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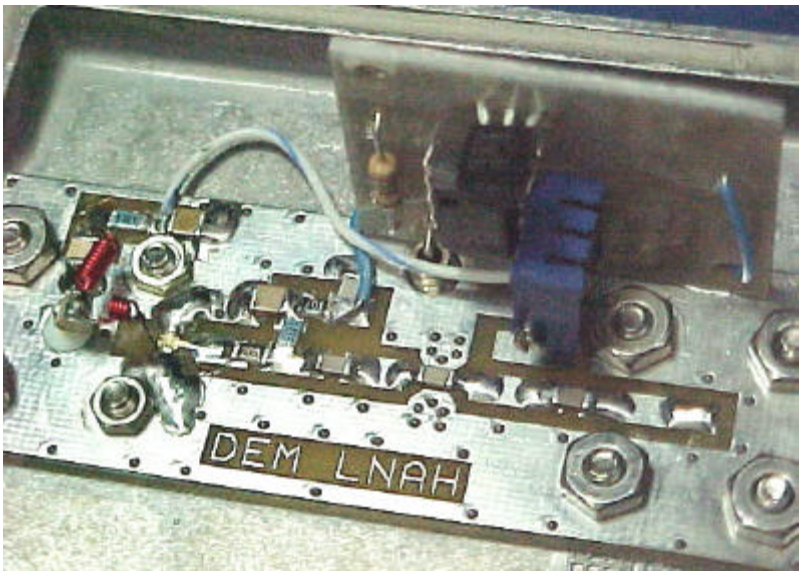
DEM33ULNA - *900-930 MHz. Low Noise Amplifier* >17dB Gain
DEM23ULNA - *1240 -1300 MHz Low Noise Amplifier* >17dB Gain
DEM1420ULNA - *1400 -1500 MHz Low Noise Amplifier* >16dB Gain
DEM1500ULNA - *1500 -1650 MHz. Low Noise Amplifier* >16dB Gain
DEM1691ULNA - *1650 -1800 MHz. Low Noise Amplifier* >15dB Gain

Specifications:

Noise Figure:	<0.4dB
IP3 output	+15dBm
Input VSWR:	>6dB @ design frequency
Output VSWR:	>10dB DC - 3 GHz.
Voltage:	+7 - +16 VDC

Product Description:

The DEM ULNA is a series of **U**ltra **L**ow **N**oise **A**mplifiers intended to be used for Radio Astronomy applications, amateur EME communications or weak signal satellite reception This series of ULNA's produced by Down East Microwave Inc. share a common design from 900 through 1800 MHz. Each model listed above is optimized depending on the frequency requirement. The ULNAs utilize the latest in PHEMT technology and are designed for applications requiring the lowest noise figure possible. All of the ULNAs are receive only and do not provide any RF bypass switching circuitry. Standard gains of our ULNAs range from15 - 17 dB depending on frequency. All noise figures for this series of ULNAs are below 0.4dB. The ULNAs are adjusted on an individual basis for the best performance possible.



Our ULNA design incorporates a low loss series inductor input circuit and a resistive loaded output circuit. During testing, the input circuit is optimized for gain and noise figure. The resistive loaded output circuit, is adjusted to control the gain and is tested for a constant wide bandwidth output impedance. This resistive load impedance absorbs products caused by reflections from band pass filters or high Q receiver front ends. We do not use tuned output circuits or baluns in our ULNA designs. Tuned output circuits and baluns do not offer constant output impedances over wide bandwidths and may cause out of band instabilities from reflected signals. Tuned circuits may also require readjusting if a cable length or the characteristics of a filter changes.

The ULNA's can be provided with type "N" or SMA connectors that are mounted on a weather proof die cast aluminum enclosure that measures 3.75" L x 2.5" W x 1.375" H. This designis also available in a standard die cast enclosure if desired. Both of these enclosures enhances RF insusceptibility and protects against stray external EMI. DC power is applied through a Pi-circuit feed through filter connector which is a simple external solder connection that attenuates frequencies through 18 GHz. It may also may be applied through the coax. Specify preference at the time of order. Higher gain versions may be available for some design frequencies. Please consult DEMI with your requirements. The 23ULNA design is also offered in kit form.

ULNAs with operating frequencies, configurations, gains and noise figures not found on our price list or product descriptions can be designed by Down East Microwave Inc. and produced with relatively short delivery times. Please contact us with your specifications and/or requirements.

Schematic Diagram of 33, 23, 1420 ,1500, and 1691ULNA Design: