

QSFP-PxxMx-1 Cable Assemblies - QSFP+ 40Gb/s Direct-Attach Copper

Preview Document. Not Live Data.



For more Information
please call
1-800-Belden1



Description

QSFP+ to QSFP+ Direct-Attach Copper, 40Gb/s, Black

Usage (Overall):

Suitable Applications

Data Centers, Main Equipment Rooms, Telecommunications Rooms, Work Area, 1-10G Ethernet, 1/2/4/8G Fiber Channel, 10G Fiber Channel over Ethernet, SDR, DDR, QDR, FDR-10 Infiniband, Storage Area Networks (SAN), Network Attached Storage (NAS) and High Performance Computing.

Cable Characteristics (Connectivity):

DAC Specs-Length

Length	# Pairs	AWG	Conductor material	Cable Type	Cable O.D.
0.5 M to 3.0 M	8	30	Solid Copper Silver Plated	Twinax	6.8 mm (0.268 in.)
>3.0 M to 5.0 M	8	26	Solid Copper Silver Plated	Twinax	8.8 mm (0.347 in)

Insulation:

Insulation Material

Insulation Material
PO - Polyolefin

Outer Shield:

Outer Shield Material

Layer #	Outer Shield Material	Coverage (%)
1	Aluminum Foil-Polyester Tape	100.000
2	Aluminum Braid	85.000

Outer Jacket:

Outer Jacket Material

Outer Jacket Material
PVC - Polyvinyl Chloride

Overall Cabling:

Overall Cabling Black

Physical Characteristics (Connectivity):

Materials:

Materials

Description	Material	Color
QSFP+ Backshell	Nickel plated zinc alloy diecast	Bright Nickel
QSFP+ Pull Tab	PVC	Green
PCB bare board	Improved FR4 UL94V-0	
PCB Contacts	Gold plated contacts	

Mechanical Characteristics (Connectivity):

Footprint/Type QSFP+ to QSFP+

Termination Interface

Termination	Connection	Durabilities

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QSFP+	Mated Connection	100
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Cable/Connector Retention:	38.218 lbs.
Plug/Connector Retention:	20.233 lbs.
Insertion Force to Cage:	8.992 lbs.
Withdraw Force from Cage:	6.744 lbs.
Storage Temperature Range	-40°C To +80°C
Installation Temperature Range	0°C To +70°C
Operating Temperature Range	0°C To +70°C
Min. Bend Radius (Overall Cable):	1.750 in.
Flex Cycle Rating	100 min.

Applicable Specifications and Agency Compliance (Overall):

Applicable Standards & Environmental Programs:

CEC/C(UL) Specification	CL2
CSA Specification	FT4
IEEE Specification	IEEE802.3
EU Directive 2002/95/EC (RoHS)	Yes
EU RoHS Compliance Date (mm/dd/yyyy)	01/01/2006
MII Order #39 (China RoHS)	Yes
Other Specification	SFF-8431 (Electrical), SFF-8661 (Mechanical)

Transmission Characteristics (Connectivity):

Electrical Characteristics (Overall):

Electrical Characteristics

Electrical Parameters	QSFP-P0M5-1	QSFP-P1M0-1	QSFP-P2M0-1	QSFP-P3M0-1	QSFP-P5M0-1
Dielectric Strength	300 v	300 v	300 v	300 v	300 v
Current Rating	0.5 A	0.5 A	0.5 A	0.5 A	0.5 A
Insulation Resistance	1000 M-Ohms Min.	1000 M-Ohms Min.	1000 M-Ohms Min.	1000 M-Ohms Min.	1000 M-Ohms Min.
Contact Resistance	50 m-Ohms Max.	50 m-Ohms Max.	50 m-Ohms Max.	50 m-Ohms Max.	50 m-Ohms Max.
ESD (contacts)	1kV	1kV	1kV	1kV	1kV
ESD (direct/air discharge to module)	8KV/16kV	8KV/16kV	8KV/16kV	8KV/16kV	8KV/16kV
Impedance	90 to 110 Ohms	90 to 110 Ohms	90 to 110 Ohms	90 to 110 Ohms	90 to 110 Ohms
Propagation Delay	5.2 nsec/m	5.2 nsec/m	5.2 nsec/m	5.2 nsec/m	5.2 nsec/m
Intra-Pair skew	15 psec/m	15 psec/m	15 psec/m	15 psec/m	15 psec/m
Insertion Loss @5 Ghz	2 dB	3.5 dB	7 dB	10.5 dB	10.5 dB
Difference Waveform Distortion Penalty (dWDPc)	-	1.68 dB	-	3.7 dB	-
Voltage Modulation Amplitude Loss (L)	-	1.07 dB	-	3.5 dB	-
Voltage Modulation Amplitude Loss to Crosstalk Ratio (VCR)	-	38.4 dB	-	37.0 dB	-
AC Common-Mode Voltage (Vcm)	-	8.8 mVrms	-	9.4 mVrms	-
Differential-Mode Return Loss Margin (SDDxx) (0.01-4.1GHz)	-	4.0 dB	-	6.4 dB	-
Differential-Mode Return Loss Margin (SDDxx) (4.1-11.1GHz)	-	3.6 dB	-	3.8 dB	-
Common-Mode Return Loss Margin (SCCxx) (0.01-2.5GHz)	0 dB	0.1 dB	-	0.5 dB	-
Common-Mode Return Loss Margin (SCCxx) (2.5-11.1GHz)	1.0 dB	1.0 dB	-	1.0 dB	-
Common to Differential Mode conversion (SCDxx) (0.01-4.1GHz)	-	13.6 dB	-	14.5 dB	-
Common to Differential Mode conversion (SCDxx) (4.1-11.1GHz)	-	5.8 dB	-	5.2 dB	-

Notes (Overall):

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Product Family:

Product List

Belden P/N	Description
SSFPP-P00M5-1	DAC, SFP+ 10Gb/s 0.5M
SSFPP-P01M0-1	DAC, SFP+ 10Gb/s 1M
SSFPP-P02M0-1	DAC, SFP+ 10Gb/s 2M
SSFPP-P03M0-1	DAC, SFP+ 10Gb/s 3M
SSFPP-P05M0-1	DAC, SFP+ 10Gb/s 5M
SSFPP-P07M0-1	DAC, SFP+ 10Gb/s 7M
QQSFP-P00M5-1	DAC, QSFP+ 40Gb/s 0.5M
QQSFP-P01M0-1	DAC, QSFP+ 40Gb/s 1M
QQSFP-P02M0-1	DAC, QSFP+ 40Gb/s 2M
QQSFP-P03M0-1	DAC, QSFP+ 40Gb/s 3M
QQSFP-P05M0-1	DAC, QSFP+ 40Gb/s 5M
QSSFP-P00M5-1	DAC, QSFP+/4SFP+ 40Gb/s 0.5M
QSSFP-P01M0-1	DAC, QSFP+/4SFP+ 40Gb/s 1M
QSSFP-P02M0-1	DAC, QSFP+/4SFP+ 40Gb/s 2M
QSSFP-P03M0-1	DAC, QSFP+/4SFP+ 40Gb/s 3M
QSSFP-P05M0-1	DAC, QSFP+/4SFP+ 40Gb/s 5M

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