



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

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.

