50G SFP56 Direct Attach Cable
TSSP-PC50G-xxM

General Description

SFP56 Direct Attach Cables are compliant with SFF-8432 and SFF-8402 specifications. Various choices of wire gauge are available from 30 to 26 AWG with various choices of cable length (up to 3m).

Features

- Up to 50Gbps data rate
- Up to 3m transmission
- Hot-pluggable SFP 20PIN footprint
- Compatible with IEEE 802.3bj and IEEE 802.3cd
- Compatible to SFF-8402 and SFF-8432
- Single 3.3V power supply
- Temperature Range: 0 °C to 70 °C
- RoHS Compliant

Applications

- Low EMI radiation Switches, servers and routers
- Data Center networks
- Storage area networks
- High performance computing
- Telecommunication and wireless infrastructure
- Medical diagnostics and networking
- Test and measurement equipment

8 Jinxiu Middle Road, Pingshan, Shenzhen, Guangdong, 518118, P. R. China
+86 755 32983688 | info@china-tscom.com | www.china-tscom.com

Recommended Operation Condition

Parameter	Symbol	Min	Max	Unit
Operating Case Temperature	Topc	0	70	degC
Storage Temperature	Tst	-40	85	degC
Relative Humidity (non-condensation)	RS	35	60	%
Supply Voltage	VCC3	3.135	3.465	V
Voltage on LVTTL Input	Vilvttl	-0.3	VCC3 +0.2	V
Power Supply Current	ICC3	-	15	mA
Total Power Consumption	Pd	-	0.05	W

Notes:
Stress or conditions exceed the above range may cause permanent damage to the device.
This is a stress rating only and functional operation of the device at these or any other conditions above those listed in the operational sections of this specification is not applied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

Frequency Domain

Parameter	Symbol	Min	Typical	Max	Uni	Note
Differential Impedance	TDR	90	100	110	Ω	-
Insertion loss	SDD21	-16.06	-	-	dB	At 13.28 GHz
Differential Return Loss	SDD11 SDD22	-	-	See 1	dB	At 0.05 to 4.1 GHz
		-	-	See 2		At 4.1 to 19 GHz
Common-mode to common-	SCC11	-	-	-2	dB	At 0.2 to 19 GHz
Differential to common-mode return loss	SCD11 SCD22	-	-	See 3	dB	At 0.01 to 12.89 GHz
		-	-	See 4		At 12.89 to 19 GHz
Differential to common Mode Conversion Loss	SCD21-IL	-	-	-10	dB	At 0.01 to 12.89 GHz
		-	-	See 5		At 12.89 to 15.7 GHz
		-	-	-6.3		At 15.7 to 19 GHz

Notes:
Reflection Coefficient given by equation SDD11(dB) < -16.5 + 2 × SQRT(f), with f in GHz
Reflection Coefficient given by equation SDD11(dB) < -10.66 + 14 × log10(f/5.5), with f in GHz
Reflection Coefficient given by equation SCD11(dB) < -22 + (20/25.78)*f, with f in GHz
Reflection Coefficient given by equation SCD11(dB) < -15 + (6/25.78)*f, with f in GHz
Reflection Coefficient given by equation SCD21(dB) < -27 + (29/22)*f, with f in GHz

8 Jinxiu Middle Road, Pingshan, Shenzhen, Guangdong, 518118, P. R. China
+86 755 32983688 | info@china-tscom.com | www.china-tscom.com

Pin Definition

Pin	Symbol	Name/Description
1	VEET [1]	Transmitter Ground
2	Tx_FAULT [2]	Not used
3	Tx_DIS [3]	Not used
4	SDA [2]	2-wire Serial Interface Data Line
5	SCL [2]	2-wire Serial Interface Clock Line
6	MOD_ABS [4]	Module Absent. Grounded within the module
7	RS0 [5]	Not used
8	RX_LOS [2]	Loss of Signal indication. Logic 0 indicates normal operation
9	RS1 [5]	Not used
10	VEER [1]	Receiver Ground
11	VEER [1]	Receiver Ground
12	RD-	Receiver Inverted DATA out. AC Coupled
13	RD+	Receiver DATA out. AC Coupled
14	VEER [1]	Receiver Ground
15	VCCR	Receiver Power Supply
16	VCCT	Transmitter Power Supply
17	VEET [1]	Transmitter Ground
18	TD+	Transmitter DATA in. AC Coupled
19	TD-	Transmitter Inverted DATA in. AC Coupled
20	VEET [1]	Transmitter Ground

Notes:

1.Module circuit ground is isolated from module chassis ground within the module.

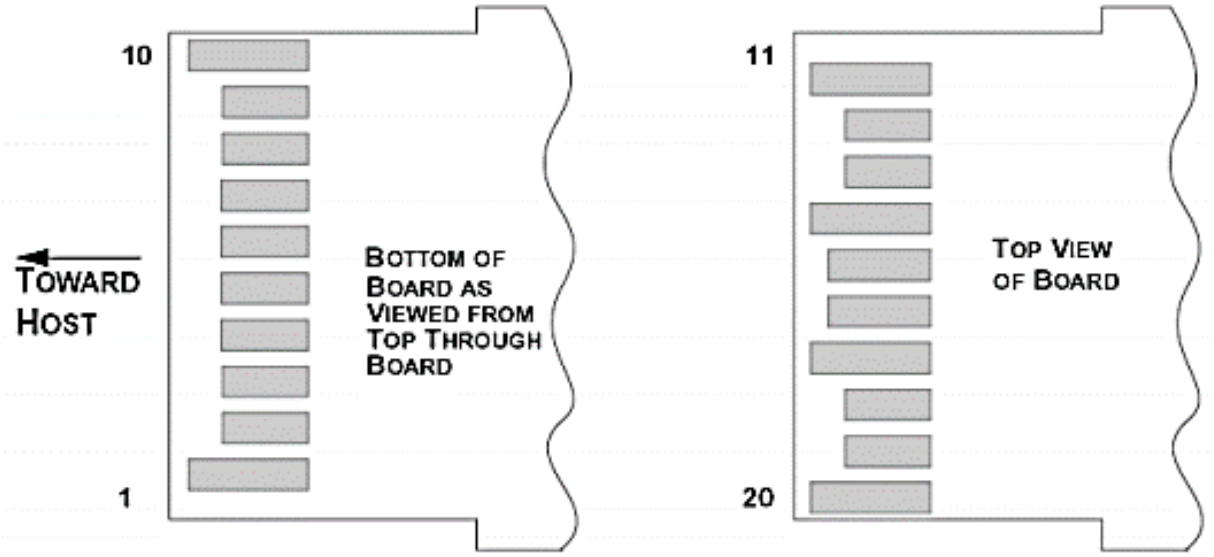
2..should be pulled up with 4.7k – 10k ohms on host board to a voltage between 3.15Vand 3.6V.

3.Tx_Disable is an input contact with a 4.7 kΩ to 10 kΩ pullup to VccT inside the module.

4.Mod_ABS is connected to VeeT or VeeR in the SFP+ module. The host may pull this contact up to Vcc_Host with a resistor in the range 4.7 kΩ to10 kΩ.Mod_ABS is asserted “High” when the SFP+ module is physically absent from a host slot.

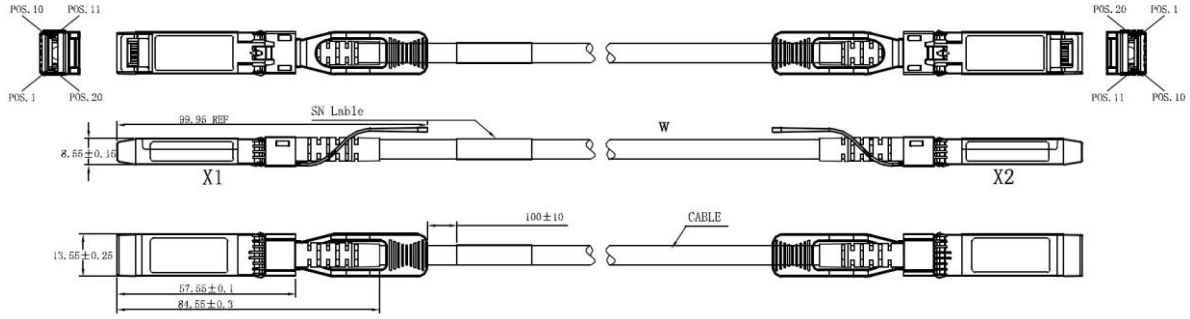
5. RS0 and RS1 are module inputs and are pulled low to VeeT with > 30 kΩ resistors in the module.

8 Jinxiu Middle Road, Pingshan, Shenzhen, Guangdong, 518118, P. R. China
+86 755 32983688 | info@china-tscom.com | www.china-tscom.com



Mechanical Dimensions

The connector is compatible with the SFF-8432 specification.



Mechanical Specifications

Parameter	Minimum	Typical	Maximum	Unit
Cable Diameter (26AWG)	-	0.220	-	Inches
Bend Radius (26AWG)	1.102	-	-	Inches
Cable Diameter (28AWG)	-	0.185	-	Inches
Bend Radius (28AWG)	0.925	-	-	Inches
Cable Diameter (30 AWG)	-	0.181	-	Inches
Bend Radius (30 AWG)	0.906	-	-	Inches
Within Pair Skew	-	-	100	ps/10m
Cable Insertion Loss	-	15.43	-	dB/5m
Bulk Cable Time Delay	-	-	5.2	ns/m
Bulk Cable Impedance	95	100	105	Ohms

Insertion Force	-	-	40	N
Withdrawal Force	-	-	30	N
Retention Force	90	-	-	N
Durability	50 Cycles	-	-	-

Ordering Information

50G SFP56 Copper Cable Assemblies, Passive.

P/N	Length	Data Rate	AWG	Length Tolerance
TSSP-PC50G-01M	1M	50G	26 / 30	+3.5/-3.5cm
TSSP-PC50G-02M	2M	50G	26 / 30	+3.5/-3.5cm
TSSP-PC50G-03M	3M	50G	26 / 30	+4/-4cm

8 Jinxiu Middle Road, Pingshan, Shenzhen, Guangdong, 518118, P. R. China
+86 755 32983688 | info@china-tscom.com | www.china-tscom.com