



R0R42A-SKY

HP® R0R42A Compatible 25GBase-SR SFP28 Transceiver (MMF, 850nm, 30m, LC, DOM, No FEC)

Product Description

This HP® R0R42A compatible SFP28 transceiver provides 25GBase-SR throughput up to 30m over multi-mode fiber (MMF) using a wavelength of 850nm via an LC connector. It is capable of withstanding -40 to 85C environments and can operate at temperatures between 0 and 70C. Our transceiver is built to meet or exceed OEM specifications and is guaranteed to be 100% compatible with HP®. It has been programmed, uniquely serialized, and tested for data-traffic and application to ensure that it will initialize and perform identically. All of our transceivers comply with Multi-Source Agreement (MSA) standards to provide seamless network integration. Additional product features include Digital Optical Monitoring (DOM) support which allows access to real-time operating parameters. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

Skylane's transceivers are RoHS compliant and lead-free.

Features:

- Up to 25.78Gbps Bi-Directional Data Links
- Electrical Interface Specifications Per SFF-8431
- Built-In CDR with 25.78Gbps Operation
- Uncooled 850nm VCSEL Laser
- 3.3V Power Supply Lines
- SFP28 MSA Package with Duplex LC Connector
- Metal Enclosure for Lower EMI
- Class 1 Laser Safety Certified
- Operating Temperature: 0 to 70 Celsius
- Up to 40M on OM4 MMF with No FEC
- RoHS Compliant and Lead-Free



Applications:

- 25GBase Ethernet
- Access and Enterprise

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



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).

The optical ports of the module need to be terminated with an optical connector or with a dust plug in order to avoid contamination.

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Maximum Supply Voltage	V _{CC}	-0.5		4	V	1
Storage Temperature	T _{stg}	-40		85	°C	
Operating Case Temperature	T _c	0	25	70	°C	
Relative Humidity	RH	5		85	%	
Data Rate	DR		25.78		Gbps	

Electrical Characteristics

Parameter		Symbol	Min.	Typ.	Max.	Unit	Notes
Module Supply Voltage		V _{CC}	3.135	3.3	3.465	V	
Module Supply Current		I _{CC}			290	mA	
Power Dissipation		P _{DISS}			1000	W	
Transmitter							
Input Differential Impedance		Z _{IN}		100		Ω	
Differential Data Input Swing		V _{IN,pp}	180		700	mVp-p	
Tx_Fault	Transmitter Fault	VOH	2		V _{CC}	V	
	Normal Operation	VOL	0		0.8	V	
Tx_Disable	Transmitter Disable	VIH	2		V _{CC}	V	
	Transmitter Enable	VIL	0		0.8	V	
Receiver							
Output Differential Impedance		Z _{OUT}		100		Ω	
Differential Data Output Swing		V _{OUT,pp}	300		850	mVp-p	1
Data Output Rise/Fall Time		Tr/Tf		30		ps	2
Rx_LOS	Loss of Signal (LOS)	VOH	2.0		Host_V _{CC}	V	3
	Normal Operation	VOL	0		0.8	V	3

Notes:

1. Internally AC coupled but requires an external 100Ω differential load termination.
2. 20-80%.
3. LOS is an open collector output and should be pulled up with 4.7kΩ on the host board.

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Launch Optical Power	Po	-2.5		2.4	dBm	1
Extinction Ratio	ER	2			dB	
Center Wavelength Range	λ_C	840	850	860	nm	
Transmitter and Dispersion Eye Closure	TDEC			4.3	dB	
Spectral Width	$\Delta\lambda$			0.6	nm	
Optical Return Loss Tolerance	ORLT			12	dB	
POUT @Tx_Disable Asserted	Poff			-20	dBm	1
Receiver						
Center Wavelength	λ_C	840		860	nm	
Receiver Sensitivity (Pavg)	RxSens			-7	dBm	2
Receiver Sensitivity (OMA)				-7	dBm	2
Receiver Overload (Pavg)	POL	2.4			dBm	
Optical Return Loss	ORL	12			dB	
LOS De-Assert	LOSD			-11	dBm	
LOS Assert	LOSA	-30			dBm	
LOS Hysteresis		0.5			dB	

Notes:

1. 50/125 μ m fiber with NA = 0.2.
2. Measured with PRBS 2³¹-1 with 1E⁻¹² BER @25.78Gbps.

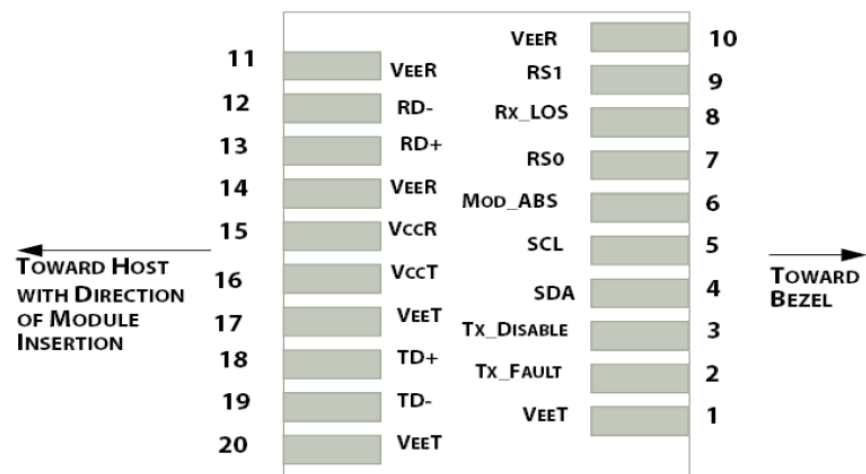
Pin Descriptions

Pin	Symbol	Name/Description	Notes
1	VeeT	Transmitter Ground.	1
2	Tx_Fault	Transmitter Fault. LVTTTL-O. "High" indicates a fault condition.	2
3	Tx_Disable	Transmitter Disable. LVTTTL-I. "High" or "open" disables the transmitter.	3
4	SDA	2-Wire Serial Interface Data. LVCMOS-I/O. MOD-DEF2.	4
5	SCL	2-Wire Serial Interface Clock. LVCMOS-I/O. MOD-DEF1.	4
6	MOD_ABS	Module Absent (Output). Connected to the VeeT or VeeR in the module.	5
7	RS0	Rate Select 0. Not Used. Presents high input impedance.	
8	Rx_LOS	Receiver Loss of Signal. LVTTTL-O.	2
9	RS1	Rate Select 1. Not Used. Presents high input impedance.	
10	VeeR	Receiver Ground.	1
11	VeeR	Receiver Ground.	1
12	RD-	Inverse Received Data Out. CML-O. AC Coupled.	
13	RD+	Received Data Out. CML-O. AC Coupled.	
14	VeeR	Receiver Ground.	
15	VccR	+3.3V Receiver Power.	
16	VccT	+3.3V Transmitter Power.	
17	VeeT	Transmitter Ground.	1
18	TD+	Transmitter Data In. CML-I. AC Coupled.	
19	TD-	Inverse Transmitter Data In. CML-I. AC Coupled.	
20	VeeT	Transmitter Ground.	1

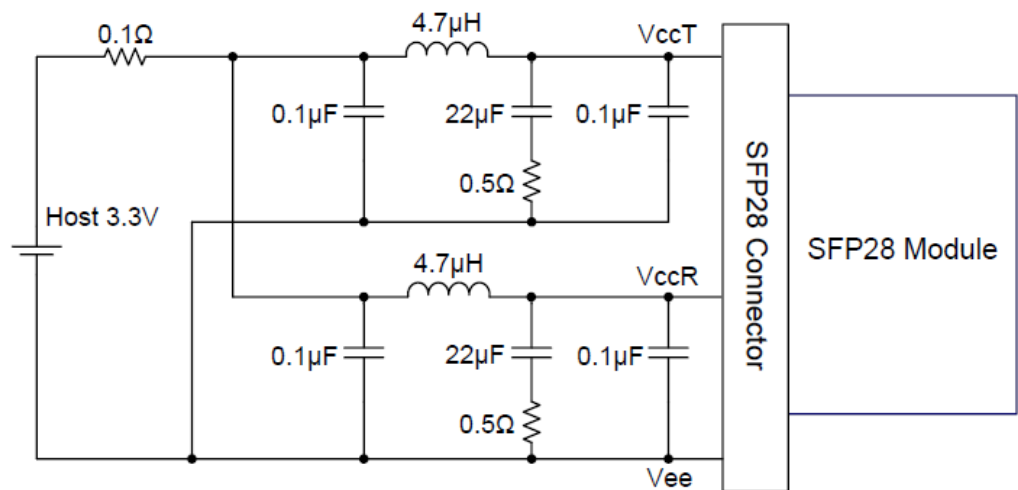
Notes:

1. The module signal grounds are isolated from the module case.
2. This is an open collector/drain output that, on the host board, requires a 4.7k Ω to 10k Ω pull-up resistor to the Host_Vcc.
3. This input is internally biased "high" with a 4.7k Ω to 10k Ω pull-up resistor to the VccT.
4. 2-Wire Serial Interface Clock and Data lines require an external pull-up resistor dependent on the capacitance load.
5. This is a ground return that, on the host board, requires a 4.7k Ω to 10k Ω pull-up resistor to the Host_Vcc.

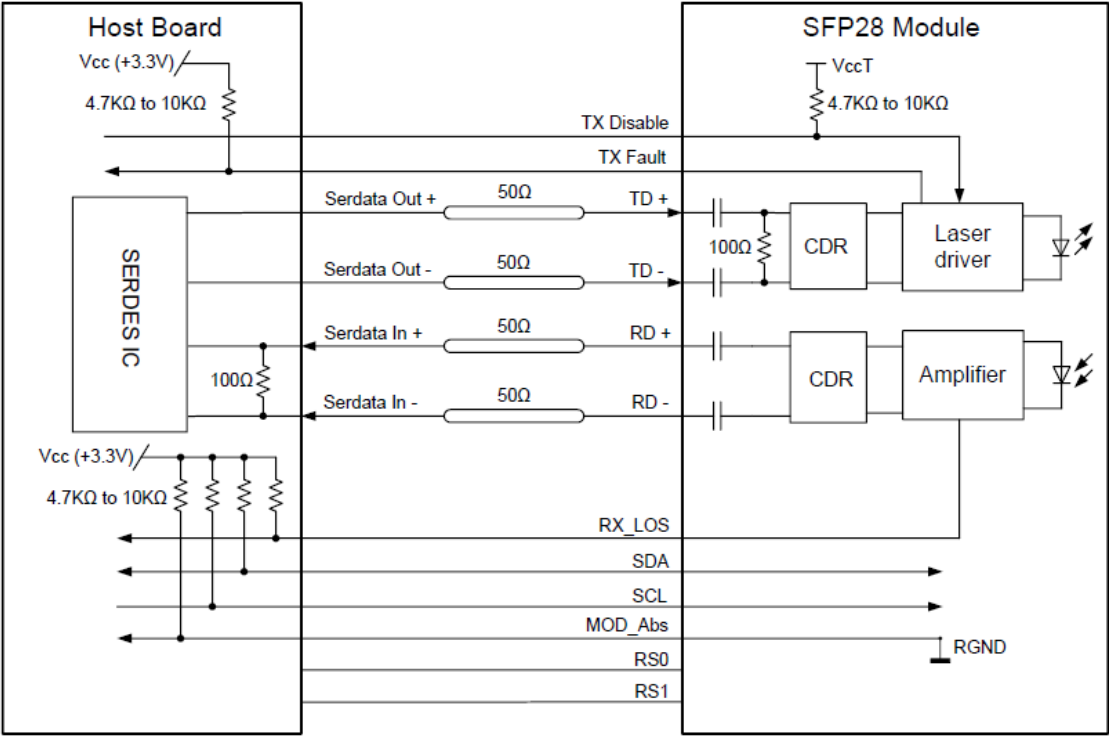
Electrical Pin-Out Details



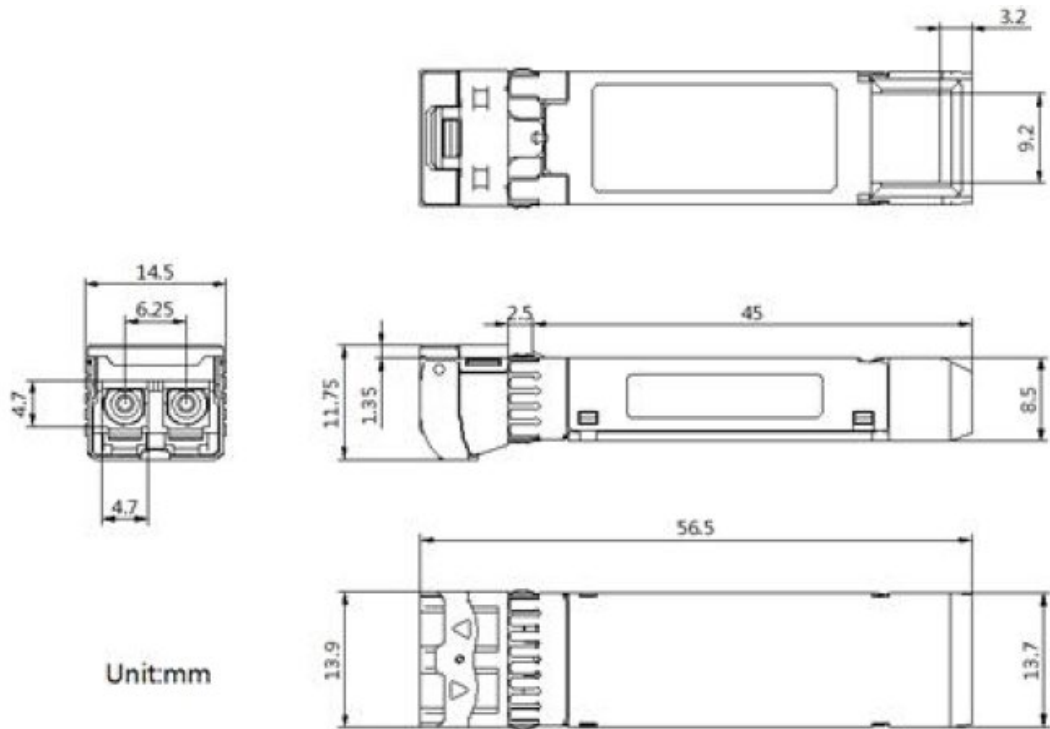
Host Board Power Supply Filter Network



Block Diagram



Mechanical Specifications



About Skylane Optics

Skylane is a leading provider of transceivers for optical communication.

We offer an extensive portfolio for the enterprise, access, datacenter and metropolitan fiber optical market as well as for smart home applications and home networks.

We cover the European, South American and North American market with a strong partner network and have offices in Belgium, Brazil, Sweden and USA.

Our offerings are characterized by high quality and performance. In combination with our strong technical support, we enable our customers to build cost optimized network solutions.

We offer an extensive range of high-quality products including transceivers (Optical and copper), Active Optical Cable (AOC), Direct Attach Cable (DAC), Mux/Demux, Coding Box.

