

## Small Integrated Transmitter Unit SITU2400

*0.05 – 3 GHz, 1550nm Directly Modulated Self-Contained Transmitter*

The Emcore Small Integrated Transmitter Unit (SITU2400) is a high-performance, directly modulated transmitter for applications with guaranteed performance over the 50 MHz to 3 GHz frequency band. The SITU2400 is a fully integrated unit that contains both the optics and the control electronics. Only DC input voltages and the RF input signal are required for operation.

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

The unit operates at a nominal optical wavelength of 1550 nm and ITU wavelengths are available for CWDM and DWDM applications.

### Specifications

#### Electrical

Frequency Range	0.05 to 3 GHz
RF Input Power	0 to +20 dBm
Power Requirements	+15 V @ 0.25 A max
RF Connector	SMA (female)
2 <sup>nd</sup> Harmonics (@ 0 dBm RF input)	< -35 dBc
Input IP1 (1 dB Compression Point)	+20 dBm (@ 900 MHz)
Input IP3 (3 <sup>rd</sup> Order Intercept)	+35 dBm (@ 900 MHz)
RF Input Impedance	50 $\Omega$ nominal
RF Return Loss	>9.5 dB

#### Optical

Wavelength	1550 $\pm$ 6 nm; Specific ITU wavelengths available
Standard Optical Connector	FC/APC
Optical Output Power	+ 8 dBm Minimum

#### Physical

Configuration	Environmentally Sealed Unit
Dimensions	1.0" H x 5.0" W x 4.0" D
Operating/Storage Temperature	-10 °C to +65 °C



### Applications

- Cellular and PCS Antenna-Remoting
- Microwave Delay Lines
- Frequency Distribution Systems
- Radar System Calibration
- Phased Array Antenna Systems

### Features

- Integrated high-powered 1550 nm DFB laser and bias control circuitry - Only DC input voltages and RF input required
- High Dynamic Range

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

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

## Ordering Information

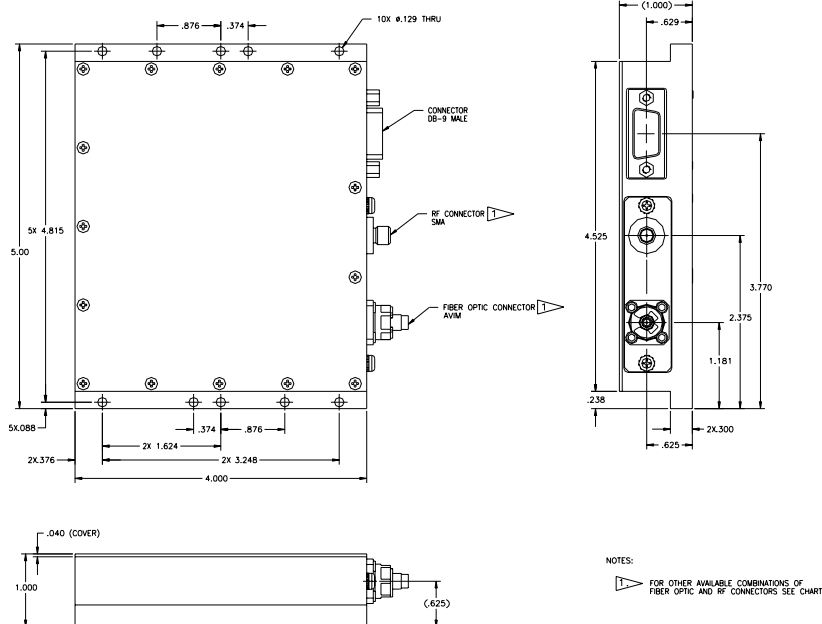
SITU-2400-FC/APC

## Performance Characteristics (SITU2400 and SIRU2300)

Parameter	Symbol	Frequency (GHz)			Unit	Conditions
		.05 to 1	1 to 2	2 to 3		
Frequency Range	G	.05 to 1	1 to 2	2 to 3		
Link Gain						Note (1)
Typical		-33			dB	
Maximum		-35				
Link Noise Figure					dB	Note (1)
Typical	NF	35	33.5	32.5		
Maximum		37.5	36.5	35.5		
1 dB Compression Point		+20			dBm	
Third Order Input Intercept Point, Typical	IP3	+35	+44	+44	dBm	Note (1)
Second Order Input Intercept Point Typical	IP2	+60			dBm	Note (1)
Spurious Free Dynamic Range SFDR, Typical	SFDR	120			dB-Hz <sup>2/3</sup>	Note (1)
Return Loss, Minimum	S11	9.5			dB	Note (1)

- (1) RF Power Level = -10 dBm, Laser output optical power =  $10 \pm 1$  dBm; Fiber loss =  $10 \pm 1$  dB, Optical power level at the photodetector = 0 dBm; Detector responsivity = 0.86 A/W

## Package Outline Drawing



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## D-Connector Pin Out

1	+15 V
2	n/c
3	n/c
4	GND
5	n/c
6	Optical Power Monitor
7	Low Power Alarm
8	n/c
9	n/c

## Laser Safety

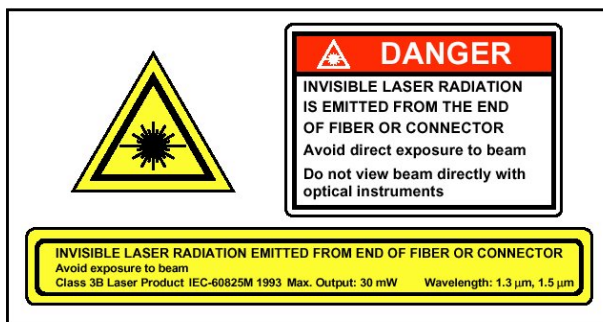
### Class IIIb Laser Product

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.



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