MSP4M-1M Fiber Pigtail Cable Data Sheet

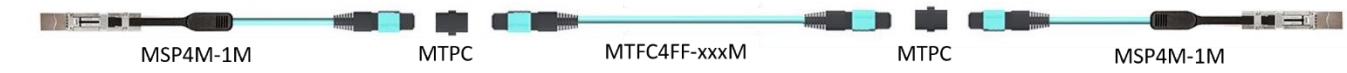
The MSP4M-1M is a PCIe 4.0 x4 SFF-8644 Optical pigtail solution for PCI Express applications. The MSP4M-1M is one meter long and includes an optical transceiver that terminates in a male MPO connector. Using two MSP4M-1M cables and a patch cable, you can extend PCIe 4.0 connectivity up to 100 meters.

Features

- ✓ Compliant to SFF-8644 Mechanical
- ✓ Compliant to SFF-8636 Management Interface
- ✓ Compatible with PCIe 4.0 x4
- ✓ Male MPO connector
- ✓ 12 Strand Fiber
- ✓ 1 EEPROMs
- ✓ Minimum Bending Radius is 30 mm.
- ✓ Regulatory compliance
- ✓ Length: 1 meter
- ✓ Length Tolerance: -50/+100 mm

Application Drawing

The picture below outlines creating a PCIe 4.0 link using two MSP4M, two MTPC bulkhead adapters, and an MTFC4FF patch cable.



Fiber head cleaning

Always use Dolphin's FCMPO-Clean MPO cleaning kit or an alternative MPO to clean the cassette before assembling the fibre cables. Dust and grease on the fiber head may cause a significant reduction in performance.

Part Number

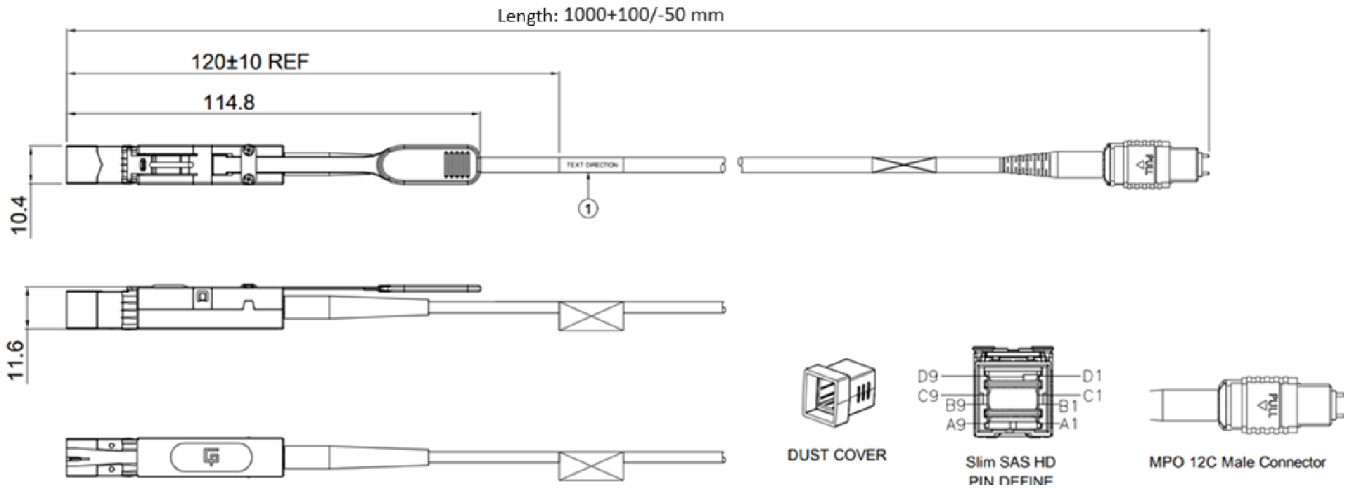
Parts	Description
MSP4M-1M	1 Meter Pigtail PCIe 4.0 x4 SFF-8644 to MPO

Custom lengths are available on request. Custom part numbers are on the form MSP4M-mMcc, where the overall length of the product is m.cc, e.g. MSP4M-1M25 (1.25 meter long).

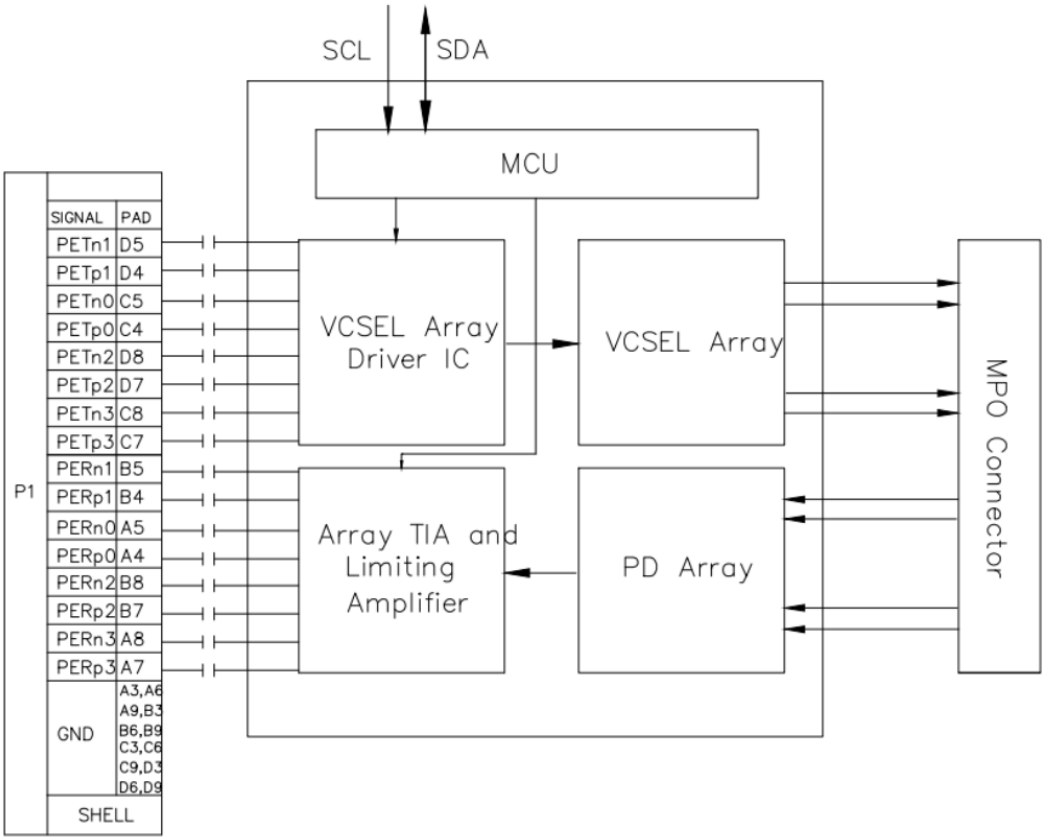
Specifications

Operation Condition				
Parameter	Min	Typical	Max	Unit
Case Operating Temperature	0	40	70	℃
Power Supply Voltage	3.135	3.300	3.465	V
Power Consumption (each end)	1.00	1.3	1.50	W
Power Supply Current (each end)	0.382	0.393	0.454	A
Date Rate per Channel	1.0	16	16	Gbps
BER per Channel		1E-12		
Test Pattern		PRBS31		
Electrical Characteristics				
Input Signal				
Maximum Input Voltage			1.3	V
Eye Height	34.0			mV
Eye Width	41.2			ps
Output Signal				
Maximum Output Voltage			1.3	V
Eye Heigh	34.0			mV
Eye Width	41.2			ps
Optical Characteristics				
Optical Power, DC (each end)	-6.0		2.0	dBm
Storage Conditions				
Storage Temperature (Limited by the fiber cable jacket, not the active ends)	-10		70	℃
Relative Humidity (Non-Condensing)	5		85	%

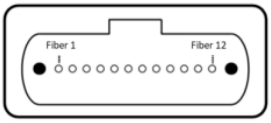
Drawing



Wiring Diagram

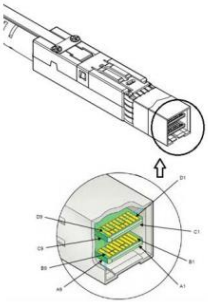


Optical Connector Lane Assignments



PCIe Signal	Fiber	PCIe3 x4 Signal	Fiber
PET0	1	Not used	7
PET1	2	Not Used	8
PET2	3	PER3	9
PET3	4	PER2	10
Not Used	5	PER 1	11
Not Used	6	PER0	12

SFF-8644 connector Pin-Out



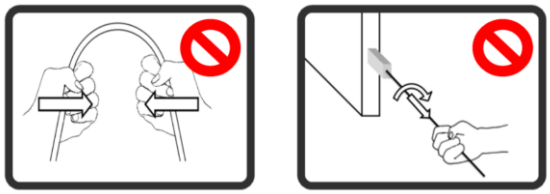
					Column				
Row	9	8	7	6	5	4	3	2	1
D	GND	PETn2	PETp2	GND	PETn1	PETp1	GND	MGTPWR	PWR
C	GND	PETn3	PETp3	GND	PETn0	PETp0	GND	CMISDA	CMISCL
B	GND	PERn2	PERp2	GND	PERn1	PERp1	GND	CBLPRSNT#	PWR
A	GND	PERn3	PERp3	GND	PERn0	PERp0	GND	CINT#	CADDR

Parameters

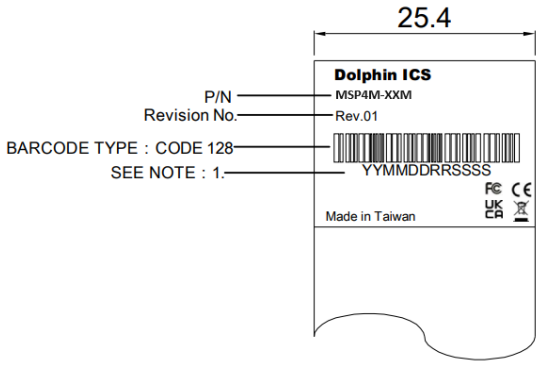
Parameter	Specification	Notes
Product length	Length -50mm / + 100mm	The 1-meter cable can be 95cm to 110 cm long
Minimum Cable Bending Radius	30mm	
Cable Cross-Section Dimension	Round Type Cable with 3mm in Diameter	
Cable Cover Type	OFNP / LSZH	
Mating Force	Max 100N	EIA 364-13
Un-mating Force	Max 50 N	EIA 364-13
Vibration	No Damage No discontinuity longer than 1 msec is allowed. 20 Megaohms maximum change from initial (baseline) contact resistance	EIA 364-28
Mechanical Shock	No Damage 20 Megaohms maximum change from initial (baseline) contact resistance	EIA 364-27

Handling

Care should be taken to restrict exposure to the conditions defined in the Absolute Maximum Ratings. Put the product in an even and stable location. If the product falls or drops, it may cause an injury or malfunction. The cable must not be subject to extreme bends during installation or operation. If you bend the cable at a radius less than the minimum bend radius, the cable may get damaged. Don't twist or pull by force ends of the cable, which might cause malfunction.



Labelling



Regulatory Compliance

EN 550032: 2015+ A11:2020	Class B EC 61000-4-4: 2012
BS EN 55032: 2015+ A11: 2020	IEC 61000-4-5: 2014 +A1:2017
CISPR 32: 2015	IEC 61000-4-6: 2013
EN 61000-3-2:2014	IEC 61000-4-8: 2009
EN 61000-3-2:2013	IEC 61000-4-11: 2004+A1:2017
EN 55024:2020 + A1: 2015	47 CFR FCC Part 15, Subpart B, Class B
BS EN 55024:2020 + A1: 2015	ICES-003: 2020 Issue 7, Class B
IEC 61000-4-2: 2008	WEEE (2012/19/EU)
IEC 61000-4-3: 2006 +A1:2007 +A2:2010	Laser Safety IEC 60825-1