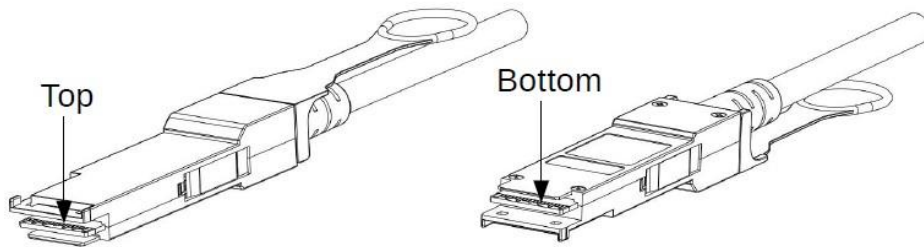
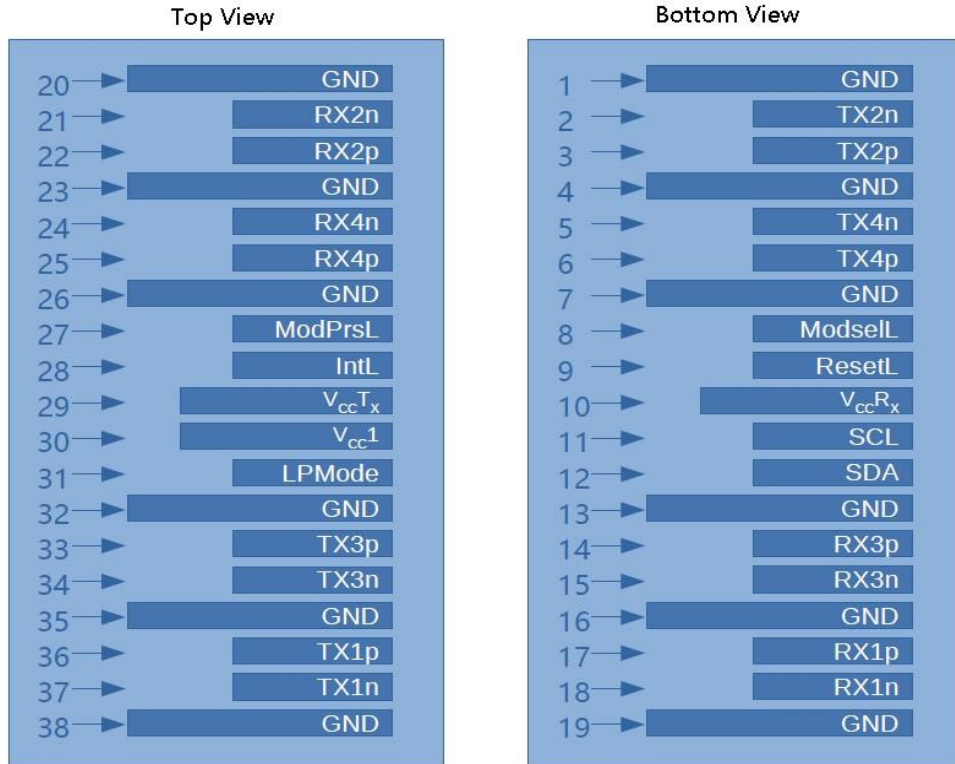
V. Cable Dimension

serial number	Standard Wire Gauge AWG	Cable diameter OD (mm)	Minimum bending radius R (mm)
1	30	6.9	35
2	26	9.2	45

VI. Length Tolerance

Serial number	Nominal length $L1$ (m)	Tolerance range \pm (cm)
1	$L1 \leq 2$	2
2	$2 < L1 \leq 4$	4
3	$4 < L1 \leq 5$	6

VII. Electrical Pad Layout



VIII. Pin Assignment

PIN #	Symbol	Description	Remarks
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 serial communication when low level	1
9	ResetL	Module Reset	2
10	VccRX	+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 in the module.	3
28	IntL	Interrupt	4
29	VccTX	+3.3V Power Supply transmitter	
30	Vcc1	+3.3V Power Supply	
31	LPMMode	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.
4. IntL is the output pin, which is the open collector output and must be pulled up to Vcc 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.

Revision History

Version No.	Date	Description
1.0	June 24, 2021	Preliminary datasheet

