



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

BDC 1075S - 500 X-SS 20 -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

Optional

G - Temperature Compensated Gain

Orbital Flexibility:

With an LNA that covers your satellite, simply order an 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 & 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
- RoHS & REACH compliant

Options

- External DC conn. - F, N, BNC or Feedthrough (standard)
- External 10 MHz Input Connector - SMA
- Temperature Compensated Gain Variation
- Can meet Mil-Std, custom mobile, or airborne specs on request

Doug Macdonald

Tel: (647) 992-1210

doug.macdonald@orbitalresearch.net

David Zuvic

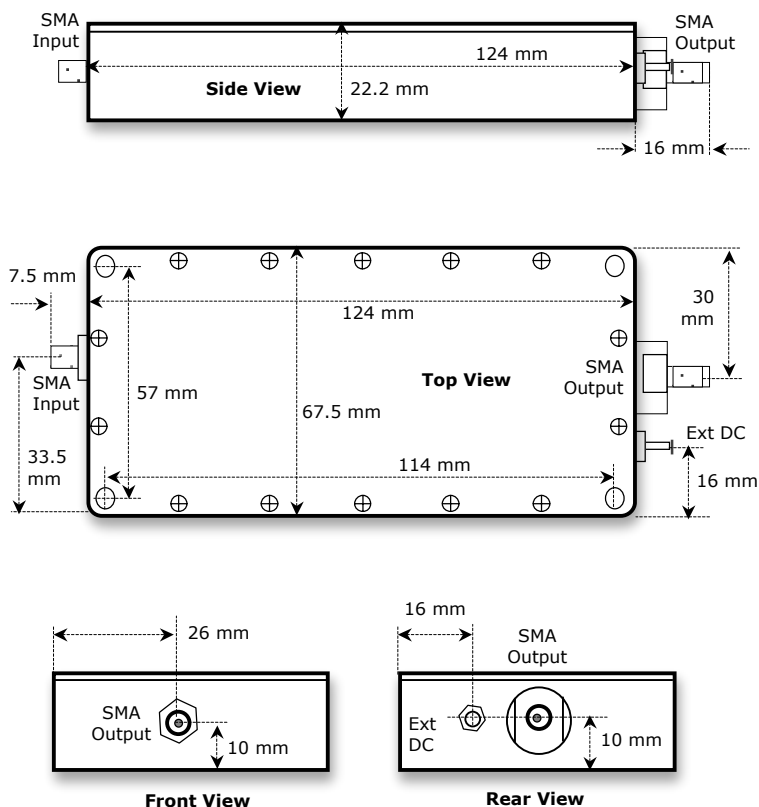
Tel: (604) 856-0305,

dzuvic@orbitalresearch.net

www.orbitalresearch.net

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: 10 dB max (dependent on gain and bandwidth)
 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
 LO Stability: dependent on 10MHz source
 Compression: +10 dBm (standard bandwidth)
 3rd Order Intercept: +20 dBm (standard bandwidth)
Gain
 Gain: 10, 20, 30, 40 dB (non-adjustable)
 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, 220 mA nominal
 Filtering: Transient, over and reverse voltage protected

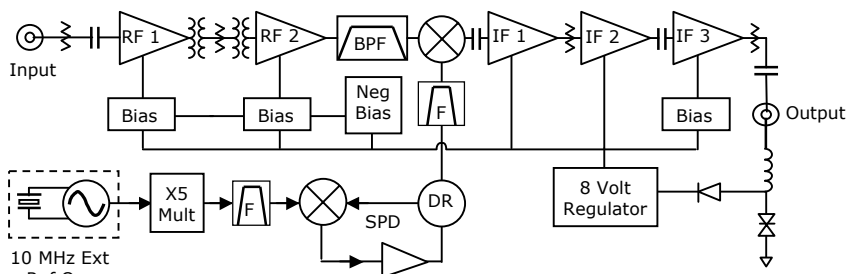
Mechanical Specifications

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

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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Orbital Research Ltd.,
 14239 Marine Drive
 White Rock, BC Canada V4B 1A9