

# 2.5 Gb/s Optical Receiver (ORM16)



The ORM16 2.5Gb/s receiver with multi-rate CDR is designed for use in optical transport and high speed data communication systems. The ORM16 can process multi-rate optical signals such as STM-1, STM-4, STM-16, Gigabit Ethernet, and FEC rate of STM-16 using TTL input.

The ORM16 is available with a PIN-PD or APD detector. APD bias supplying circuitry is included in the APD type receiver. The wavelength of the optical input signal can range from 1200 nm to 1600 nm.

This receiver has a low profile 24-pin DIP type package. It operates with a +3.3V or +5V single power supply.

## Features

- ▶ Multi-rate clock and data recovery of the STM-1/4/16, OC-3/12/48, Gigabit Ethernet, and FEC of ITU-T G.709
- ▶ PIN-PD and APD type
- ▶ Wavelength range, 1200nm ~ 1600nm
- ▶ High sensitivity
- ▶ Differential data and clock outputs
- ▶ +3.3V or +5V single power supply
- ▶ 24 pin DIP type
- ▶ Package size : 58.9 x 35.6 x 8.5(mm)

## Applications

- ▶ High-speed data communications
- ▶ Metropolitan networks



**LiComm**



TL9000



KSA 9001:2001  
ISO 9001:2000

**ORM**

## Specifications of Optical Characteristics

Parameter		Min	Typ	Max	Unit
Wavelength range		1200	-	1600	nm
Minimum sensitivity <sup>1</sup>	PIN-PD	-	-22	-20.0	dBm
	APD	-	-32	-30.0	dBm
Overload <sup>1</sup>	PIN-PD	1.0	-	-	dBm
	APD	-8.0	-	-	dBm
Maximum reflectance		-	-	-27	dB

1. At 1.55 $\mu$ m wavelength and 1x 10<sup>-10</sup> BER with 2<sup>23</sup>-1 NRZ pseudo-random data.

## Specifications of Electrical Characteristics

Parameter		Min	Typ	Max	Unit
Bit rate		STM-1/-4/-16 , GbE, 2.66Gb/s			
Supply voltage	V <sub>cc</sub>	3.13	3.3	3.47	V
	I <sub>cc</sub>	-	300	500	mA
Power dissipation		-	1.3	1.7	W
Data/Clock output level		400	-	800	mV
LOS output		LVTTTL			V
Bit rate selection (BRS0, BRS1, SDH-SEL)		LVTTTL			V
Clock duty cycle deviation		45	-	55	%
Data output delay	T <sub>D</sub>	-50	-10	50	ps
Jitter generation		-	-	0.008	UIrms
Jitter transfer peaking		-	-	0.1	dB
Jitter tolerance		Complies with ITU-TG.958			
Input power monitoring (IPM)					
PIN-PD at 0 dBm		-	2	-	V
APD at -10dBm		-	2	-	V

## Pin Configurations

Pin No.	Description	Pin No.	Description
1	Bit rate selection 1	13	No connection
2	SDH or Non-SDH (GBE/FEC)	14	Ground
3	Loss of signal	15	Ground
4	Ground	16	Ground
5	Clock output -	17	Ground
6	Clock output +	18	No connection
7	Ground	19	Ground
8	Analog Vcc	20	Ground
9	Ground	21	No connection
10	Data output +	22	Digital Vcc
11	Data output -	23	Input power monitoring
12	Ground	24	Bit rate selection 0

## Outline Drawings

