



## ORBITAL 5400X Series Ku BAND External Reference BLOCK DOWN CONVERTER



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

### How to order a 5400X Series Ku XR 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

'X' Signifies External Reference

Input Connector  
Ku BDC is SMA, 50Ω

BDC1075S-500X-SS20

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

### 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)
- External 10 MHz Input Connector - SMA
- 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

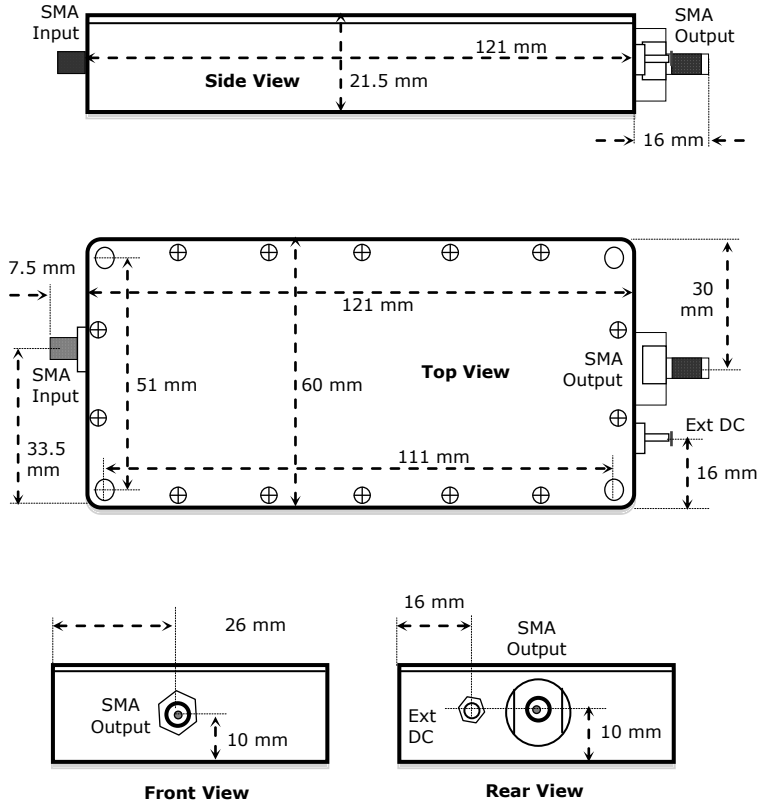
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# Orbital 5400X Series Ku Ext Ref BDC Specifications

## 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  
 10 MHz level: -10 dB to 0 dB

### Output

Bandpass: 950 up to 2100 MHz  
 Output VSWR: 1.6 : 1 typical  
 Gain: 10, 20, 30, 40 dB (non-adjustable)  
 Gain Ripple:  $\pm 0.5$  dB max /36 MHz segment  
 LO Stability: dependent on 10MHz source  
 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

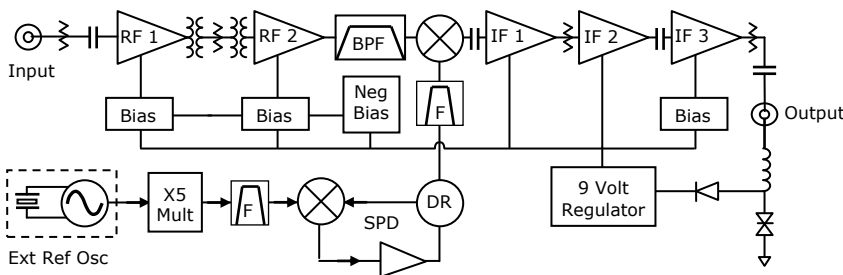
## Mechanical Specifications

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°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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