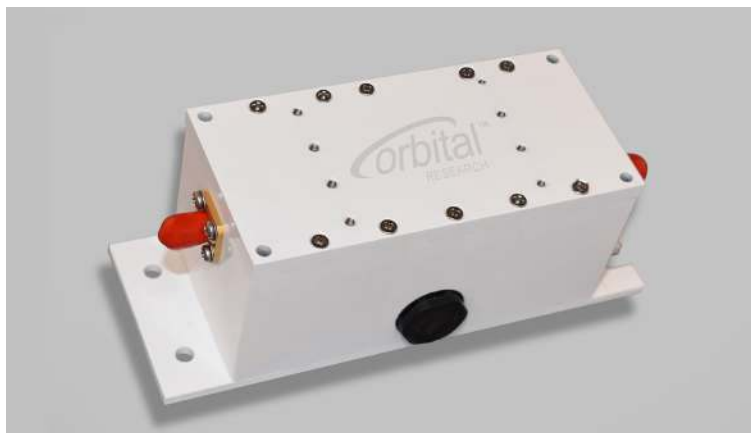




## Ka-band Airborne BDC



Built for airborne SATCOM and in-flight connectivity, these Ka-band block downconverters (BDCs) deliver market-leading performance and reliability in a ruggedized package. They come with either multiple or 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 (option: 17.7 to 20.2 GHz) and 20.2 to 22.2 GHz. Like all

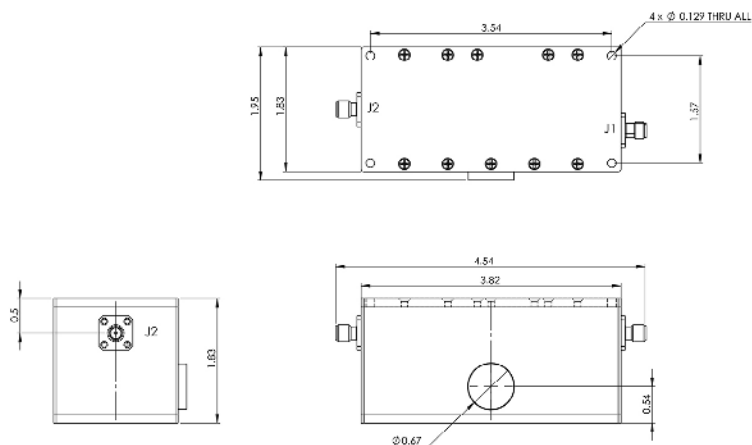
Orbital BDCs, they support high data throughput with very low bit error rates.

- 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 airborne BDCs are designed for military, commercial and BSS broadband applications – and can provide access to 4 GHz of Ka spectrum. They are built to AS9100 standards and operate reliably at high altitudes, extreme temperatures, and in turbulence. Whether they're installed in-cabin or externally, these BDCs can help meet demand for fast airplane wifi and in-flight entertainment.

*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	18.2 to 20.2 option: 17.7 to 20.2	20.2 to 22.2
Output RF Freq MHz	950 to 1950	1000 to 2000 & 950 to 1950
Fixed and Multi-LO Options Available	Standard are 17.25 & 18.25 (others available) option: 16.75	Standard are 19.20 & 20.25 (others available)
LO Stability Locked to External Reference	Y	Y
Output Bandwidth GHz	1.0 max option: 500 MHz	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 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  
50,000 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

## POWER

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)

## OTHER SPECS

LO Leakage -Output -45 dBm min

LO Leakage -Input -45 dBm max

Image Rejection -40 dBm min

Spurious (inband): <-65 dBc

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](mailto:sales@orbitalresearch.net)