

# Orbital 3400X Series Modified C-Band External Reference LNB



40 to 65 dB gain, 250 to 800 MHz bandwidth, any C band satellite

## How to order an Orbital 3400X Series C-Band External Reference LNB

Frequencies (GHz):

LO	Input	Output	Bandwidth
5.15S	- 3.70 to 4.20	.95 to 1.45	0.500
5.15S	- 3.60 to 4.20	.95 to 1.55	0.600
5.15S	- 3.40 to 4.20	.95 to 1.75	0.800

Bandwidth in MHz

'X' Signifies External Reference

LNB515S-800X-WN40-L

### Input Connector

C Band LNB is CPR-229G

### Output Connector

F - F, 75 ohm (standard)  
N - N, 50 ohm  
S - SMA, 50 ohm  
T - TNC, 50 ohm

### Gain

40 - 40 dB  
50 - 50 dB  
55 - 55 dB  
60 - 60 dB  
65 - 65 dB (nominal)

### Loss of Lock Alarm (Optional)

L - Loss of Lock Alarm installed

### Orbital Flexibility:

Engineered using the highest quality components insures you from failure due to environmental extremes, such as arctic cold, Saharan heat, and rain-forest humidity. Our LNB is protected from man-made conditions such as shock, vibration, low power, over-voltage, surges, transients, and static discharge. Performance is consistent and replacements will match or exceed your original device. Market leading specifications yield some of the best phase noise on the market.

### "Mass-Custom" Solution

Orbital starts with a proven performance of our standard 3400X Series C-Band External Reference LNB, which is extremely well engineered. We then customize the mass produced LNB into what you want at 1/100 the cost of designing and building from scratch.

### Orbital Features:

#### Custom Engineering

- Optimize Input and Output for superior VSWR
- Modify LO frequencies preserving phase noise and stability
- Modify and tune RF & IF filters for optimum response
- Tune for very low bandpass ripple
- Optimize Gain distribution for your system parameters

#### Environmental

- O ring sealed connectors for weather resistant operation
- Preserve the environmental engineering of the original LNB

#### Options

- Change output connector, gain or LO frequency, etc
- External DC & 10 MHz connector: F, N, BNC or Feedthrough
- Special Dual DC option via output coax and ext DC port
- Loss-of-Lock-Alarm option for redundant switch operations
- Full test documentation available
- Custom design and labeling requirements welcomed

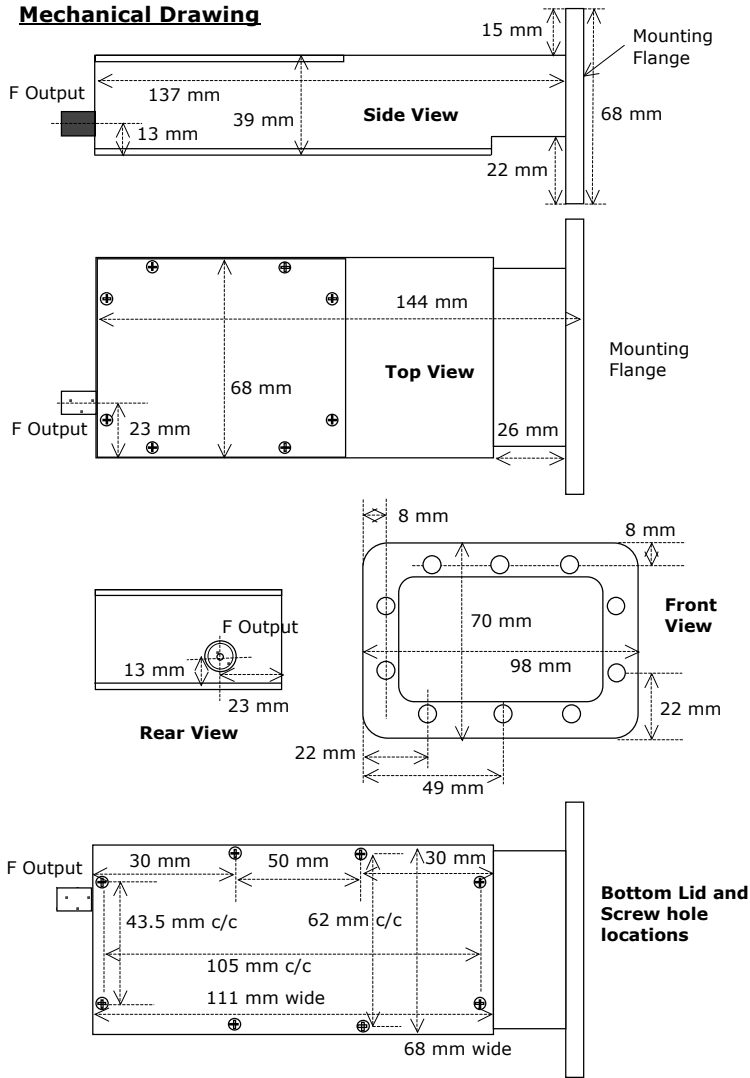
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# Orbital 3400X Series C Band External Reference LNB Specs

## Mechanical Drawing



## Electrical Specifications

### Input

Frequency: 3.4-4.2, 3.7-4.2, 4.5-4.8 GHz  
 Bandwidth: up to 800 MHz  
 Noise Temp: 20 deg K typical  
 Ripple:  $\pm 0.5$  dB max /36 MHz segment  
 Input VSWR: 2.2 : 1 max

### Output

Bandpass: 950 up to 1750 MHz  
 Output VSWR: 1.5 : 1 typical at 75 $\Omega$   
 Gain: 40 to 60 dB (60 dB nominal)  
 LO Stability:  $\pm 3$  kHz over temperature  
 Compression: +10dBm  
 3rd Order Intercept: +20 dBm

### Power

DC Input: 12 to 24 VDC, 250 mA nominal  
 Filtering: Transient, over and reverse voltage protected

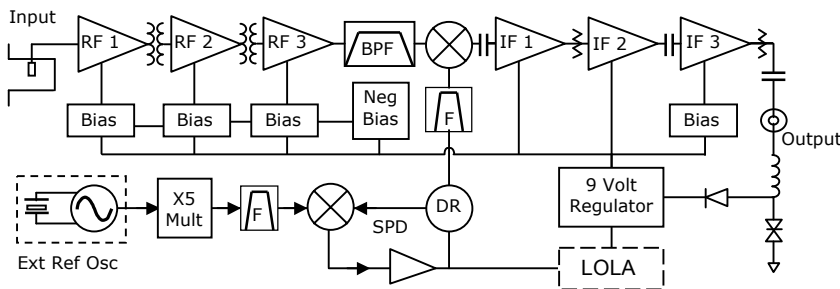
## Mechanical Specifications

Size: 144(L) x 68(W) x 39(H) mm  
 (5.6 x 2.6 x 1.5 in)  
 Weight: 560 grams  
 Paint: Brilliant White Enamel

## Environmental Specifications

Operating Temp: -40 to +60 °Celsius  
 Relative Humidity: Up to 100% condensation and frost  
 MTBF: >700,000 hours

## Block Diagram



## Loss of Lock Alarm – LOLA (optional)

LNBS can lose oscillator lock from internal failure or loss of the 10 MHz reference. The LOLA detects this anomaly and increases the current consumption of the LNB over the IFL cable to trigger a redundant switch or other detector. No extra ports, cables or infrastructure are required.

Simply hookup the LNB with 10 MHz present, set the current windows on the redundancy system so they are just out of triggering, then turn off the 10 MHz to trigger the LNB LOL circuit. The redundant switch should activate. Restore 10 MHz and the LOLA will reset.

It should be noted that these LNBS are exceptionally good for 10 MHz lock range. They will stay locked under adverse 10 MHz conditions and keep the system in sync.

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