

4300I Series X-Band PLL LNB with 12-hole, universal gasketed input isolator

# Orbital 4300 & 4300I SERIES X-Band PLL LNB



MIL Spec MIL-STD-188-164A, 45 dB internal filter

## How to order an Orbital 4300 or 4300I Series X-Band PLL LNB

### Frequencies (GHz):

LO	Input	Output	Bandwidth
6.30S	- 7.25 to 7.75	.95 to 1.45	0.500

Bandwidth in MHz

'P' Signifies PLL

Input Connector  
X LNB is WR-112

**LNB630S-500P-WN60-G12**

### Output Connector

F - F, 75 ohm  
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

### Input Isolator

"blank" - no Input Isolator  
G12 - Isolator, 12 hole gasketed flange

## Orbital Features:

The newly designed Orbital X-Band LNB comes in 4 main varieties:

- External Reference with input Isolator
- External Reference without input Isolator
- PLL with input Isolator
- PLL without input Isolator

Other varieties/options include color, gain, output connector, as well as flange type for the isolator: CPR-112 12-hole

The LNB input flange (without input isolator) is FBM-84, 4-hole type.

## Orbital Specs:

- Image Rejection >60 dB
- P1 dB >15 dBm
- IP3 >25 dBm
- Internal Transmit Rejection >45 dB
- Noise Figure <0.7 dB
- Mil-Std 188-164A for vibe and shock

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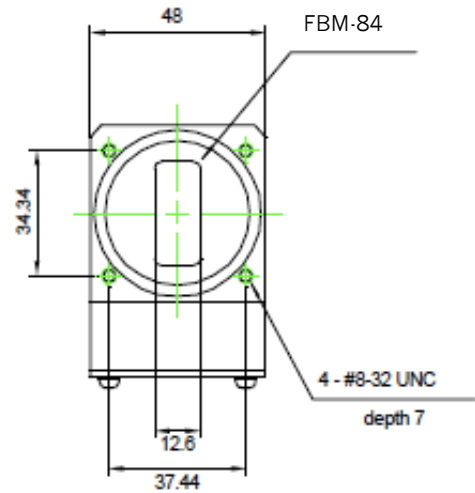
**[dzuvic@orbitalresearch.net](mailto:dzuvic@orbitalresearch.net)**

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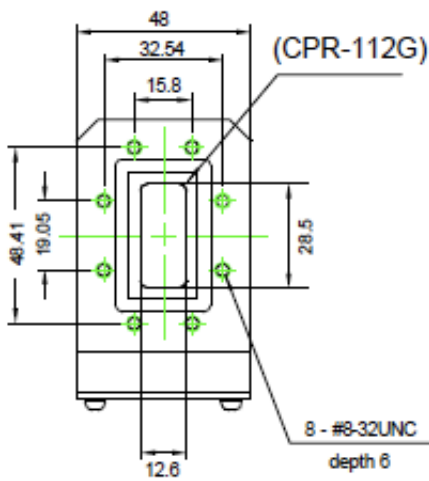
# Orbital 4300 Series X-Band PLL LNB Specifications

## Mechanical Drawing

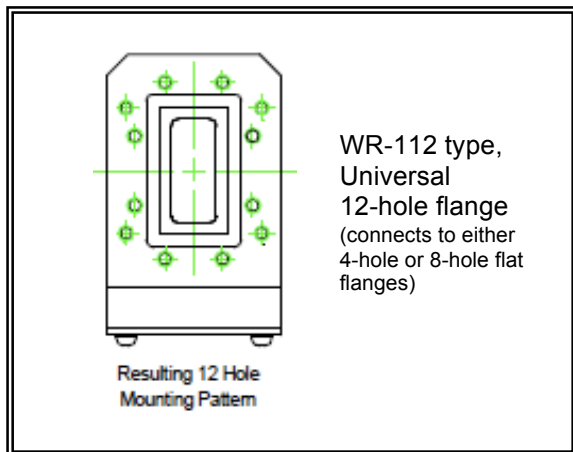
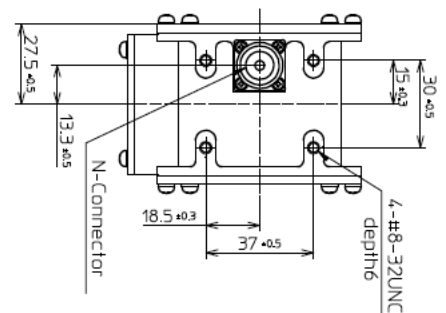
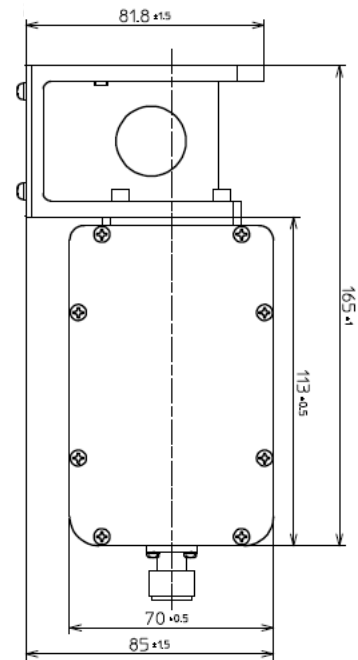
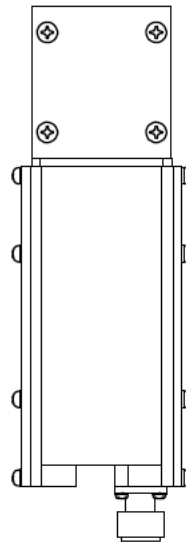
<b>Item</b>	<b>4300 Series X PLL LNB without Isolator</b> (FBM84 4 hole gasket flange only)
<b>Size</b>	(L) 113mm x (W) 70mm x (H) 55mm
<b>Weight</b>	Approx. 585g
<b>NF</b>	Approx. 0.7dB @+23C, dependent upon connecting components
<b>VSWR</b>	1.5:1 to 2.5:1, dependent upon connecting components



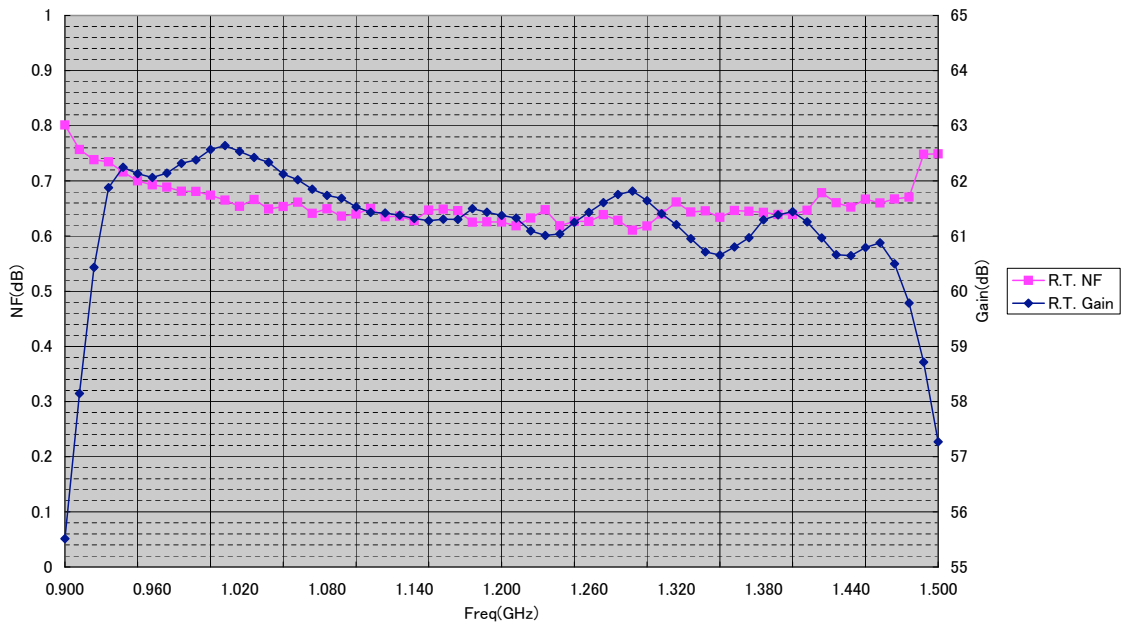
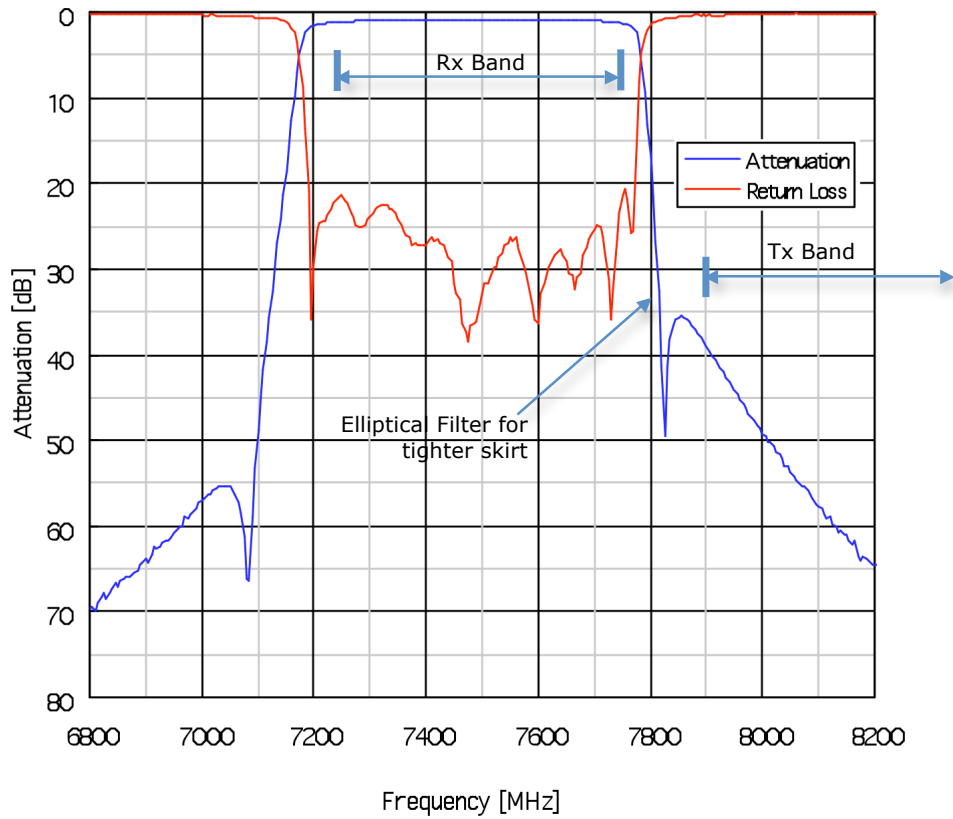
Standard 4 hole flange



Standard 8 hole flange



<b>Item</b>	<b>4300 Series X PLL LNB With Isolator</b>
<b>Size</b>	(L) 165mm x (W) 85mm x (H) 55mm
<b>Weight</b>	Approx. 800 g
<b>NF</b>	0.7 dB max. @+23C
<b>VSWR</b>	1.3 : 1



## ELECTRICAL SPECIFICATIONS

Item	With Isolator (4300I)	Without Isolator (4300)
RF Input Frequency	7.25 to 7.75GHz	
IF Output Frequency	950 to 1450MHz	
Local Frequency	6.3GHz	
Local Frequency Stability	±10 kHz max	±10 kHz max
Local Phase Noise	-65dBc/Hz max. @100Hz -75dBc/Hz max. @1KHz -85dBc/Hz max. @10KHz -95dBc/Hz max. @100KHz -105dBc/Hzmax. @1MHz	
LO Leakage	Virtually eliminated	-60dBm max at waveguide flange
Noise Figure	0.7dB typ. @+23°C	Approx. 0.7dB @+23°C, dependent upon connecting components
Gain	62dB±4dB @Over temp. and freq.	
Gain Flatness	±2.0dB max. @Over band	
Gain Stability	±1.0dB max. @Over a 24hr at +25°C	
Input VSWR	1.3:1 max.	1.5:1 to 2.5:1, dependent upon connecting components
Output VSWR	2.0:1 max.	
Attenuation (In Tx band, 7.9 to 8.4 GHz)	45 dB	45 dB
Image Rejection	-60dBc max.	
P1dB Compression point	+15dBm min.	
Signal Independent Spurious	-60dBm max. @Rx-band	
Signal Related Spurious	-65dBc max. @0dBm output, Rx-band	
Desense level	-40dBm, 7.9-8.4GHz @No more than 0.1dB of noise figure degradation	
Overdrive	-20dBm @Non-damaging	
Input DC Power	+15 to +24VDC, 500mA Multiplexed on a single coaxial connector with the IF and 10MHz reference signal.	
Input Interface	WR-112 waveguide, CPR-112 or FBM-84 flange	WR-112 waveguide, FBM-84 flange
Output Interface	50Ω, N-type female coaxial connector	

## MECHANICAL SPECIFICATIONS

Size	(L) 165mm x (W) 85mm x (H) 55mm	(L) 113mm x (W) 70mm x (H) 55mm
Weight	approx. 850g 1.9 lbs	Approx. 585g 1.3 lbs
Color	White Munsell N9.5 semigloss standard, other colors available	

## ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-40°C to +60°C	
Operating Altitude	10,000 ft ASL	
Operating Relative Humidity	100%, condensing	
Non-operating Temperature	-50°C to +70°C	
Non-operating Altitude	50,000 ft. ASL	
F Shock	20g, 11ms, half sine	
Vibration	MIL-STD-810E, method 514-4	
MTBF	>125,000 hours	

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