



SBM43CCCDG3D000

MSA Compliant Compliant GPON OLT SFP C++ Transceiver (1490nmTx/1310nmRx, 2.5Gbps/1.25Gbps, 39dBm, SC)

Product Description

This MSA compliant SFP transceiver provides 2.4Gbps/1.2Gbps-C++ throughput up to 60km over single-mode fiber (SMF) using a wavelength of 1490nmTx/1310nmRx via a SC connector. It is built to MSA standards and is uniquely serialized and data-traffic and application tested to ensure that they will integrate into your network seamlessly. Digital optical monitoring (DOM) support is also present to allow 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:

- INF-8074 and SFF-8472 Compliance
- Simplex SC Connector
- Commercial Temperature 0 to 70 Celsius
- Single-mode Fiber
- Hot Pluggable
- Excellent ESD Protection
- Metal with Lower EMI
- RoHS Compliant and Lead Free



Applications:

- GPON
- 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.

Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit
Operating Case Temperature	Tc	0		70	°C
Storage Temperature	TSTG	-40		85	°C
Power Supply Voltage	Vcc	3.13	3.3	3.47	V
Power Supply Current	Icc			450	mA

Transmitter Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Optical Transmitter Power	PO	4.5		10	dBm	
Optical Transmitter Power off	POFF			-39	dBm	
Output Center Wavelength	λ	1480		1500	nm	
Output Spectrum Width	$\Delta\lambda$			1.0	nm	
Side Mode Suppression Ratio	SMSR	30			dB	
Extinction Ratio	ER	8.2			dB	
Optical Rise Time				160	ps	
Optical Fall Time				160	ps	
Optical Eye Diagram	Compliant with ITU-T G.984.2 Mask					
Tolerance to TX Back Reflection		-15			dB	
Data Rate			2.488		Gb/s	
Differential Input Voltage	VPP	300		1200	mV	
Differential Input Impedance	ZIN	80	100	120	ohm	
TX Disable	High	2.0			V	
	Low	0		0.8	V	
TX Fault	High	2.4			V	
	Low	0		0.4	V	

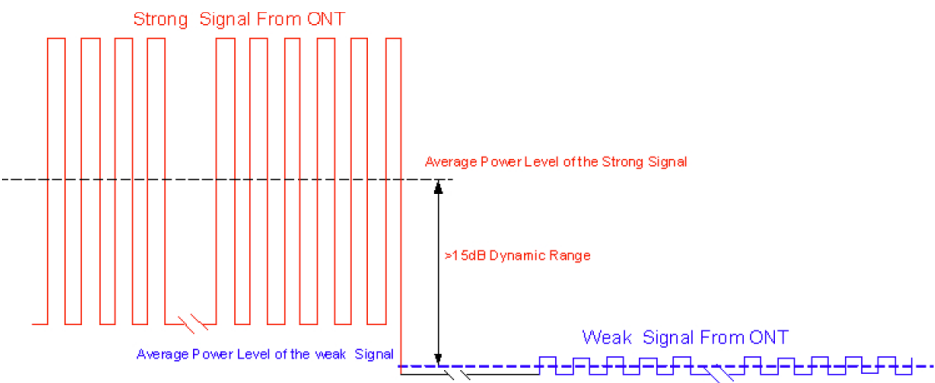
Receiver Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Wavelength of Operation		1260		1310	nm	
Data Rate			1.244		Gb/s	
Sensitivity	Sen			-30	dBm	1
Saturation Optical Power	Sat	-12			dBm	1
Receiver Reflectance				-12	dB	
Receiver Burst-mode Dynamic Range		15			dB	2
Data Output Voltage - High	VOH	VccR-1.05		VccR-0.85	V	
Data Output Voltage - Low	VOL	VccR-1.84		VccR-1.60	V	
Data Output Differential Swing		400		1600	mV	
RSSI accuracy		-3		3	dB	3
BPD Output Voltage - High	VIH	2.4			V	4
BPD Output Voltage – Low	VIL			0.4	V	4
Guard Time	T _{GUARD}		32		bits	
Reset Width	T _{RESET}		16		bits	
Optical Signal During Time	T _{ONT EN_DUR}	300			ns	5
RSSI Trigger Delay	T _D	0		3000	ns	6
RSSI Trigger Width	T _W	300		T _{ONT EN_DUR}	ns	

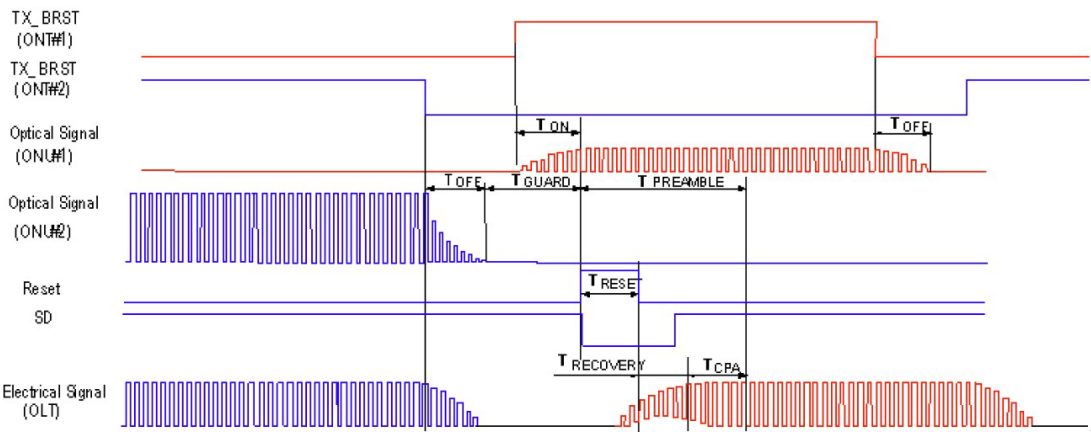
Notes

1. Measured with 1310nm, 1.244Gbps PRBS223-1 burst-mode optical input, ER=10dB, BER=1x10⁻¹⁰; Single burst packet length is 40us and packet interval is 40us.
2. Input optical power level difference of adjacent burst packets.
3. Receiver optical power ranged from -8dBm to -28dBm, measured with 1310nm, 1.244Gbps PRBS27-1 burst-mode optical input, ER=10dB, 50%duty cycle.
4. BPD assert low when module receive “Reset” signal, assert high when burst package is detected and latch to high state until next “Reset” signal.
5. For RSSI Measurement
6. Refer to first bit of the preamble

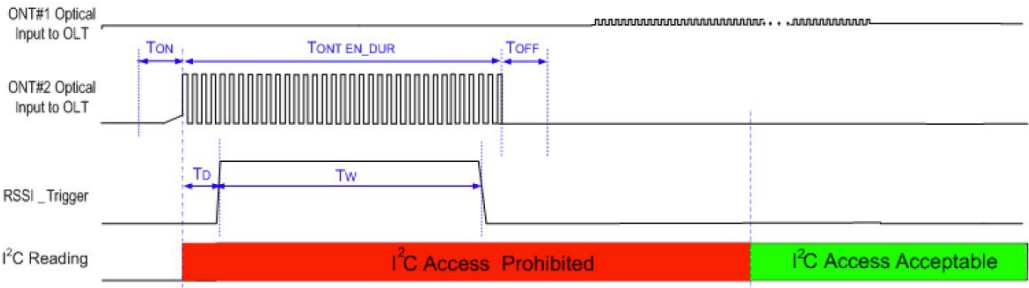
Burst Mode Receiver Dynamic Range



Timing Parameter Definitions in Burst Mode Sequence



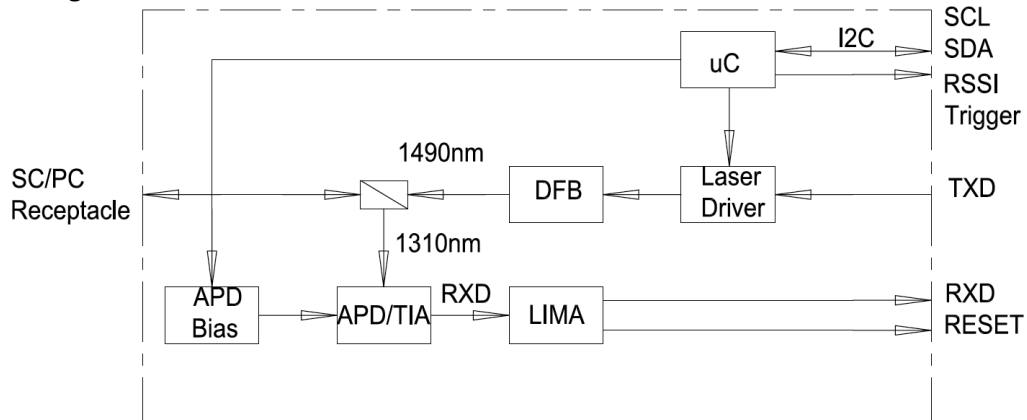
RSSI Timing Sequence



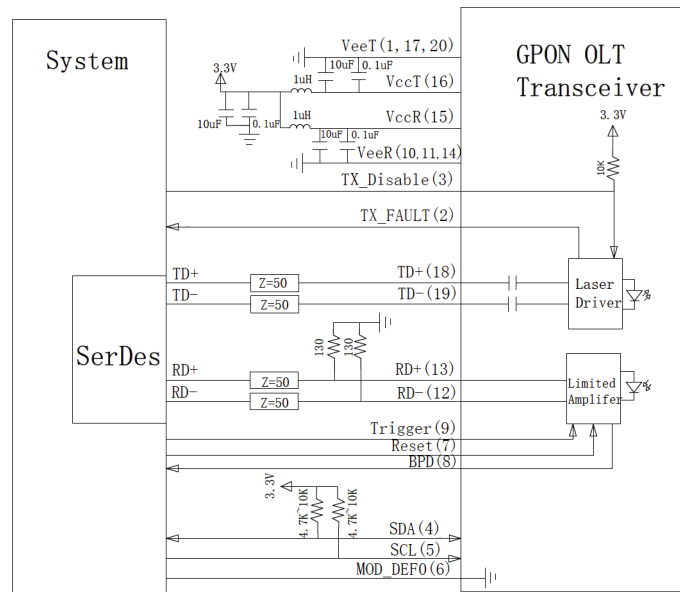
Pin Descriptions

Pin	Symbol	Name/Descriptions
1	V _{EET}	Transmitter Ground
2	TX_FAULT	Transmitter Fault Indication, LVTTTL Output, Active High
3	TX_DISABLE	Transmitter Disable, LVTTTL Input. Optical output power is off when this PIN is high or left unconnected.
4	SDA	I2C Data
5	SCL	I2C Clock
6	MOD_DEF(0)	Internally grounded
7	Rest	Receiver Reset, LVTTTL Input. Set "Reset" high at the end of previous burst, 2 bytes in duration
8	BPD	Burst Packet Detect, LVTTTL output. BPD assert low when module receives "reset" signal, assert high when incoming burst is preset.
9	RSSI_Trigger	RSSI Trigger Signal from Host, LVTTTL input.
10	V _{EER}	Receiver ground
11	V _{EER}	Receiver ground
12	RD-	Inv. Received Data Out, LVPECL, DC coupled
13	RD+	Received Data Out, LVPECL, DC coupled
14	V _{EER}	Receiver ground
15	V _{CCR}	Receiver Power Supply
16	V _{CCT}	Transmitter Power Supply
17	V _{EET}	Transmitter Ground
18	TD+	Transmit Data In, LVPECL or CML (AC coupled; internally 100 ohms differential
19	TD-	Inv. Transmit Data In, LVPECL or CML (AC coupled; internally 100 ohms differential termination)
20	V _{EET}	Transmitter Ground

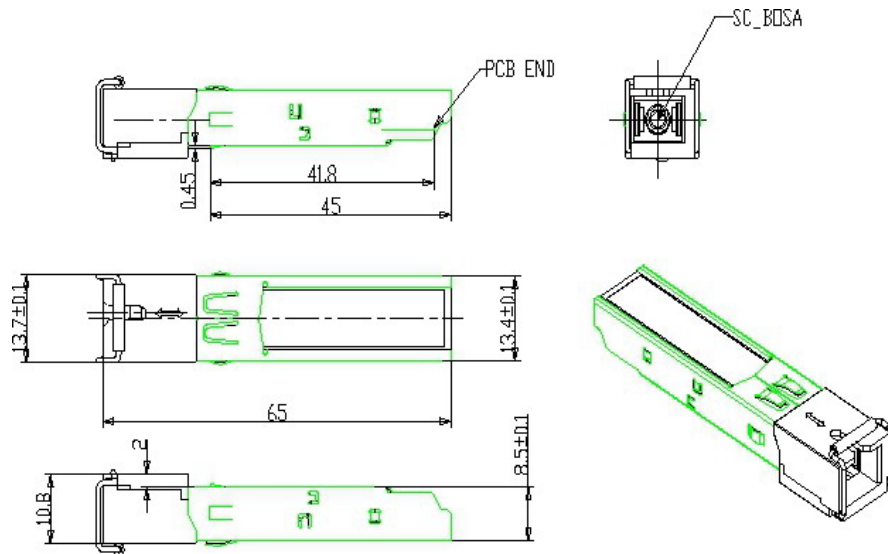
Functional Diagram



Recommended Application Circuit



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.

