

DM-317-XXXX 40 Gbps QSFP+ Passive Cable RoHS COMPLIANT

- QSFP+ MSA compliant
- Hot-pluggable footprint
- Supports Digital Serial ID and User Memory
- Robust Die Cast Housing
- Small footprint to maximize port spacing
- Spring Loaded Pull Tab that is easy to operate
- Lengths up to 10M



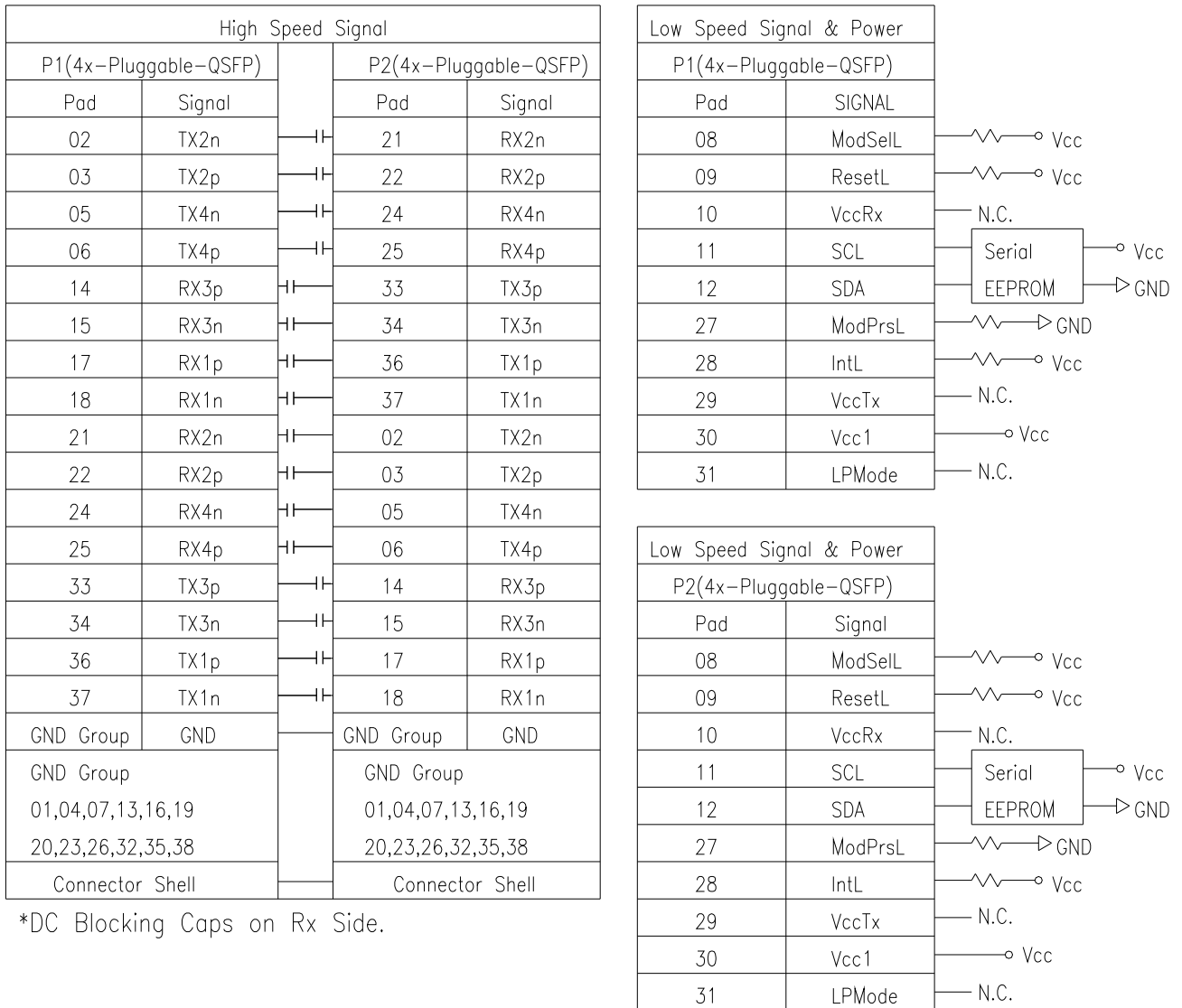
Product Overview:

The DM-317-XXXX QSFP+ Direct Attach cable assembly is a high performance integrated duplex data link for bi-directional communication over copper cable for lengths up to 10m. The DM-317-XXXX provides 4 pairs of data channels at transmission speeds up to 10Gbps. The DM-317-XXXX is compliant with the QSFP+ MSA (SFF 8436). The DM-317-XXXX provides a cost effective alternative to optical links.

Ordering Information		
Part Number	Length	Cable AWG
DM-317-50	½ M	28
DM-317-100	1 M	28
DM-317-200	2M	28
DM-317-300	3M	26
DM-317-500	5M	24
DM-317-700	7M	24

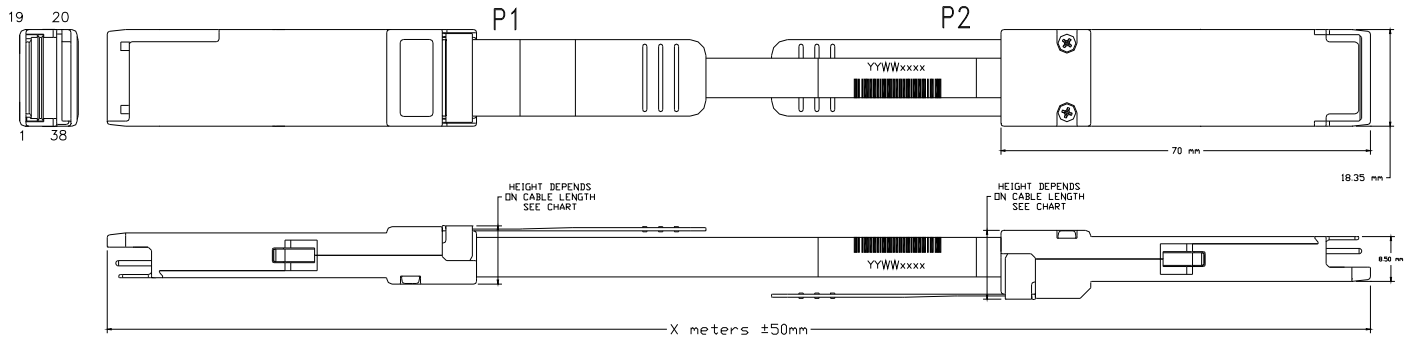
Table 1: Standard Lengths

Wiring Diagram



*DC Blocking Caps on Rx Side.

Figure 1: Wiring Diagram



1. CABLE:
 CONDUCTOR (SIGNAL WIRE): SOLID SILVER PLATED COPPER, 8 PAIRS.
 DIFFERENTIAL IMPEDANCE: 100±5 OHMS
 RoHS Compliant

CABLE	LENGTH	HEIGHT FOR BOTH P1 AND P2
DM-317-50	1/2 METER	11.1
DM-317-100	1 METER	11.1
DM-317-200	2 METERS	11.1
DM-317-300	3 METERS	13.1
DM-317-500	5 METERS	13.1
DM-317-700	7 METERS	13.1

2. CONNECTORS:
 P1 & P2: 4X PLUGGABLE QSFP+
 HOUSING: ZINC DIE CASTING, NICKEL PLATING
 P.C.B.: 4 LAYERS, 30µin. GOLD PLATING ON FINGERS
 LATCH: STAINLESS STEEL WITH PULL TAB

Note: 1M Cable serial number label = 007868RYYWWXXXX, 3M = 007869RYYWWXXXX.

Figure 2: Mechanical Dimensions of Module

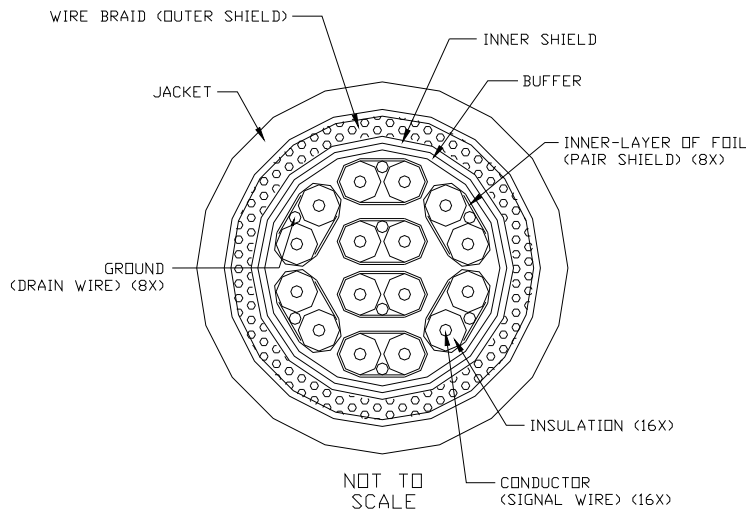
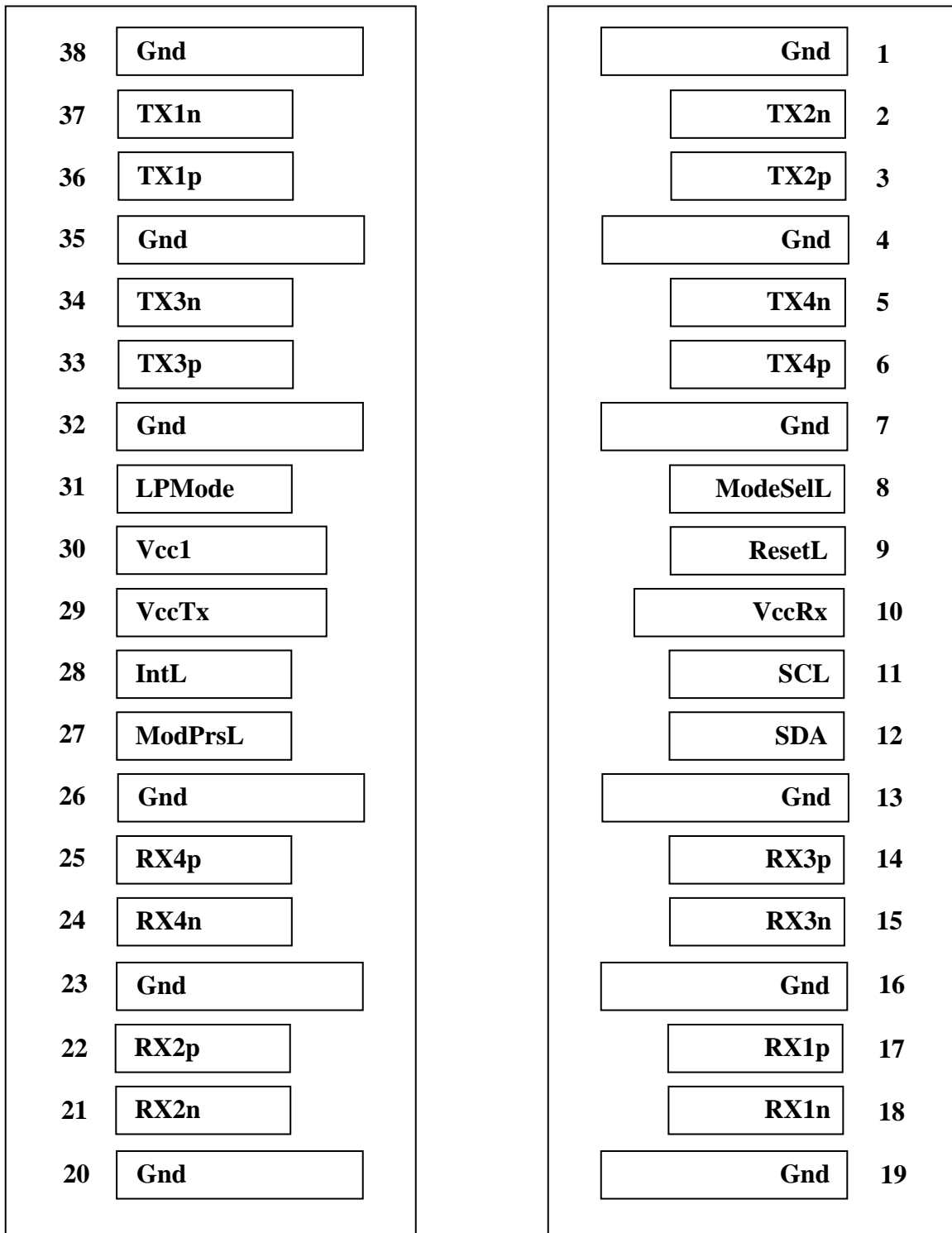


Figure 3: Cable Cross Section

✓ISO 9001 Certified

www.methode.com



Top Side – Viewed from Top

Bottom Side – Viewed from Bottom

Figure 4: QSFP+ Transceiver Electrical Pad Layout

✓ISO 9001 Certified

Pin	Logic	Symbol	Name/Description	Plug Sequence	Note
1		GND	Module Ground	1	1
2	CML-I	Tx2n	Transmitter Inverted Data Input	3	
3	CML-I	Tx2p	Transmitter Non-Inverted Data Input	3	
4		GND	Module Ground	1	1
5	CML-I	Tx4n	Transmitter Inverted Data Input	3	
6	CML-I	Tx4p	Transmitter Non-Inverted Data Input	3	
7		GND	Module Ground	1	1
8	LVTTL-I	ModSelL	Module Select	3	
9	LVTTL-I	ResetL	Module Reset	3	
10		VccRx	3.3V Power Supply Receiver	2	
11	LVCMOS-I/O	SCL	2-wire serial interface clock	3	
12	LVCMOS-I/O	SDA	2-wire serial interface data	3	
13		GND	Module Ground	1	1
14	CML-O	Rx3p	Receiver Non-Inverted Data Output	3	
15	CML-O	Rx3n	Receiver Inverted Data Output	3	
16		GND	Module Ground	1	1
17	CML-O	Rx1p	Receiver Non-Inverted Data Output	3	
18	CML-O	Rx1n	Receiver Inverted Data Output	3	
19		GND	Module Ground	1	1
20		GND	Module Ground	1	1
21	CML-O	Rx2n	Receiver Inverted Data Output	3	
22	CML-O	Rx2p	Receiver Non-Inverted Data Output	3	
23		GND	Module Ground	1	1
24	CML-O	Rx2n	Receiver Inverted Data Output	3	
25	CML-O	Rx2p	Receiver Non-Inverted Data Output	3	
26		GND	Module Ground	1	1
27	LVTTL-O	ModPrsL	Module Present	3	
28	LVTTL-O	IntL	Interrupt	3	
29		VccTx	3.3V Power Supply Transmitter	2	
30		Vcc1	3.3V Power Supply	2	
31	LVTTL-I	LPMode	Low Power Mode	3	
32		GND	Module Ground	1	1
33	CML-I	Tx3p	Transmitter Non-Inverted Data Input	3	
34	CML-I	Tx3n	Transmitter Inverted Data Input	3	
35		GND	Module Ground	1	1
36	CML-I	Tx1p	Transmitter Non-Inverted Data Input	3	
37	CML-I	Tx1n	Transmitter Inverted Data Input	3	
38		GND	Module Ground	1	1

Note 1: GND is the symbol for signal and supply (power) common for the QSFP+ module. All are common within the QSFP+ module and all module voltages are referenced to this potential unless otherwise noted. Connect these directly to the host board signal-common ground plane.

Note 2: Vcc Rx, Vcc1 and Vcc Tx are the receiver and transmitter power supplies and shall be applied concurrently. Vcc Rx, Vcc1 and Vcc Tx may be internally connected within the QSFP+ transceiver module in any combination. The connector pins are each rated for a maximum current of 500 mA.

Table 2: QSFP+ Module Electrical Pin Definition



Lower Memory Map The lower 128 bytes of the 2-wire serial bus address space is located in the EEPROM, which is accessed over the 2-wire serial management interface. The address of the EEPROM is 0xA0 (1010000X). The following table shows the QSFP+ lower memory map and the actual data.

Data Address	Field Size	Field Name	Field Description	Field Value	Value Description
BASE ID FIELDS					
0	1	Identifier	Type of serial transceiver	0C	QSFP+ TRANSCEIVER
1	1	Status	Reserved	00	
2	1	Status	Status Indicators	06	Page 0 Upper Memory Only, IntL Output = 1
3-126	124		Measurements and Diagnostics	All 00	
127	1		Page Select	00	

Serial ID Memory Map The module identification is located in the upper 128 bytes of the 2-wire serial bus address space of the EEPROM, which is accessed over the 2-wire serial management interface. The address of the EEPROM is 0xA0 (1010000X). The following table shows the QSFP+ Serial Identification memory map and the actual data.

Data Address	Field Size	Field Name	Field Description	Field Value	Value Description
BASE ID FIELDS					
128	1	Identifier	Type of serial transceiver	0C	QSFP+ TRANSCEIVER
129	1	Ext. Identifier	Extended identifier of type of serial transceiver	00	Power Level 1, No CLEI Code present in Page 02h
130	1	Connector	Code for connector type	21	COPPER PIGTAIL
131-138	8	Transceiver	Code for electronic compatibility or optical compatibility	08,00,00,00,00,00,00,00	40GBase-CR
139	1	Encoding	Code for serial encoding algorithm	00	UNSPECIFIED
140	1	BR, Nom	Nominal bit rate, units of 100Mbps/sec	64	10Gb Bit Rate
141	1	Ext Rate Sel	Tags for Extended Rate Select Compliance	00	NA
142	1	Length (SMF)-km	Link length supported for SMF fiber in km	00	NA
143	1	Length (E-50µm)	Link length supported EBW 50/125 µm fiber, units of 2 m	00	NA
144	1	Length (50µm)	Link length supported for 50/125 µm fiber, units of 1 m	00	NA
145	1	Length (62.5 µm)	Link length supported for 62.5/125 µm fiber, units of 1 m	00	NA
146	1	Length (Copper)	Link length supported for copper, units of 1 m	01	DM-317-50
				01	DM-317-100
				02	DM-317-200
				03	DM-317-300
				05	DM-317-500
07	DM-317-700				
147	1	Device Tech	Device technology	A0	Copper Cable Unequalized
148-163	16	Vendor name	Vendor name (ASCII)	4D,65,74,68,6F,64,65,20,45,6C,65,63,2E,20,20,20	Methode Elec. (ASCII)
164	1	Ext Transceiver Codes	Extended Transceiver Codes	05	QDR Speed
165-167	3	Vendor OUI	Vendor IEEE company ID	00,17,05	Methode OUI
168-183	16	Vendor PN	Part number provided by Vendor (ASCII)	44,4D,2D,33,31,37,2D,XX,XX,XX,XX,20,20,20,20,20	DM-317-XXXX (ASCII)
184-185	2	Vendor rev	Revision level for part number provided by vendor (ASCII)	2D,20	Rev -

✓ISO 9001 Certified

www.methode.com



186-187	2	Copper Cable Attenuation	Copper Cable Attenuation in dB (at 2.5Ghz in address 186 and 5.0Ghz in address 187)	03, 05	1M Cable
				06, 09	3M Cable
				09, 0D	5M Cable
188-189	2	Wavelength Tolerance	Guaranteed range of laser wavelength	00,00	NA
190	1	Max Case Temp	Maximum Case Temperature in Degrees C.	55	85 Degrees C.
191	1	CC_BASE	Check code for Base ID Fields (addresses 120-190)	VARIABLES	

Data Address	Field Size	Field Name	Field Description	Field Value	Value Description
EXTENDED ID FIELDS					
192-193	2	Reserved	Reserved	00,00	
194	1		Squelch Options	00	
195	1		Options	00	
196-211	16	Vendor SN	Serial number provided by vendor (ASCII)	VARIABLES	YYWWXXX(ASCII)
212-219	8	Date code	Vendor's manufacturing date code	VARIABLES	YY-MM-DD-LOT#
220	1	Diagnostic Monitoring Type	Indicates which type of diagnostic monitoring is implemented (if any) in the transceiver	00	None Implemented
221	1	Enhanced Options	Indicates which optional enhanced features are implemented by the transceiver	00	None Implemented
222	1	Reserved	Reserved	00	
223	1	CC_EXT	Check code for the Extended ID Fields (addresses 192 to 222)	VARIABLES	
224-255	32	Vendor Specific	Vendor Specific EEPROM	All FF's	

Table 3: QSFP+ MSA Serial ID Data