



High Performance HF Receiving array Systems And Components

Hi-Z Antennas™ Hi-Z Amplifier V2



Stock Number HIZ-AMP-V2

The Hi-Z Antennas™ HIZ-AMP-V2 is an impedance converting amplifier that can be used with Hi-Z Antennas arrays or any other system needing a high impedance converted to drive a 75 ohm load. These amplifiers are generally used to extract signals from a shortened vertical antenna. Their amplitude and phase accuracy make them particularly suitable for use in multi element receiving arrays. This makes them compatible for use in all the current Hi-Z Antennas array products as well as the YCCC receiving arrays for the amateur lower frequency bands. In addition, they can be used to make a single element e-probe type of a receiving antenna.

The amplifiers primary purpose is to interface a shortened element such as a 20 foot length element on 1.8 MHz and below to 75 ohm coaxial cables feeding into a combining circuit. The combining circuits can then synthesize multi-element receiving arrays.

News Flash.. These Hi-Z amps were involved in the first 475 KHz record QSO from W3 to VK4

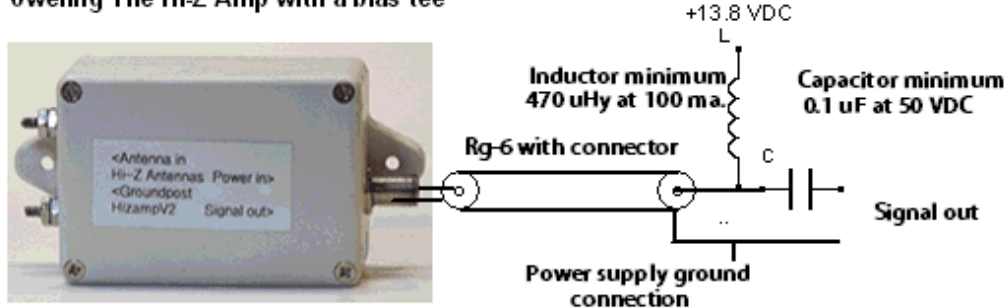
- These amps operate from 13.8 Volts DC (+11 to +14) at .04 amps each
- Power is supplied via the output coaxial connector by an internal Bias Tee
- Output RF impedance is a nominal 75 ohms providing cable impedance matching
- The front view size is 4 1/2 X 2 1/4 inches Depth is 1 1/4 inches including input and output connectors plus mounting tabs
- Input connectors are universal stainless-steel screw terminals
- Output connector is a high-quality RG-6 coaxial cable connector
- The Antenna Ground input terminal is AC coupled to eliminate any ground related DC current
- The Antenna Input terminal is DC coupled and by design carries approximately 7 VDC
- The amplifier input Resistance is approximately 54KOhms in parallel with 12 Picofarads
- The voltage gain into a 75 ohm load and fed with a large coupling capacitance is 0.50
- Phase tracking between multiple amps is typically less than 1 degree at 1.8 MHz

- Amplitude tracking between multiple amps is typically less than 1% error at 1.8 MHz
- Bandwidth is typically greater than 10 MHz for amplitude and phase tracking
- RF bandwidth is typically greater than 50 MHz
- These amps are protected with a Gas discharge tube in addition to diode clamping
- Amplifier supply overvoltage is protected by an MOV device
- The Output connection provides a nominal 5KOhms of common mode protection at 1.8 MHz

To use these amplifiers simply connect them between your antenna element and the Antenna inputs of a suitable array that supplies their operating voltage. The ground is carried over the shield of the RG6 coax cable.

To power them for other purposes, use this schematic. A larger capacitor will be needed if 137 KHz or 475 KHz operation is required.

Powering The Hi-Z Amp with a bias tee



* To inject signals into one of these amplifiers with a signal generator you must use an AC coupled source due to the Approximate 7 VDC present at the input!

To measure the DC present on the antenna input terminal you must ground the voltmeter at the RG-6 connector shell as the Groundpost connector is AC coupled.

These amps are water resistant however we have no control over how your RG-6 cable is protected. Coax sealing grease such as "STUF" should always be used in RG-6 connections as well as taping or boot installation.

These amplifiers would normally be installed by connecting the amp through an RG-6 cable direct to the array or a Receiver antenna input. The amp output can also be sent over any 75 ohm cable to the shack or to an impedance matching 75 to 50 ohm transformer for 50 ohm receivers.

Anyone attempting service of these amps must be prepared to work with Surface Mount components.

THANK YOU for selecting Hi-Z Antennas™.

Hi-Z Service Department

We do maintain a service area where we try to provide very rapid turn around of repairs. Typically we can return repaired equipment within a few business days. Our GOAL is to keep your array uptime maximized. All repairs are returned as designed and thoroughly tested to meet our advanced internal specifications.

More information is available at
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