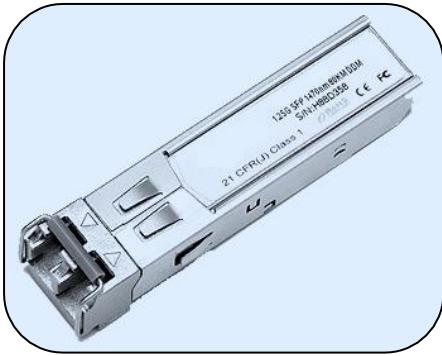




XSS31C-40Lx

155 Mbps SFP Optical Transceiver,
40 km Reach



Applications

- DH STM-1, S-1.1, L-1.1, L-1.2
- SONET OC-3 IR1, LR1, R2
- Other optical links

Description

The SFP transceivers are high performance, cost effective modules supporting 155 Mbps data-rate and 40 km transmission distance with SMF.

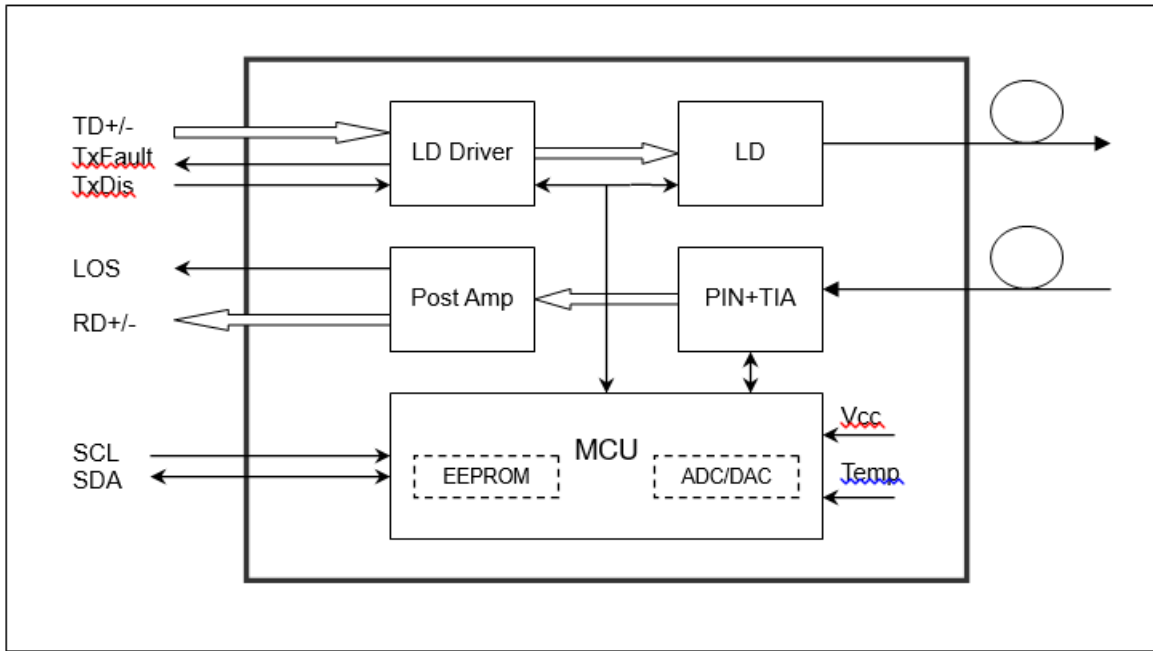
The transceiver consists of three sections: a FP laser transmitter, a PIN photodiode integrated with a trans-impedance preamplifier (TIA) and MCU control unit. All modules satisfy class I laser safety requirements.

The transceivers are compatible with SFP Multi-Source Agreement (MSA) and SFF-8472. For further information, please refer to SFP MSA.

Features

- Up to 155Mbps data-rate
- 1310 nm FP laser and PIN photo detector for 40 km transmission
- Compliant with SFP MSA and SFF-8472 with duplex LC receptacle
- Digital Diagnostic Monitoring:
Internal Calibration or External Calibration
- Digital Diagnostic Monitoring
- Compatible with RoHS
- +3.3 V single power supply
- Operating case temperature:
Standard : 0 to +70°C
Industrial : -40 to +85°C

Module Block Diagram



Absolute Maximum Ratings

Table 1 - Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Supply Voltage	Vcc	-0.5	4.5	V
Storage Temperature	Ts	-40	+85	°C
Operating Humidity	-	5	85	%

Recommended Operating Conditions

Table 2 - Recommended Operating Conditions

Parameter		Symbol	Min	Typical	Max	Unit
Operating Case Temperature	Standard	Tc	0		+70	°C
	Industrial		-40		+85	°C
Power Supply Voltage		Vcc	3.13	3.3	3.47	V
Power Supply Current		Icc			300	mA
Data Rate				155		Mbps

Optical and Electrical Characteristics

Table 3 - Optical and Electrical Characteristics

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Transmitter						
Centre Wavelength	λ_c	1260	1310	1360	nm	
Spectral Width (RMS)	σ			4	nm	
Average Output Power	P _{out}	-5		0	dBm	1
Extinction Ratio	ER	9			dB	
Optical Rise/Fall Time	t _r /t _f			1.3	ns	
Data Input Swing Differential	V _{IN}	300		1860	mV	2
Input Differential Impedance	Z _{IN}	90	100	110	Ω	
TX Disable	Disable		2.0		V _{cc}	V
	Enable		0		0.8	V
TX Fault	Fault		2.0		V _{cc}	V
	Normal		0		0.8	V
Receiver						
Centre Wavelength	λ_c	1260		1580	nm	
Receiver Sensitivity				-34	dBm	3
Receiver Overload		-3			dBm	3
LOS De-Assert	LOS _D			-36	dBm	
LOS Assert	LOS _A	-45			dBm	
LOS Hysteresis		1		4	dB	
Data Output Swing Differential	V _{out}	400		1800	mV	4
LOS	High	2.0		V _{cc}	V	
	Low			0.8	V	

Notes

1. The optical power is launched into SMF.
2. PECL input, internally AC-coupled and terminated.
3. Measured with a PRBS 2²³-1 test pattern @155Mbps, BER $\leq 1 \times 10^{-10}$.
4. Internally AC-coupled.

Timing and Electrical

Table 4 - Timing and Electrical

Parameter	Symbol	Min	Typical	Max	Unit
Tx Disable Negate Time	t_on			1	ms
Tx Disable Assert Time	t_off			10	μs
Time To Initialize, including Reset of Tx Fault	t_init			300	ms
Tx Fault Assert Time	t_fault			100	μs
Tx Disable To Reset	t_reset	10			μs
LOS Assert Time	t_loss_on			100	μs
LOS De-assert Time	t_loss_off			100	μs
Serial ID Clock Rate	f_serial_clock			400	KHz
MOD_DEF (0:2)-High	V _H	2		V _{cc}	V
MOD_DEF (0:2)-Low	V _L			0.8	V

Ordering information

Part number	Product Description
XSS31C-40LN	SFP, 1310 nm, 155 Mbps, 40 km, LC, 0°C ~ 70°C
XSS31C-40LY	SFP, 1310 nm, 155 Mbps, 40 km, LC, 0°C ~ +70°C, DDMI
XSS31C-40LL	SFP, 1310 nm, 155 Mbps, 40 km, LC, -40°C ~ +85°C

Notes

¹ For accurate order specification please contact XenOpt reseller before placing an order. The content of this document is subject to change without notice.

These modules are available in multiple customized compatible versions. **Please specify any compatibility requirements at time of ordering.** Standard MSA compatible pluggable components may not work or some function of these components may not be available in devices that require customized compatible devices. Pluggable components compatible with one type of communications equipment may not work in other type of communications equipment.

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