

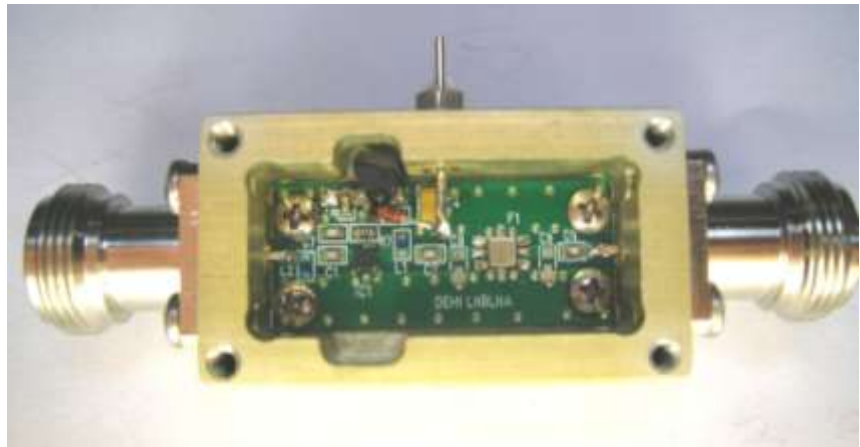
DEM NBLNA-AP Low Noise Amplifier

Specifications:

Gain:	17dB nominal
Frequency Range	4330-438 MHz
Noise Figure:	<0.5dB
P1dB without Damage	+13dBm output
Input VSWR:	>6dB 500 - 3500 MHz
Output VSWR:	>10dB @ design frequency
Voltage:	+4.5 - +6.0 VDC through Output Connector
Current Drain	70 mA nominal

Description:

The DEM NBLNA-AP is a new design in our NBLNA series (Narrow Band Low Noise Amplifier) utilizing the combination of PHEMT and SAW filter technology to produce a LNA that is very immune to out of band interference. The active component is the QORVO QPL9547 MMIC amplifier. The difference between the two models is the selection of the



Band Pass filters. The LNA's do not offer any RF bypass switching for transceiver operation and therefore may only be utilized in receive only applications. It is offered with a robust machined enclosure and various types of RF connectors and connector combinations. Overall enclosure size without connectors is 1.75" L x 1.0" W x 0.9" H

Installation and Operation:

Depending on your application, the LNA 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. 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.

The connector marked **IN** (Input), is to be connected to the antenna side of the system. The **OUT** (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 just wide enough at the specified operating frequency to obtain a low noise figure. This still may result in the passing of strong but “close in frequency” out of band signals that may cause the overloading of your receiver resulting in increased inter-modulation. This new design utilizes a SAW band pass filter in the output circuit that will eliminate all but the strongest of interferences.

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, because of the SAW filters dissipation factor, do not apply more than -10dBm to the input if testing linear response. At levels above -10dBm, expect some gain compression. The input is protected with a DC path to ground to eliminate static build up from rain or wind but may not survive levels of EMP developed by lightning. Please use standard lightning protection for all installations.

Schematic Diagram :

