



Ka-band BDC with multiple local oscillators



The Orbital Ka-Band Block Downconverter (BDC) with Multiple Local Oscillators delivers market-leading performance for broadband Ka satellite communications. This BDC provides bandwidth of up to 1 GHz and lets you switch between different Ka frequency bands: 18.2 to 20.2 GHz and 20.2 to 22.2 GHz. Its flat frequency response supports high data rate applications with very low bit error rates.

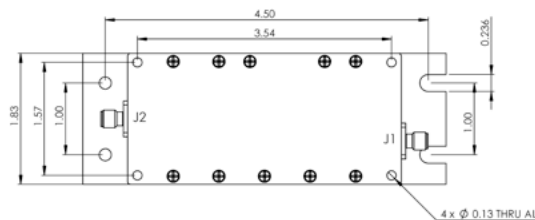
- External referenced for stability
- Exceptionally low phase noise
- Preset signal gains from 20 to 40 dB
- Linearity for higher-order modulation schemes
- Options for temperatures up to 70°C

Applications

Our Ka-band BDC with multiple local oscillators is designed for mobile commercial, military and BSS SATCOM applications that require switchable access to 4 GHz of Ka spectrum.

[An airborne version is 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.

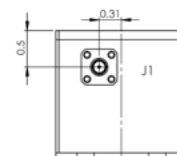
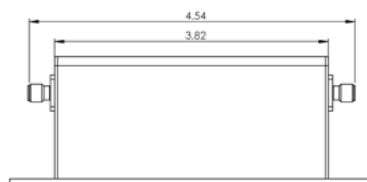
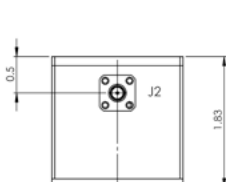


Connections:

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

Finish:

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



FREQUENCY RANGE	LOW BAND	HIGH BAND
Input RF Freq GHz	17.7 to 20.2	20.2 to 22.2
Output RF Freq MHz	950 to 1950	1000 to 2000 & 950 to 1950
Local Oscillator(s) Preset as per user requirements (2 or more LOs per BDC)	Standard are 16.75, 17.25 and 18.25 (others available)	Standard are 19.20 and 20.25 (others available)
LO Stability Locked to External Reference - See Options section	Y	Y
Output Bandwidth GHz	1.0 max	1.0 max

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 any 27 MHz

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

DC Level Band Switching (-DCS ordering option)

Push Button Band Switching (-PBS ordering option)

Open Collector Input Band Switching (-OCS ordering option)

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)

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 dB 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