

Specification

Small Form Factor Pluggable

Dual Optical Receiver

Duplex LC Receptacle

4250 Mbit /s

Ordering Information

S A B - x C A 1 - 1 1 1

A = Dual Transmitter
 B = Dual Receiver

1 = 0°C ~ +70°C
 5 = -10°C ~ +85°C

Product Summary

Model Name	Voltage	Device type	Interface	Temperature	Media	Distance	Latch Color
SAB-1CA1-111	3.3V	GaAs PIN Detector	AC / AC Coupling	0°C~+70°C	Multi-Mode Fiber	150M (OM2) 70M (OM1)	Black
SAB-3CA1-111				-40°C~+85°C			

Descriptions

The series of transceivers comply with standard Small Form Factor Pluggable (SFP) package. It is designed for multi-mode fiber application with high performance and cost-effective. Each module consists of two receivers which use the high-speed laser diode a light source. It complies with the laser class 1 products and EN60825-1.

Features

- Standard Small Form Factor Pluggable Package
- Duplex LC Receptacle Optical Interface
- Gigabit Ethernet Standard (IEEE802.3Z 1000BASE) Compliant
- Fibre Channel Standard (100-M5-SN-I and 100-M6-SN-I) Compliant
- Fibre Channel Standard (200-M5-SN-I and 200-M6-SN-I) Compliant
- Fibre Channel Standard (400-M5-SN-I and 400-M6-SN-I) Compliant
- Single + 3.3 V Power Supply
- Differential LVPECL Data Output
- Metal Enclosure and Low Power Consumption
- RoHs Compliant

Applications

- Support up to 4250 Mb/s data links
- Support 1250 Mb/s Gigabit Ethernet data links
- Router interconnects / Bus extenders
- Distributed multi processing / Host adapters
- SAN / Switch-to-switch interfaces
- Channel extenders / Telecom switches
- SAN / Mass storage system interconnects
- High speed I/O file servers / LAN
- Data storage networks / Hub interconnects

Absolute Maximum Ratings

Parameter	Symbol	Min	Typ	Max	Unit
Storage Temperature	T _S	-40	--	85	°C
Supply Voltage	V _{CC}	0	--	3.8	V
Relative humidity (non-condensing)	RH	--	--	85	%
Input voltage	V _{IN}	0	--	V _{CC}	V

General Characteristics

Parameter	Symbol	Min	Typ	Max	Unit
Case Operating Temperature (SAB-1CA1-111)	T _c	0	--	70	°C
Case Operating Temperature (SAB-3CA1-111)	T _c	-40	--	85	°C
Supply Voltage	V _{CC}	3.1	3.3	3.5	V
Supply Current (Total Current)	I _{Total}	--	--	300	mA

Receiver Logic

Parameter	Function	Logic Stage	Logic Type	Min	Max	Unit	Notes
RX_LOS	Loss of Signal	High	LVTTL	2.0	V _{CC} +0.3	V	Loss of Optical Input Signal
RX_LOS	Loss of Signal	Low	LVTTL	0	0.8	V	Indicates the Normal Optical Data Input

Receiver Specifications – Electro-Optical

(V_{CC}=3.1V~3.5V ; T_c= 0°C~70°C / T_c= -40°C~85°C unless specified)

Parameter	Symbol	Min	Typ	Max	Unit
Receiver Differential Output Voltage	V _{DIFF}	400	--	2000	mV _{P-P}
Operating Center Wavelength	λ _c	770	--	860	nm
Receiver Overload	P _{INMAX}	-3	--	--	dBm
Receiver Sensitivity	P _{INMIN}	--	--	-17	dBm
Receiver LOS Assert Level	P _{RX_LOS A}	-35	--	--	dBm
Receiver LOS Deassert Level	P _{RX_LOS D}	--	--	-18	dBm
Receiver Loss of Signal Hysteresis	R _{LH}	0.5	--	6	dB
Differential Output Voltage	V _{DIFF}	0.4	--	2.0	V
Receiver Loss of Signal Output Voltage -Low	V _{LOSL}	0	--	0.8	V
Receiver Loss of Signal Output Voltage -High	V _{LOSH}	2	--	V _{CC} +0.3	V

Notes:

- (A) All of data is measured at 4250 Mbps
- (B) With BER better than or equal to 10⁻¹²
- (C) measured in the center of the eye opening with 2⁷ -1 PRBS, NRZ

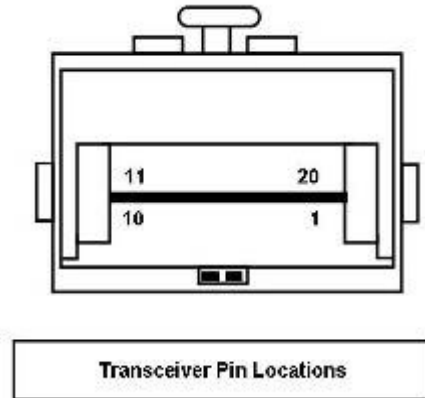
Pin Definition and Descriptions

20	VeeR
19	RD2-
18	RD2+
17	VeeR
16	VccR
15	VccR
14	VeeR
13	RD1+
12	RD1-
11	VeeR

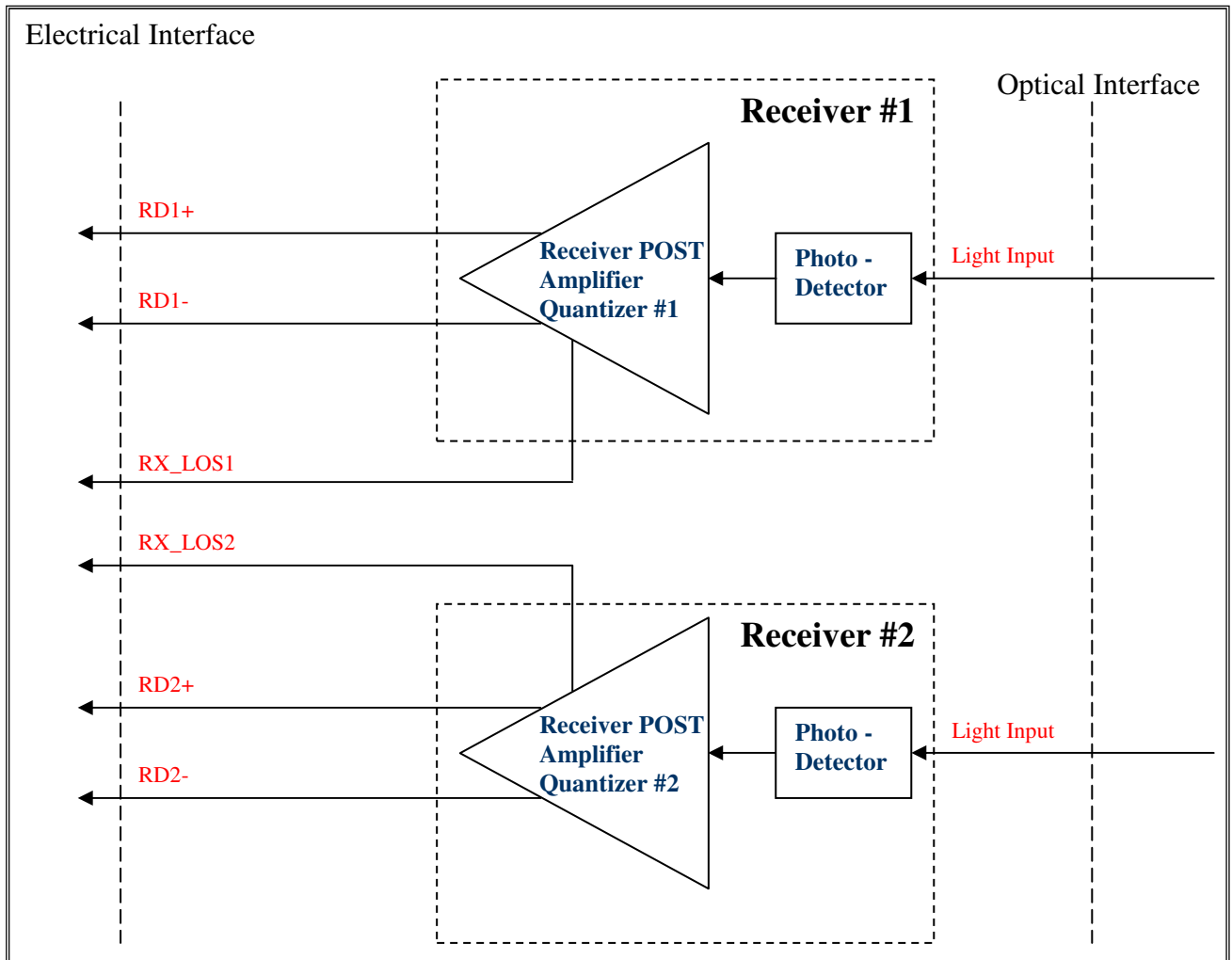
Top of Board

1	VeeR
2	N/C
3	RX_LOS2
4	N/C
5	N/C
6	N/C
7	N/C
8	RX_LOS1
9	VeeR
10	VeeR

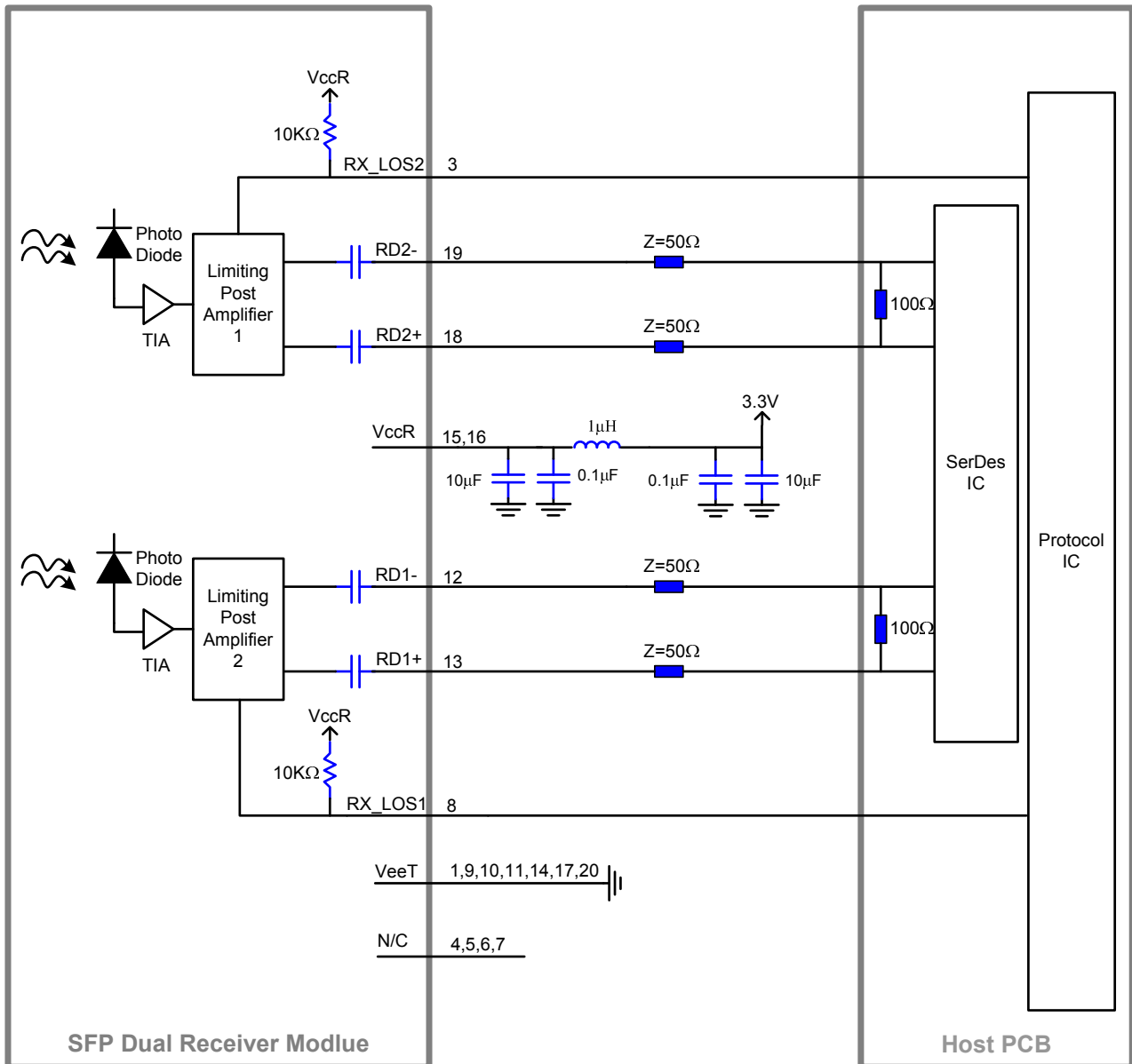
Bottom of Board
(as view through top of board)



Pin No.	Pin Name	Description	I/O / Level
1	VeeR	Receiver Ground	Input
2	N/C	Not Connected	--
3	Rx_LOS2	Receiver2 Signal Detect. High = Loss of Signal ; Low = Normal Operation	Output / LVTTTL
4	N/C	Not Connected	--
5	N/C	Not Connected	--
6	N/C	Not Connected	--
7	N/C	Not Connected	--
8	Rx_LOS1	Receiver1 Signal Detect. High = Loss of Signal ; Low = Normal Operation	Output / LVTTTL
9	VeeR	Receiver Ground	Input
10	VeeR	Receiver Ground	Input
11	VeeR	Receiver Ground	Input
12	RD1-	Rx_Data Output1 (Inverted)	Output / LVPECL
13	RD1+	Rx_Data Output1 (Non Inverted)	Output / LVPECL
14	VeeR	Receiver Ground	Input
15	VccR	Receiver Power	Input
16	VccR	Receiver Power	Input
17	VeeR	Receiver Ground	Input
18	RD2+	Rx_Data Output2 (Non Inverted)	Output / LVPECL
19	RD2-	Rx_Data Output2 (Inverted)	Output / LVPECL
20	VeeR	Receiver Ground	

Dual Receiver Function Block Diagram


The dual receivers consist of high-speed GaAs PIN photodiodes and transimpedance preamplifiers mounted in an optical subassembly (ROSA), which are mated to the ports of the fiber optic LC duplex receptacle. The output of the PD drives the post-amplification and optical signal detection circuits. The receiver is equipped with the Rx_LOS (Los of Signal) monitoring function.

Recommended Circuit Diagram


Mechanical Outlines:**(Units in mm)**