DSFP-Q56-100GB-PDAC2M-AO

MSA and TAA 100GBase-CU DSFP to QSFP56 Direct Attach Cable (Passive Twinax, 2m) 30AWG

Features

- DSFP Module Compliant to DSFP MSA
- Enables 100Gbps (up to 53.125Gbps Per Channel) Transmission
- QSFP Module Compliant to SFF-8661
- Operating Case Temperature: 0C to 70C
- RoHS Compliant and Lead-Free
- Built-In EEPROM Functions

Applications

- 100GBase Ethernet

Product Description

This is a MSA Compliant 100GBase-CU DSFP to QSFP56 direct attach cable that operates over passive copper with a maximum reach of 2m. 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.

AddOn's 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."

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			100		Gbps

Electrical Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Resistance	Rcon			3	Ω	
Insulation Resistance	Rins			10	MΩ	
Raw Cable Impedance	Zca	95	100	110	Ω	
Mated Connector Impedance	Zmated	85	100	115	Ω	
Insertion Loss @13.28GHz	SDD21	8		17.16	dB	
Return Loss	SDD11/22	$\text{Return\_loss}(f) \geq \begin{cases} 16.5-2\sqrt{f} & 0.05 \leq f < 4.1 \\ 10.66-14\log_{10}(f/5.5) & 4.1 \leq f \leq 19 \end{cases}$			dB	1
Differential to Common-Mode Return Loss	SCD11/22	$\text{Return\_loss}(f) \geq \begin{cases} 22-(20/25.78)f & 0.01 \leq f < 12.89 \\ 15-(6/25.78)f & 12.89 \leq f \leq 19 \end{cases}$			dB	1
Differential to Common-Mode Conversion Loss	SCD21-SDD21	$\text{Conversion\_loss}(f) - \text{IL}(f) \geq \begin{cases} 10 & 0.01 \leq f < 12.89 \\ 27-(29/22)f & 12.89 \leq f < 15.7 \\ 6.3 & 15.7 \leq f \leq 19 \end{cases}$			dB	1
Minimum COM	COM	3			dB	

Notes:

1. For $0.05 \leq f \leq 19$ GHz. Where f is the frequency in GHz.

Physical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
Length	L		2		M
Wire Gauge			30		AWG
Jacket Material		PVC, Black			

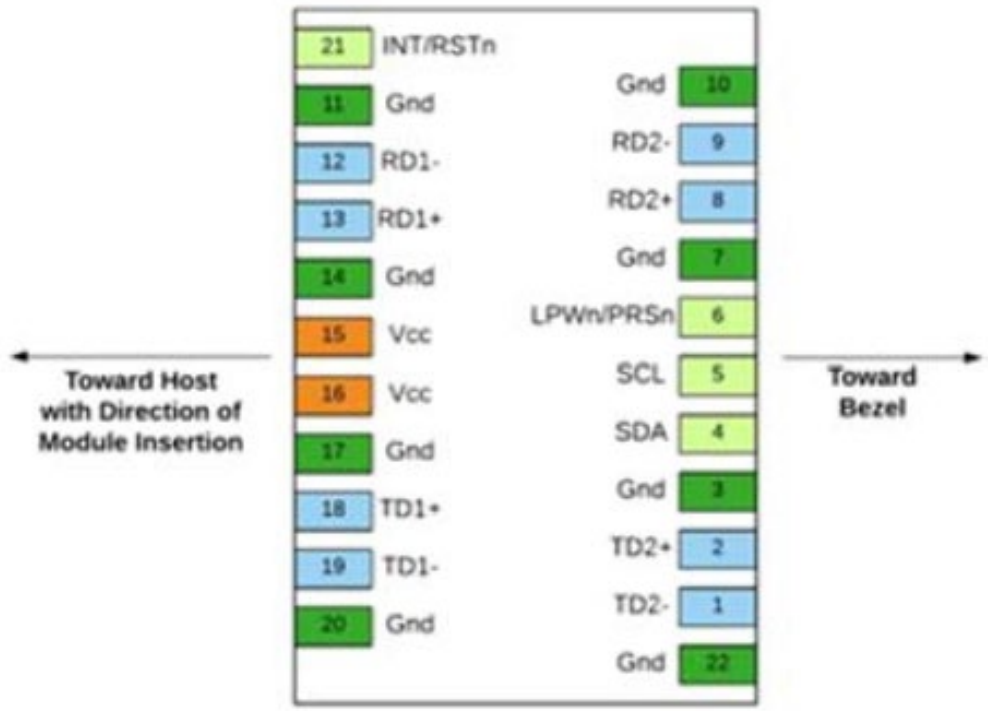
DSFP Pin Descriptions

Pin	Logic	Symbol	Name/Description	Power Sequence Order	Notes
Case		Case	Module Case.		2
1	CML-I	TD2-	Transmitter Inverted Data Input. Lane 2.	3	
2	CML-I	TD2+	Transmitter Non-Inverted Data Input. Lane 2.	3	
3		GND	Module Ground.	1	5
4	LVTTL-I/O	SDA	2-Wire Serial Interface Data.	3	3
5	LVTTL-I/O	SCL	2-Wire Serial Interface Clock.	3	3
6	Multi-Level-I/O	LPWn/PRSn	Low-Power Mode/Module Present. MOD_ABS.	3	
7		GND	Module Ground.	1	5
8	CML-O	RD2+	Receiver Non-Inverted Data Output. Lane 2.	3	
9	CML-O	RD2-	Receiver Inverted Data Output. Lane 2.	3	
10		GND	Module Ground.	1	5
11		GND	Module Ground.	1	5
12	CML-O	RD1-	Receiver Inverted Data Output. Lane 1.	3	4
13	CML-O	RD1+	Receiver Non-Inverted Data Output. Lane 1.	3	4
14		GND	Module Ground.	1	5
15		Vcc	Module 3.3V Supply.	2	
16		Vcc	Module 3.3V Supply.	2	
17		GND	Module Ground.	1	5
18	CML-I	TD1+	Transmitter Non-Inverted Data Input. Lane 1.	3	4
19	CML-I	TD1-	Transmitter Inverted Data Input. Lane 1.	3	4
20		GND	Module Ground.	1	5
21	Multi-Level-I/O	INT/RSTn	Dual-Function Module Interrupt and Reset.	3	
22		GND	Module Ground.	1	5

Notes:

1. Labeling as inputs (I) and outputs (O) are from the perspective of the module.
2. The case makes electrical contact to the cage before any of the board edge contacts are made.
3. See the 2-wire specifications.
4. Backwards compatible with SFF-8431 SFI interface.
5. The module ground contacts (GND) are recommended to be isolated from the module case by offering flexibility in the host EMI control strategy.

Electrical Pin-Out Details - DSFP



QSFP Pin Descriptions

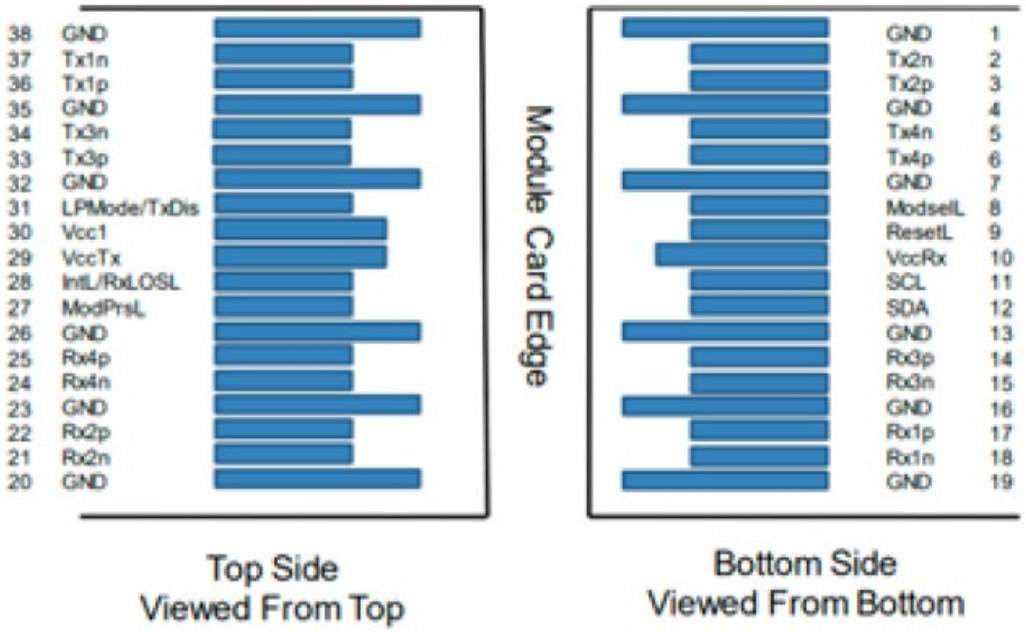
Pin	Logic	Symbol	Name/Description	Plug Sequence	Notes
1		GND	Module Ground.	1	1
2	CML-I	Tx2-	Transmitter Inverted Data Input.	3	
3	CML-I	Tx2+	Transmitter Non-Inverted Data Input.	3	
4		GND	Module Ground.	1	1
5	CML-I	Tx4-	Transmitter Inverted Data Input.	3	
6	CML-I	Tx4+	Transmitter Non-Inverted Data Input.	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 Receiver Power Supply.	2	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	Rx3+	Receiver Non-Inverted Data Output.	3	
15	CML-O	Rx3-	Receiver Inverted Data Output.	3	
16		GND	Module Ground.	1	1
17	CML-O	Rx1+	Receiver Non-Inverted Data Output.	3	

18	CML-O	Rx1-	Receiver Inverted Data Output.	3	
19		GND	Module Ground.	1	1
20		GND	Module Ground.	1	1
21	CML-O	Rx2-	Receiver Inverted Data Output.	3	
22	CML-O	Rx2+	Receiver Non-Inverted Data Output.	3	
23		GND	Module Ground.	1	1
24	CML-O	Rx4-	Receiver Inverted Data Output.	3	
25	CML-O	Rx4+	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 Transmitter Power Supply.	2	2
30		Vcc1	+3.3V Power Supply.	2	2
31	LVTTL-I	LPMode	Low-Power Mode.	3	
32		GND	Module Ground.	1	1
33	CML-I	Tx3+	Transmitter Non-Inverted Data Input.	3	
34	CML-I	Tx3-	Transmitter Inverted Data Input.	3	
35		GND	Module Ground.	1	1
36	CML-I	Tx1+	Transmitter Non-Inverted Data Input.	3	
37	CML-I	Tx1-	Transmitter Inverted Data Input.	3	
38		GND	Module Ground.	1	1

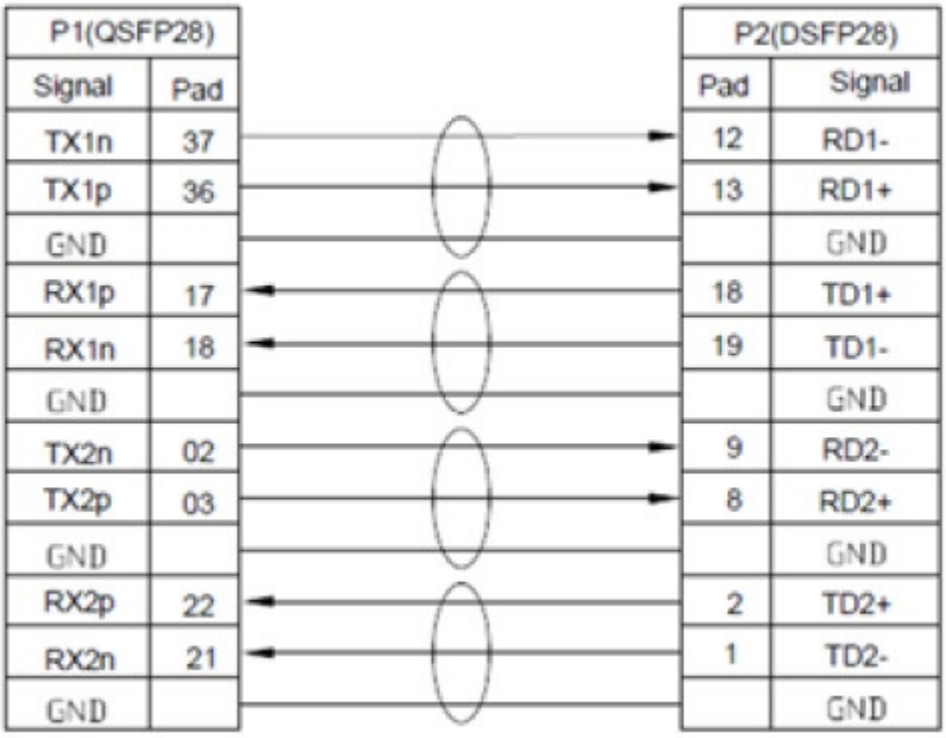
Notes:

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.
2. VccRx, Vcc1, and VccTx are the receiver and transmitter power suppliers and shall be applied concurrently. Requirements defined for the host side of the Host Edge Connector are listed in this datasheet. Recommended host board power supply filtering is shown below. VccRx, Vcc1, and VccTx may be internally connected within the QSFP+ module in any combination. The connector pins are each rated for a maximum current of 500mA.

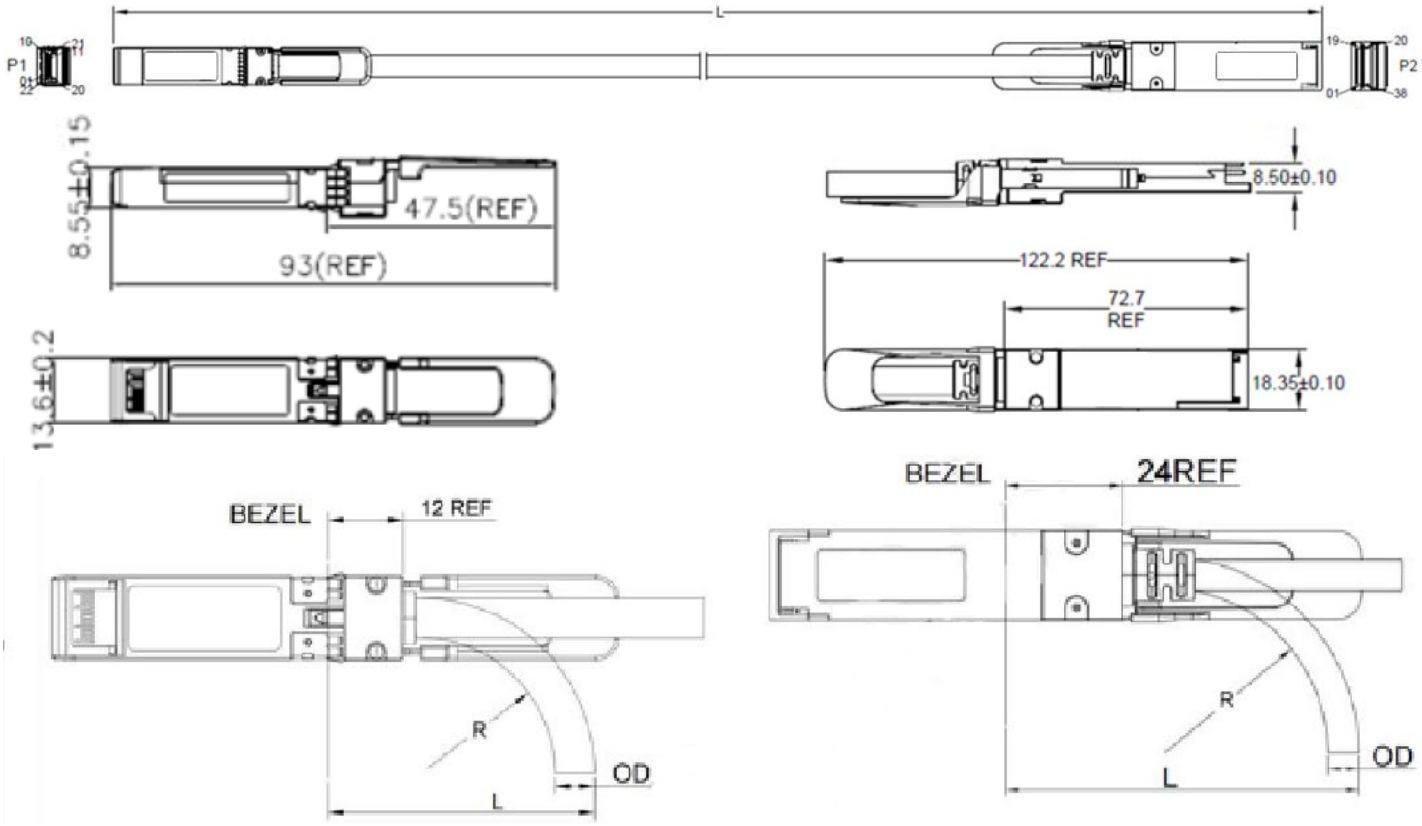
Electrical Pin-Out Details – QSFP56



Wiring Diagram



Mechanical Specifications



Cable Specifications

100G DSFP				QDFP56			
Gauge	**OD**	**Bend Radius "R"**	**Min. Bend Radius "L"**	**Gauge**	**OD**	**Bend Radius "R"**	**Min. Bend Radius "L"**
30AWG	6MM	30MM	48MM	30AWG	6MM	30MM	80MM

About AddOn Networks

In 1999, AddOn Networks entered the market with a single product. Our founders fulfilled a severe shortage for compatible, cost-effective optical transceivers that compete at the same performance levels as leading OEM manufacturers. Adhering to the idea of redefining service and product quality not previously had in the fiber optic networking industry, AddOn invested resources in solution design, production, fulfillment, and global support.

Combining one of the most extensive and stringent testing processes in the industry, an exceptional free tech support center, and a consistent roll-out of innovative technologies, AddOn has continually set industry standards of quality and reliability throughout its history.

Reliability is the cornerstone of any optical fiber network and is in engrained in AddOn's DNA. It has played a key role in nurturing the long-term relationships developed over the years with customers. AddOn remains committed to exceeding industry standards with certifications from ranging from NEBS Level 3 to ISO 9001:2005 with every new development while maintaining the signature reliability of its products.

U.S. Headquarters

Email: sales@addonnetworks.com

Telephone: +1 877.292.1701

Fax: 949.266.9273

Europe Headquarters

Email: salessupportemea@addonnetworks.com

Telephone: +44 1285 842070