

My LongWire Antenna.

Design Info based on this [W8JI article](#).

His information is available on his [website](#), and is extensive and easy to read.

my system is build from his Long-Wire "[Basic Simple System](#)" [on this page](#) .

and a very informative analysis of [counter-poise on this page](#)

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and there is much, much more.

[Documentation for W8JI Long Wire Antenna \(click for PDF version of this page \)](#)

My [Wiji LongWire](#) is 180 to 225 ft long, up at 17 ft, running in the shape of "Z", and connected to the antenna tuner via a Current Balun to keep RF out of the shack.

52 Ohm coax is 17' long .

To **adjust for lowest SWR** on 40 and 20,

I roll up the far end of the antenna about 6' at a time, into a simple hand-loop.

This adjustment gathered fist sized loop is taped securely and hooked on my fence at 5' off ground.

Then I go into the shack, and vary the antenna-tunner, until lowest SWR.

Certain antenna lengths give 10Mhz, 14Mhz, 18Mhz,

while the standard adjusted length gives 3.5Mhz, 7Mhz, 10Mhz, 14Mhz at near 1:1 at the Antenna-Tuner.

80M tunes narrowly. 40M and 20M tune broadly, both 1:1 .

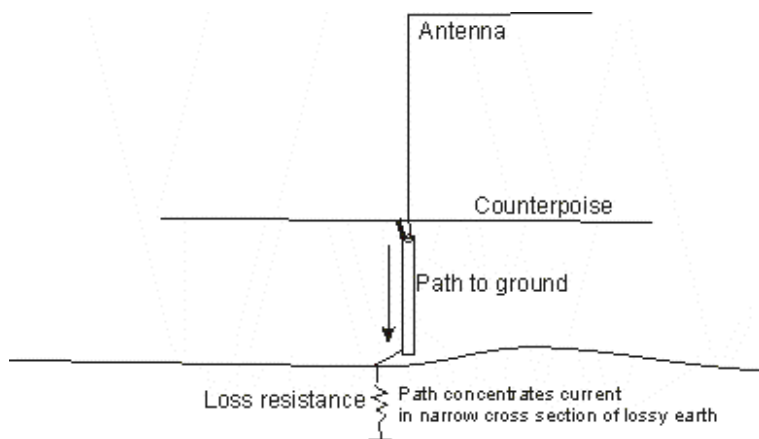
Results:

I run 1 W QRPp/CW into the Long-Wire,

and have worked all states, and half of Europe, and Hawaii,

with my HW-8 1977 tranceiver.

It Seems to be efficient enough for my ONE WATT 20M system.



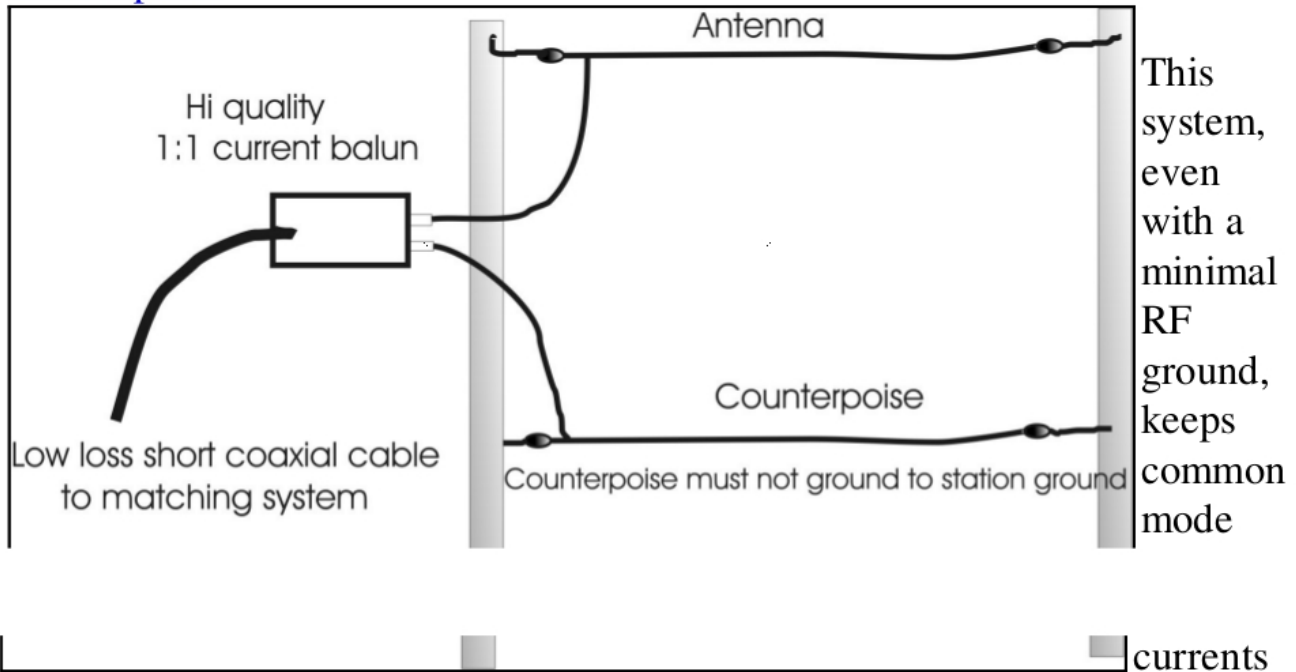
The **Counterpoise wire** runs down from the 17' pole, then along the brick side of the house, and attaches to the back fence, ungrounded. My counter-poise is about 20' long, and not grounded at the antenna. Ideally it would be a few feet of the ground, but mine is 10' up, 20' long.

The Counterpoise is not grounded to the earth and only grounded to the transceiver system. Only the Coax Shield is grounded, and only in the shack, at the Antenna-Tuner, along with the normal shack equipment grounds, and a very close ground rod. This Long-Wire is grounded only at the connection of the coax to the antenna tuner, grounded ONLY inside the shack, right at the tuner.

The Counterpoise is positioned off the feed-end of the "Z" shaped LongWire. The Long-Wire zig-zags across the house and back yard.

The **1:1 Current Balun** has been placed outside, at 17' where the Long-Wire and the counter-poise are attached. RF in shack is minimal.

counterpoise.



This system reduces noise and RFI. It generally eliminates the need for a shack "floor groundplane". The balun must be a reliable current balun with high common mode impedance. A voltage balun, or a single core 4:1 balun, will make things worse.

The counterpoise can be a ground system like radials instead of a single counterpoise. It just cannot connect back to the station entrance ground, or the balun's ground. If it is a single wire or a few wires, they should be insulated from earth and kept a little distance above earth. Ideally the single wire counterpoise should be directly under the longwire antenna, and a few feet above earth. Remember the counterpoise will have considerable current and voltage, and might be an RF burn or shock hazard.
