



Low Noise L-band Block Downconverter



Features

- Low noise figure, 0.5 dB typ.
- Conversion gain, 52 dB typical
- Higher gain version available (special order)
- High stability phase locked oscillator
- Temp. stability, ± 2.5 ppm
- Low phase noise
- O-ring sealed 'N' connector
- Weatherproof O-ring sealed machined aluminum case

Applications

- GOES GVAR & LRIT reception
- Meteosat Second Generation (MSG) HRIT, LRIT and existing Meteosat PDUS reception
- MTSAT HiRID, LRIT and GMS SVISSR reception

Description

The next generation of geosynchronous weather satellites, including Europe's MSG (Meteosat Second Generation) and Japan's MTSAT (Multi-functional Transport Satellite), have been designed to provide users with upgraded data quality and quantity by implementing improved high and low speed digital downlinks based on industry standard protocols. The LNB-1691 has been specifically designed for these new digital formats.

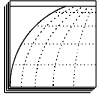
The LNB-1691 is particularly suited for use in systems that require the highest performance from a small antenna. Typical receive system noise temperatures of 70K and G/T of greater than 15db/K can be expected when using the LNB-1691 with a good quality 12 ft (3.7 meter) antenna and the SFD-1691 scalar feed.

The LNB-1691 is designed to mount directly to the SFD-1691

Scalar Feed to eliminate cable losses for maximum performance. If small antenna size is important, the LNB-1691 can be used with the SFD-1691 to provide a high efficiency extremely low noise front end. When this configuration is used on a 7.5 ft (2.3 meter) antenna a receive system G/T of greater than 10.5 dB/K can be achieved.

The LNB-1691 is a block downconverter that incorporates a phase locked and temperature compensated local oscillator. The low phase noise of the LNB-1691 is essential for quality reception of the downlinked digital data.

Satellite data reception front ends constructed from the LNB-1691, SFD-1691 and the MetCom DSP Receiver have been engineered to provide the ultimate in reliable performance from existing and next generation weather satellites.



(specifications subject to change with out

Electrical

Noise Figure	0.5 dB (38 K) typical
Input Center Frequency	1691.000 MHz
Local Oscillator Frequency	1553.500 MHz
Output Center Frequency	137.500 Mhz
Converted Bandwidth	50 MHz @ 3 dB typical
Conversion Gain standard model	>50 dB, 52 dB typ i cal
Conversion Gain high gain model	>70 dB, 72 dB typical
Image Rejection	>60 dB,790 dB typ i cal @ 1416 MHz
Input / Output Impedance	50 ohms
Output 1dB Compression Point	>+10 dBm
Local Oscillator Stability	±2.5 ppm (-30 to +60 °C)
Local Oscillator Type	Internal PLL locked to TCXO
Phase Noise	-94 dBc/Hz @ 10 KHz typical -114 dBc/Hz @ 100 KHz typical
Input Voltage	+10 to +15 VDC @ 350 ma typical Power provided on IF output cable

Environmental

Temperature (operating)	-40 to +60 °C (-40 to 140 °F)
Humidity	100%

Mechanical

Connectors	Type 'N' female
Size	4.21" x 2.53" x 1.11" (107.4 mm x 64.3 mm x 28.0 mm)
Weight	0.9 lb (0.4 kg)
Construction	Machined Aluminum Case, O-ring sealed, painted white

System Usage Notes

A typical NVG system for the reception of Geosynchronous Meteorolglcal satellite digital downlinks would pair the **LNB-1691** Downconverter with a **SFD-1691** high efficiency scalar feed. The feed and downconverter would be mounted to a commercial quality 3 to 3.7 me ter (10 to 12 foot) antenna. Typical system performance with a 3.7 meter antenna would pro vide 15 dB/K G/T.

The output of the downconverter would be connected to a MetCom DSP SG Receiver to provide state of the art weather satellite reception.