

40G-QSFP-4SFP-C-0101-AO

Brocade® Compatible TAA Compliant 40GBase-CU QSFP+ to 4xSFP+ Direct Attach Cable (Active Twinax, 1m)

Features

- Available in lengths of 1 to 10m
- Four-channel full-duplex active copper cable with breakout from QSFP+ to four SFP+
- Hot-pluggable QSFP +footprint
- RoHS compliant and Lead Free
- Power dissipation <1.5W (0~70°C)
- Commercial operating temperature optional
- Compliant with IEEE802.3ba, SFF-8436

Applications

- 40G Ethernet
- Infiniband 4x SDR DDR QDR
- 40G Telecom connections

Product Description

This is a Brocade® 40G-QSFP-4SFP-C-0101 compatible 40GBase-CU QSFP+ to 4xSFP+ direct attach cable that operates over active copper with a maximum reach of 1.0m (3.3ft). It has been programmed, uniquely serialized, and data-traffic and application tested to ensure it is 100% compliant and functional. This direct attach cable is TAA (Trade Agreements Act) compliant and is built to comply with MSA (Multi-Source Agreement) standards. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

AddOn's direct attach cables 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."



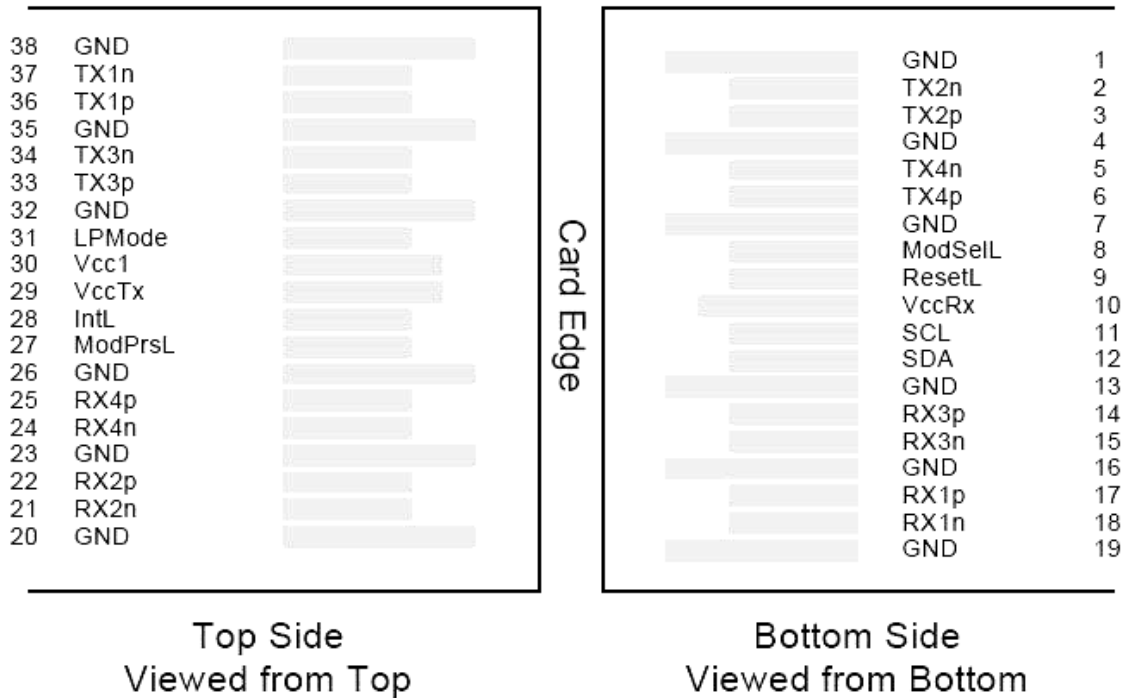
Regulatory Compliance

- ESD to the Electrical PINs: compatible with MIL-STD-883 Method 3015
- Immunity compatible with IEC 61000-4-3
- EMI compatible with FCC Part 15 Class B EN55022 Class B(CISPR 22B) VCCI Class B
- RoHS compliant with RoHS 2 (2011/65/EU)

Pin Descriptions

Pin	Symbol	Name/Description
1	GND	Ground
2	Tx2n	Transmitter Inverted Data Input, CML-I
3	Tx2p	Transmitter Non-Inverted Data output, CML-I
4	GND	Ground
5	Tx4n	Transmitter Inverted Data Input, CML-I
6	Tx4p	Transmitter Non-Inverted Data output, CML-I
7	GND	Ground
8	ModSelL	The ModSelL is an input pin. When held low by the host, the module responds to 2-wire serial communication commands. The ModSelL allows the use of multiple QSFP+ modules on a single 2-wire interface bus. When the ModSelL is "High", the module shall not respond to or acknowledge any 2-wire interface communication from the host. ModSelL signal input node must be biased to the "High" state in the module.
9	ResetL	The ResetL pin must be pulled to Vcc in the QSFP+ module. A low level on the ResetL pin for longer than the minimum pulse length (t_Reset_init) initiates a complete module reset, returning all user module settings to their default state. Module Reset Assert Time (t_init) starts on the rising edge after the low level on the ResetL pin is released.
10	VccRx	+3.3V Power Supply Receiver
11	SCL	2-Wire Serial Interface Clock
12	SDA	2-Wire Serial Interface Data
13	GND	GND
14	Rx3p	Receiver Non-Inverted Data Output, CML-O
15	Rx3n	Receiver Inverted Data Output, CML-O
16	GND	GND
17	Rx1p	Receiver Non-Inverted Data Output, CML-O
18	Rx1n	Receiver Inverted Data Output, CML-O
19	GND	Ground
20	GND	Ground
21	Rx2n	Receiver Inverted Data Output, CML-O
22	Rx2p	Receiver Non-Inverted Data Output, CML-O
23	GND	Ground

24	Rx4n	Receiver Inverted Data Output, CML-O
25	Rx4p	Receiver Non-Inverted Data Output, CML-O
26	GND	Ground
27	ModPrsL	Module Present, connect to GND
28	IntL	The IntL Pin is an open collector output and must be pulled to host supply voltage on the host board. The INTL pin is de-asserted "High" after completion of reset, when byte 2 bit 0 (Data Not Ready) is read with a value of '0' and the flag field is read.
29	VccTx	+3.3 V Power Supply transmitter
30	Vcc1	+3.3 V Power Supply
31	LPMODE	The LPMODE pin shall be pulled up to Vcc in the QSFP+ module. This function is affected by the LPMODE pin and the combination of the Power_over-ride and Power_set software control bits (Address A0h, byte 93 bits 0,1).
32	GND	Ground
33	Tx3p	Transmitter Non-Inverted Data Input, CML-I
34	Tx3n	Transmitter Inverted Data Output, CML-I
35	GND	Ground
36	Tx1p	Transmitter Non-Inverted Data Input, CML-I
37	Tx1n	Transmitter Inverted Data Output, CML-I
38	GND	Ground



Pin-out of Connector Block on Host Board

SFP+

Pin	Symbol	Name/Description	Note
1	VeeT	Transmitter Ground (Common with Receiver Ground)	1
2	TX Fault	Transmitter Fault. LVTTTL-O	2
3	TX Disable	Transmitter Disable. Laser output disabled on high or open. LVTTTL-I	3
4	SDA	2-Wire Serial Interface Data Line(Same as MOD-DEF2 in INF-8074i). LVTTTL-I/O	2
5	SCL	2-Wire Serial Interface Data Line(Same as MOD-DEF2 in INF-8074i). LVTTTL-I	2
6	Mod_ABS	Module Absent, Connect to VeeT or VeeR in Module	2
7	RS0	Rate Select 0, optionally controls SFP+ module receiver LVTTTL-I	4
8	LOS	Loss of Signal Indication. Logic 0 indicates normal operation. LVTTTL-O	5
9	RS1	Rate Select 1, optionally controls SFP+ module transmitter. LVTTTL-I	4
10	VeeR	Receiver Ground (Common with Transmitter Ground)	1
11	VeeR	Receiver Ground (Common with Transmitter Ground)	1
12	RD-	Receiver Inverted DATA out. AC Coupled. CML-O	
13	RD+	Receiver Non-inverted DATA out. AC Coupled. CML-O	
14	VeeR	Receiver Ground (Common with Transmitter Ground)	1
15	VccR	Receiver Power Supply	6
16	VccT	Transmitter Power Supply	6
17	VccT	Transmitter Ground (Common with Receiver Ground)	1
18	TD+	Transmitter Ground (Common with Receiver Ground)	1
19	TD-	Transmitter Inverted DATA in. AC Coupled. CML-I	
20	VeeT	Transmitter Ground (Common with Receiver Ground)	1

Notes

1. Circuit ground is internally isolated from chassis ground.
2. T_fault is an open collector/drain output which should be pulled up with a 4.7K – 10K Ohms resistor on the host board if intended for use. Pull up voltage should be between 2.0V to Vcc+0.3V. A high output indicates a transmitter fault caused by either the tx bias current or the tx output power exceeding the preset alarm thresholds. A low output indicates normal operation. In the low state, the output is pulled to <0.8V.
3. Laser output disabled on TX Disable >2.0V or open, enabled on TX Disable <0.8V.
4. Internally pulled down per SFF-8431 Rev4.1 .
5. LOS is open collector output. Should be pulled up with 4.7k – 10kohms on host board to a voltage between 2.0V and 3.6V. Logic 0 indicates normal operation; logic 1 indicates loss of signal.
6. Internally connected

Absolute Maximum Ratings

Parameter	Symbol	Min	Typ	Max	Unit	Ref.
Maximum Supply Voltage	Vcc	-0.5		+4.0	V	
Storage Temperature	TS	-40		+85	°C	
Operating Humidity	RH	0		85	%	

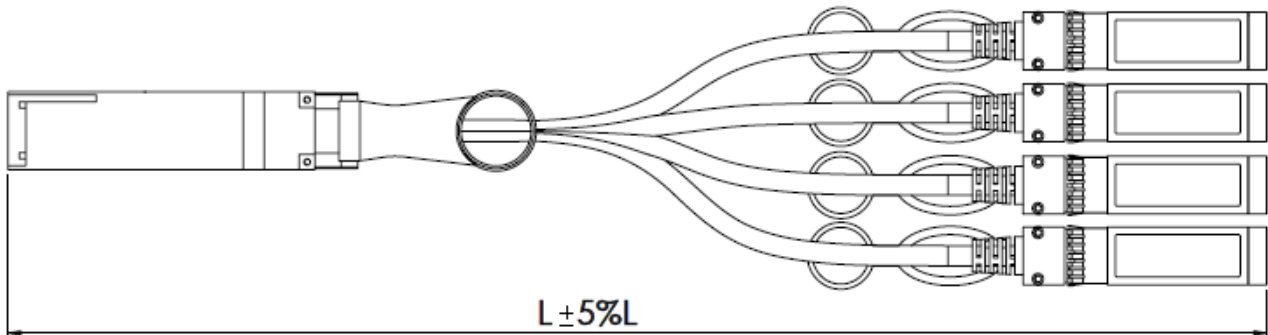
Recommended Operating Conditions

Parameter	Symbol	Min	Typ	Max	Unit	Ref.
Power Supply Voltage	Vcc	3.13	3.30	3.47	V	
Power Supply Current	Icc	-	-	1	A	QSFP+ End
				0.4	A	SFP+ End
Case Operating Temperature	Tc	0	-	+70	°C	
Bit Rate Each Lane	Br	1	-	11.3	Gbps	BER<1*10 ⁻¹²

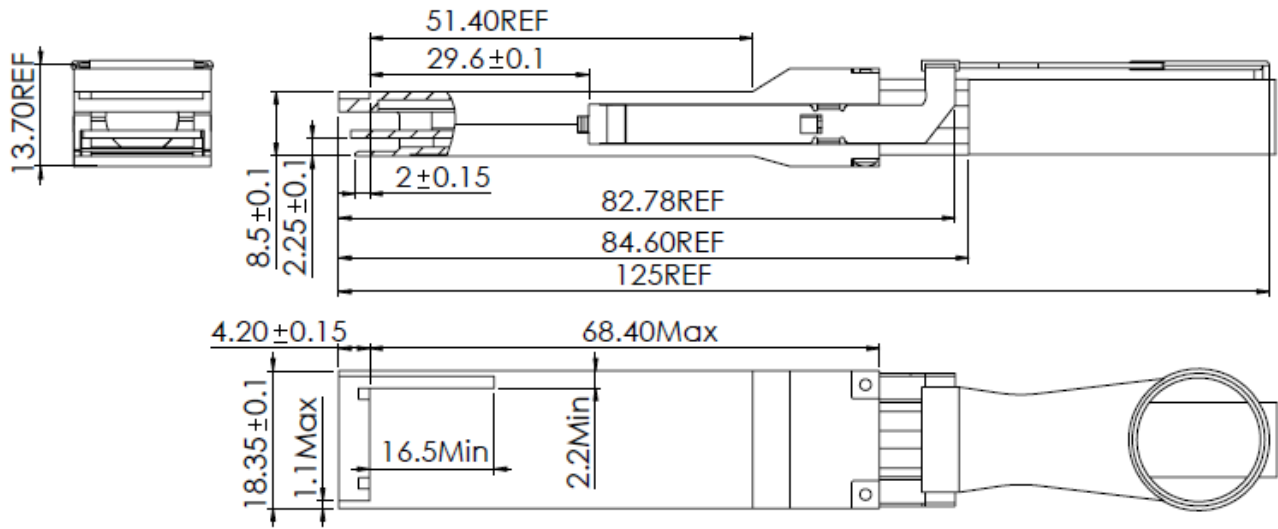
Electrical Characteristics (TOP=25 °C, Vcc=3.3Volts)

Parameter	Symbol	Min	Typ	Max	Unit	Note
Transmitter						
Input Differential impedance	Rin	80	100	120	Ω	
Differential data input swing	Vin,pp	120	-	850	mV	
Receiver						
Output differential impedance	Rout	80	100	120	Ω	
Single ended data output swing	Vout, pp	300	-	850	mV	

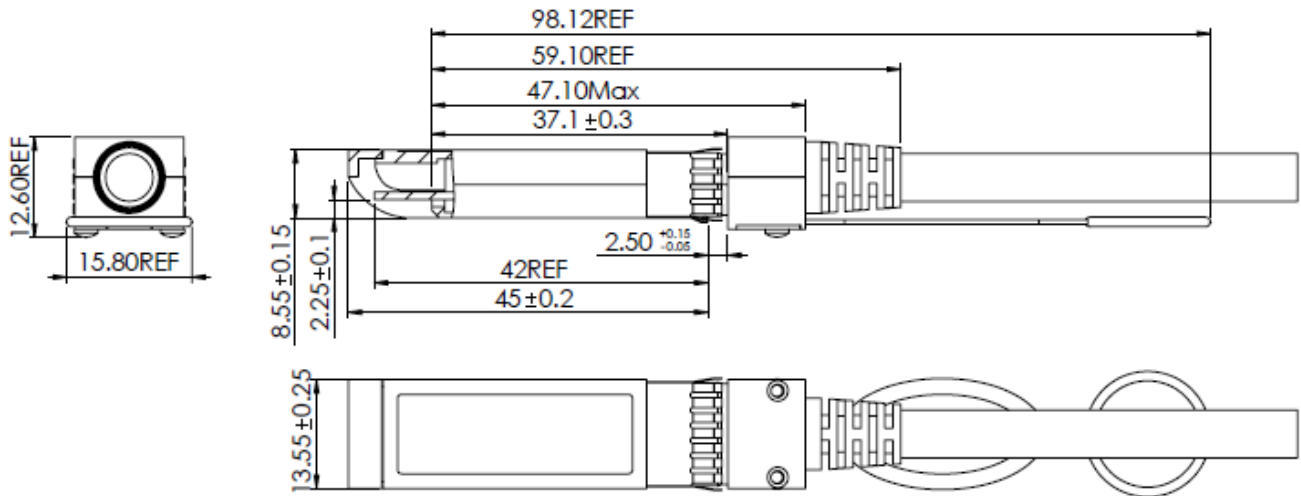
Mechanical Specifications



QSFP+ End



SFP+ End

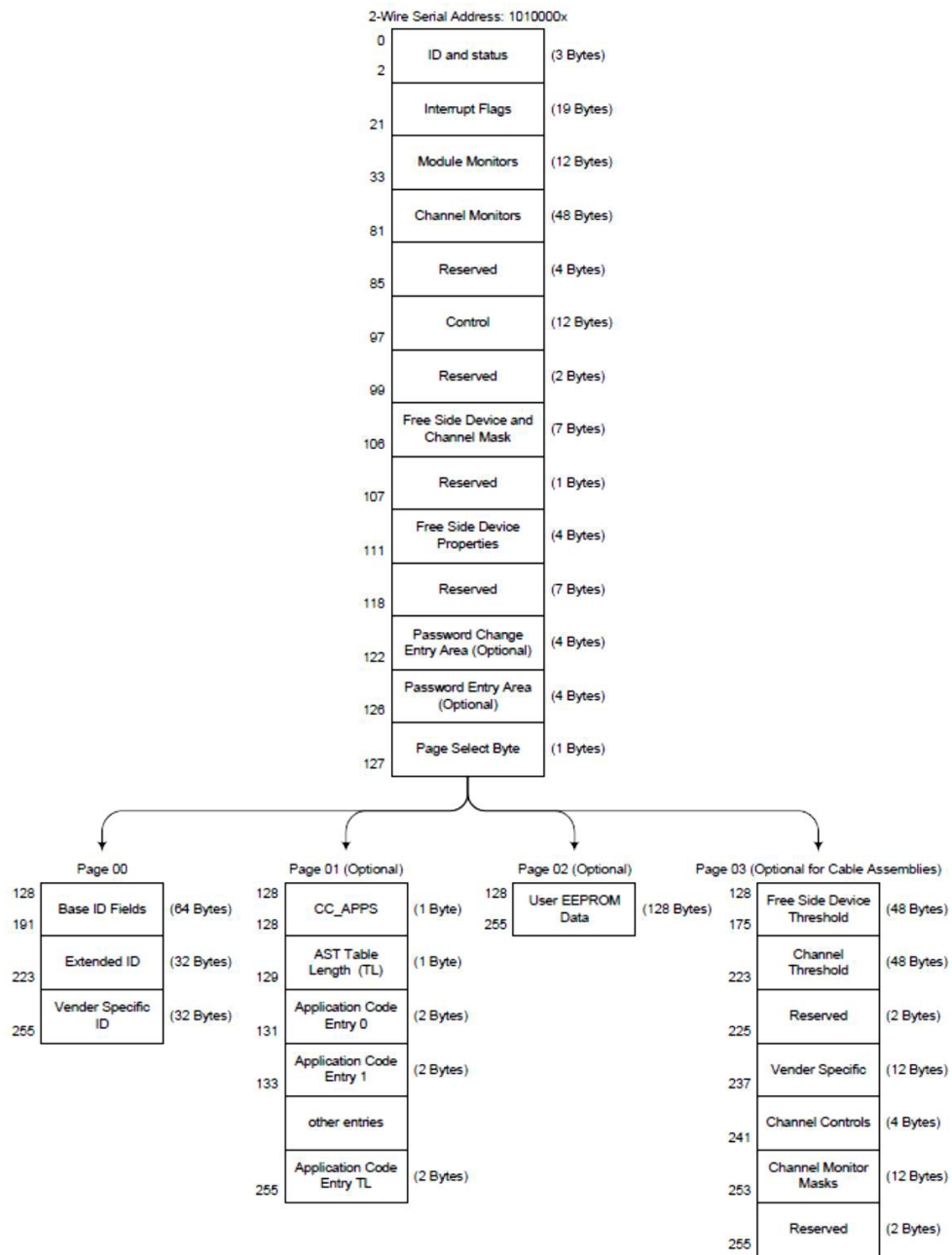


Length	Breakout Point (measured from QSFP)	Breakout point (measured from SFP+)
1m	30cm	70cm
2m	60cm	1.4m
3m	1m	2m
4m	1m	3m
5m	2m	3m
7m	4m	3m
10m	7m	3m

Parameter	Symbol	Min	Typ	Max	Unit
Durability		100			Cycle
Transceiver Insert Force		40			N
Transceiver Extraction Force		11.5			N
Transceiver Retention Force		90		170	N

EEPROM Information

EEPROM memory map specific data field description is as below:



Contact Information

Founded in 1999, AddOn Networks is North America's leading provider of transceivers and high speed cabling. With a reputation for high quality products as well as an extensive custom design portfolio, AddOn has the connectivity solution regardless of the requirement.

At AddOn, 100% of the products we ship every day are tested in the specific application for which they are intended—never batch or spec tested only. We run bandwidth, distance and IOS network tests. We have documented an impressive 0.03% failure rate over the last 10 years. To continue this rate of success we invest millions annually in our own on-site testing lab.

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