SFPDD-50GB-PDAC1M-C

MSA and TAA 50GBase-CU SFP-DD to SFP-DD Direct Attach Cable (Passive Twinax, 1m, 30AWG)

Features:

- SFP-DD module compliant to SFP-DD MSA Rev. 2.1Is
- Compliant to IEEE802.3cd & IEEE802.3bj high-frequency test standards
- SFP-DD-MIS Rev. 2
- 50Gbps transmission
- 30AWG
- Passive twinax
- Built-in EEPROM functions
- Operating Temperature 0 to 70 Celsius
- RoHS compliant and lead-free

Applications:

- 50GBase Ethernet

Product Description

This is a MSA Compliant 50GBase-CU SFP-DD to SFP-DD direct attach cable that operates over passive copper with a maximum reach of 1m. It has been programmed, uniquely serialized, and data-traffic and application tested to ensure it is 100% compliant and functional. We stand behind the quality of our products and proudly offer a limited lifetime warranty. This cable is TAA (Trade Agreements Act) compliant and is built to comply with MSA (Multi-Source Agreement) standards.

ProLabs' transceivers are RoHS compliant and lead-free.

TAA refers to the Trade Agreements Act (19 U.S.C. & 2501-2581), which is intended to foster fair and open international trade. TAA requires that the U.S. Government may acquire only "U.S. – made or designated country end products."

Rev. 041123

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit
Supply Voltage	Vcc	3.13	3.3	3.47	V
Storage Temperature	Tstg	-40		85	°C
Operating Case Temperature	Tc	0		70	°C
Humidity	RH	5		85	%
Data Rate (FDR10)			50		Gbps

Physical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
Length	L			1	m
AWG				30	AWG
Jacket Material	Black PVC				
Flame Rating	VW-1				

Electrical Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit
Resistance	Rcon			3	Ω
Insulation Resistance	Rins			10	MΩ
Raw Cable Impedance	Zca	95		110	Ω
Mated Connector Impedance	Zmated	85		110	Ω
Maximum Insertion Loss at 13.28GHz	SDD21	8		17.16	dB
Differential to Common-Mode Return Loss	SCD11/22	$\text{Return\_loss(f)} \geq \begin{cases} 22-(\frac{20}{25.78})f, & 0.01 \leq f < 12.89 \\ 15-\left(\frac{6}{25.78}\right)f, & 12.89 \leq f \leq 19 \end{cases}$			dB
Differential to Common-Mode Conversion Loss	SCD21-SDD21	$\text{Conversion\_loss(f)} - \text{IL(f)} \geq \begin{cases} 10, & 0.01 \leq \text{f} < 12.89 \\ 27-\left(\frac{29}{22}\right)\text{f}, & 12.89 \leq \text{f} < 15.7 \\ 6.3, & 15.7 \leq f \leq 19 \end{cases}$			dB
Minimum COM	COM	3			dB
Rise Time (20-80%)				25	ps

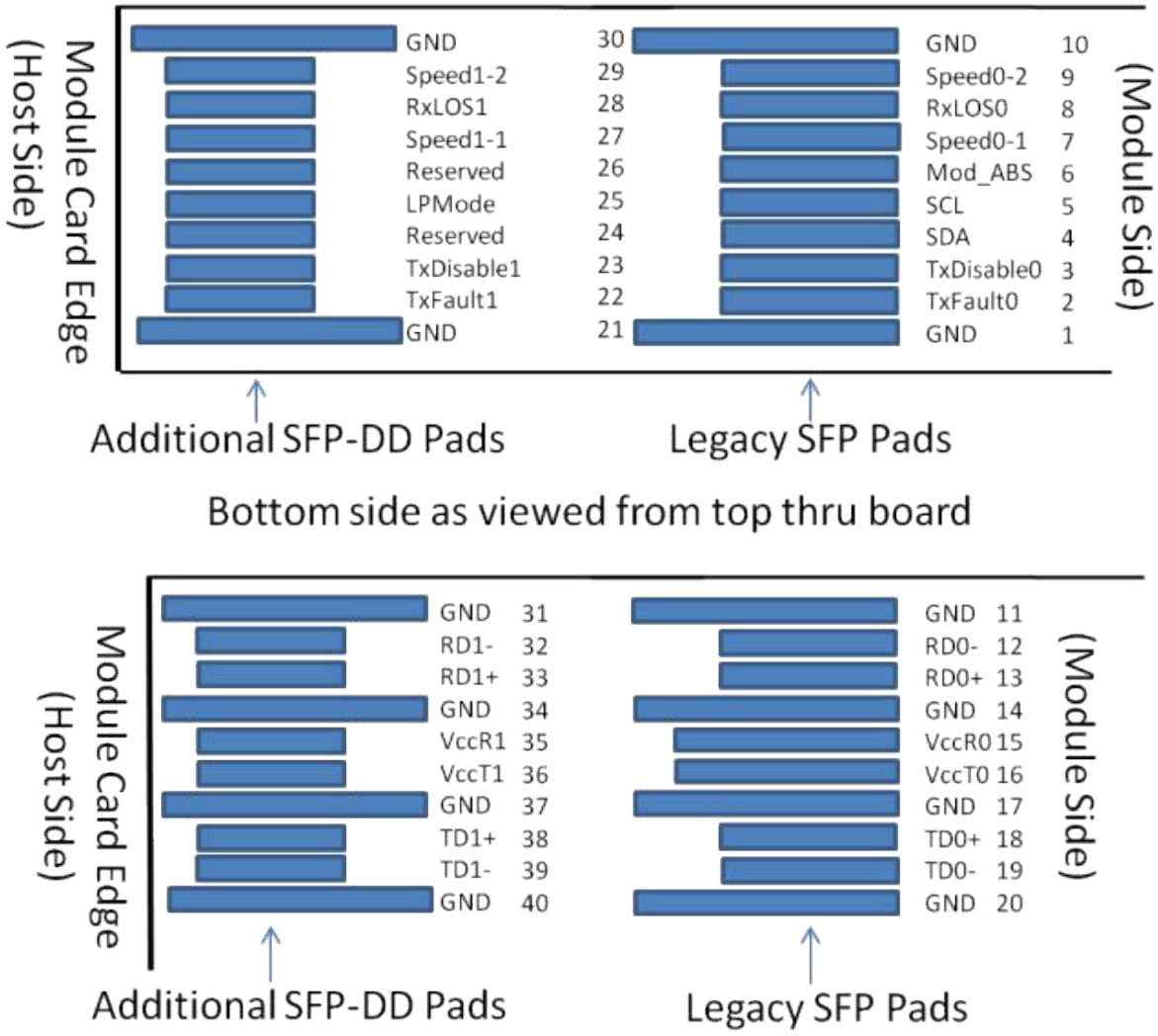
Pin Descriptions

Pin	Logic	Symbol	Name/Description	Plug Sequence	Notes
1		GND	Module Ground.	1A	1
2	LVTTL-O	Tx_Fault0	Transmitter Fault Indication for Channel 0.	3A	
3	LVTTL-I	Tx_Disable0	Transmitter Disable for Channel 0.	3A	
4	LVCMOS-I/O	SDA	Management I/F Data.	3A	
5	LVCMOS-I/O	SCL	Management I/F Clock.	3A	
6	LVTTL-O	MOD_ABS	Module Absent.	3A	
7	LVTTL-I	Speed0-1	Rx Rate Select for Channel 0.	3A	
8	LVTTL-O	RxLOS0	Rx Loss of Signal for Channel 0.	3A	
9	LVTTL-I	Speed0-2	Tx Rate Select for Channel 0.	3A	
10		GND	Module Ground.	1A	1
11		GND	Module Ground.	1A	1
12	CML-O	RD0-	Inverse Received Data Out for Channel 0.	3A	
13	CML-O	RD0+	Received Data Out for Channel 0.	3A	
14		GND	Module Ground.	1A	1
15		VccR0	Receiver Power.	2A	2
16		VccT0	Transmitter Power.	2A	2
17		GND	Module Ground.	1A	1
18	CML-I	TD0+	Transmit Data In for Channel 0.	3A	
19	CML-I	TD0-	Inverse Transmit Data In for Channel 0.	3A	
20		GND	Module Ground.	1A	1
21		GND	Module Ground.	1B	1
22	LVTTL-O	Tx_Fault1	Transmitter Fault Indication/Interrupt for Channel 1.	3B	
23	LVTTL-I	Tx_Disable1	Transmitter Disable for Channel 1.	3B	
24		Reserved	Reserved for Future Use.	3B	
25	LVTTL-I	LPMode	Low-Power Mode Control.	3B	
26		Reserved	Reserved for Future Use.	3B	
27	LVTTL-I	Speed1-1	Rx Rate Select for Channel 1.	3B	
28	LVTTL-O	RxLOS1	Loss of Signal for Channel 1.	3B	
29	LVTTL-I	Speed1-2	Tx Rate Select for Channel 1.	3B	
30		GND	Module Ground.	1B	1
31		GND	Module Ground.	1B	1
32	CML-O	RD1-	Inverse Received Data Out for Channel 1.	3B	
33	CML-O	RD1+	Received Data Out for Channel 1.	3B	
34		GND	Module Ground.	1B	1
35		VccR1	Receiver Power for Channel 1.	2B	2
36		VccT1	Transmitter Power for Channel 1.	2B	2
37		GND	Module Ground.	1B	1
38	CML-I	TD1+	Transmit Data In for Channel 1.	3B	
39	CML-I	TD1-	Inverse Transmit Data In for Channel 1.	3B	
40		GND	Module Ground.	1B	1

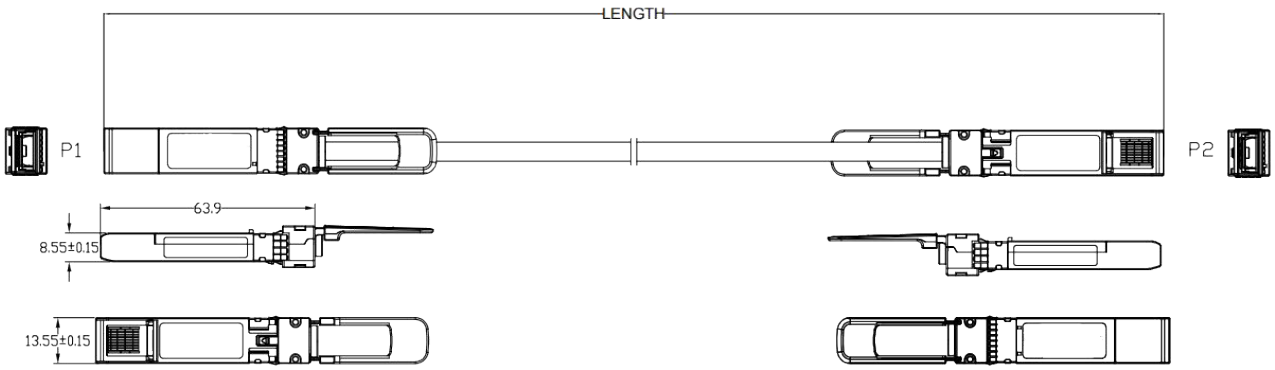
Notes:

1. GND is the symbol for signal and supply (power) common for the module. All are common within the module, and all module voltages are referenced to this potential unless otherwise noted. Connect these directly to the host board signal-common ground plane.
2. VccT0, VccT1, VccR0, and VccR1 are applied concurrently and may be internally connected within the module in any combination.

Electrical Pin-Out Details



Mechanical Specifications



Notes:

1. 4 pairs, black PVC jacket, and RoHS 2.0 compliant.
2. 100% conductor test conditions: voltage of 5V, insulation resistance of 10MΩ, and a conduction resistance of maximum 3Ω.
3. High-frequency test according to IEEE802.3bj & IEEE802.3cd standards.

About ProLabs

Our experience comes as standard; for over 15 years ProLabs has delivered optical connectivity solutions that give our customers freedom and choice through our ability to provide seamless interoperability. At the heart of our company is the ability to provide state-of-the-art optical transport and connectivity solutions that are compatible with over 90 optical switching and transport platforms.

Complete Portfolio of Network Solutions

ProLabs is focused on innovations in optical transport and connectivity. The combination of our knowledge of optics and networking equipment enables ProLabs to be your single source for optical transport and connectivity solutions from 100Mb to 400G while providing innovative solutions that increase network efficiency. We provide the optical connectivity expertise that is compatible with and enhances your switching and transport equipment.

Trusted Partner

Customer service is our number one value. ProLabs has invested in people, labs and manufacturing capacity to ensure that you get immediate answers to your questions and compatible product when needed. With Engineering and Manufacturing offices in the U.K. and U.S. augmented by field offices throughout the U.S., U.K. and Asia, ProLabs is able to be our customers best advocate 24 hours a day.

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