Small Integrated Transmitter Unit SITU2400-XZ

0.05 – 1 GHz, ITU-Grid DWDM 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 0.05 to 1 GHz frequency band. The SITU2400-XZ 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 ITU wavelengths for CWDM and DWDM applications.

Applications

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

Features

- **Wavelength-specific operation for multi-channel DWDM systems**
- **Integrated high-powered 1550 nm DFB laser and bias control circuitry - Only DC input voltages and RF input required**
- **High Dynamic Range**

Specifications

Electrical

Frequency Range	0.05 - 1 GHz
RF Input Power	-30 to +12 dBm
Power Requirements	+15 V @ 0.25 A max
RF Connector	SMA (female)
2nd Harmonics (@ 0 dBm RF input)	< -35 dBc
Input IP1 (1 dB Compression Point)	+12 dBm
Input IP3 (3rd Order Intercept)	+24 dBm
Noise Figure	48 dB
RF Input Impedance	50 Ω
RF Return Loss	9 dB

Optical

Wavelength	1527.99 -1563.05 nm, ITU specific
Optical Connector	FC/APC or SC/APC
Optical Output Power	+ 8 dBm Nominal

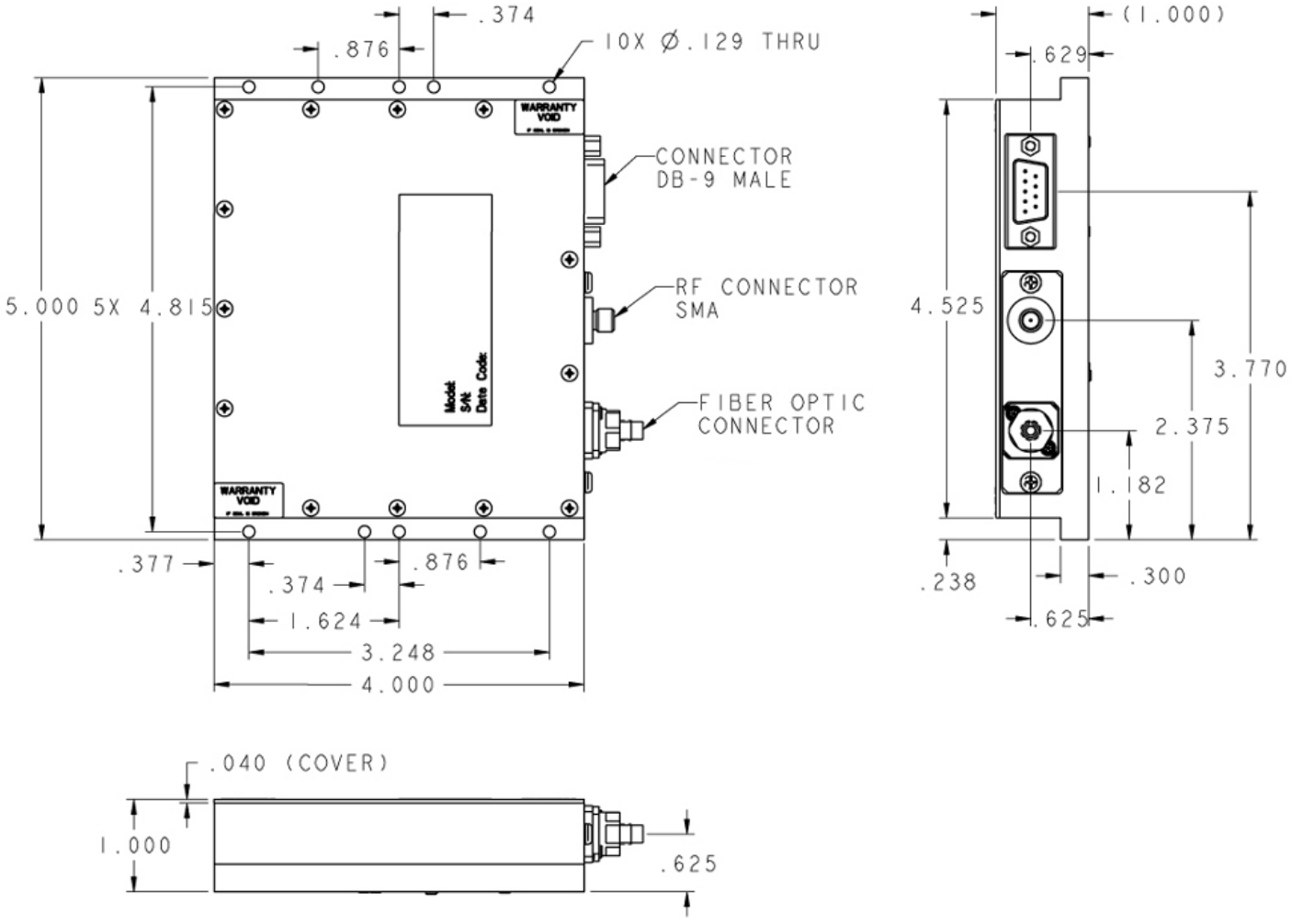
Physical

Configuration	Environmentally Sealed Unit
Dimensions	1.0” H x 5.0” W x 4.0” D
Operating/Storage Temperature	-20 °C to +70 °C

Performance Characteristics (SITU2400-XZ Transmitter and SIRU2300-XZ Receiver)

Parameter	Symbol	Frequency (GHz)	Unit
Frequency Range	BW	.05 - 1	GHz
RF Input Level Minimum Maximum	RF_{in}	 -46 -30	dBm
Link Gain Minimum Maximum	G	 -46 -30	dB
Amplitude RF Flatness, Peak-to-Peak		3	dB
Link Noise Figure, Maximum	NF	48	dB
1 dB Compression Point, Minimum	P1dB	+12	dBm
Third Order Input Intercept Point, Minimum	IP3	+24	dBm
Return Loss, Minimum	S11	9	dB

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

Ordering Information

SITU2400-XZ-YY XZ = ITU Wavelength
YY = Optical Connector: FC=FC/APC, SC=SC/APC

ITU Channel	Frequency (THz)	Wavelength (nm)
62	196.2	1527.99
61	196.1	1528.77
60	196.0	1529.55
59	195.9	1530.33
58	195.8	1531.12
57	195.7	1531.90
56	195.6	1532.68
55	195.5	1533.47
54	195.4	1534.25
53	195.3	1535.04
52	195.2	1535.82
51	195.1	1536.61
50	195.0	1537.40
49	194.9	1538.19
48	194.8	1538.98
47	194.7	1539.77
46	194.6	1540.56
45	194.5	1541.35
44	194.4	1542.14
43	194.3	1542.94
42	194.2	1543.73
41	194.1	1544.53
40	194.0	1545.32

ITU Channel	Frequency (THz)	Wavelength (nm)
39	193.9	1546.12
38	193.8	1546.92
37	193.7	1547.72
36	193.6	1548.51
35	193.5	1549.32
34	193.4	1550.12
33	193.3	1550.92
32	193.2	1551.72
31	193.1	1552.52
30	193.0	1553.33
29	192.9	1554.13
28	192.8	1554.94
27	192.7	1555.75
26	192.6	1556.56
25	192.5	1557.36
24	192.4	1558.17
23	192.3	1558.98
22	192.2	1559.79
21	192.1	1560.61
20	192.0	1561.42
19	191.9	1562.23
18	191.8	1563.05

Laser Safety

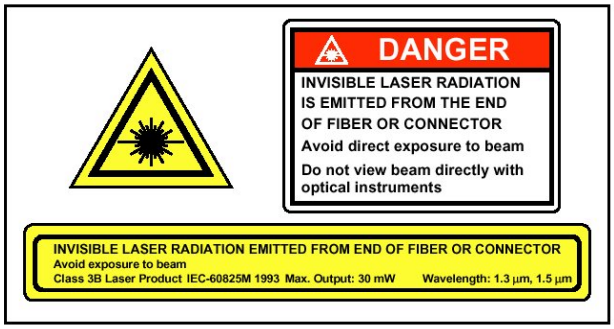
Class IIIb Laser Product

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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