

SPT00M301000 – SFP+ Copper Transceiver **Copper / 30m / 10GBase-T**

#01 Overview

SPT00M301000 is a high performance transceiver module for 10x Gigabit Ethernet data links over Category 6a/7 cable. The maximum reach is 30m.

This transceiver module is compatible with the Small Form-factor Pluggable (SFP) Multisource Agreement (MSA) and hot pluggable.

Always contact Skylane Optics® commercial agents for compatibility with different equipment platforms.

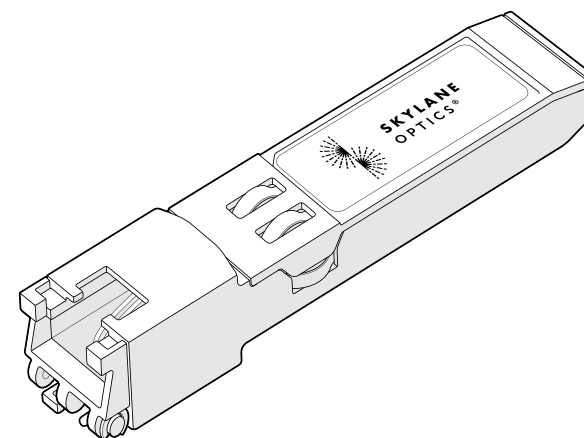


Figure 1. SFP+ Copper
(non-binding illustration)

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#02 Features

- Electrical interface specification as per SFF-8431
- Hot pluggable SFP+ footprint
- Management interface specification as per INF-8074i
- Compact RJ45 connector assembly
- Access to Physical Layer IC via 2-wire serial bus
- 30m reach over Cat6a/7 cable
- Operating temperature range 0 to 70°C
- Power dissipation < 3W
- Auto-negotiation function implemented

#03 Applications

- 10GBase-T

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#04 Technical Parameters

4.1 Recommended Operating Conditions						
Parameter	Min	Typ	Max	Unit	Notes	
Storage temperature	-40		85	°C		
Operating Case Temperature	0		70	°C		
Relative Humidity	0		85	%	Non-Condensing	
Power Supply Voltage	3.135	3.3	3.465	V		
Power Dissipation			950	mA		
Power Supply Voltage			3	W		

4.2 Transmitter Optical Specifications						
Parameter	Min	Typ	Max	Unit	Notes	
Data Rate		10.3125		Gbps	1	
Distance			30	m	2	

1. IEEE 803-2an
2. Category 6A/7 cable



#04 Technical Parameters

4.3 High-speed Electrical Interface, Host-SFP

Parameter	Min	Typ	Max	Unit	Notes
Differential Input Voltage Swing	190		700	mV(p-p)	3
Input Signal Rise/Fall Time	34			ps	5
Differential Input Impedance	80		120	Ω	
Differential Output Voltage Swing	300		850	mV(p-p)	4
Output Signal Rise/Fall Time	34			ps	5

4.4 High-speed Electrical Interface, Transmission Line-SFP

Parameter	Min	Typ	Max	Unit	Notes
Differential Output Impedance		100		Ω	
Differential Input Impedance		100		Ω	

3. Internally AC-coupled and terminated to 100 Ω differential load
 4. Internally AC-coupled. 100 Ω differential termination required
 5. 20% to 80%

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#05 Transceiver Electrical Pad Layout

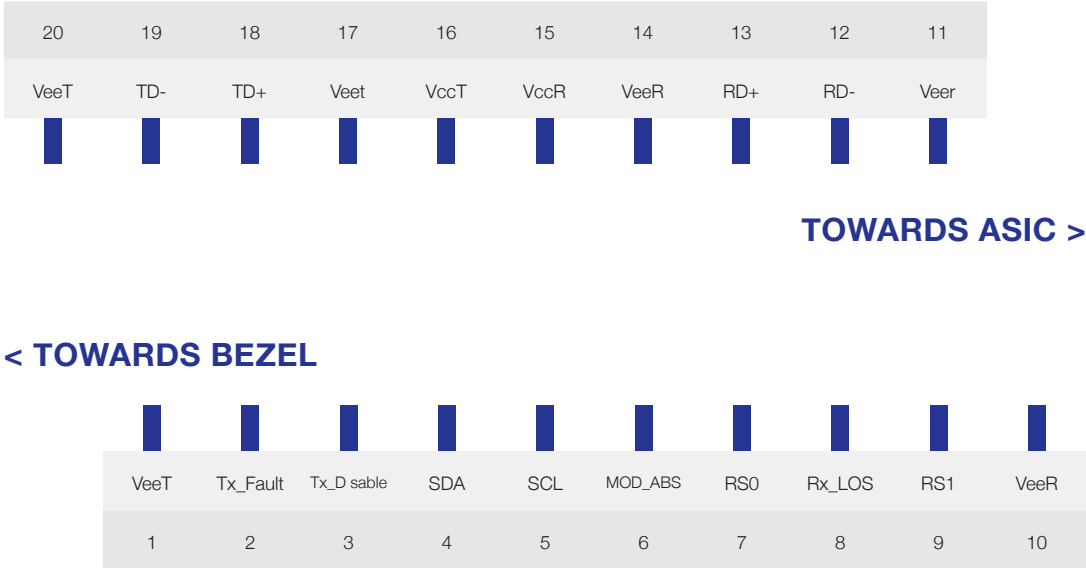


Figure 2. Transceiver Electrical Pad Layout

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#06 Pin Function Definition

Pin	Symbol	Description	Pin	Symbol	Description
1	VeeT	Module Transmitter Ground	11	VeeR	Module Receiver Ground
2	Tx_Fault	Module Transmitter Fault	12	RD-	Receiver Inverted Data Output
3	Tx_Disable	Transmitter Disable	13	RD+	Receiver Non-Inverted Data Output
4	SDA	2-Wire Serial Interface Data	14	VeeR	Module Receiver Ground
5	SCL	2-Wire Serial Interface Clock	15	VccR	Module Receiver 3.3V Supply
6	Mod_ABS	Module Absent	16	VccT	Module Transmitter 3.3V Supply
7	RS0	Rate Select 0	17	VeeT	Module Transmitter Ground
8	Rx_LOS	Receiver Loss of Signal	18	TD+	Transmitter Non-Inverted Data Input
9	RS1	Not Used	19	TD-	Transmitter Inverted Data Input
10	VeeR	Module Receiver Ground	20	VeeT	Module Transmitter Ground

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#07 EEPROM - Memory map as per INF-8074i

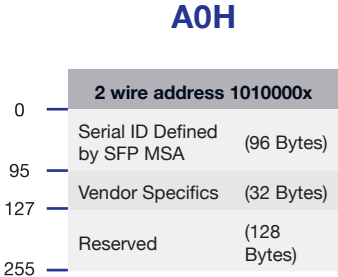


Figure 3. EEPROM of a SFP Copper

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#08 Ordering information

Part Number	Description
SPT00M301000	SFP copper, RJ45 connector, 10GBase-T, maximum reach 30m on Cat 6a/7 cable, 0°C to 70°C

#09 Document Revision Information

Revision	Description
RevA	Initial release

For your product safety, please read the following information carefully before any manipulation of the box:



ESD

This transceiver is specified as ESD threshold 1kV for SFI pins and 2kV for all others electrical input pins, tested per MIL-STD-883G, Method 3015.4 /JESD22-A114-A (HBM). However, normal ESD precautions are still required during the handling of this module.



LASER SAFETY

This is a Class1 Laser Product according to IEC 60825-1:2007. This product complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated (June 24, 2007).

Skylane Optics® supplies a broad range of optical transceivers. Our engineers work closely with our customers to find the best solutions for every application. We are committed to provide high quality products and services to our customers.

For questions on this product please contact: support@skylaneoptics.com