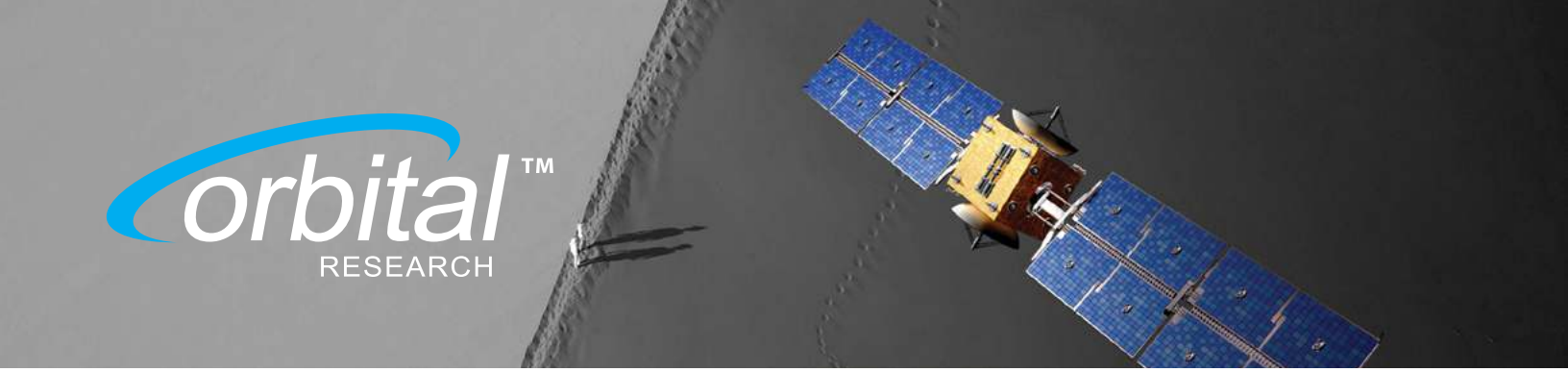
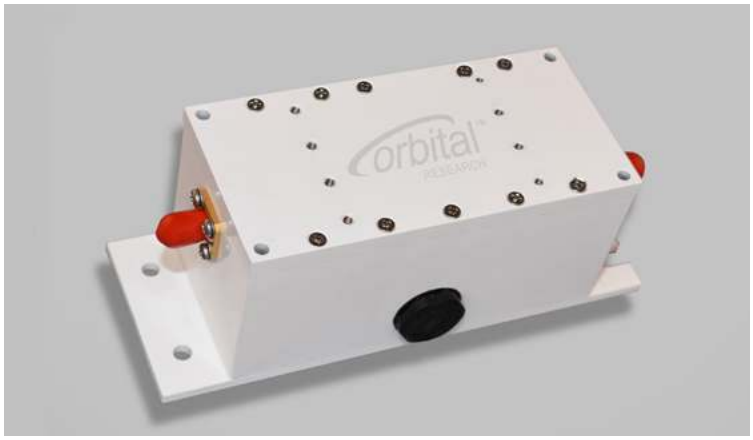


Ku-Band Airborne BDC



Our airborne block downconverters (BDCs) for Ku-band are built to support reliable in-flight connectivity and meet the extreme environmental conditions on aircraft. They come in two versions: fixed local oscillator (for a single Ku region) and multiple local oscillator (for multiple Ku regions). Like all Orbital BDCs, they enable high data rate applications with very low bit error rates.

- External referenced for stability
- Low phase noise for maximum data throughput
- Preset signal gains from 20 to 45 dB
- Linearity for higher-order modulation schemes
- Options for temperatures up to 70°C

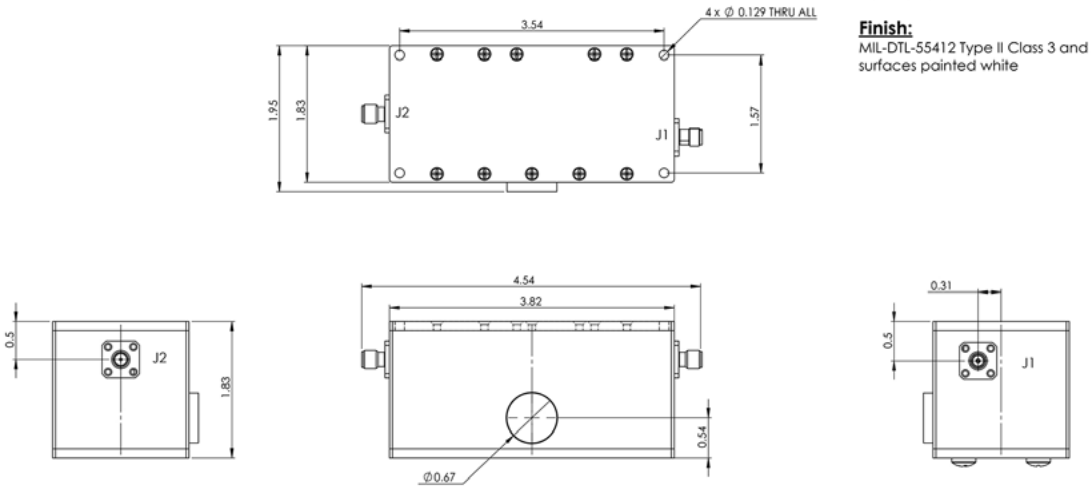
Applications

These BDCs are for military and commercial airborne SATCOM applications and can help customers provide reliable in-flight wifi, communication and entertainment. Built to AS9100 standards, they are designed for high altitude operation, high vibration environments and extreme thermal cycles – and can operate either in-cabin or externally with the antennas.

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



MODEL NUMBER: BDCKUAIR

FREQUENCY RANGE	LOW BAND	HIGH BAND	WIDE BAND
Input RF Freq GHz	10.7 to 11.7	11.7 to 12.75	10.75 to 12.75
Output RF Freq MHz	950 to 1950	950 to 2000	950 to 3000
Fixed and Multi-LO Options Available			
Local Oscillator(s) Preset as per User Requirements MHz	9.75	10.75	9.75
LO Stability Locked to External Reference	Y	Y	Y
Output Bandwidth GHz	1.0 max	1.05 max	2.05 max

NOISE FIGURE
10 dB typical @ 25°C

VSWR
Input 2.0:1 nominal
Output 1.5:1 nominal

GAIN
Gain 20 to 45 dB in 5 dB steps
Flatness +/- 0.75 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 50,000 ft. ASL
Operating Relative Humidity 100% Condensing
Standards RoHS & REACH

INTERFACES
Input SMA (S)
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[1]
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
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