

# Orbital LNB X-Band Earth Observation

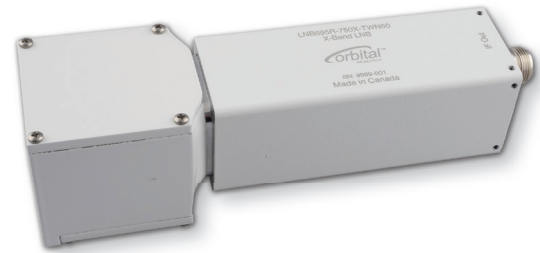
## Description

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.

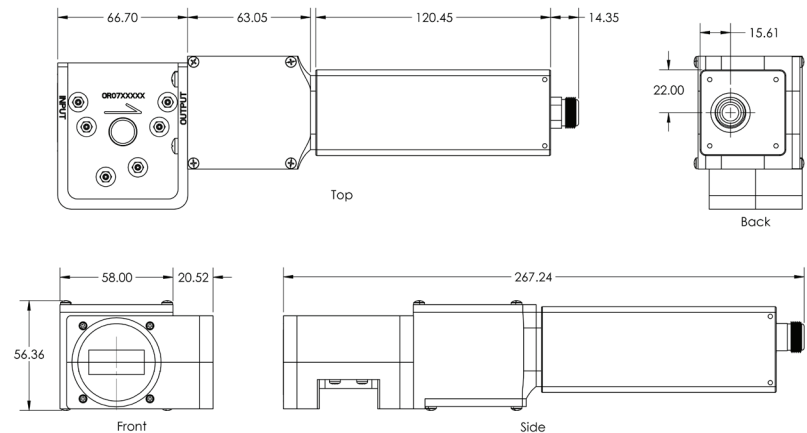
- Ultra low phase noise and DVB-S2X compliance for maximum data throughput at high modcod
- Low noise figure and flat frequency response for optimal G/T
- Local oscillator flexibility for custom L-Band frequency conversions
- Aluminum sealed enclosure for extreme conditions – IP67 and RF isolation

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



intertek



v.230907

# Orbital LNB X-Band Earth Observation

## Specifications

### FREQUENCY RANGE

RF Frequency Band (GHz)	7.75 to 8.50
IF Frequency Band (MHz)	1200 ± 400
Bandwidth (MHz)	800
Local Oscillator Frequency (GHz)	6.95
Noise Figure (dB) (typ)	0.55
LO Stability (ppm)	Locked to external reference
Band Switching	

### 10MHZ EXTERNAL REFERENCE

Insertion	External
Input Level Range (dBm)	0 to 10

### VSWR

Input (typ)	2.0 : 1
Input w/ Isolator (typ)	1.1 : 1
Output (typ) across any band	1.3 : 1

### GAIN

Gain (dB) (typ)	60
Flatness over any 1 GHz +/- dB	1.5
Ripple (10 MHz) +/- dB	0.25
Stability over Temp (dB)	1.0 over 24 hours @ 25°C

### OUTPUT PHASE NOISE (TYP) 100 MHZ EXT REF WITH ORBITAL'S OCXO POS

10 Hz (dBc/Hz)	-55
100 Hz (dBc/Hz)	-85
1 KHz (dBc/Hz)	-95
10 KHz (dBc/Hz)	-105
100 KHz (dBc/Hz)	-100
1 MHz (dBc/Hz)	-110
10 MHz (dBc/Hz)	-115

### OTHER SPECS

Image Rejection (typ) (dB)	70
LO Leakage Input (dBm)	< -90
LO Leakage Output (dBm)	< -80
P1dB Output (dBm)	18
OIP3 (dBm)	30
MTBF (> Hrs)	250,000
Standards	CE, ROHs, REACH, IP67, DVB-SX2

### 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 24
DC Power Consumption (Watts)	5.5
DC Current Draw (mAmps)	300

### MECHANICAL

Weight (grams)	900
Dimensions (mm)	56 x 58 x 200
Input Connector	WR-112 (CPR-112)
Output Connector	SMA or N

### MONITOR & CONTROL

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

### CUSTOM OPTIONS

Monitor & Control	
DC Via M & C Connector (pigtail)	M12A or µD9
Auto Internal Fall Back	
Customized Gain	
Enhanced Gain Over Temperature	
Automatic Level Control (ALC)	
Power Level at the Output	
Customized LO Frequency (GHz)	6.2 to 7.4
Extended IF Frequency (MHz)	up to 3500
Custom Frequency Range (GHz)	7.1 to 8.5
Bandwidth (MHz)	500 to 1400
Internal Reference	
External Isolator	