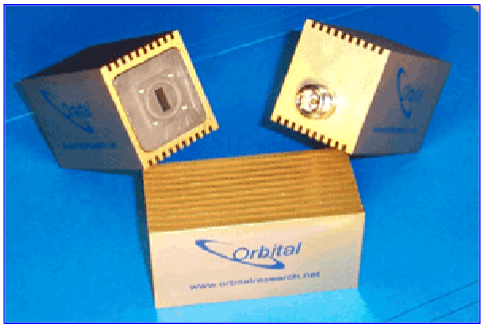
Orbital Research LNB692X

Lock and Load

the LNB692X Ka Band External Reference Low Noise Block Downconverter



Why an External Reference DRO?

Phase lock loop designs double phase noise as well as drift when they are raised to Ka frequencies. However, DRO designs maintain low phase noise while drift is eliminated through the use of an External Reference. Orbital is proud to introduce the phase locked DRO Ka external reference LNB.

Why do I need this level of quality?

The move to Ka is NOT trivial. While you have to worry about factors such as atmospheric absorption, dish accuracy and positioning, and feed VSWR and occlusion - you can eliminate concerns about phase noise, drift, noise figure, dynamic range, custom frequency and bandwidth issues by moving to the Orbital LNB692X Ka Band External Reference LNB.

What models are available?

Our first MilSatCom version was at 19.25 GHz, but global deployment at Ka requires custom LO frequencies, and Orbital currently produces for Intelsat, Eutelsat, SES, and Optus satellites. Clients can also select bandwidth/LO combinations to meet their specific requirements - commercial or military.

How about a 10 MHz External Reference Source?

Naturally, optimum performance can be achieved by using our Master Oscillator or Precision Oscillator for your external reference source. This integrated package of LNB, reference oscillator, and bias tee/mux and power supply provides true plug and play capability - lock and load!

Built from the best, from the inside, out

Engineered using the highest quality components insures you from failure due to environmental extremes, such as Arctic cold, Saharan heat, and rain-forest humidity. Our custom housing is milled from a solid aluminum billet, and allodyned to MIL SPEC C-5541 Cat 3 for superior grounding and heat dissipation.

LNB692X Ka Band External Reference Low Noise Block Downconverter

Milsatcom Proven:

- Low phase noise
- Good flatness
- Good noise figure
- Absolutely stable to the limit of 10 MHz source
- Small size minimizes dish occlusion and thereby maximizing antenna gain
- Machined from a solid aluminum billet, and allodyned to a MIL SPEC C-5541 Cat 3 finish for endurance and superior grounding
- Protected from manmade conditions such as shock, vibration, low-power, over-voltage, surges, transients, and static discharge

- Performance is consistent and replacements will match or exceed your original device
- Design enables improved heat dissipation for best performance
- Frequency and bandwidth can be modified in 50 MHz increments to a bandwidth maximum of 1.00 GHz

Specifications

Electrical Specifications:

Input

Frequency:	18.2~19.2, 19.2~20.2, 20.2~21.2 GHZ
Bandwidth:	1,000 MHz
Input Stability:	Unconditionally stable (no oscillation) for all possible input loads
Noise Figure:	1.8 dB maximum @ 23 °Celcius
Input VSWR:	2.5 : 1 nominal

Output

Bandpass:	950 up to 1950 MHz
Output VSWR:	2.1 : 1 maximum at 75W
Output Stability:	Unconditionally stable (no oscillation) for all possible input loads
3rd Order Intercept:	+13 dBm minimum, up to +17 dBm (optional)

Local Oscillator

Frequency:	17.25, 18.25, 19.25, 20.25 GHz
Stability:	Dependent on external reference
Leakage:	-45 dBm maximum @ IF output & input
Phase noise:	Dependent on external reference

Gain

Nominal Gain:	50, 55 dB
Variation over Temperature & Frequency:	±2.0 dB maximum
Gain Ripple:	1 dB p-p maximum over any 33 MHz segment
1 dB Compression Point:	+3 dBm minimum, up to +7 dBm (optional)

Power

DC Input:	12 VDC, 450 mA maximum
Filtering:	Transient, over and reverse voltage protected

Mechanical Specifications

Size:	45 x 51 x 115 mm (With F connector)
Weight:	350 grams
Finish:	Gold Allodyne (MIL SPEC C-5541 Cat 3

Environmental Specifications

Operating Temp.:	-40 to +60 °Celcius
Relative Humidity:	Up to 100% condensation and frost

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Level: +3 dBm Stability: ±1.5 x 10^{-7}, +10 to 40 °Celcius Aging: ±1 x 10^{-6} per day after 30 days ±5 x 10^{-6} per year after 180 days Phase Noise: 100Hz -130 dBc/Hz 1kHz -147 dBc/Hz 10kHz -148 dBc/Hz 100kHz -148 dBc/Hz	Level: +3 dBm Stability: ±1.5 x 10^{-7}, +10 to 40 °Celcius Aging: ±1 x 10^{-6} per day after 30 days ±5 x 10^{-6} per year after 180 days Phase Noise: 100Hz -130 dBc/Hz 1kHz -147 dBc/Hz 10kHz -148 dBc/Hz 100kHz -148 dBc/Hz	Thermal stability: ±5 x 10^{-8}, 0° to + 50° Celcius Stability: ± 1 x 10^{-9} per day after 30 days Aging: ± 5 x 10^{-7} per year after 180 days Phase Noise: 10 Hz -120 dBc / Hz 100 Hz -145 dBc / Hz 1 kHz -160 dBc / Hz 10 kHz -165 dBc / Hz 100 kHz -165 dBc / Hz