

Optisat 2.25 GHz, 1310 nm Directly-Modulated Transmitter



DATASHEET | OCTOBER 2013

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Applications

- L-Band Antenna Signal Distribution
- Provides Optical Isolation Between Antenna and Receiver
- Provides Remoting of up to 10 km

Features

- Frequency Range of 800 MHz - 2.25 GHz
- Fully-Integrated Unit
- Provides LNB Power

Environmentally Sealed Fiber Optic Transmitter

The EMCORE Optisat is a directly-modulated fiber optic transmitter that can be mounted to an LNB. This provides the benefit of a low-loss fiber optic link for transport of L-Band signals from the receiving antenna. The unit operates from 800 MHz to 2.25 GHz. It also provides power to the LNB. The Optisat is a fully-integrated unit that contains both the optics and the control electronics. Only DC input voltages and the RF signal are required for operation. The unit is sealed and can be used outdoors.



Performance Highlights

Parameter	Min	Typical	Max	Units
Frequency Range	0.8	-	2.25	GHz
RF Input Power	-45	-25	-10	dBm
Wavelength	1290	1310	1330	nm
Optical Output Power	9	10	11	dBm
Temperature Range	-40	-	70	°C
Supply Voltage	-	24	-	V
Supply Current	-	-	240	mA

Optical Characteristics

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Wavelength	λ	-	1290	1310	1330	nm
Optical Output Power	P_L	-	9	10	11	dBm
Connector Return Loss	-	-	45	-	-	dB
Connector Type	-	FC APC	-	-	-	-

Note: In order to prevent reflection-induced distortion, the laser should be connected to an optical cable having a return loss of at least 55 dB for discrete reflections and 30 dB for distributed reflections.

RF Characteristics

Parameter	Symbol	Condition	Min	Typ	Max	Unit
RF Input Impedance	-	-	-	75	-	Ω
Return Loss	-	-	-	2:1	-	-
RF Connector	-	F-Type Female	-	-	-	-

Link Performance (with 4 dB Optical Loss)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Link Gain	G	@ 2 GHz	-3	0	3	dB
Gain Variation	-	0.8 - 2.2 GHz	-	-	2	dB
Noise Figure	NF	@ 2 GHz	-	18	20	dB
3rd Order Intercept	IP3	@ 2 GHz	8	-	-	dBm
Dynamic Range	SFDR3	-	-	110	-	dBm Hz ^{2/3}

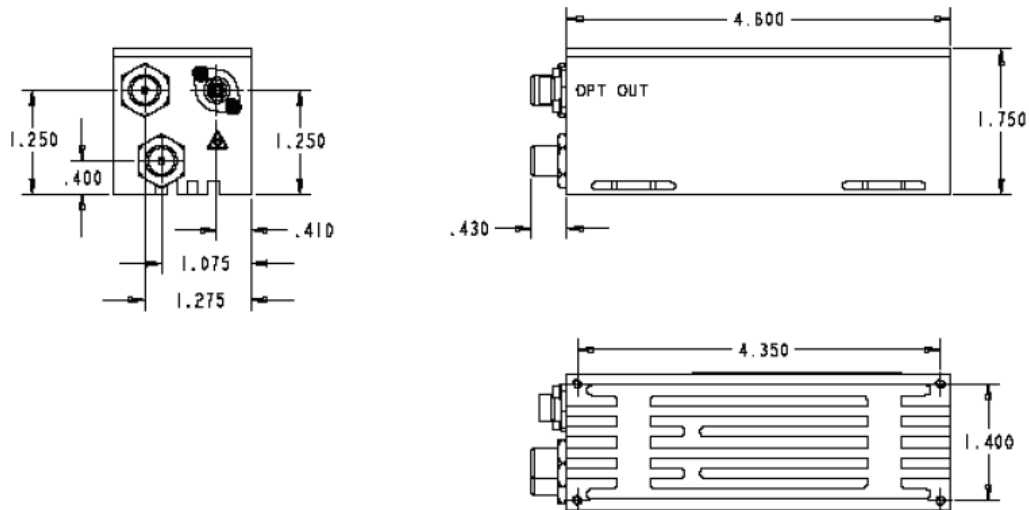
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Package Outline Drawing



Ordering Information

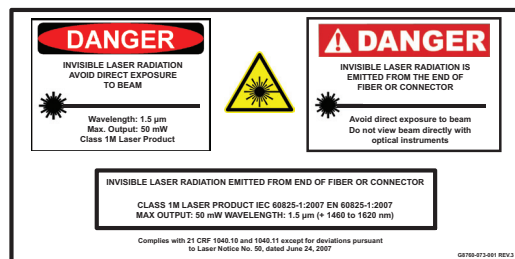
Part Number	Description
21047269-003	OPTISAT 1310 nm DFB Transmitter

Laser Safety

This product meets the appropriate standard in Title 21 of the Code of Federal Regulations (CFR). FDA/CDRH Class 1M laser product. All versions of this laser are Class 1M laser product, tested according to IEC 60825-1:2007 / EN 60825-1:2007. An additional warning for Class 1M laser products. For diverging beams, this warning shall state that viewing the laser output with certain optical instruments (for example: eye loupes, magnifiers, and microscopes) within a distance of 100 mm may pose an eye hazard. For collimated beams, this warning shall state that viewing the laser output with certain instruments designed for use at a distance (for example: telescopes and binoculars) may pose an eye hazard.

Wavelength = 1.3/1.5 μ m.

Maximum power = 30 mW.



*Caution - Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

*IEC is a registered trademark of the International Electrotechnical Commission.