

DEM LLNAWB Low Noise Amplifier

Overall Specifications:

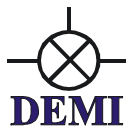
Frequency in MHz	Minimum Gain in dB	Maximum Noise Figure in dB
50	12.0	4.50
144	22.0	1.00
222	20.0	0.70
432	20.0	0.60
902	18.0	0.60
1296	15.0	0.60
1420	14.0	0.70
1575	13.0	0.70
1691	13.0	0.80
2000	12.0	0.90
2304	9.0	1.10

P1dB	>+17dBm output
Input VSWR	>10dB @ 300 – 2000MHz
Output VSWR	>17dB 300 - 2000 MHz.
Voltage	+7 - +22 VDC
Curent Drain	65 mA nominal



Description:

This new design utilizes the latest PHEMT MMIC technology to produce a LNA that is a wide band low noise amplifier with imunity to overload. The LLNAWB design does not offer any RF bypass switching for transceiver operation and therefore may only be utilized in receive only applications. It is offered with various types of RF connectors and connector combinations to allow any LNA to be “dropped in” to any pre-existing system or is ready to be a component in a newly developed receive system.



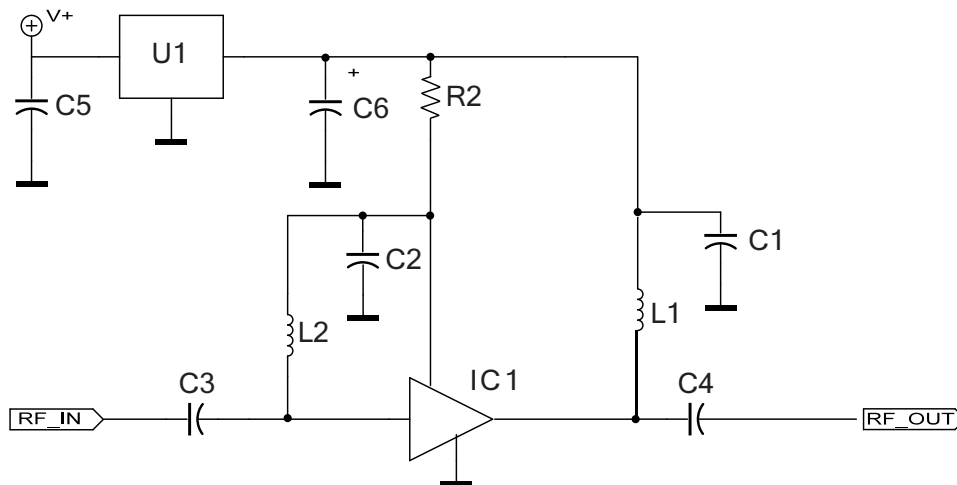
Installation and Operation:

Depending on your application, the LLNAWB may be installed anywhere in your system to increase gain. To maintain or improve the systems noise figure requires the LNA to be installed as close to the systems antenna as possible. If you plan to utilize this LNA in a transceive system with transmit bypass relays, be sure of their isolation characteristics and transmit power handling capabilities before transmitting. Use only interconnecting cables and/or adapters that are rated for use at or above the intended frequency of use. Inadequate cabling or cables with poor shielding may cause system instabilities, signal loss, or undesirable intermittent operation. Test any sequenced scheme before applying transmit power to avoid mishaps.

The connector marked **INPUT**, is to be connected to the antenna side of the system. The **OUTPUT** is connected to the receiver side of the system. Expected performance with the LNA correctly installed should be overall improvement in gain and system noise figure of the receive system. The proper installation of an LNA becomes more important if you make this installation in a harsh RF environment. The gain bandwidth of the LNA is very wide. This may result in the passing of strong out of band signals that may cause the overloading of your receiver resulting in increased inter-modulation. This design utilizes an output circuit that allows the use of very narrow band external filtering between the LNA and receiver. If IMD is experienced, a filter should be implemented. With any receive installation, practice system gain management by not cascading amplifiers to solve system noise problems without adequate filtering. Too much system gain will degrade the receive systems dynamic range.

Be sure both input and output ports are terminated before applying DC voltage to the LNA. If you desire to pre-test the LNA in a test bench environment before installation, do not apply more than +0dBm to the input and expect gain compression at levels above this input level output. Do not exceed +14dBm input. Please use standard lightning protection for all installations.

Schematic Diagram of the LLNAWB



LLNAWB