



ORBITAL 5300 Series Ku PLL BLOCK DOWN CONVERTER (BDC)



10 to 40 dB gain, 250 to 1050 MHz bandwidth, any Ku satellite

How to order a 5300 Series Ku PLL BDC

Frequencies (GHz):

LO	Input	Output	Bandwidth
9.75S	- 10.70 to 11.70	.95 to 1.95	1.000
10.00S	- 10.95 to 11.70	.95 to 1.70	0.750
10.15S	- 11.70 to 12.20	1.55 to 2.05	0.500
10.25S	- 11.20 to 11.70	.95 to 1.45	0.500
10.50S	- 11.45 to 11.95	.95 to 1.45	0.500
10.50S	- 11.45 to 12.20	.95 to 1.70	0.750
10.60S	- 11.70 to 12.20	1.10 to 1.60	0.500
10.75S	- 11.70 to 12.20	.95 to 1.45	0.500
10.75S	- 11.70 to 12.75	.95 to 2.00	1.050
11.25S	- 12.20 to 12.75	.95 to 1.50	0.550
11.30S	- 12.25 to 12.75	.95 to 1.45	0.500

Bandwidth in MHz

'P' Signifies PLL

BDC1075S-500P-SS20-G

Input Connector
Ku BDC is SMA, 50Ω

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

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

Enhanced Gain Flatness
G - Temperature Compensated

Orbital Flexibility:

With an LNA that covers your satellite, simply order a custom Orbital BDC to cover the bandwidth that you need. You can even cover from 10.7 to 12.75 with just two Orbital BDCs. Or stack the output: 950 to 2000. Specify 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

Options

- External DC conn. - F, N, BNC or Feedthrough (standard)
- Special Dual DC option via output coax and ext DC port
- Custom alarm options for redundant switch operations
- Full test documentation available
- Custom design and labeling requirements welcomed

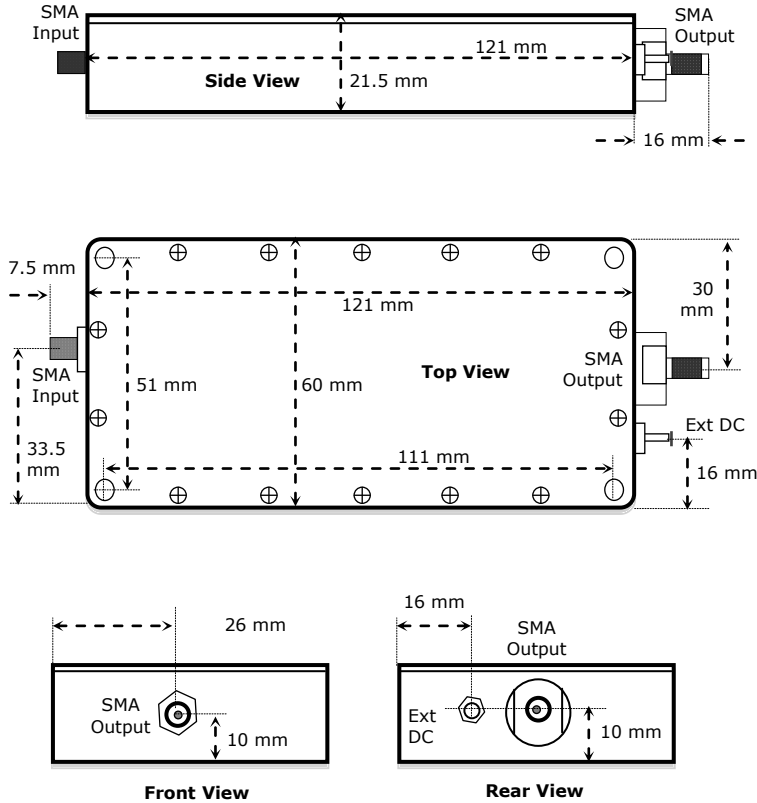
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Orbital 5300 Series Ku-Band PLL BDC Specifications

Mechanical Drawing



Electrical Specifications

Input

Frequency: See front page for the most popular frequency ranges, others available
 Bandwidth: up to 1.05 GHz
 Noise Figure: 7 dB typical
 Input VSWR: 1.5 : 1 typical

Output

Bandpass: 950 up to 2100 MHz
 Output VSWR: 1.6 : 1 typical
 Gain: 10, 20, 30, 40 dB (non-adjustable)
 Gain Ripple: ± 0.5 dB max /36 MHz segment
 Temperature Compensated Gain Variation (optional): ± 0.5 dB max over frequency band

LO Stability: ± 5 kHz
 Compression: +7 dBm minimum,
 3rd Order
 Intercept: +17 dBm minimum,

Power

DC Input: 12 to 24 VDC, 220 mA nominal
 Filtering: Transient, over and reverse voltage protected

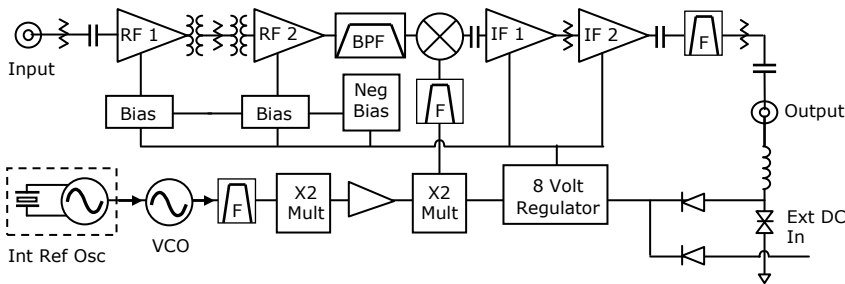
Mechanical Specifications

Size: 121 x 60 x 21.5 mm
 144 x 60 x 21.5 mm (with SMA connectors)
 Weight: 350 grams
 Coating: Blue Anodized

Environmental Specifications

Operating Temp: -40 to $+60^\circ$ Celsius
 Relative Humidity: Up to 100% condensation and frost

Block Diagram



Enhancing Standard Product

Mass-production means low-cost, reliable, repeatable products. Engineers design these products well within margins on component specifications so that individual tuning is not required to meet desired specifications.

As we modify product, we also tweak the design and components to optimize them for their inherent capabilities. Effectively, we bring out the full potential of the product by adjusting components to their full capability.

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