HIGH PERFORMANCE

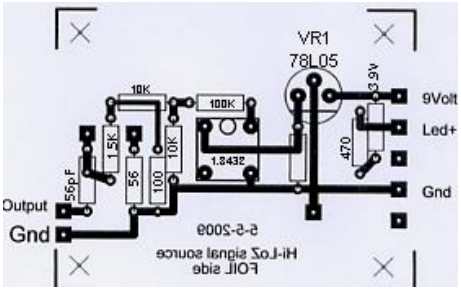
HF RECEIVING SYSTEMS & COMPONENTS

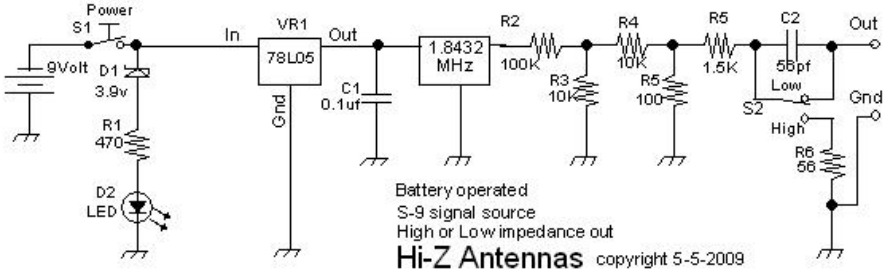
Hi-Z Antennas™ - 160 Meter Signal Source

160 Meter Signal Source

1.8432 MHz S-9 signal source
The array builder's friend

This signal source was designed to produce a 50 uV signal (S-9) into a 50 load. It also provides a 50 uV signal through 56pf for testing High impedance arrays. While providing an S-9 signal in the low Z mode it will not normally read S-9 with a high impedance system. Most High impedance arrays have various gain stages changing the level of the signal to the receiver. The signal as provided is stable and can be used for High impedance comparison purposes. The LED indicator is designed to extinguish when the battery is discharged can no longer maintain a stable signal output. The unit uses any standard 9-volt clip-on battery. The unit will operate for many hours depending on the quality of the battery used.





>>Testing with the Signal Source<<

First, be very aware that there are DC voltages on some of the signal lines in an array. In particular, there is +13.8 VDC at the Antenna inputs on an array controller and can be +5 VDC on the Hi-Z amp inputs. Use only the High impedance mode on the Signal Source product when connecting to these ports carrying DC.

A series of tests were set up to trouble shoot a system such as a 4-Square receiving antenna.

First, the signal source was fed directly into the receiver tuned to 1.8432 MHz. When activated in the Low-Z mode, which is made for 50-ohm systems, the receiver reads S-9.

Second, the Signals Source was fed through a 75 to 50 ohm transformer into the same receiver settings. 75 ohms being on the Signal source side. The receiver read S9.

Third, 175 feet of 75-ohm cable was added and the signal source was fed to the receiver through the cable and the 75 to 50 ohm transformer. The receiver signal read S8½.

Fourth, a power injector was added to the cable and transformer. The receiver signal level remained at S8 ½.

Fifth, 50 feet more cable was added to this system and the reading remained at S8½.

Sixth, a Hi-Z antenna preamp was added and the Signal Source was switched to the Hi-Z mode. The Hi-Z amp was then powered through the power injector. The receiver read S9+10dB.

And last, the power injector was removed and a 4-Square controller was added in its place. The system was first a Hi-Z amp driving 50 feet of cable. This cable was attached to Antenna 1 input on the 4-Square controller. A power supply was connected to the controller so it and the Hi-Z amp would be powered. All phasing lines were attached to the controller and unused inputs were terminated using AC coupled 75-ohm terminators. The output of the controller was fed through the 175-foot cable and 75 to 50 ohm transformer into the receiver. The reading was S9.

These results may vary by significant amounts with different length cables. Open, or shorted switches, cables, or connectors become immediately obvious by testing in these manners.

Once an operating system has been installed it would be a great idea to record the signal levels for each part of the system. Then, test the system each year to verify all connections are working.

THANK YOU for selecting Hi-Z Antennas™.

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