

Orbital LNB X-Band Earth Observation

Description

Maximize downlink throughput for your X-Band earth observation (EO) satellites with the Orbital X-Band EO Low Noise Block Downconverter (LNB).

This powerful LNB supports applications that transmit large volumes of earth observation data over the X-Band frequency, such as high-resolution satellite imagery and SAR applications. Take advantage of its low noise figure to reduce the size of your receiving terminal – or increase the modcod to get more data through per pass.

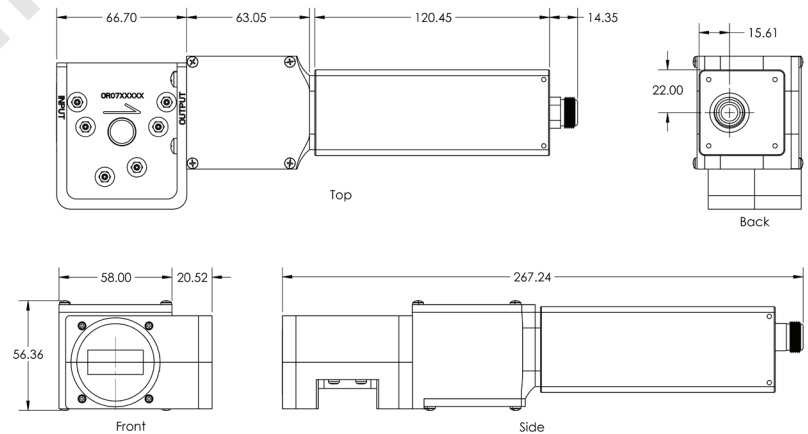
- Ultra low phase noise and DVB-S2X compliance for maximum data throughput at high modcod
- Low noise figure and flat frequency response for optimal G/T
- Local oscillator flexibility for custom L-Band frequency conversions
- Aluminum sealed enclosure for extreme conditions – IP67 and RF isolation

The Orbital X-Band EO LNB is built for remote sensing, optical imaging and radar imaging satellites. It is ideally suited to LEO and MEO SmallSats with regulatory access to X-Band spectrum.



Mechanical Diagram

With external isolator



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Specifications

FREQUENCY RANGE

RF Frequency Band (GHz)	8.00 to 8.50
IF Frequency Band (MHz)	950 to 1450
Bandwidth (MHz)	500
Noise Figure (dB) (typ) with Isolator	0.60
LO Stability (ppm)	Locked to external reference

10MHZ EXTERNAL REFERENCE

Insertion	External
Input Level Range (dBm)	0 to 10

VSWR

Input (typ)	2.0 : 1
Input w/ Isolator (typ)	1.3 : 1
Output (typ) across any band	1.3 : 1

GAIN

Gain (dB) (typ)	60
Flatness over frequency (dB)	2.0
Ripple (10 MHz) +/- dB	0.25
Stability over Temp (dB)	+/-2.5 over 24 hours @ 25°C

OUTPUT PHASE NOISE (TYP) 10 MHZ EXT REF WITH ORBITAL'S OCOXO POS

10 Hz (dBc/Hz)	-33
100 Hz (dBc/Hz)	-62
1 KHz (dBc/Hz)	-79
10 KHz (dBc/Hz)	-95
100 KHz (dBc/Hz)	-100
1 MHz (dBc/Hz)	-115
10 MHz (dBc/Hz)	-125

OTHER SPECS

Image Rejection (typ) (dB)	40
LO Leakage Input (dBm)	< -90
LO Leakage Output (dBm)	< -80
P1dB Output (dBm)	15
OIP3 (dBm)	26
MTBF (> Hrs)	250,000
Standards	CE, ROHs, REACH, IP67,

ENVIRONMENTAL

Operating Temperature (deg C)	-40 to +60
Storage Temperature (deg C)	-55 to +85
Operating Altitude (ft)	10,000
Humidity (%)	100

POWER

DC Input Voltage Range (Volts)	12 to 26
DC Power Consumption (Watts)	6.0
DC Current Draw (mAmps)	340

MECHANICAL

Weight (grams)	1130 with Isolator
Dimensions (mm)	270 x 79 x 55
Input Connector	WR-112 (CPR-112)
Output Connector	SMA or N

MONITOR & CONTROL (Optional)

Connector	M12A, RJ45, µD9
Monitor	Voltage, current, temperature
Control	Attenuation
Output Protocols	RS485, RS422, Ethernet

CUSTOM OPTIONS

Monitor & Control	
DC Via M & C Connector (pigtail)	
Auto Internal Fall Back	
Customized Gain	
Enhanced Gain Over Temperature	
Automatic Level Control (ALC)	
Power Level at the Output	
Customized LO Frequency (GHz)	
Extended IF Frequency (MHz)	
Custom Frequency Range (GHz)	7.1 to 8.5
Bandwidth (MHz)	750
Internal Reference	
External Isolator	