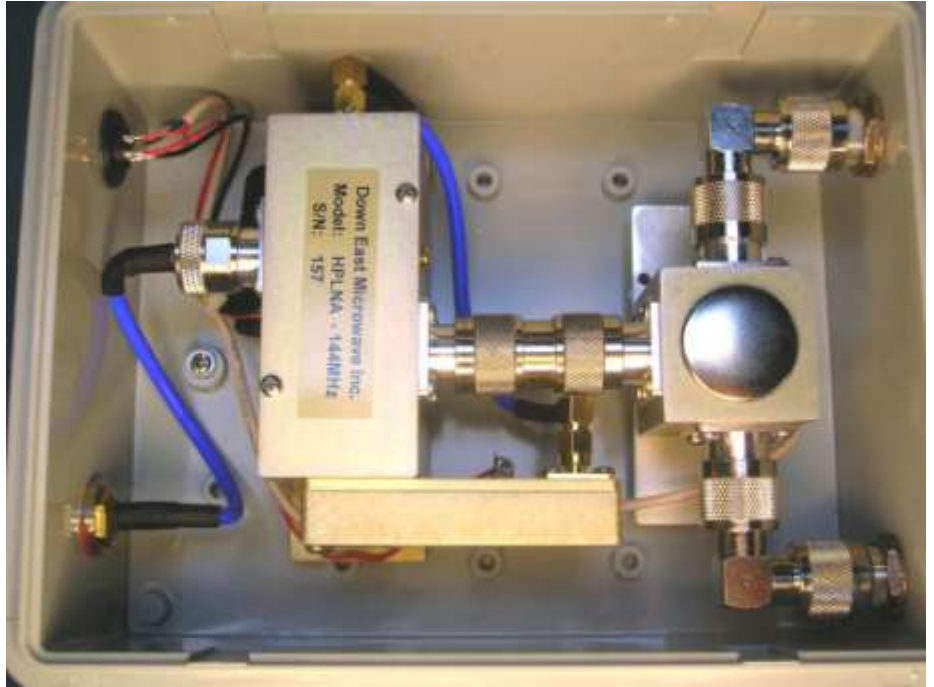


DEM HPLNADP- XXX MHz.

Legal Limit Switching LNA for Dual Polarity EME Systems

The DEM HPLNADP is a combination of our DEM DTR, VHF LNA and TR-1 relay. This combination will allow two separate antenna systems such as a dual polarity EME array, to be attached to one transceiver system. It utilizes high quality type "N" connectors for all RF connections. The DTR and VHF LNA are combined through the DTR's high isolation ports providing complete transceiver function. The TR-1 is on the Antenna side of the HPLNA and provides the two separate antenna port selection.



Pictured in the Weather Proof Option Enclosure

The basis of this total system design is standard vacuum relays that have been selected for their insertion loss isolation, and switching time (6ms) characteristics. This coupled with the high voltage and current breakdown specifications of vacuum relays, and high quality type "N" connectors, the complete system may be utilized at legal limit RF power levels from 50 to 450 MHz.



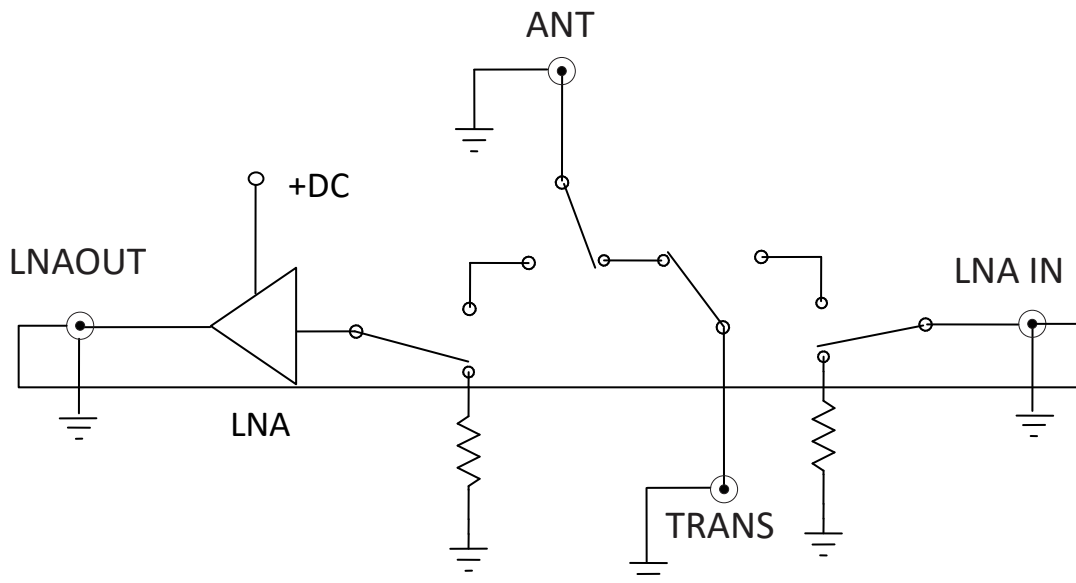
The HPLNA and VHFLNA are switched to the RX position by providing a +12VDC voltage during receive. To transmit, the +12VDC is disabled. This provides LNA bypassing during TX and keeps the LNA bypassed when the Total system is shut down. The HPLNA is designed as a single band device and is only available on the Amateur Radio bands of 6M, 2M, 1.25M and the 70 CM bands. Performance of the LNA is similar to our standard VHF LNA product line producing >17 dB Gain and under a 0.6 dB Noise Figure. Connecting the DEM TR-1 to the antenna side of the HPLNA

allows the LNA system to be connected to two separate antennas.

The mechanical design contains various mounting holes (Tapped and Clearance for #4 screw) to be attached into a weather proof enclosure for mast mounting or custom installation. A weather proof mast mountable version as shown is available.

Antenna Port to Port Specifications

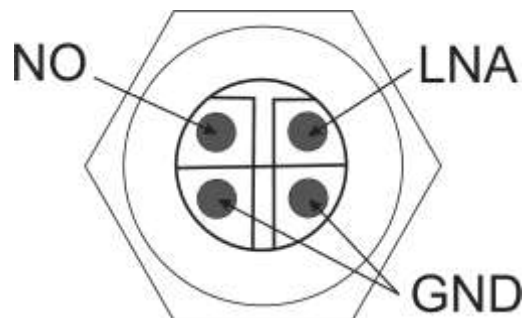
FREQUENCY	Isolation
50 – 54 MHz	>48dB
144 – 148 MHz	>31 dB
222 – 225 MHz	>27 dB
420 – 450 MHz	>21 dB



Schematic shows (without Dual ANT port relay) relay in TX position, DC removed. All 4 relays fire at once during RX.

Instructions and Cautions

1. No voltage is required for transmit or to bypass the LNADP. DC is applied for receive only and simplifies sequencing. To bypass the LNA, remove DC power and you can still operate at full TX power. This also provides a bypass of the LNA when the station DC power is shut down.
2. The relay is rated for continuous "Power On" service. Total current during receive is 450 ma. Transmit is 0 ma (Normally Open port energized adds 200 mA)
3. Use good quality RF cable for the desired frequency to maintain HPLNA specifications.
4. Normal 12 VDC (11- 17 VDC) operating voltage is standard but custom 24 VDC units are available. They would be marked as 24VDC. By the DC input connections.
5. The internal LNA isolation relays will protect the LNA from a bad antenna VSWR.
6. Vacuum relays will resist contact arcing from lightning and high improper keying during transmit but repeated instances will result in contact pitting and/or welding. Be sure to prevent lightning and be sure to sequence the relay with your high power amplifier.



Power Connector wiring looking from outside of the enclosure.