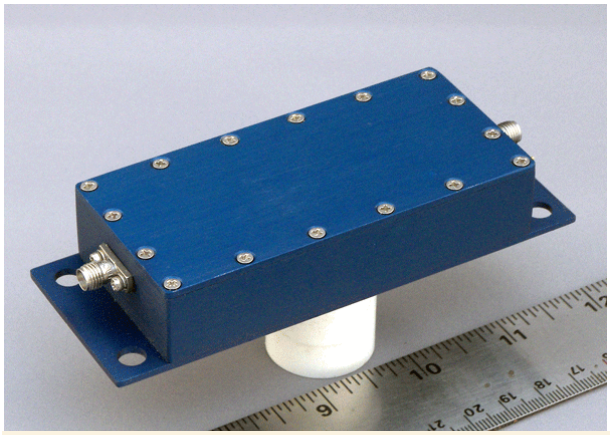


Orbital 692X Series

Ka External Reference BDC

Orbital Research.net

Choice of gain and LO Frequencies

How to order a 692X Series Orbital Ka Band External Reference BDC

Frequencies (GHz):

LO	Input	Output	Bandwidth
17.25F	- 18.2 to 19.2	.95 to 1.95	1.000
18.25F	- 19.2 to 20.2	.95 to 1.95	1.000
19.25F	- 20.2 to 21.2	.95 to 1.95	1.000
19.25F	- 20.2 to 21.3	.95 to 2.05	1.100
20.25F	- 21.2 to 22.2	.95 to 1.95	1.000
20.45F	- 21.4 to 22.0	.95 to 1.55	0.600

Bandwidth in MHz

'X' Signifies External Reference

BDC1925F-1000X-KS20

Input Connector
K - K (3.5mm)
R - Super SMA

Output Connector
F - F, 75 ohm
N - N, 50 ohm
S - SMA, 50 ohm
B - BNC, 50 ohm

Gain
20 - 20 dB
25 - 25 dB
30 - 30 dB
35 - 35 dB
40 - 40 dB

Orbital Flexibility:

A wide range of frequencies are available. When used in conjunction with a wideband Ka LNA, you can choose between multiple BDCs to select multiple Satellite signals.

"Mass-Custom" Solution

Orbital starts with a proven performance product that is extremely well engineered with the development costs amortized over thousands of units and the parts costs reduced by volume discounts. We then customize the mass produced DRO LNB into an external reference version 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
- Change the LO circuitry from DRO to External Reference PLL
- Optimize Input and Output for superior VSWR
- 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
- protected from shock, vibration, low power, over-voltage, surges, transients, and static discharge
- highest quality components insure against failure due to environmental extremes, such as arctic cold, Saharan heat, and rain-forest humidity

Options

- Other input / output frequency ranges available
- Custom IF amps capable of +17 dBm 3rd order intercept point
- Full test documentation available
- Custom design and labelling requirements welcomed

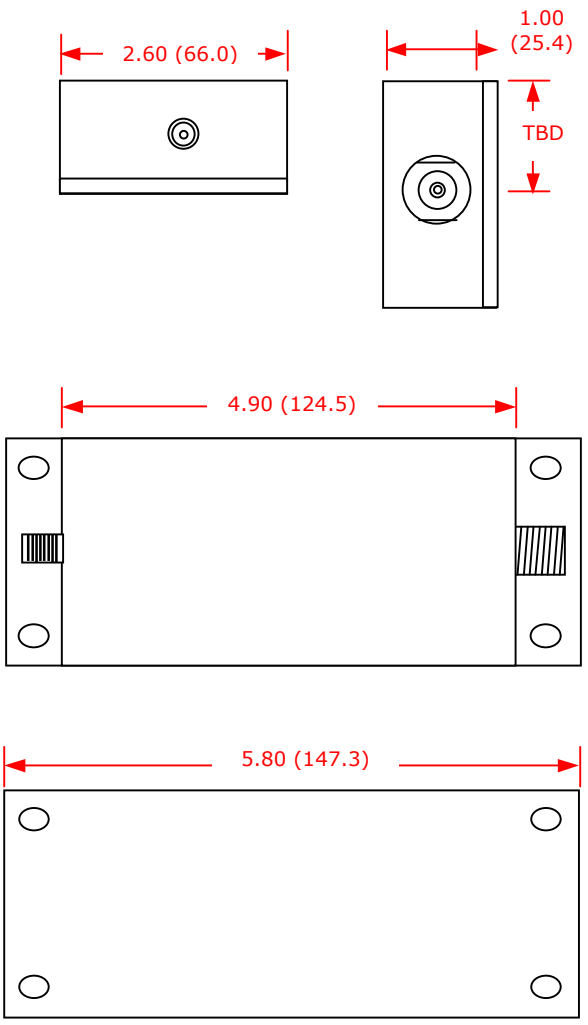
David Zuvic
Tel: 1-604-856-0305
dzuvic@orbitalresearch.net

www.orbitalresearch.net

Doug Macdonald
Tel: 1-647-992-1210
doug.macdonald@orbitalresearch.net

Orbital 692X Series Ext Ref Ka BDC Specifications

Mechanical Drawing



Electrical Specifications

Input

Frequency:	18.2 to 19.2 GHz, 19.2 to 20.2 GHz, 20.2 to 21.2 GHz, 20.2 to 21.3 GHz, 21.2 to 22.2 GHz, 21.4 to 22.0 GHz (Standard frequencies. Others available)
Bandwidth:	up to 1,100 MHz (depends on input freq)
Input Stability:	Unconditionally stable (no oscillation) for all possible input loads
Input VSWR:	2.5 : 1 nominal
Noise Figure:	<10 dBm @ 23°C configuration dependant
RF Impedance:	50 Ohms
Return Loss:	≥12 dB
Signal Level:	-70 to –40 dBm (-20 dBm max)

Output

Bandpass:	950 to 1950MHz (standard) Other outputs available
Output VSWR:	2.1 : 1 maximum @ 50Ω
Output Stability:	Unconditionally stable (no oscillation) for all possible input loads
1 dB Comp Point:	+3 dBm min, up to +7 dBm (optional)
3rd Order Intercept:	+13 dBm min, up to +17 dBm (optional)
Return Loss:	≥10 dB

10MHz Reference

Level:	-10 to 0 dBm

Local Oscillator

Frequency:	17.25, 18.25, 19.25, 20.25, 20.45 GHz (Standard frequencies. Others available)
Stability:	Dependent on external reference
Leakage:	-45 dBm maximum @ IF output & input

Phase Noise using Orbital POP 10 MHz reference Oscillator:

POP		MilStan 188-164
-65 dBc/Hz	@100Hz	-62 dBc/Hz
-80 dBc/Hz	@1kHz	-72 dBc/Hz
-85 dBc/Hz	@10kHz	-82 dBc/Hz
-101 dBc/Hz	@100kHz	-92 dBc/Hz

Gain

Preset Options:	20, 25, 30, 35, 40 dB
Variation over Temperature & Frequency:	±2.0 dB maximum
Gain Flatness:	±0.75 dB max over any 27 MHz segment
In-Band Spurious Rejection:	>45 dBc
Image Rejection:	>40 dB

Power

DC Input:	12 to 15 VDC, 250 mA maximum
Filtering:	Transient, over and reverse voltage protected

Mechanical Specifications

Size:	26 x 66 x 125 mm (without plate)
Weight:	350 grams
Paint:	Blue Anodyzed finish to MIL SPEC C-5541 Cat 3

Environmental Specifications

Operating Temp:	-35 to +55°C Airborne Temperatures, optional
Relative Humidity:	Up to 100% condensation & frost