

Orbital 3300 Series

C-BAND PLL BLOCK DOWN CONVERTER



10 to 40 dB gain, 250 to 800 MHz bandwidth

How to order a 3300 Series C-Band PLL BDC

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

'P' Signifies PLL - Phase Lock Loop

BDC 515S - 800 P-NF 20 -L

Input Connector
S - SMA, 50 ohm
N - N, 50 ohm

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

Gain
10 - 10 dB
20 - 20 dB
30 - 30 dB
40 - 40 dB

Optional
L - Loss of Lock Alarm installed
G - Temperature Compensated Gain

Orbital Flexibility:

With an LNA that covers your satellite, simply order a custom Orbital BDC to cover the bandwidth that you need. You can specify input and output connector types, external DC input, coaxial DC input, or dual power option. Most importantly, we can customize your gain to optimize compression point and noise distribution. Just tell us your needs and we will build a mass-custom solution in a unique, cost effective way.

"Mass-Custom" Solution

Orbital starts with a proven performance product that is extremely well engineered with the development costs amortized over hundreds of thousands of units and the parts costs reduced by volume discounts. 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

- Begin with the low noise figure of a proven quality LNB
- 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

- External DC connector - F, N, BNC or Feedthrough
- Special Dual DC option via output coax and ext DC port
- Loss-of-Lock Alarm for redundant switch operations
- Temperature Compensated Gain Variation
- Full test documentation available

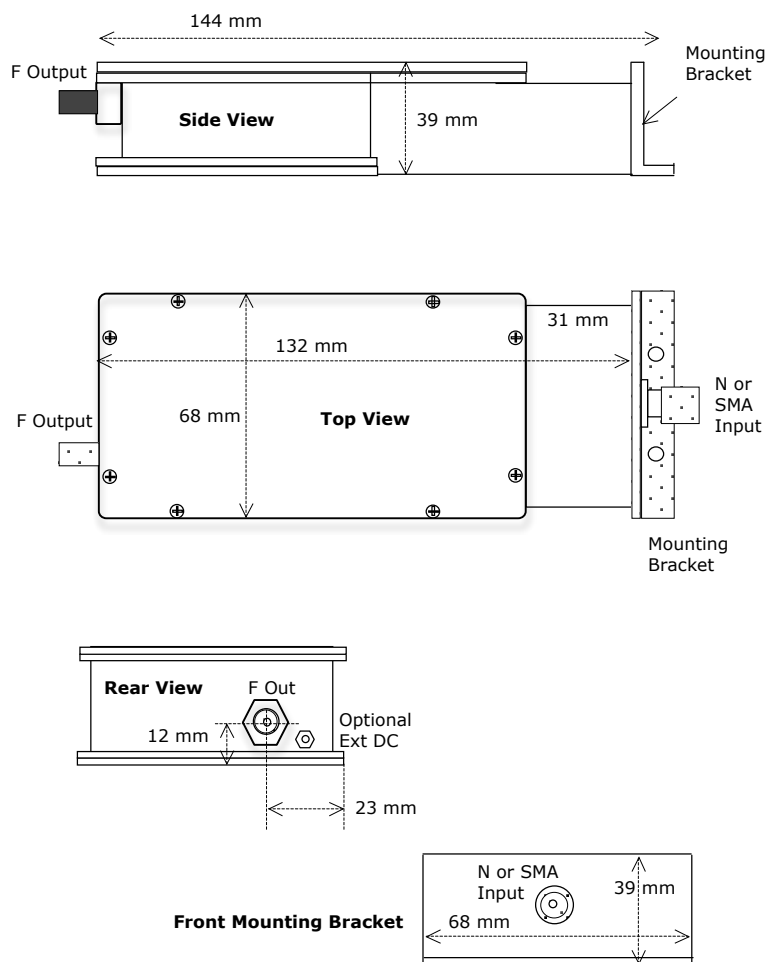
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Orbital 3300 Series C Band PLL BDC Specifications

Mechanical Drawing



Electrical Specifications

Input

Frequency: 3.4-4.2, 3.6-4.2, 3.7-4.2, 4.5 to 4.8 GHz
 Bandwidth: up to 800 MHz
 Noise Figure: 10 dB max (dependent on gain and bandwidth)
 Input VSWR: 1.5 : 1 typical
 LO Leakage: -45 dBm max

Output

Bandpass: 950 up to 1750 MHz
 Output VSWR: 1.5 : 1 typical
 LO Stability: ± 3 kHz
 1 dB Comp pt: +10 dBm minimum
 3rd Order Intercept: +20 dBm minimum
 LO Leakage: -45 dBm max
 Image Reject: 45 dBm
 Phase Noise: -80 dBc/Hz @ 1 kHz
 -85 dBc/Hz @ 10 kHz
 -95 dBc/Hz @ 100 kHz

Gain

Options: 10, 20, 30 or 40 dB
 Ripple: 1dB p-p max per 36 MHz segment
 Temperature Compensated Gain Variation (optional)
 ± 0.5 dB max over frequency band

Power

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

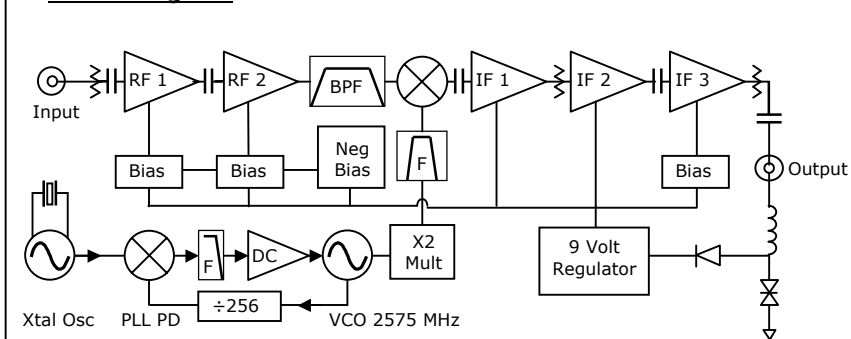
Mechanical Specifications

Size: 144 x 68 x 39 mm
 5.7 x 2.7 x 1.5 inches
 Weight: approx. 550 grams, 19.4 ounces
 Paint: Brilliant White Enamel

Environmental Specifications

Operating Temp: -40 to +60°Celsius
 Relative Humidity: Up to 100% condensation & frost

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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