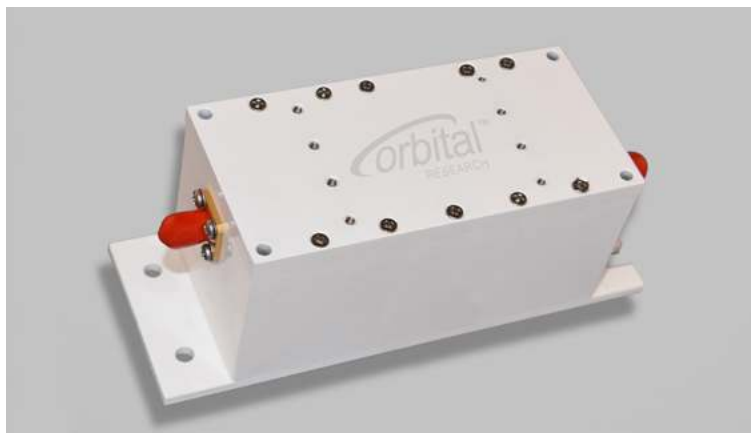




Ka-band BDC with fixed local oscillators



Orbital Ka-Band Block Downconverters (BDCs) with Fixed Local Oscillators provide bandwidth of up to 1 GHz and can be tuned anywhere in the following Ka frequency bands: 18.2 to 20.2 GHz and 20.2 to 22.2 GHz. These BDCs deliver superior performance for broadband Ka satellite communications – and their flat frequency response supports high data rate applications with very low bit error rates (BER).

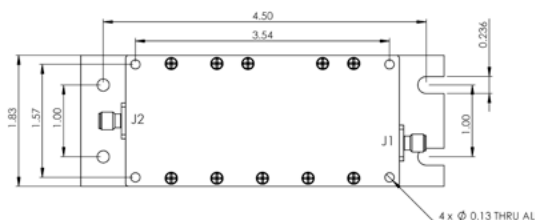
- External referenced for stability
- Exceptionally low phase noise
- Preset signal gains from 20 to 40 dB
- Linearity for higher-order modulation schemes
- Options for temperatures up to 70°C

Applications

Our Ka-band BDCs with fixed frequency oscillators are designed for broadband commercial, military and BSS satellite communication (SATCOM). Applications include large satellite teleports, small earth stations – and anywhere a user wants reliable access to the Ka spectrum.

[Airborne versions are also available.](#)

Unlike an LNB, BDCs are used after an external low noise amplifier (LNA). This means you can connect multiple BDCs to a single LNA without affecting the noise figure of the system. BDCs let you receive signals from the entire satellite spectrum – with IF outputs at appropriate frequencies for your demodulators.

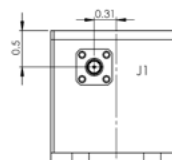
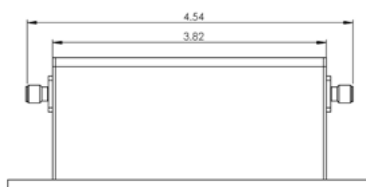
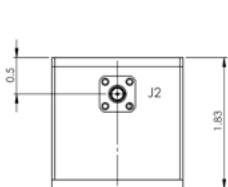


Connections:

J1: RF in SMA Female 50 ohm
J2: IF out+DC in+ 10M in

Finish:

MIL-DTL-55412 Type II Class 3 and outside surfaces painted white



FREQUENCY RANGE	COMMERCIAL LOW BAND	COMMERCIAL HIGH BAND	MILITARY BAND	BSS BAND
Input RF Freq GHz	18.2 to 19.2 (17.7 to 18.2 Optional)	19.2 to 20.2	20.2 to 21.2	21.2 to 22.2
Output RF Freq MHz	950 to 1950 (950 to 1450 Optional)	950 to 1950	1000 to 2000 (950 to 1950 Optional)	950 to 1950
Local Oscillator(s) - Non-Standard LOs Available	17.25 (16.75 Optional)	18.25	19.20 (19.25 Optional)	20.25
LO Stability Locked to External Reference - see Options Section	Y	Y	Y	Y
Output Bandwidth GHz	1.0 (0.5 Optional)	1.0	1.0	1.0

NOISE FIGURE

10 dB typical @ 25°C

VSWR

Input 2.0:1 nominal

Output 1.5:1 nominal

GAIN

Gain 20 to 40 dB

Flatness +/- 1.5 dB over 1 GHz

Ripple +/- 0.15 dB per 10 MHz

Stability +/- 0.25 dB max over 24 hours @ +25°C

ENVIRONMENTAL

Operating Temp -40°C to +60°C

Operating Altitude 10,000 ft. ASL

Operating Relative Humidity 100% Condensing

Standards RoHS & REACH

CONNECTOR OPTIONS

Input SMA (S), SMK (K), APC3.5 (APC)

Output N (N) or SMA (S)

PHASE NOISE MIL-STD-188-164

10 Hz -32 dBc/Hz max

100 Hz -62 dBc/Hz max

1 KHz -72 dBc/Hz max

10 KHz -82 dBc/Hz max

100 KHz -92 dBc/Hz max

1 MHz -102 dBc/Hz max

10 MHz -112 dBc/Hz max

POWER¹

DC In +16 to +26 VDC

Current Draw 280 mA max

Interface via IF Connector

OPTIONS

Remote Data Connection for M&C via Micro DB9
(-RDC ordering option)

Extended Temp to +70°C (-ET ordering option)

Improved Gain Over Temp (-GT ordering option)

Other Frequency Bands available please contact Orbital Research

Phase Locked Loop Local Oscillator please contact Orbital Research

OTHER SPECS

LO Leakage - Output -45 dBm max

LO Leakage - Input -45 dBm max

Image Rejection -40 dBm max

P1 dB +10 dBm min, +15 optional

OIP3 +20 dBm min, +25 optional

Overdrive -20 dBm non-damaging

Weight 450 grams

Please contact Orbital Research for ordering
information: sales@orbitalresearch.net

¹ Power supplies must meet 100 mV Maximum Ripple and Noise