

## Integrated Microwave Transceiver RACK1227

*0.05 – 18 GHz, 1550 nm Externally Modulated Transmitter with Receiver and Integrated Pre & Post RF Amplifiers, -5 dB Minimum Link Gain*

The Emcore RACK1227 is an integrated, 1 RU high-performance transceiver with guaranteed performance over the 0.05 – 18 GHz frequency band. Extended range operation below 0.05 and above 18 GHz is also provided. It incorporates a high dynamic range externally modulated transmitter, RF preamplifier, optical receiver and RF post amplifier. It provides +6 dBm minimum of optical output power.

The unit can be used to construct transparent optical links for microwave test cell antenna remoting, microwave signal distribution, microwave delay lines, point-to-point data links and other applications where it is necessary to transport RF and microwave signals over long distances without signal degradation.

The unit operates at a nominal optical wavelength of 1550 nm.



### Applications

- Microwave Test Cell Antenna Signal Remoting
- Microwave Data Links
- Broadband Delay-Line and Signal Processing Systems
- Frequency Distribution Systems

### Features

- Integrated externally modulated transmitter, preamp, receiver and post amp
- 0.05 – 18 GHz specified bandwidth
- High dynamic range
- 1 RU rack mount package
- Front panel RF and optical connections

### Specifications

#### Electrical

RF Connectors	N-type (female, 50Ω)
Frequency Range	0.05 to 18 GHz
Extended Frequency Range*	0.01 – 20 GHz
TX RF Input Power	-60 to +10 dBm
Link Gain (@ 18 GHz)	-5 dB typical @ 0 dBm RX optical input

#### Optical

Wavelength	1550 ± 30 nm
Connectors	SC/APC
TX Optical Output Power	+6 to +8 dBm
Optical Power Stability	<± 0.5 dBm over temperature and time
RX Optical Input Power	+12 dBm max

#### Physical

Configuration	Self Contained 1 RU Housing, 19" Rack
Dimensions	1.75" H x 17" W x 14" D
Operating/Storage Temperature	0°C to +50°C
Power Requirements	110 VAC @ 100W

#### Interface and Control

Front Panel Interfaces	RF Input/Output; Optical Input/Output
Front Panel Indicators	Illuminated Power Switch

\*Operation above 18 GHz may result in degraded RF performance

**For more information on this and other products:**

Contact Sales at Emcore 626-293-3400, or visit [www.emcore.com](http://www.emcore.com)

### Typical Link Performance (with 0 dBm<sub>o</sub> at Receiver Optical Input)

Parameter	Symbol	Condition	Value	Unit
Link Gain	G	@ 18 GHz	-5	dB
Input P1dB	P1		+10	dBm
Input IP3	IIP3	@10 GHz	+20	dBm
Input RF Return Loss			9	dB
Spurious Free Dynamic Range	SFDR		100	dB/Hz <sup>2/3</sup>
Gain Variation		1 - 18 GHz	10	dB
Noise Figure	NF	1 - 18 GHz	≤45	dB

### Ordering Information

RACK1227-00 0.05 – 18 GHz 1 RU Microwave Transceiver, -5 dB Link Gain

### Laser Safety

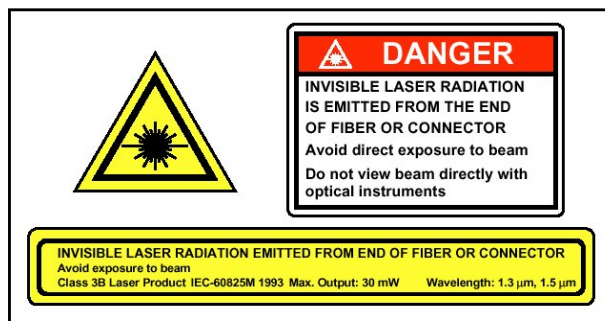
#### Class IIIb Laser Product

FDA/CDRH Class IIIb laser product. All transmitter versions are Class IIIB laser products per CDRH, 21 CFR 2040 Laser Safety requirements. All versions are Class 3B laser products per IEC\*60825-1:1993.

Maximum Optical Output Power = +10 dBm

**Caution: Use of controls, adjustments and procedures other than those specified herein may result in hazardous laser radiation exposure.**

\*IEC is a registered trademark of the International Electrotechnical Commission.



### EMCORE

2015 West Chestnut Street  
Alhambra, California 91803-1542  
Tel: 626-293-3400  
Fax: 626-293-3428  
[www.emcore.com](http://www.emcore.com)

*For more information on this and other products:*

Contact Sales at Emcore 626-293-3400 or visit [www.emcore.com](http://www.emcore.com)

