



# Orbital 692X Series

## Ka BAND EXTERNAL REFERENCE LNB



### Wide range of Frequencies and Bandwidths

#### How to order an Orbital 692X Series Ka Ext Ref LNB

Frequencies (GHz):

LO	Input	Output	Bandwidth
17.25F	18.2 to 19.2	.95 to 1.95	1.000
18.25F	19.2 to 20.2	.95 to 1.95	1.000
18.425F	19.375 to 20.375	.95 to 1.95	1.000
19.20F	20.2 to 21.2	1.0 to 2.0	1.000
19.25F	20.2 to 21.2	.95 to 1.95	1.000
19.50F	20.6 to 21.2	1.1 to 1.7	.600
20.25F	21.2 to 22.2	.95 to 1.95	1.000
20.45F	21.4 to 22.0	.95 to 1.55	0.600

Bandwidth in MHz

'X' Signifies External Reference

LNB 1925F - 1000 X-WN 55 -G

Input Connector  
Ka LNB is WR-42

Output Connector  
F - F, 75 ohm  
N - N, 50 ohm  
S - SMA, 50 ohm  
B - BNC, 50 ohm

Gain  
55 - 55dB (nominal)

G - Enhanced Gain Flatness  
L - Loss of Lock Alarm

#### Standard Quality

The Orbital 692X Series Ka-XR LNBs meet Mil Standard 188-164A specifications. Part of this Mil Standard Interoperability spec is that the output frequency range is 1000 to 2000 MHz. We can provide that output or the traditional commercial frequency range of 950 to 1950 MHz. Orbital can also meet Mil Standard 810F environmental standards on request.

#### 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.

#### Orbital Features:

##### Environmental

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

##### Options

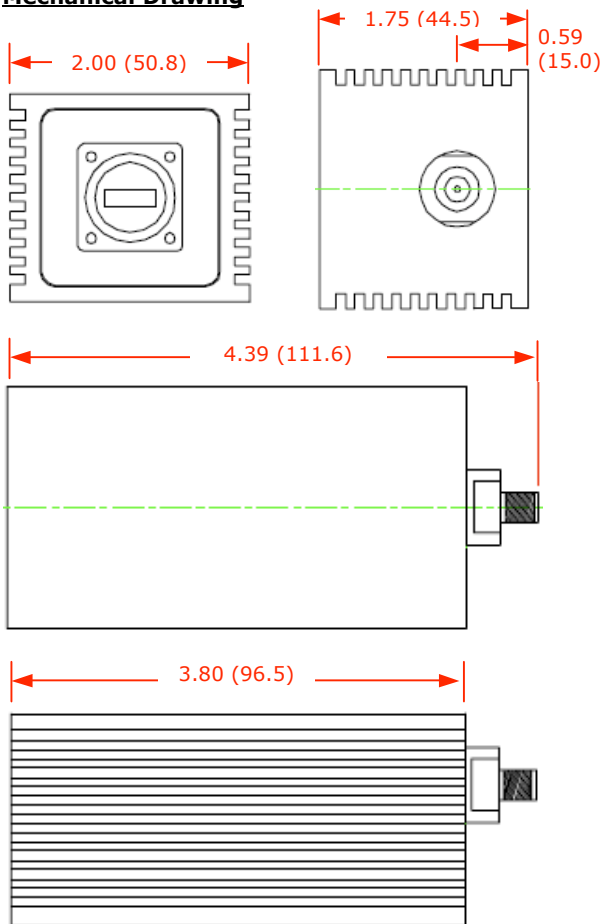
- Other input / output frequency ranges available
- Loss-of-Lock-Alarm option for redundant switch operations
- Full test documentation available
- Custom design and labeling requirements welcomed

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# Orbital 692X Series Ext Ref Ka LNB Specifications

## Mechanical Drawing



## Electrical Specifications

### Input

Frequency: As listed on front page (Standard frequencies. Others available)  
 Bandwidth: up to 1,000 MHz (depends on input freq)  
 Input Stability: Unconditionally stable (no oscillation) for all possible input loads  
 Input VSWR: 2.5 : 1 nominal  
 Noise Figure: 1.8 dB maximum, 1.2 dB nominal @ 23°C  
 RF Impedance: 50 Ohms  
 Return Loss:  $\geq 12$  dB  
 Signal Level: -70 to -40 dBm (-20 dBm max)

### Output

Bandpass: 950 to 1950 MHz (standard)  
 1000 to 2000 MHz (Mil spec)  
 Other outputs available  
 Output VSWR: 2.1 : 1 maximum @ 75 $\Omega$   
 Output Stability: Unconditionally stable (no oscillation) for all possible input loads  
 1 dB Comp Point: +3 dBm min, up to +7 dBm (optional)  
 3rd Order Intercept: +13 dBm min, up to +17 dBm (optional)  
 Return Loss:  $\geq 10$  dB

### 10MHz Reference

Level: -10 to 0 dBm

### Local Oscillator

Frequency: 17.25, 18.25, 19.25, 20.25, 20.45 GHz  
 Stability: Dependent on external reference  
 Leakage: -45 dBm maximum @ IF output & input  
 Phase Noise using Orbital-:

	MOM	POP
-20dBc/Hz @10Hz	-20dBc/Hz	-50dBc/Hz
-60dBc/Hz @100Hz	-60dBc/Hz	-70dBc/Hz
-80dBc/Hz @1kHz	-80dBc/Hz	-90dBc/Hz
-80dBc/Hz @10kHz	-80dBc/Hz	-90dBc/Hz

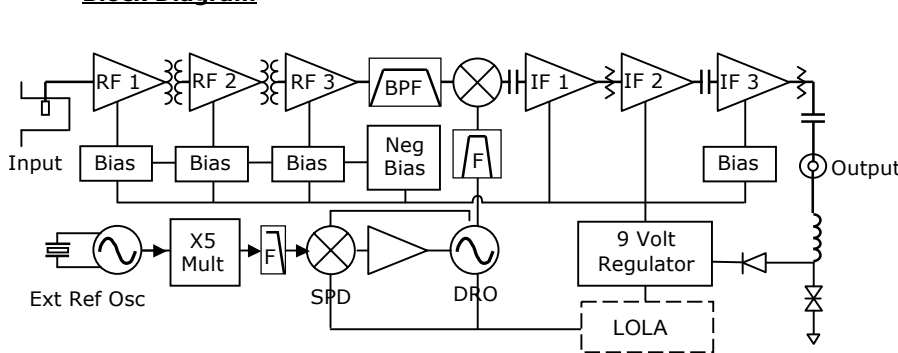
### Gain

Typical: 55 dB (50 dB available)  
 Variation over Temperature & Frequency:  $\pm 2.0$  dB maximum  
 (Optional):  $\pm 0.5$  dB max over temperature range  
 Gain Flatness:  $\pm 0.75$  dB max over any 27 MHz segment  
 In-Band Spurious Rejection:  $> 45$  dBc  
 Image Rejection:  $> 40$  dB

## Power

DC Input: 15 to 18 VDC, 400 mA Max  
 Filtering: Transient, over and reverse voltage protected

## Block Diagram



## Mechanical Specifications

Size: 45 x 51 x 112 mm  
 1.75 x 2.0 x 3.8 in.  
 Weight: 350 grams  
 Paint: Allodyne finish to MIL SPEC C-5541 Cat 3

## Environmental Specifications

Operating Temp: -35 to +55°C  
 Relative Humidity: Up to 100% condensation and frost

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