Product Datasheet

39.8/45.6 GB VSR2000 300 pin Transceiver

T300-BW-40NRZ-SFF-A

DESCRIPTION

The **T300-BW-40NRZ-SFF-A** Transceiver is a multi rate, optical interface designed for data transmission up to 45.6 Gbps according to the following Telecom and Datacom standards:

- 40Gb 300PIN MSA rev.3;
- ITU-T G.693 (VSR2000 3R2-3R3-3R5)
- SDH / STM256; ITU-T G.693 (39.813 Gb/s);
- SDH / OTU3; ITU-T G709 (39.813 – 43.018 Gb/s);
- SONET / OC768; GR 253 Core (39.813 Gb/s);
- SONET / OC768 with FEC (43.018 Gb/s);
- SFI-5 electrical interface;
- I2C management interface.

The module is a 40GBps Electro-optical transceiver containing a transmitter, a receiver and a 1:16 SERDES. The module gets the low bit rate electrical signals (1/16 bit rate of transmitted HF signal) from a 300pins pluggable connector, performs the 3R regeneration of both transmitted and received HF signals. On the Transmitter side, the Electrical to Optical signal conversion is performed by an Electroabsorption modulator. On the Receiver side, the Optical to Electrical signal conversion is performed by a PIN photodetector with integrated low noise transimpedance amplifier.

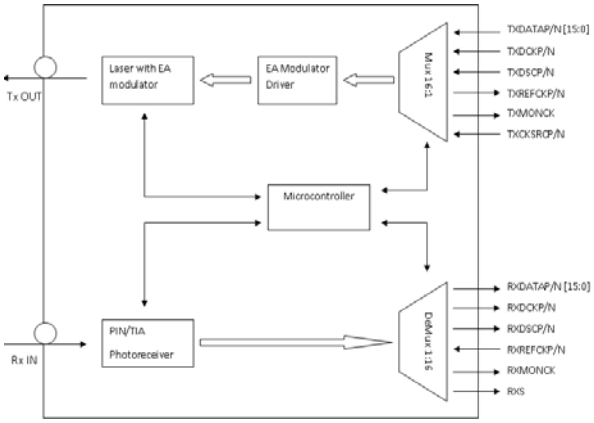
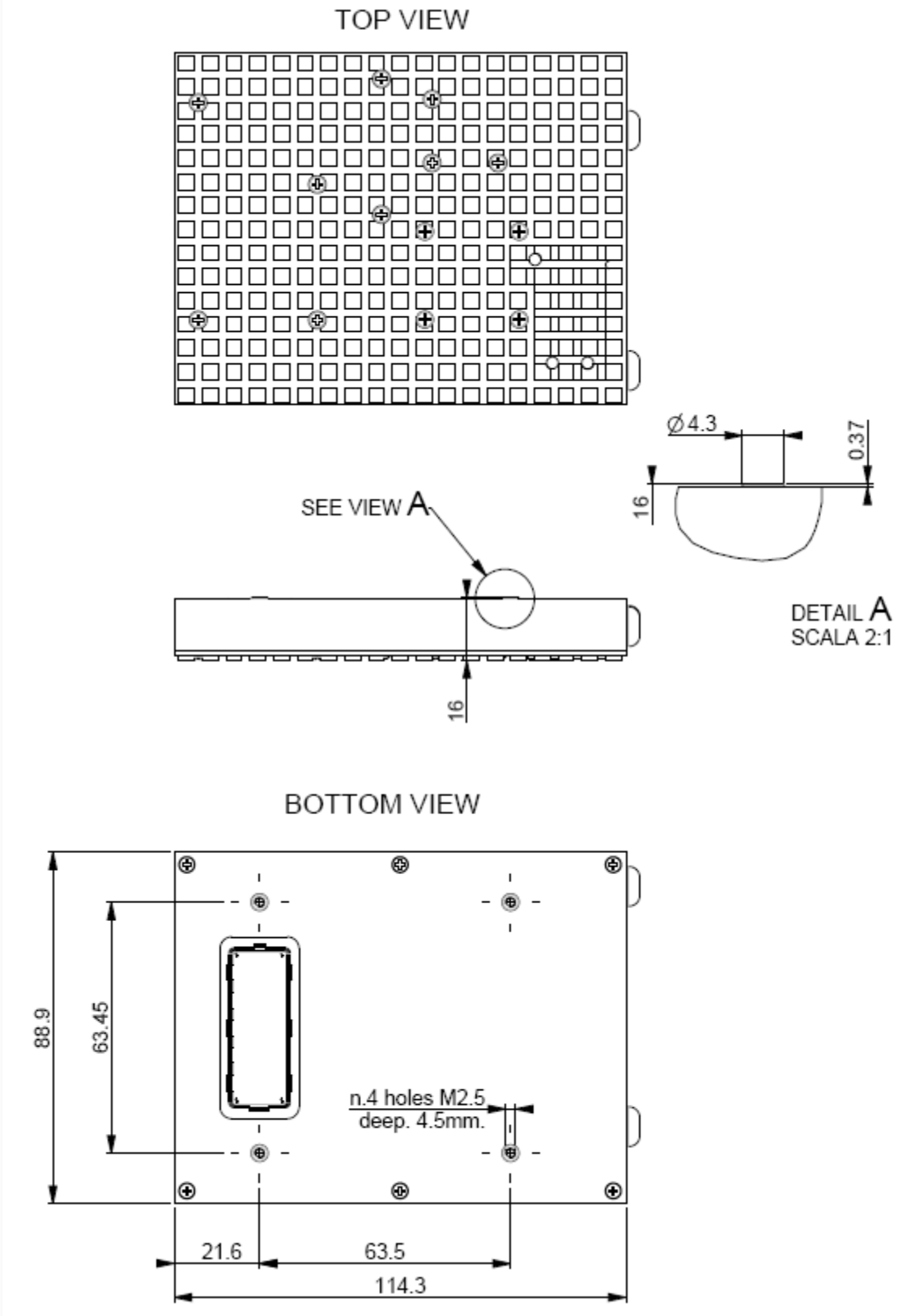


Fig. 1 Module Block Diagram

The **T300-BW-40NRZ-SFF-A** operates in a wide temperature range from -5 to +70 °C with very low power consumption (8W typical, 12W maximum) and heat sink integrated that provide very good features for heat dissipation and electromagnetic shielding.

As well as all Teleoptix product lines, the **T300-BW-40NRZ-SFF-A** has been designed, engineered and is currently manufactured according to the highest quality levels requested by the major Telecom and Datacom networks equipment manufacturers.

MECHANICAL SPECIFICATIONS



POWER SUPPLY

PARAMETER	CONDITION	SYMBOL	MIN	TYP	MAX	UNIT
+5.0 V Analog Power Supply Voltage		VCC5.0A	+4.75	+5.0	+5.25	V
+5.0 V Analog Supply Current	Operating	ICC5.0A		80		mA
+3.3 V Analog Power Supply Voltage		VCC3.3A	+3.13	+3.3	+3.47	V
+3.3 V Analog Supply Current	Operating	ICC3.3A		200		mA
+3.3 V Digital Power Supply Voltage		VCC3.3D	+3.13	+3.3	+3.47	V
+3.3 V Digital Supply Current	Operating	ICC3.3D		50		mA
+1.8 V Digital APS Supply Voltage		VAPSD		+1.8		V
+1.8 V Digital APS Current	Operating	IAPSD		570		mA
-5.2 V Analog Power Supply Voltage		VEE5.2A	-5.46	-5.2	-4.94	V
-5.2 V Analog Supply Current	Operating	IEE5.2A		500		mA
-5.2 V Digital Power Supply Voltage		VEE5.2D	-5.46	-5.2	-4.94	V
-5.2 V Digital Supply Current	Operating	IEE5.2D		600		mA
Power Consumption	Operating	P		8	12	W

HIGH SPEED ELECTRICAL INTERFACE CHARACTERISTICS (*)

PARAMETER	CONDITION	SYMBOL	MIN	TYP	MAX	UNIT
Tx [0:15] Input data	CML Differential Amplitude	TXDIN[0:15]P; TXDIN[0:15]N	0.7		1.3	Vpp
	Differential Input impedance	ZDin	75		125	Ohm
Rx [0:15] Output data	CML Differential Amplitude	RXDOUT[0:15]P; RXDOUT[0:15]N	0.72		1.23	Vpp
	Differential Output impedance	ZDout	75		125	Ohm
Tx Ref. Clock Input Amplitude	LVPECL Differential	TXREFCLKP; TXREFCLKN	0.45		1.1	Vpp
Tx Ref. Clock Duty Cycle			45	50	55	%
Tx Ref. Clock Frequency		Fo		BR/64		
Tx Ref. Clock tolerance		ΔFo	-100		+100	ppm
Rx Ref. Clock Input Amplitude	LVPECL Differential		0.45		1.1	Vpp
Rx Ref. Clock Duty Cycle			45		55	%
Rx Ref. Clock Frequency		Fo		BR/64		
Rx Ref. Clock tolerance		ΔFo	-100		+100	ppm

OPTICAL CHARACTERISTICS (*)

PARAMETER	CONDITION	SYMBOL	MIN	TYP	MAX	UNIT
Optical Output Power	Modulated;	Po	0		+3	dBm
Optical Output Power	Shut down;	Po-SD			-40	dBm
Dynamic Extinction Ratio	PRBS 2^{31}-1; with Bessel Filter	ER	8.2	9.5		dB
Eye Mask Margin	PRBS 2^{31}-1; with Bessel Filter; ITU-T G.693		10	15		%
Spectral Width	@ -20dB from peak value				1	nm
Side Mode Suppression Ratio		SMSR	40			dB
Chromatic Dispersion Tolerance		DT			40	ps/nm
Chromatic Dispersion Penalty		DP			2	dB
Receiver Sensitivity	DT=0; back to back; BER<1x10^{-12};PRBS 2^{31}-1	So			-6	dBm

(*): Unless otherwise specified the above characteristics are referred to EOL and full operating condition range. The typical values are referred to Operating Case Temperature of +25 °C, nominal power supply condition, BOL.

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