SIEMENS

5 V V23806-S84-Z1
3.3 V V23806-S84-Z2

Testboard
ATM, Fibre Channel and Gigabit Ethernet Transceivers

Preliminary

FEATURES

- Allows for separate powering of receiver and transmitter section
- Power supply lines filtered externally to module under test
- Signal Detect level displayed by LED
- Power supply can be interrupted separately for receiver and transmitter
- External Data and Signal Detect interfaces are made through high performance SMA connectors
- Receiver data outputs are DC coupled. Output voltage can be directly measured at SMA connectors

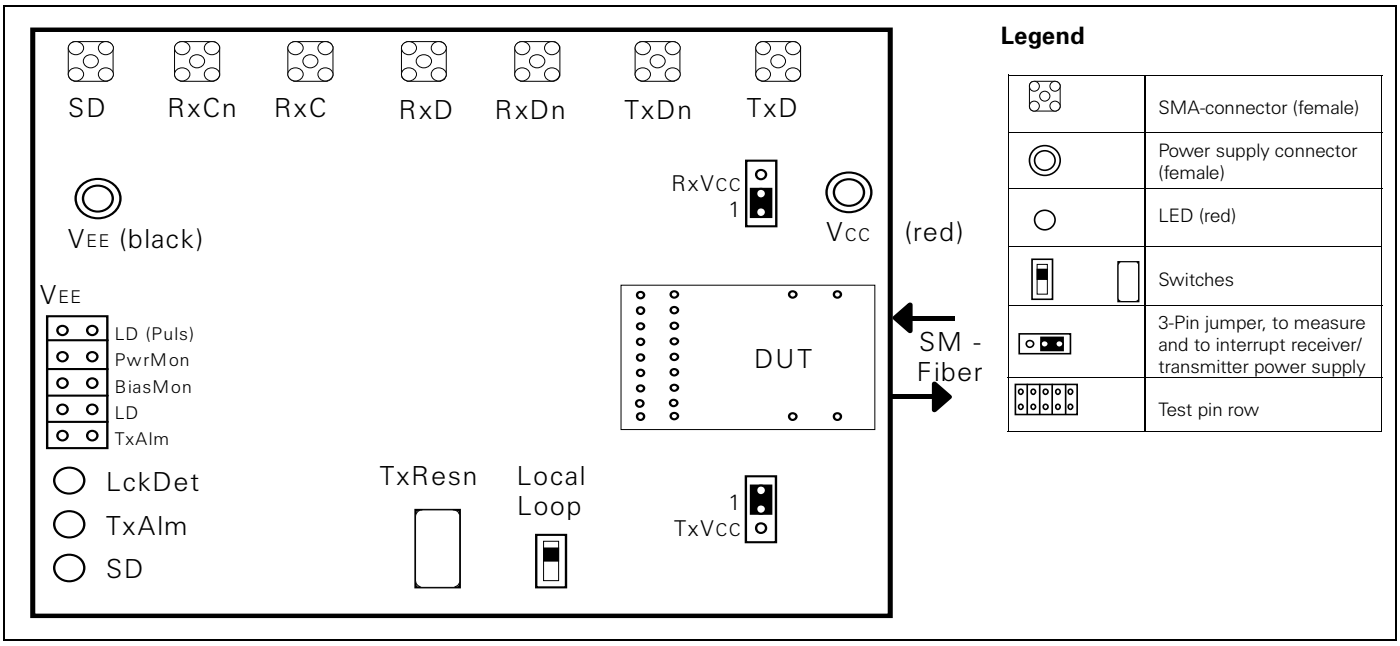
Features of 2x9 pin row version

- Fail function of transmitter (Tx +2dB Alarm) displayed by LED (TxAlm)
- Switch for Reset after fail function of transmitter (TxResn)
- Test pin for laser bias current monitor output (Bias Monitor)
- Test pin for optical power monitor output (Power Monitor)

DESCRIPTION

This testboard is a functional test fixture intended for use with the 1x9 pin row and the 2x9 pin row single mode 155MBd or 622MBd ATM transceiver and the Fibre Channel and Gigabit Ethernet transceivers. It provides a test medium for characterizing the performance of these transceivers.

Schematic of Testboard



Connectors/Test Pins

Label	Type	Name	Level	Description
SD	SMA	Signal Detect Output	PECL Output	To measure use high input resistance voltmeter or scope
RxC*)	SMA	Receiver Clock Output	PECL Output	Load is 50Ω to GND, DC coupled or AC coupled, depending on board assembly
RxCn*)	SMA	Receiver Clock Not Output	PECL Output	
RxD	SMA	Receiver Data Output	PECL Output	
RxDn	SMA	Receiver Data Not Output	PECL Output	
TxD	SMA	Transmitter Data Input	PECL Input	Load is 50Ω to GND, AC coupled
TxDn	SMA	Transmitter Data Not Input	PECL Input	
V_{CC}		Power Supply	In accordance with recommended operating conditions of transceiver (3.3V / 5V)	
V_{EE}		Ground		
PwrMon**)	Test Pin Row	Power Monitor Output Pin and GND Pin	Analog Voltage Output	Output voltage is proportional to optical laser power. - Output voltage V_O=2V±0.1V if no laser fault - Source resistance R_S = 110 kΩ (100 kΩ R_S of transceiver, 10 kΩ on testboard)
Bias Mon**)	Test Pin Row	Bias Monitor Output Pin and GND Pin	Analog Voltage Output	Output voltage is proportional to laser bias current. - Output voltage V_O=V_{CC} - I_{bias} x 45 - Source resistance R_S = 10 kΩ on testboard
TxAlm**)	Test Pin Row	Tx + 2dB Alarm output pin and GND pin	TTL Output active high	High level: fail function of transmitter Low level: no fail function

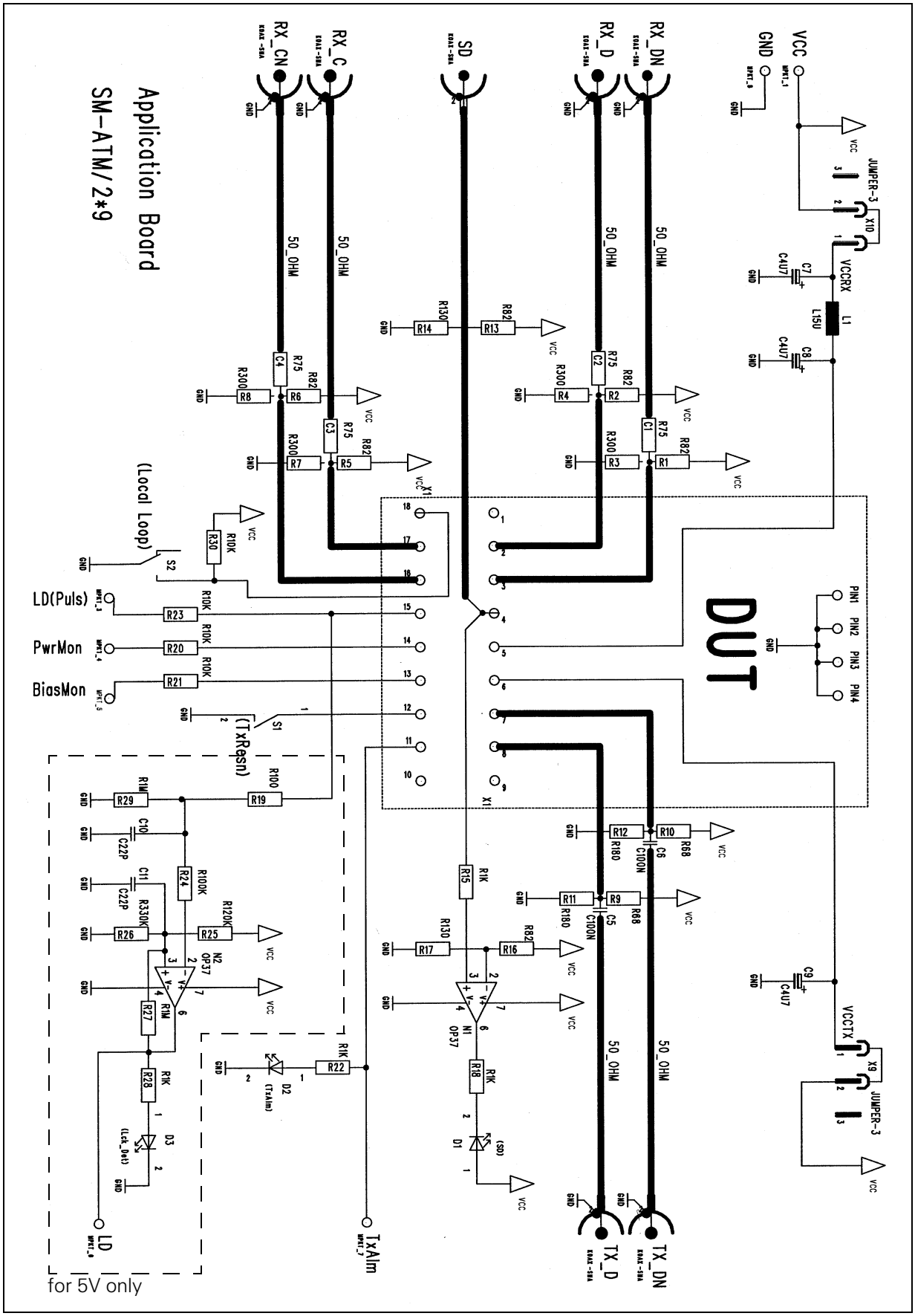
Indicators/Switches

Label	Type	Name	Level	Description
SD	LED	Signal Detect Indicator	active high	LED off: SD off LED on: SD on
TxAlm	LED	Tx + 2dB Alarm Indicator	active high	LED on: fail function of transmitter LED off: no fail function
LckDet*)	LED	Lock Detect Indicator	active high	LED on: lock on LED off: lock off
Tx Resn	Switch	Transmitter Reset / Disable Not Switch		Resets the shutdown circuits of the transmitter and switches the laser off
Local Loop*)	Switch	Local Loop Switch		Multiplexes receiver output data to transmitter input data

*) for future transceiver versions

**) valid for 2x9 single mode 155 MBd module (V23806-A84-C1)

SCHEMATIC OF TESTBOARD



FUNCTIONAL DESCRIPTION

1. Power supply

Power supply filtering as recommended for good EMI performance.

2. Receiver clock and data outputs

For DC coupling **(5V)**
Load is 50Ω to GND also for not used outputs.
C1, C2, C3, C4 = 75Ω
R1, R2, R5, R6 = 82Ω
R3, R4, R7, R8 not assembled

The output voltage is divided by a factor of 2.5.
For V_{CC} = 3.3V: C1, C2, C3, C4 = 32Ω
R1, R2, R5, R6 = 130Ω

For AC coupling **(5V)**
Load is 50Ω to GND.
C1, C2, C3, C4 = 100nF
R1, R2, R5, R6 not assembled
R3, R4, R7, R8 = 300Ω

The output voltage factor is close to 1.
For V_{CC} = 3.3V: R3, R4, R7, R8 = 150Ω

3. Signal detect output and LED

The signal detect level is evaluated by comparator N1 and displayed by LED D1.
For V_{CC} = 3.3V: R13, R16 = 127Ω
R14, R17 = 83Ω

4. Transmitter data inputs

The inputs are AC coupled. Load is 50Ω to GND.
For V_{CC} = 3.3V: R9, R10 = 82Ω
R11, R12 = 130Ω

5. Test pins

The test pins *Power Monitor* and *Bias Monitor* are connected with device under test (transceiver) via 10kΩ resistors. The switches S1 and S2 connect the *local loop* pin and *TxResn* pin of transceiver with V_{EE}.