



10Gb/s 300Pin MSA Transponder

OEO225 Series

OEO225 Including two parts:

- *10Gb/s 300Pin MSA Small Form Factor Transponder – RTXM225 Series*
- *The Adapter Board*

10Gb/s 300Pin MSA Transponders – Small Form Factor: RTXM225 Series

Features

- *Small Form Factor Package*
- *IR-2/S-64.2 SONET/SDH Application*
- *Microprocessor controls to support I²C*
- *Optical Rate from 9.953 Gb/s to 11.318 Gb/s*
- *Full Performance with operating case temperature from 0 to +70°C*
- *Power Supplies: +5.0V, -5.2V, +3.3V and +1.8V(opt.)*
- *Typical Power Dissipation 5W*
- *SFF for Easy Application on Line Cards*
- *MSA Compliant for Interoperability*
- *Multi-Rate for OC192/STM64, 10GbE and FEC Rate Applicability*

Application

- *Inter- and intra- office SONET/SDH*
- *Subscriber Loop*
- *Metropolitan area networks*
- *Optical add-/drop-multiplexing*
- *10Gb/s Ethernet*

Standards

- *300 Pin MSA Compliant*
- *OIF-SF14-01.0 compliant SERDES's I/O timing*
- *I2C Reference Document for 300PIN 10G and 40G Transponder (Edition 4). Compatible*

Absolute Maximum Ratings

Parameter	Symbol	Unit	Min	Max
Storage Temperature Range	Ts	°C	-40	85
Relative Humidity	RH	%		85
Voltage on LVDS pin		V	0	Vdd2
Static Discharge Voltage	ESD	V		2000
Supply Voltages	Vcc	V	-0.5	6.0
	Vdd1	V	-0.5	3.6
	Vdd2	V	-0.5	2.0
	Vee	V	-5.6	0.5



(V1.0)

Recommended Operating Conditions

Parameter	Symbol	Unit	Min	Typ	Max
Case Operating Temperature Range	Tc	°C	0		70
Power Supply Voltage	VCC	V	4.75	5.0	5.25
	VDD2	V	1.71	1.8	1.89
	VDD1	V	3.13	3.3	3.47
	VEE	V	-4.94	-5.2	-5.45

Specifications (T=25°C, BOL, unless otherwise noted)

RTXM225-024/025/026/027/028/029/030/031/032/033/034/035/036/037/038/039/040/041/042/043/044/045/046/047/048/049/050/051/052/053/054/055 (IR-2/S-64.2, 40Km)

Parameter	Symbol	Unit	Min	Typ	Max	Test condition
Electrical Characteristics						
-5.2V Supply Current	IEE	mA		400	500	
+1.8V Supply Current	IDD2	mA		700	800	
+3.3V Supply Current	IDD1	mA		200	1000	
+5.0V Supply Current	ICC	mA		100	200	
Power Dissipation		W		5	7	
Optical transmitter Characteristics						
Data rate		Gbps		10		
Average Output Power	Po	dBm	-1		+1	
Center Wavelength range	λ	nm	G.694.1 [1] , C24/C25/C26/C27/C28/C29/ C30/C31/C32/C33/C34/C35/ C36/C37/C38/C39/C40/C41/ C42/C43/C44/C45/C46/C47/			
Center Wavelength Stability		pm	-200		+200	
Extinction ratio	EX	dB	9			
Dispersion Penalty		dB		2		BER=10-12, 231-1PRBS 9.953Gb/s
Output Power at laser disable	Po	dBm			-45	



OEO225 Series

(V1.0)

Spectral width(-20dBm)	nm	0.3	
SMSR	dB	35	
Chromatic Dispersion	ps/nm	800	
Jitter Generation	B1	UI	0.3
	B2	UI	0.1
Eye diagram	Compliant with Telcordia GR-253-CORE and ITU-T G.691		
Optical receive Characteristics			
Receiver Sensitivity (BOL)	S	dBm	-25
Receiver Overload		dBm	-6
BER=10-12,231-1PRBS 9.953Gb/s ,λ=1550nm			
Jitter Performance	Compliant with Telcordia GR-253 and ITU-T G.825 2M		
Loss of Power		dBm	-27
Optical return loss		dB	-27

NOTE1: The vendee can choose any channel of the center wavelength from C24 to C55.

Transponder Pin Description

	K	J	H	G	F	E	D	C	B	A
1	+5.0V	NC	GND	RxDout1 2P	+1.8V	RxDout8 P	GND	RxDout4 P	GND	RxDout0 P
2	+5.0V	FFU	GND	RxDout1 2N	+1.8V	RxDout8 N	GND	RxDout4 N	GND	RxDout0 N
3	NC	NC	NC	GND	RxPOWM ON	GND	I2CAD02	GND	NC	GND
4	+3.3V	NC	GND	RxDout1 3P	+3.3V	RxDout9 P	GND	RxDout5 P	GND	RxDout1 P
5	+3.3V	NC	GND	RxDout1 3N	+3.3V	RxDout9 N	GND	RxDout5 N	GND	RxDout1 N
6	NC	NC	NC	GND	RxPOWA LM	GND	I2CAD12	GND	RxMUTEDO UT	GND
7	+3.3V	FFU	GND	RxDout1 4P	+3.3V	RxDout1 0P	GND	RxDout6 P	GND	RxDout2 P
8	+3.3V	FFU	GND	RxDout1 4N	+3.3V	RxDout1 0N	GND	RxDout6 N	GND	RxDout2 N
9	RxMUTEPO CLK	NC	FFU	GND	NC	GND	I2CAD22	GND	RxLCKREF	GND



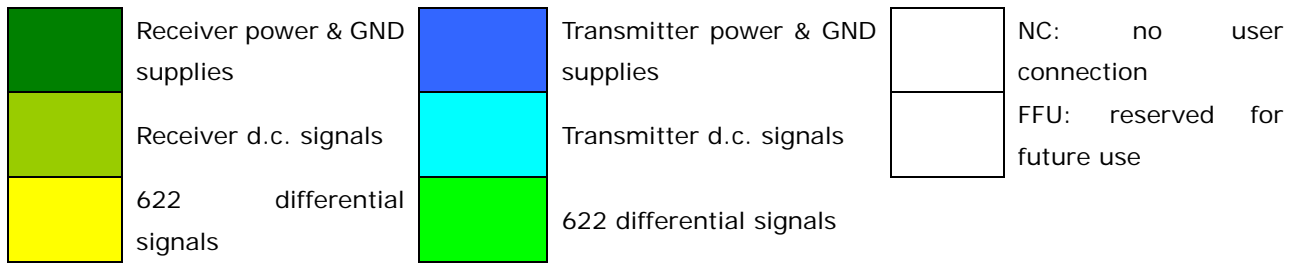
OEO225 Series

(V1.0)

10	-5.2V	NC	GND	RxDout1 5P	-5.2V	RxDout1 1P	GND	RxDout7 P	GND	RxDout3 P
11	-5.2V	NC	GND	RxDout1 5N	-5.2V	RxDout1 1N	GND	RxDout7 N	GND	RxDout3 N
12	RxMUTEM CLK	FFU	FFU	GND	NC	GND	MOD_RE SET	GND	RxMCLKSE L	GND
13	-5.2V	FFU	GND	NC	-5.2V	RxPOCLK P	GND	RxMCLKP	GND	RxREFCL KP
14	-5.2V	NC	GND	NC	-5.2V	RxPOCLK N	GND	RxMCLKN	GND	RxREFCL KN
15	I2CCLOCK 2	NC	ALM-INT2	GND	RxREFSE L	GND	FFU	GND	RxLOCKER R	GND
16	+5.0V	NC	GND	TxDin12P	+1.8V	TxDin8P	GND	TxDin4P	GND	TxDin0P
17	+5.0V	FFU	GND	TxDin12 N	+1.8V	TxDin8N	GND	TxDin4N	GND	TxDin0N
18	I2CDATA2	NC	NC	GND	LsBIASM ON	GND	LsPOWM ON	GND	NC	GND
19	+3.3V	NC	GND	TxDin13P	+3.3V	TxDin9P	GND	TxDin5P	GND	TxDin1P
20	+3.3V	NC	GND	TxDin13 N	+3.3V	TxDin9N	GND	TxDin5N	GND	TxDin1N
21	NC	NC	NC	GND	LsENABL E	GND	LsTEMPM ON	GND	NC	GND
22	+3.3V	FFU	GND	TxDin14P	+3.3V	TxDin10P	GND	TxDin6P	GND	TxDin2P
23	+3.3V	FFU	GND	TxDin14 N	+3.3V	TxDin10 N	GND	TxDin6N	GND	TxDin2N
24	TxRESET	NC	NC	GND	LsBIASAL M	GND	TxPHSAD J0	GND	NC	GND
25	-5.2V	NC	GND	TxDin15P	-5.2V	TxDin11P	GND	TxDin7P	GND	TxDin3P
26	-5.2V	NC	GND	TxDin15 N	-5.2V	TxDin11 N	GND	TxDin7N	GND	TxDin3N
27	TxFIFORE S	NC	NC	GND	TxTEMPA LM	GND	TxPHSAD J1	GND	NC	GND
28	-5.2V	NC	GND	TxPICKLP	-5.2V	TxPCLKP	GND	TxMCKP	GND	TxREFCL KP
29	-5.2V	NC	GND	TxPICKL N	-5.2V	TxPCLKN	GND	TxMCKN	GND	TxREFCL KN
30	TxFIFOER R	NC	TxLINETIM SEL	GND	TxREFSE L	GND	LsPOWAL M	GND	TxLOCKER R	GND

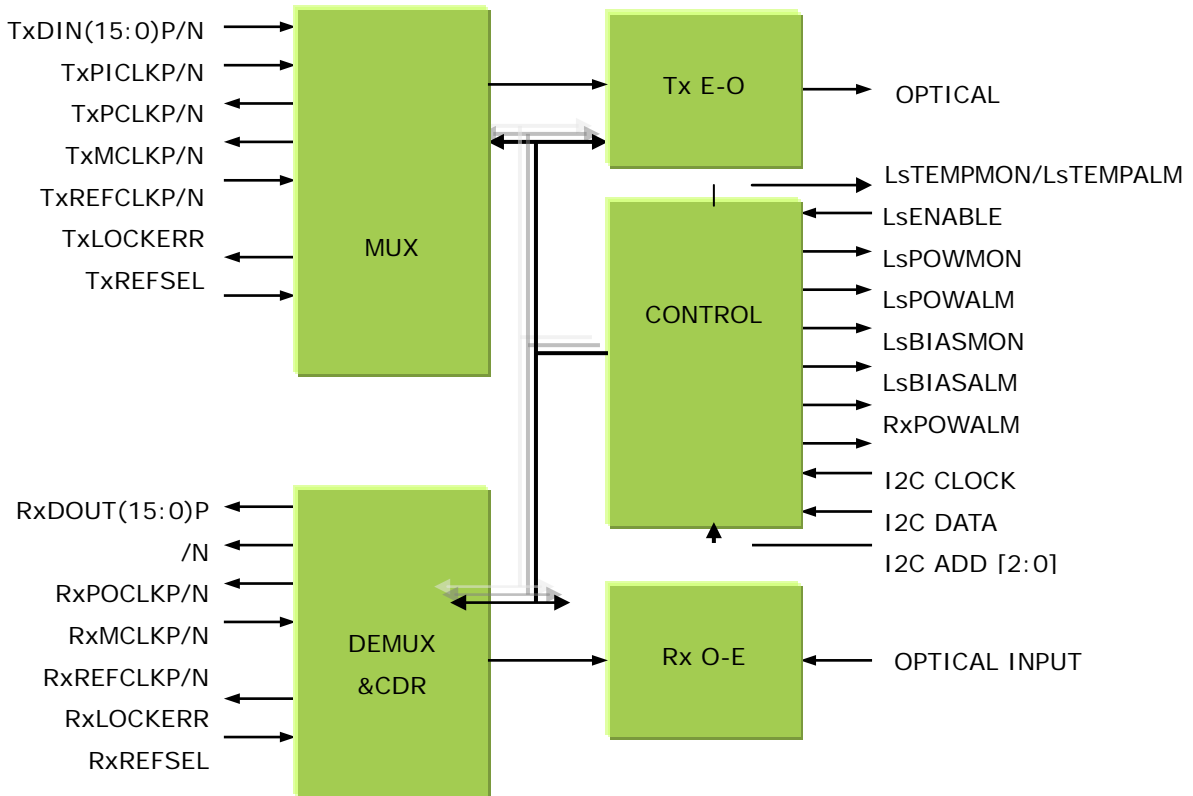


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NOTE2: for soft control mode version only

Transponder Block Diagram

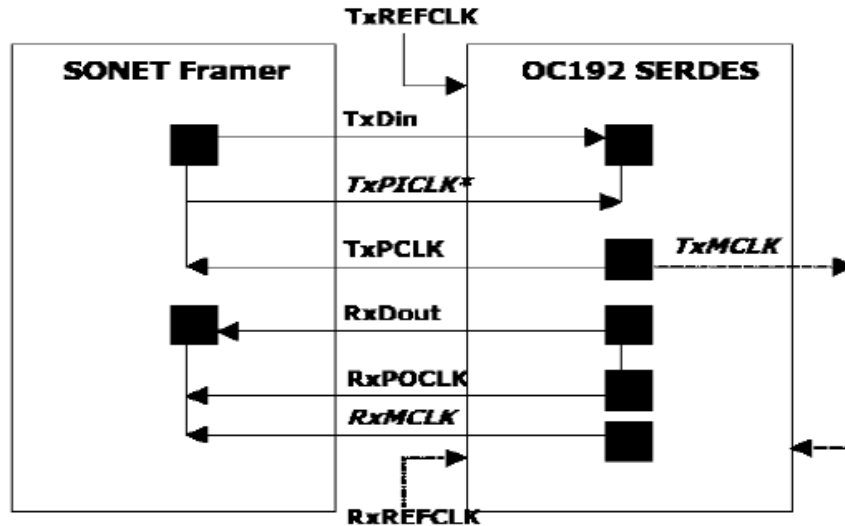


Note3: for Cooled Version only



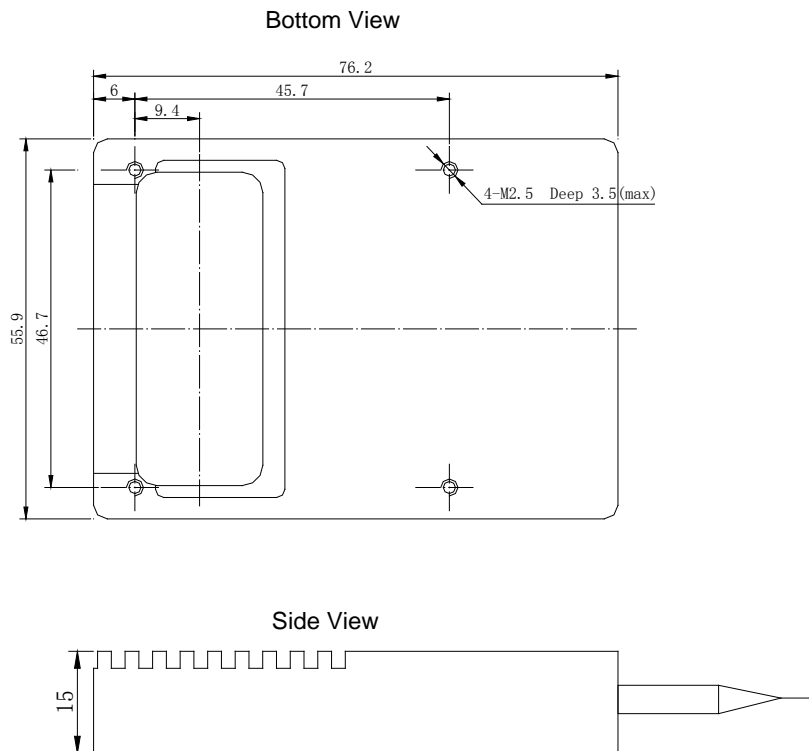
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Transponder Typical Application Circuit



Transponder Package Outline

Unit: mm

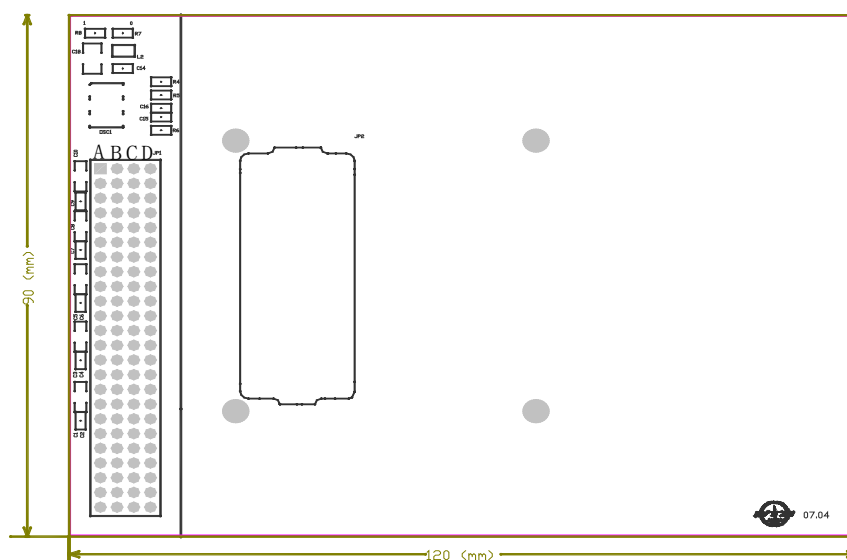




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Adapter Board

The Adapter board Pin Description



	A	B	C	D
1	GND	GND	GND	GND
2	+5.0V	+5.0V	+5.0V	+5.0V
3	GND	GND	GND	GND
4	+3.3V	+3.3V	+3.3V	+3.3V
5	+3.3V	+3.3V	+3.3V	+3.3V
6	GND	GND	GND	GND
7	GND	GND	GND	GND
8	-5.2V	-5.2V	-5.2V	-5.2V
9	-5.2V	-5.2V	-5.2V	-5.2V
10	GND	GND	GND	GND
11	GND	GND	GND	GND
12	+1.8V	+1.8V	+1.8V	+1.8V
13	+1.8V	+1.8V	+1.8V	+1.8V
14	GND	GND	GND	RxPOWMON
15	GND	GND	GND	RxPOWALM
16	GND	GND	GND	RxLOCKERR
17	---	---	GND	RxCLKREF
18	---	---	GND	LsENABLE
19	NC	NC	GND	LsBIASMON
20	NC	NC	GND	LsBIASALM
21	NC	NC	GND	LsPOWMON
22	NC	NC	GND	LsTEMPMON



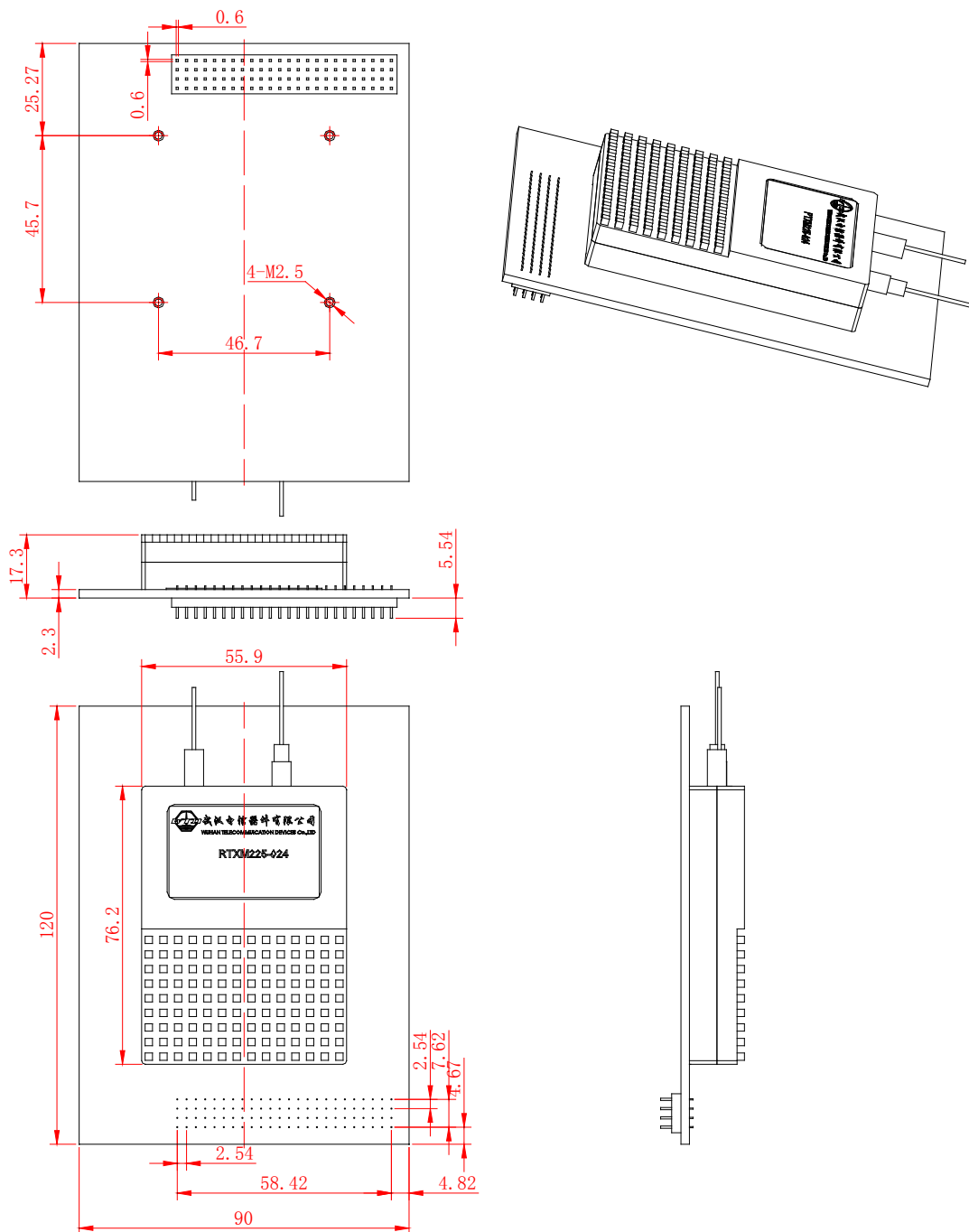
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23	NC	NC	GND	LsTEMPALM
24	GND	GND	GND	GND

Package Outline

Unit: mm

The entire OEO225-XXX equipment





(V1.0)

Ordering Information

Part. No	Specifications									Application	
	Pack	Rate	Tx	Pout	Rx	S	Top	Reach	others		
OEO225-024			EML,The								
/025/026/02			wavelength								
7/028/029/0			is								
30/031/032/			C24/C25/C2								
033/034/035			6/C27/C28/C								
/036/037/03			29/C30/C31/								
8/039/040/0	SFF	10G	C32/C33/C3	-1~+1dBm	APD	-25dBm	0~70oC	40km	Note1	IR-2/S-64.	
41/042/043/			37/C38/C39/							2, DWDM	
044/045/046			C40/C41/C4								
/047/048/04			2/C43/C44/C								
9/050/051/0			45/C46/C47/								
52/053/054/			C48/C49/C5								
055			0/C51/C52/C								
			53/C54/C55								

Note1: The vendee can choose any channel of the center wavelength from C24 to C55.

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