Data Sheet

10GBase SFP+ Passive Direct Attach Cable Series
P/N: WST-SFP+DACxx-x

Features:

- Electrical interface compliant to SFF-8431 specification for 10GBase Ethernet and 8G Fiber Channel application
- Compliant with SFP+ MSA
- Data Rate from 1 Gbps to 11.1 Gbps
- Link length 0.5m to 8m for Passive type and 0.5m to 15m for Active type
- Hot Pluggable
- Operating case temperature range: 0°C~70°C
- RoHS 6 compliant

Applications:

- High capacity I/O in SAN, NAS
- InfiniBand and SONET
- Data center cabling infrastructure
- Custom high-speed data pipe
- High density connections between networking equipments
- Inter Rack Connection

Absolute Maximum Ratings

Parameter	Symbol	Unit	Min	Max
Storage Temperature Range	T_s	°C	-40	+85
Power Supply Voltage	V_{cc}	V	0	+3.6
Operating Case Temperature	T_c	°C	0	+70
Relative Humidity	RH	%	5	90

Recommended Operating Conditions

Parameter	Symbol	Unit	Min	Typ	Max
Case Operating Temperature Range	T_c	°C	0	25	+70
Power Supply Voltage	V_{cc}	V	3.135	3.3	3.465
Data rate		Gbps		10.3125	

Specifications (tested under recommended operating conditions, unless otherwise noted)

1. Electrical

Item	Specification
Low Level Contact Resistance	Initial :140 milliohms maximum with 100mm cable from the backshell edge Change: 20 milliohms maximum
Insulation Resistance	100VDC, 1000Mohm (Min.)
Dielectric Withstanding Voltage	AC 350V 1min, no breakdown or flash

2. Signal Integrity

Item	Specification
Difference Waveform Dispersion Penalty	6.75dBe max
VMA loss	4.4dBe max
VMA Loss to Crosstalk Ratio	32.5dB min
Differential output/input reflection coefficient	0.01-4.1 GHz: -12 + 2 x SQRT(f) with f in GHz 4.1-11.1 GHz: -6.3 + 13 x log10(f/5.5) with f in GHz
Common mode output/input reflection coefficient	0.01-2.5 GHz: < -7 +1.6 x f with f in GHz 2.5-11.1 GHz: -3 dB

Material

3.1 Backshel: Zinc alloy.

Nickel plated over all 100u" Min.

3.2 PCB Contact Plating

100 u" min. nickel underplate over all

30 u" min. gold over nickel at contact area

100u" min tin over nickel at soldering area

3.3 Raw Cable

High Speed cable, 2 pairs, 100 +/- 5 ohms

Mechanical

Item	Specification
Mating Force	50N Max. With retention latch disengaged.
Un-mating Force	50N Max. With retention latch disengaged.
Latch retention force	100N Min. with latch.
Durability	250 cycles

Environmental

Item	Specification
Physical shock	Subject mated specimens to 30G's half-sine shock pulses of 11 milliseconds duration. 3 shocks in each direction applied along 3 mutually perpendicular planes, 18 total shocks
Vibration (random)	Subject mated specimens to 3.10G's rms between 20-500 Hz for 15 minutes in each of 3 mutually perpendicular planes
Thermal shock	10 cycles of: a) -55°C for 30 minutes b) +85°C for 30 minutes
Temperature Life	Subject mated Specimens to +85°C for 500 hours
Humidity & Temperature cycling	Subject unmated specimens to 10 cycles (10 days) between 25 and 65℃ at 80% to 100% RH
Mixed Flowing Gas	Subject specimens to environmental EIA-364-65, Class IIA for 7 days unmated, and 7 days mated.
Visual Examination.	Connectors & contacts shall have no evidence of physical defects or otherwise unfit for testing.

Pin Definition

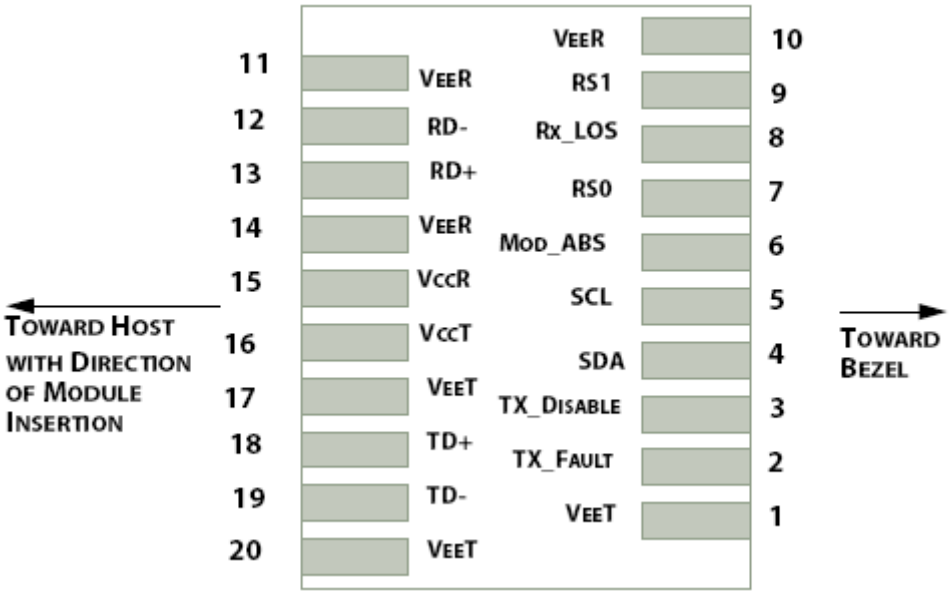


Figure 1: Interface to Host PCB

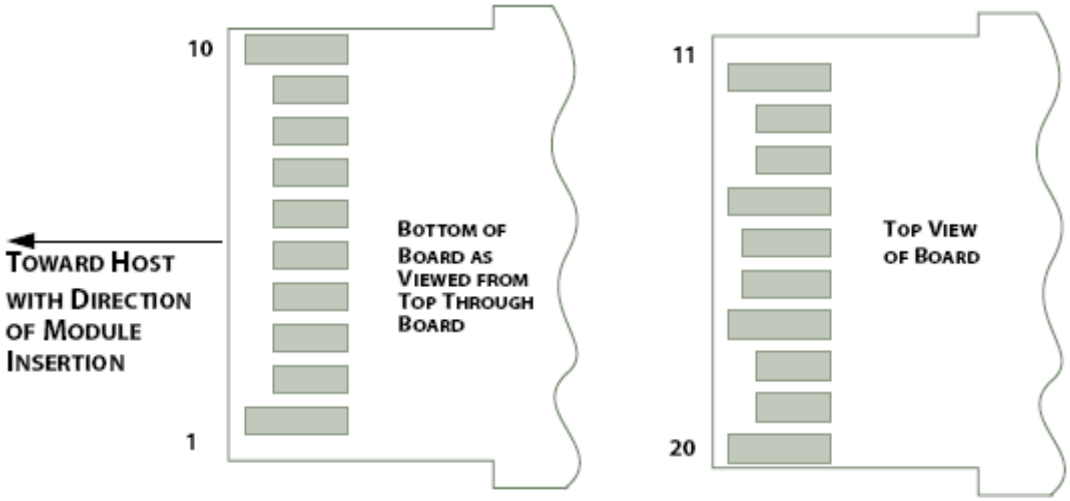


Figure 2: Module Contact Assignment

Module Electrical Pin Definition

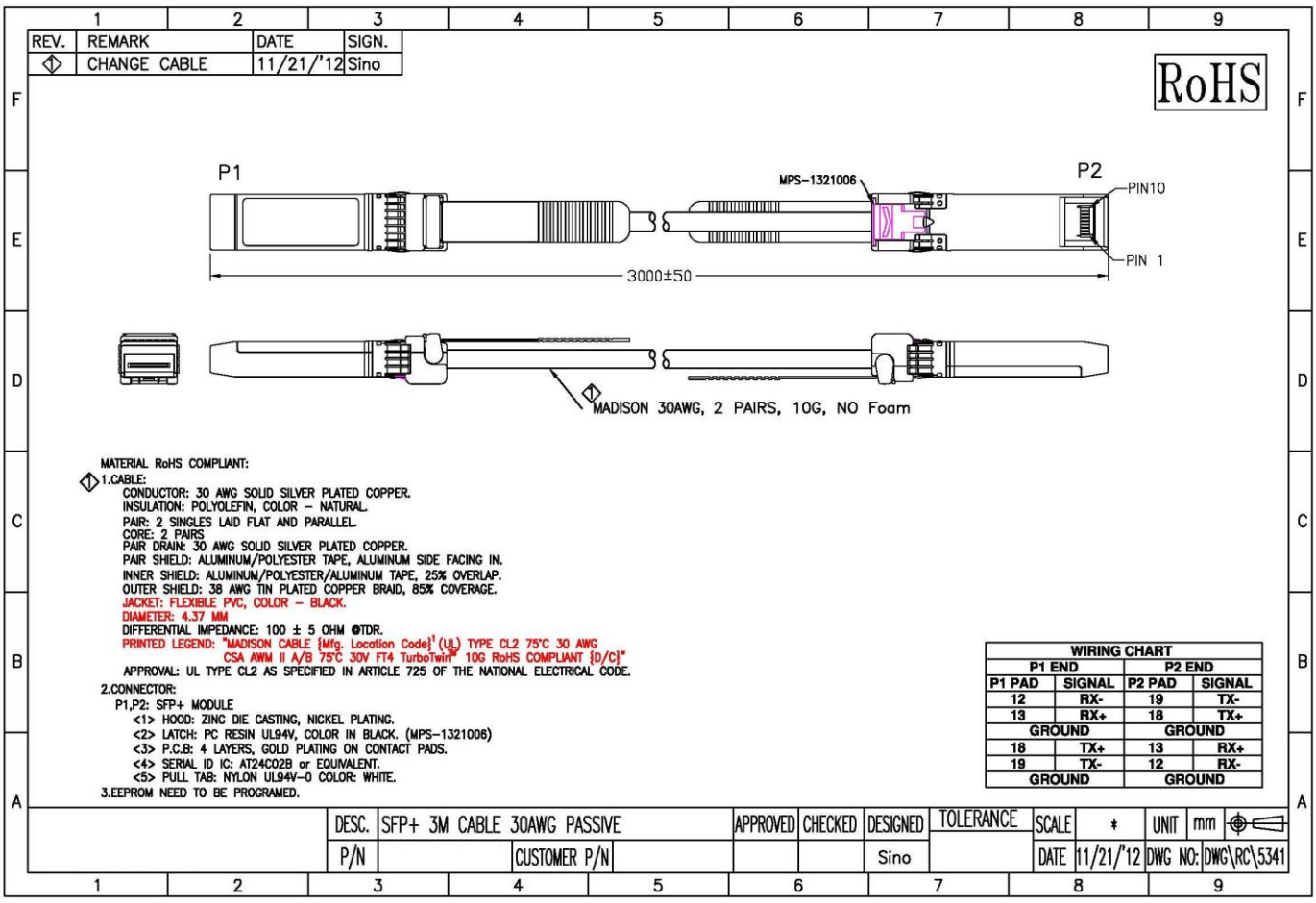
Pin	Logic	Symbol	Name/Description	Note
1		VeeT	Module Transmitter Ground	1
2	LVTTL-O	TX_Fault	Module Transmitter Fault	2
3	LVTTL-I	TX_Disable	Transmitter Disable; Turns of transmitter laser output	3
4	LVTTL-I/O	SDA	2-wire Serial Interface Data Line (Same as MOD-DEF2 in the INF-8074i)	
5	LVTTL-I/O	SCL	2-wire Serial Interface Clock (Same as MOD-DEF1 in the INF-8074i)	
6		Mod_ABS	Module Absent, connected to VeeT or VeeR in the module	2
7	LVTTL-I	RS0	Rate Select 0, optionally controls SFP+ module receiver. When high input signaling rate> 4.25 GBd and when low input signal rate≦ 4.25 GBd.	
8	LVTTL-O	Rx_LOS	Receiver Loss of Signal Indication	2
9	LVTTL-I	RS1	Rate Select 1, optionally controls SFP+ module transmitter. When high input signaling rate> 4.25 GBd and when low input signal rate≦ 4.25 GBd.	
10		VeeR	Module Receiver Ground	1
11		VeeR	Module Receiver Ground	1
12	CML-O	RD-	Receiver Inverted Data Output	
13	CML-O	RD+	Receiver Non-Inverted Data Output	
14		VeeR	Module Receiver Ground	1
15		VccR	Module Receiver 3.3 V Supply	
16		VccT	Module Transmitter 3.3 V Supply	
17		VeeT	Module Transmitter Ground	1
18	CML-I	TD+	Receiver Non-Inverted Data Output	
19	CML-I	TD-	Receiver Inverted Data Output	
20		VeeT	Module Transmitter Ground	1

Notes:

1. Module ground pins are isolated from the module case and chassis ground within the module.
2. Shall be pulled up with 4.7k to 10k ohm to a voltage between 3.15V and 3.45V on the host board.
3. Shall be pulled up with 4.7k to 10k ohm to VccT in the module.

Mechanical

Comply with SFF-8432, the improved Pluggable form fact or specification.



Ordering Information

Part No	Specification					
	Package	**Data rate**	**Temp.**	**Gauge**	**Length***	**Application**
WST-SFP+DACP4-x	**Passive SFP+**	**10.31Gbps**	**0~70°C**	**24AWG**	**5~8m**	**10G Ethernet & 8G Fibre Channel**
WST-SFP+DACP6-x	**Passive SFP+**	**10.31Gbps**	**0~70°C**	**26AWG**	**4~7m**	**10G Ethernet & 8G Fibre Channel**
WST-SFP+DACP8-x	**Passive SFP+**	**10.31Gbps**	**0~70°C**	**28AWG**	**3~6m**	**10G Ethernet & 8G Fibre Channel**
WST-SFP+DACP0-x	**Passive SFP+**	**10.31Gbps**	**0~70°C**	**30AWG**	**0.5~4m**	**10G Ethernet & 8G Fibre Channel**
WST-SFP+DACP2-x	**Passive SFP+**	**10.31Gbps**	**0~70°C**	**32AWG**	**0.5~3m**	**10G Ethernet & 8G Fibre Channel**

* Please contact our sales for customized length not listed in the above table.

Modification History

Revision	Date	Description	Originator	Review	Approved
V1	4-Sep-2013	New Issue	Min Liu	Wayne Liao	Wayne Liao
V2	11-Jun-2014	Add Active type	Min Liu	Wayne Liao	Wayne Liao
V3	15-Sep-2014	Update mechanical Drawing	Min Liu	Wayne Liao	Wayne Liao
V3.1	26-Aug-2015	Update document No.	Ivy Chen	Wayne Liao	Wayne Liao
V3.2	26-Sept-2015	Update order information	Ivy Chen	Wayne Liao	Wayne Liao

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