



## Features

- Integrated high-powered 1550 nm DFB laser and bias control circuitry - Only DC input voltages and RF input required
- Integrated 30 dB GaAs FET Preamplifier
- High Dynamic Range

## Applications

- Cellular and PCS Antenna-Remoting
- Microwave Delay-Lines
- Frequency distribution systems
- Radar System Calibration
- Phased array antenna systems

## 0.05 – 3 GHz, 1550nm Directly Modulated Self-Contained Transmitter With 30 dB Integrated RF Preamplifier

The Emcore Small Integrated Transmitter Unit (SITU2300) is a high-performance, directly modulated transmitter for applications with guaranteed performance over the 50 MHz to 3 GHz frequency band. The SITU2300 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. An input RF amplifier increases link performance.

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 MHz to 3 GHz
RF Input Power	-30 to -10 dBm
Power Requirements	+15 V @ 0.5 A max
RF Connector	SMA (female)
2nd Harmonics (@ 0 dBm RF input)	< -35 dBc
Input IP1 (1 dB Compression Point)	-10 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 Input 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

# SITU2300

Small Integrated Transmitter Unit



BROADBAND

## Ordering Information

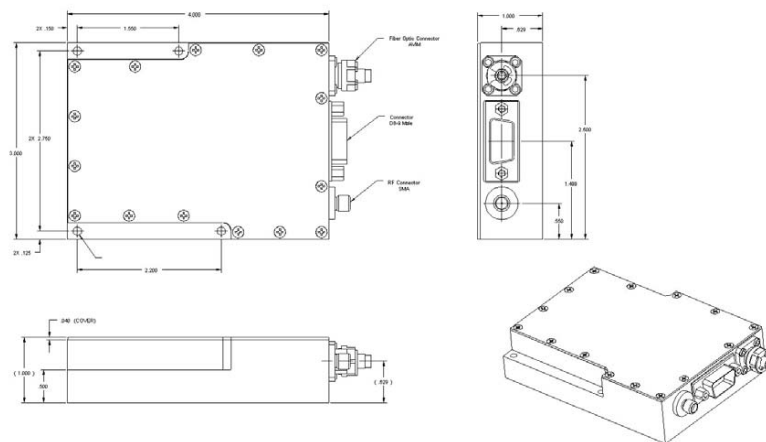
SITU-2300-FC/APC

## Performance Characteristics (SITU2300 and SIRU2300)

Parameter	Symbol	Frequency (GHz)	Units	Condition
Frequency Range	G	.05 to 3		
Link Gain Typical		-0	dB	Note (1)
Maximum		-1.5	dB	
Link Noise Figure Typical	NF	12	dB	Note (1)
1 dB Compression Point		-10	dBm	
Return Loss, Minimum	S11	9.5	dB	Note (1)

(1) RF Power Level = -40 dBm, Laser output optical power =  $8 \pm 1$  dBm; Fiber loss =  $8 \pm 1$  dB, Optical powerlevel at the photodetector = 0 dBm; Detector responsivity = 0.86 A/W

## Package Outline Drawing



## 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 transmitters 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.