



DEM 23LNAWPO - 23cm ATV Low Noise Amplifier

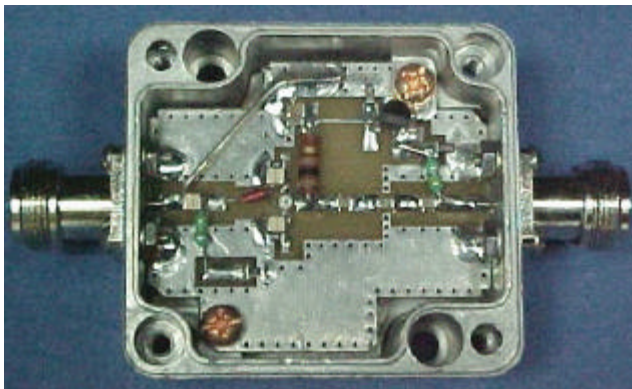
Specifications:

Gain:	13dB nominal
Noise Figure:	< 1.0dB
P1dB:	+ 20dBm output
Input VSWR:	> 6dB @ design frequency
Output VSWR:	> 10dB DC - 3 GHz.
Voltage:	+10 - +16 VDC



Product Description:

The DEM 23LNAWPO is a modified version of our LNAWP series of low noise amplifiers. The LNAWPO was specifically designed for ATV use but may be used in any harsh Intermod environment in place of our standard LNA or LNAWP. The design attenuates or eliminates desense on the 23 cm ATV band caused when operating full duplex by transmitting on 70 cm. Each LNAWPO is optimized for it's own specified band of operation. All LNAWPOs are assembled in weather proof enclosures and are designed for receive only applications. This design does not offer any RF bypass switching circuitry. Our LNAWP design utilizes a single gate GaAs FET that has been developed for low noise applications yet it is robust enough to withstand high levels of IMD. Standard gains of our LNAWPOs are nominally 13 dB. All noise figures for the LNAWPOs are below 1.0dB. The LNAWPOs are specifically biased for the highest P1dB (1 dB compression point maximum @ +20 dBm output) which will in turn produce the best 3<sup>rd</sup> order intercept or IMD performance possible while obtaining the gain and noise figure specified.



Down East Microwave Inc.'s LNAWPO low noise amplifier design incorporates a shunt L, series L input circuit and a resistive loaded output circuit. During the test process, the input circuit is optimized for gain, noise figure and attenuation below 500 MHz. The resistive loaded output circuit, is adjusted to control the gain and is tested for a constant wide band-width 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 LNA 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 returning if a cable length is changed or when various types of filters are used or tuned after being connected to the output of the LNA.

This LNAWPO design is provided with type "N" as standard but SMA connectors may be specified. The weather proof die cast aluminum enclosure measures 2.5" L x 2.25" W x 1.375" H. This enclosure enhances RF insusceptibility and protects against stray external EMI. DC power is applied through the coax in the standard LNAWPO but a DC Pi-circuit feed through filter connector with a simple solder connection may be specified at the time of order. Higher gain models are not available with this design!

LNAWPOs with different operating frequencies and configurations 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 LNAWPO Design:**

