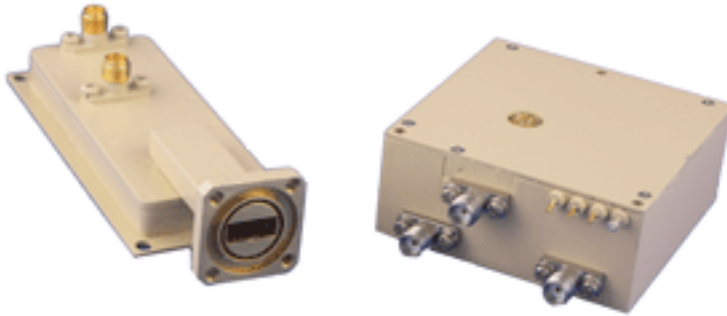


LRO692X SERIES LNB



**Ka BAND
EXTERNAL REFERENCE
Remote LO LNB**



Ultra small and light weight Ka external reference LNB

How to order an LRO692X Series Orbital Ka Band Remote LO External Reference LNB

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
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

LRO1925F - 1000XS-WN

Output Frequency Range

S - Standard 950 - ____ MHz
M - Military 1,000 - 2000 MHz

Input Connector
Ka LNB is WR-42

Output Connector

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

Orbital Flexibility:

Ka systems offer the promise of higher bandwidths, faster data, and smaller, lighter terminals. However, conventional LNBs tend to be large and heavy, causing increased requirements in size and weight of supporting structures, and require heavier motors to move the increased mass. As well, mobile applications mean exposure to vibration, temperature, and moisture extremes. Electronics at the feed then require stringent environmental housings to protect delicate circuits and assure stable operation under extreme environmental conditions. Orbital Research solves these problems by cutting the LNB in half and moving sensitive components off the feed to a more secure position behind the dish - leaving the low noise and lightweight LNA, mixer and IF amp in a small, secure package at the feed. Now, the antenna is much lighter and much more agile.

Orbital Features:

Custom Engineering

- MIL STD-188-164A Interoperability of SHF Satellite Communications Earth Terminals.
- FAA RTCA DO-160E Environmental Conditions and Test Procedures for Airborne Equipment
- MIL-STD-810F
- Meets RoHS requirements

Environmental

- O ring sealed connectors for weather resistant operation
- Preserve the environmental engineering of the original LNB

Options

- Other input / output frequency ranges available
- External Reference of 10 MHz

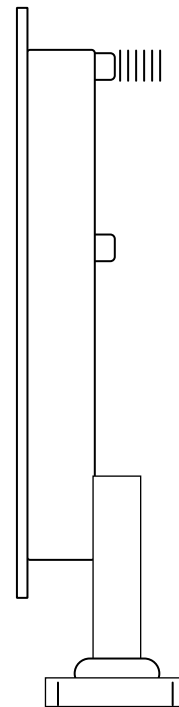
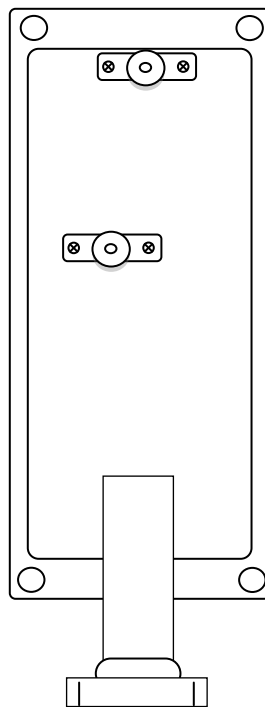
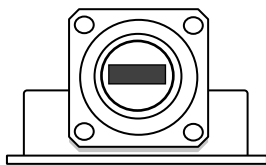
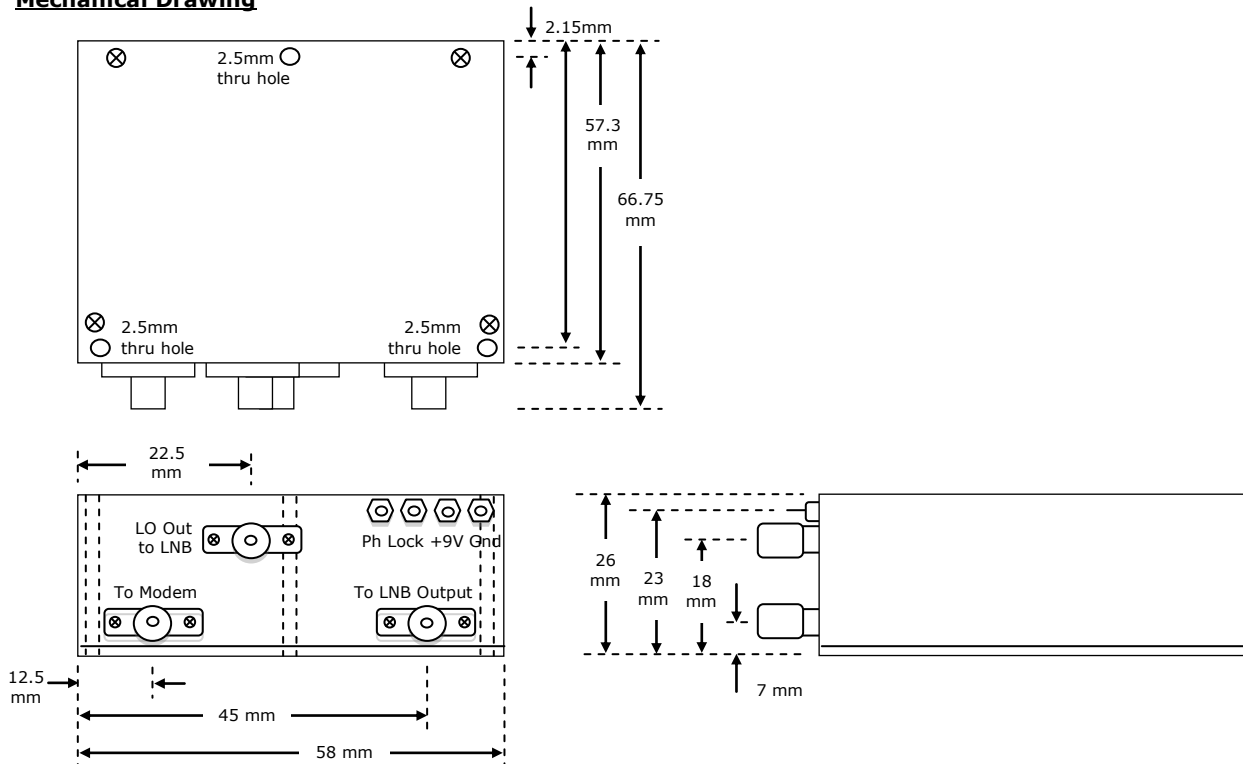
14239 Marine Drive,
White Rock, BC
V4B-1A9 Canada

Unit 126 - 1160 Yew Ave,
Blaine, WA
98230, USA

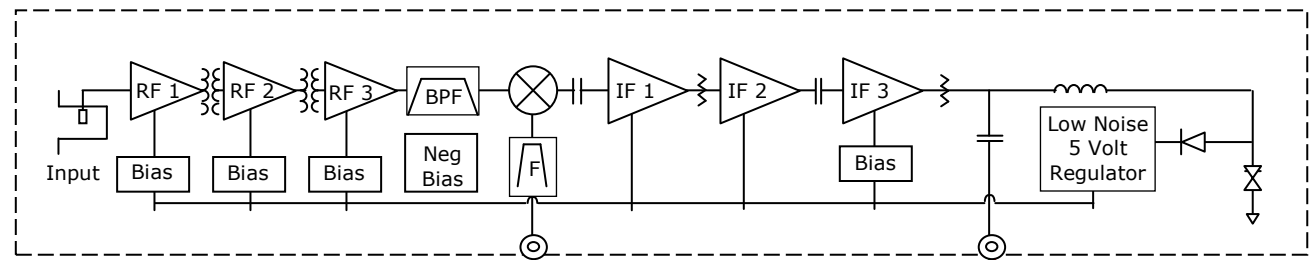
Tel: (604) 856-0305, Fax: (604) 856-0315
davidzuvic@orbitalresearch.net
www.orbitalresearch.net

Orbital LRO692X Series Ext Ref Ka Remote LO LNB Diagrams

Mechanical Drawing

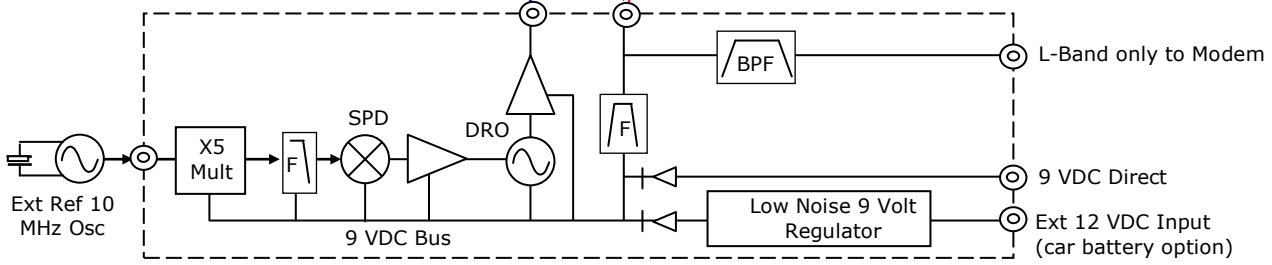


Block Diagram



LO Input

L-Band output,
DC 9 volt input



L-Band only to Modem

9 VDC Direct

Ext 12 VDC Input
(car battery option)

Orbital LRO692X Series Ext Ref Ka Remote LO LNB Specs

KaRLO

Ka systems offer the promise of higher bandwidths, faster data, and smaller, lighter terminals. However, conventional LNBs tend to be large and heavy, causing increased requirements in size and weight of supporting structures, and require heavier motors to move the increased mass. As well, mobile applications mean exposure to vibration, temperature, and moisture extremes. Electronics at the feed then require stringent environmental housings to protect delicate circuits and assure stable operation under extreme environmental conditions. Orbital solves these problems by cutting the LNB in half and moving sensitive components off the feed to a more secure position behind the dish - leaving the low noise and lightweight LNA, mixer and IF amp in a small, secure package at the feed. Now, the antenna is much lighter and much more agile.

KaRLO meets or exceeds the following standards:

1. MIL-STD-188-164A Interoperability of SHF Satellite Communications Earth Terminals.
2. FAA RTCA DO-160E Environmental Conditions and Test Procedures for Airborne Equipment.
3. MIL-STD-810F.
4. Meet RoHS requirements.

Mechanical Specifications

Size: 45 x 51 x 115 mm
(with F connector)
Weight: 350 grams
Paint: Allodine finish to MIL SPEC C-5541 Cat 3

Environmental Specifications

Operating Temp: -40 to +85°C
Relative Humidity: Up to 95% condensation and frost

Electrical Specifications

Input

Frequency: 18.2 to 19.2 GHz, 19.2 to 20.2 GHz, 20.2 to 21.2 GHz, 21.2 to 22.2 GHz, 21.4 to 22.0 GHz
(Standard frequencies. Others available)
Bandwidth: up to 1,000 MHz (depends on input freq)
Input Stability: Unconditionally stable
(no oscillation) for all possible input loads
2.5 : 1 nominal
Input VSWR: 1.8 dB maximum, 1.2 dB nominal @ 23°C
Noise Figure: ≥12 dB
Return Loss: -90 to -40 dBm (-20 dBm max)
Signal Level:

Output

Bandpass: 950 to 1950 MHz (Standard)
1000 to 2000 MHz (Military)
Output VSWR: 2.1 : 1 maximum @ 75Ω
Output Stability: Unconditionally stable
(no oscillation) for all possible input loads
1 dB Compression 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
Stability: Dependent on external reference
Leakage: -45 dBm maximum @ IF output & input
Phase Noise based on supplied reference:

	Reference	LNB
-105dBc/Hz @10Hz		-32dBc/Hz
-130dBc/Hz @100Hz		-62dBc/Hz
-150dBc/Hz @1kHz		-72dBc/Hz
-150dBc/Hz @10kHz		-82dBc/Hz
-150dBc/Hz @100kHz		-92dBc/Hz

Gain

Typical: 55 dB
Variation over Temperature & Frequency: ±2.0 dB maximum
Gain Flatness: ±0.75 dB max over any 27 MHz segment
±1.0 dB max over entire bandwidth
In-Band Spurious Rejection: >45 dBc
Image Rejection: >40 dB

Power

DC Input: 12 to 15 VDC, 450 mA maximum
Filtering: Transient, over and reverse voltage protected