



## Applications

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

## Features

- Integrated directly modulated transmitter, preamp, receiver and post amp
- Optical AGC
- 0.01 - 3 GHz specified bandwidth
- 1 RU rack mount package
- Front panel RF and optical connections

## Integrated Microwave Transceiver RACK2022T

*0.01 – 3 GHz, 1550 nm Directly Modulated Transmitter with Receiver and Integrated AGC, Pre & Post Amps*

The Emcore RACK2022 is an integrated, 1 RU high-performance transceiver with guaranteed performance over the 0.01 – 3 GHz frequency band. It incorporates a directly modulated transmitter, RF preamplifier, optical receiver, RF post amplifier and optical AGC. It provides +8 dBm minimum of optical output power. The optical AGC provides fixed gain operation for a constant RF input power and varying optical link budgets.

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

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

## Specifications

### Electrical

RF Connectors	SMA (female, 50Ω)
Frequency Range	0.01 to 3 GHz
TX RF Input Power	-30 dBm, max
Input IP3 at 18 GHz	-22 dBm, typical
Input P1dB at 18 GHz	-28 dBm, typical
RX RF Output Power Range	-30 dBm, typical

### Optical

Wavelength	1550 ± 6 nm
Connectors	SC/APC
TX Optical Output Power	+8 dBm min
Optical Power Stability	<± 0.5 dBm over temperature and time
RX Optical Input Power	0 to +6 dBm for AGC operation with constant RF output

### 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 @ 40W

### Interface and Control

RF Gain Control	Optical AGC
Front Panel Indicators	Power, Link Status LED

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

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

### Link Performance (with 0 to -6dBm at Receiver)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Link Gain	G	@ 50 MHz	-10	-2		dB
	G	@ 2 GHz	-15	-5		dB
Input IP3	IIP3	@ 0.1 – 2 GHz		-21		dBm
Two Tone Dynamic Range		@ 1 GHz		-40		dBc
Gain Variation		0.1 MHz to 2 GHz		5		dB
Noise Figure	NF	0.1 MHz to 2 GHz		≤50		dB

### 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 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.

