

Regulatory Compliance

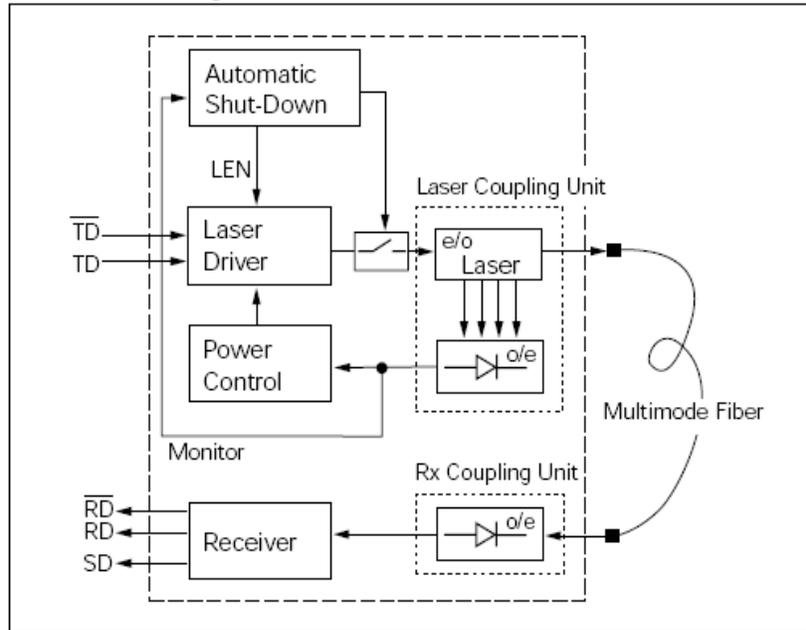
Feature	Standard	Performance
Electrostatic Discharge (ESD) to the Electrical Pins	MIL-STD-883G Method 3015.7	Class 1C (>1000 V)
Electrostatic Discharge to the Enclosure	EN 55024:1998+A1+A2 IEC-61000-4-2 GR-1089-CORE	Compliant with Standards
Electromagnetic Interference (EMI)	FCC Part 15 Class B EN55022:2006 CISPR 22B :2006 VCCI Class B	Compliant with Standards Noise frequency range: 30MHz to 6GHz. Good system EMI design practice required to achieve Class B margins. System margins are dependent on customer host board and chassis design.
Immunity	EN 55024:1998+A1+A2 IEC 61000-4-3	Compliant with standards. 1KHz sine-wave, 80% AM, from 80MHz to 1GHz. No effect on transmitter/receiver performance is detectable between these limits.
Laser Eye Safety	FDA 21CFR 1040.10 and 1040.11 EN (IEC) 60825-1:2007 EN (IEC) 60825-2:2004+A1	CDRH compliant and Class I laser product. TüV Certificate No. 50135086
Component Recognition	UL and CUL EN60950-1:2006	UL file E317337 TüV Certificate No. 50135086 (CB Scheme)
RoHS6	2002/95/EC 4.1&4.2 2005/747/EC 5&7&13	Compliant with Standards ^{*note1}

Note1: For update of the equipments and strict control of raw materials, EOPTOLINK has the ability to supply the customized products since Jan 1st, 2007, which meet the requirements of RoHS6 (Restrictions on use of certain Hazardous Substances) of European Union.

In light of item 5 in RoHS exemption list of RoHS Directive 2002/95/EC, Item 5: Lead in glass of cathode ray tubes, electronic components and fluorescent tubes.

In light of item 13 in RoHS exemption list of RoHS Directive 2005/747/EC, Item13: Lead and cadmium in optical and filter glass. The three exemptions are being concerned for Eoptolink's transceivers, because Eoptolink's transceivers use glass, which may contain Pb, for components such as lenses, isolators, and other components.

Functional Diagram



The Signal Detect (SD, active high), Normal optical input of receiver represents to a logic “1” level, which means asserted. (Optional)

Product Description

EOL9-8501-02 series multi-mode transceivers are small form factor pluggable module for duplex optical data communications. This module is designed for multi-mode fiber and operates at a nominal wavelength of 850nm.

The transmitter section uses a Vertical Cavity Surface Emitted Laser (VCSEL) which is a Class 1 laser compliant with International Safety Standard IEC 60825. The receiver section uses an integrated GaAs detector preamplifier (IDP) mounted in an optical header and a limiting post-amplifier IC.

Absolute Maximum Ratings^{*note2}

Parameter	Symbol	Min.	Max.	Unit
Storage Temperature	T _S	-40	+85	°C
Supply Voltage	V _{CC}	3.3	3.6	V
Operating Relative Humidity		-	95	%

Note2: Exceeding any one of these values may destroy the device immediately.

Recommended Operating Conditions

Parameter	Symbol	Min.	Typical	Max.	Unit
Operating Case Temperature	EOL9-8501-02-TRV	0		+70	°C
Power Supply Voltage	V _{CC}	3.15	3.3	3.45	V
Power Supply Current	I _{CC}			100	mA
Data Rate		250Kbps		20Mbps	

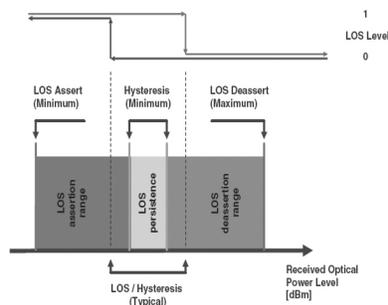
Optical and Electrical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Unit
62.5µm Core Diameter MMF	L	2			km
Data Rate		250Kbps		20Mbps	
Transmitter					
Centre Wavelength	λ _C	840	850	860	nm
RMS Spectral Width	Δλ			10	nm
Average Output Power*(note3)	P _{out}	-14		-7	dBm
Extinction Ratio	ER	9			dB
Input Differential Impedance	Z _{in}	90	100	110	Ω
Data Input	TTL				
Receiver					
Receiver Rate	0.25 to 20				Mbps
Input center wavelength	λ _C	760		860	nm
Receiver Sensitivity*(note4)	P _{min}			-34	dBm
Receiver Overload	P _{max}	-6			dBm
SD Assert	SDA			-36	dBm
SD De-Assert	SDD	-46			dBm
SD Hysteresis*(note5)		0.5			dB
SD Voltage(TTL-H)	V _H	2			V
SD Voltage (TTL-L)	V _L			0.4	V
Data Output	TTL				

Note3: The optical power is launched into 62.5/125um MMF.

Note4: Minimum average optical power at which the BER is less than 1E-12 or lower. Measured with a 2⁷-1 NRZ PRBS and ER=9 dB.

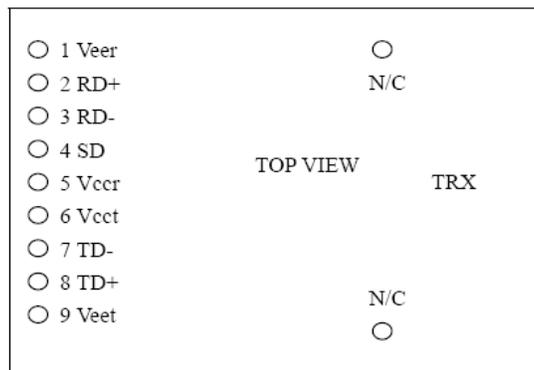
Note5: LOS Hysteresis(SD signal coincides with the LOS signal inversion)



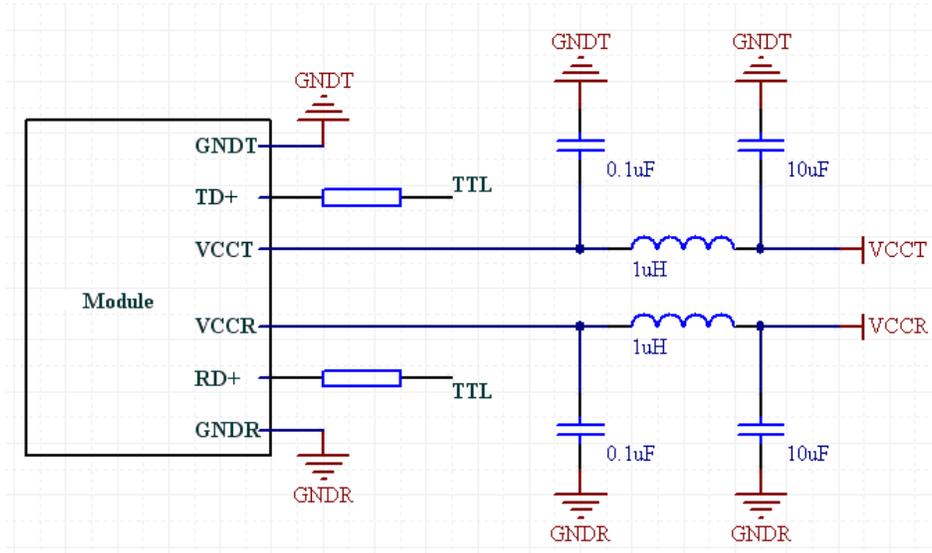
Pin Description

Pin	Name	Level	Description
1	Veer		Receiver Signal Ground, connect to receiver signal ground plane directly
2	RD+	TTL	Receiver data out
3	RD-	NC	NC
4	SD	TTL	Optional output . Signal Detect, TTL (Load resistor > 4.7KΩ), Normal optical input levels to the receiver result in a logic “1” output, asserted. Low input levels to the receiver result in a fault condition indicated by a logic “0”output, de-asserted.
5	Vccr		Receiver Power Supply, provide +3.3V, the recommended receiver power supply filter circuit. Locate the power filter circuit as close as possible to the Vccr pin
6	Vcct		Transmitter Power Supply, provide +3.3V via the recommended transmitter power supply filter circuit. Locate the power filter circuit as close as possible to the Vcct pin
7	TD-	NC	NC
8	TD+	TTL	Transmitter Data in
9	Veet		Transmitter Signal Ground, connect to the transmitter signal ground planed directly

Pin Function Definitions

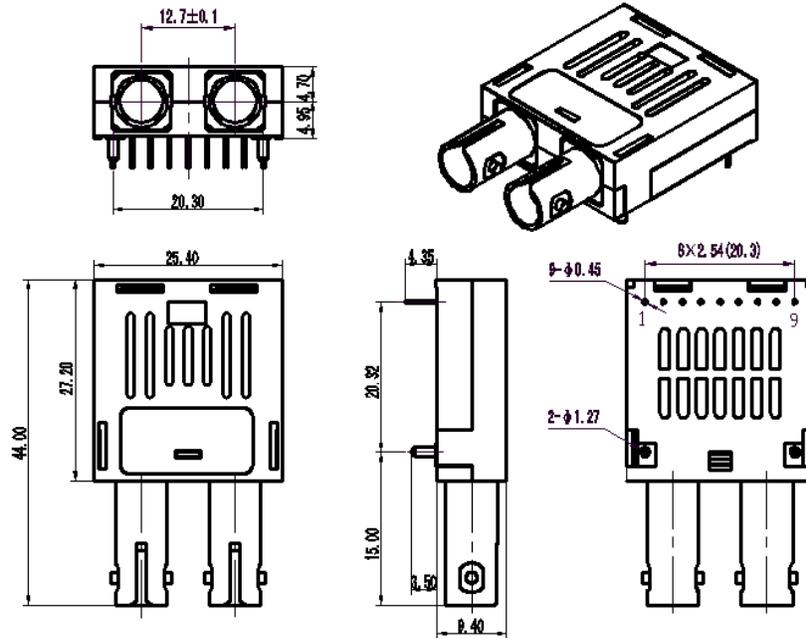


Recommended Circuit Schematic



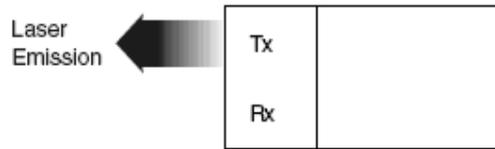
DC coupling inside

Package outline (Unit: mm)



ST receptacle

Laser Emission



Obtaining Document

You can visit our website:

<http://www.eoptolink.com>

Or contact Eoptolink Technology Inc., Ltd. listed at the end of the documentation to get the latest documentation.

Revision History

Revision	Initiated	Reviewed	Approved	DCN	Release Date
V1.a	Xavi	Angela		Released.	Apr 23,2013

Notice:

Eoptolink reserves the right to make changes to or discontinue any optical link product or service identified in this publication, without notice, in order to improve design and/or performance. Applications that are described herein for any of the optical link products are for illustrative purposes only. Eoptolink makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.

Contact:

Add: Floor 5, Building 2, No. 21 Gaopeng Avenue, High-Tech District, CHENGDU, SICHUAN
610041 P.R. CHINA

Tel: (+86) 028-85124308 ext 801

Fax: (+86) 028-85121912

Postal: 610041

E-mail:sales@eoptolink.com

<http://www.eoptolink.com>