

September 2012 Edition - Vol 1 Issue 3

A publication of the Four State QRP Group and OzarkCon QRP Conference
www.4sqrp.com

Ozark QRP BANNER



Plan on being at the **BIG BRUTUS** Ham-Out Sept 8th & 9th

More information is at the club website
<http://www.4sqrp.com/index.php>



QRP'ers **September 8th** - 1st Annual Central IL Branch of the **4 States QRP Club** Meeting. Any and all interested QRP'ers and kitbuilders should plan to attend. We're planning on having at least one operating QRP station and there will be kits for sale from the 4SQRP Club.

<https://sites.google.com/site/cenoisarc/>

Index

SS-40 pg 2.....Getting started 500kc pg 3.....40-15 EFHW pg 5
160m EFHW pg 7Smoke Curls pg 11....Workbench News pg 13



SS-40

40M High Performance Superhet Receiver

Designed by Jim Kortge, K8IQY

Kitted and Offered For Sale by The Four State QRP Group

The SS-40 high performance receiver is the latest design effort from Jim Kortge, K8IQY. SS stands for "Stable and Sensitive". It exhibits the signature IQY extremely quiet amplifier chain. Disconnect the antenna and the receiver's noise floor is almost undetectable. A matched crystal IF filter provides a steep sided 500 cycle bandpass and outstanding opposite sideband rejection. Covering the 40M QRP "watering holes", a Super VXO provides 25-30 kHz of smooth stable tuning, and no perceptible drift even from a cold start. While easy to build, this is not a trivial kit. There are 150 parts, and when completed the resulting high quality receiver is a pleasure to use.

Intended as a companion receiver for the NS-40 transmitter, a Magic Box TR system between the SS-40 and NS-40 allows effortless transceiving, and RIT results since the receiver is independently tuned.

First time builders please note: This kit is not difficult to build. All parts are through hole except the main mixer, which is an easy to solder large footprint SMT part. The parts are wide spaced on the board making installation easy, and all connectors are board mounted which eliminates point to point wiring. After all the parts are installed it's ready to try out.

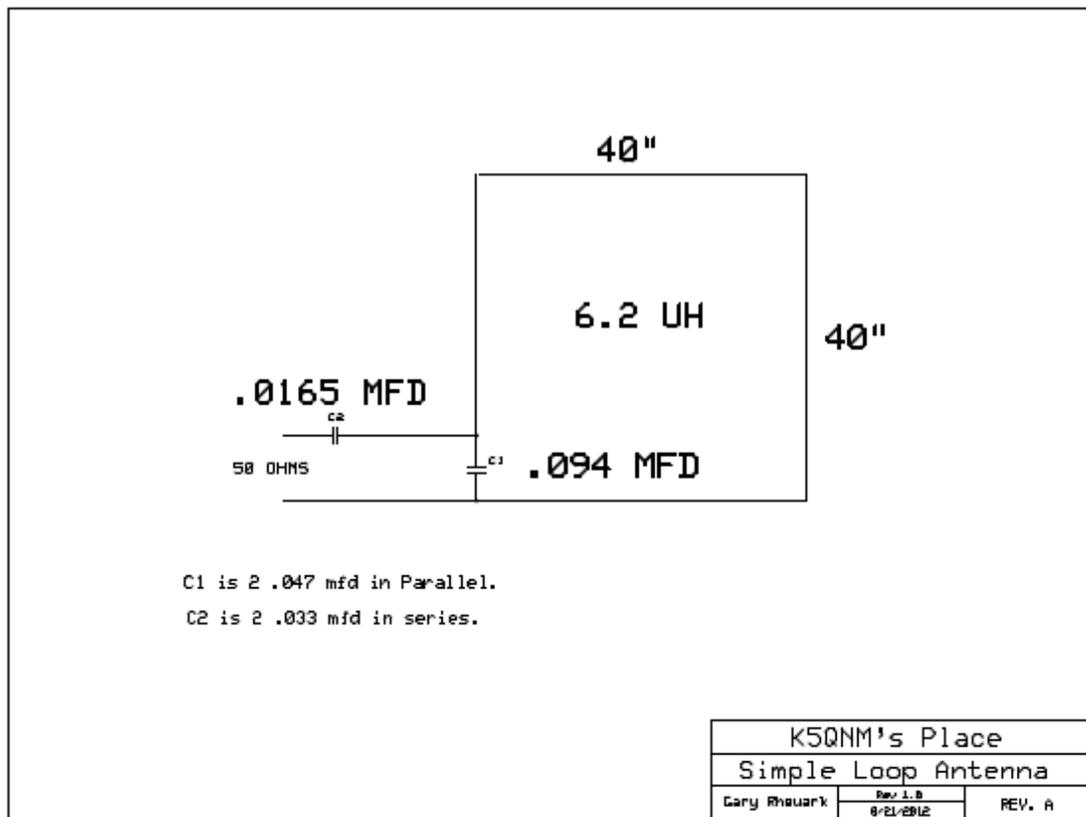
Don't wait, here is the order and info page,

<http://www.4sgrp.com/SS40.php>

Feature Article....by: Gary - K5QNM

A Getting Started Antenna

Gary Rheurk, K5QNM, Gainesville MO., 65655



Having a simple antenna to use for beginning transmitting or receiving is half the problem.

This article will show how to get a working antenna for three different bands, namely, the 500 khz band, the 472-479 khz band and the 160-180 khz band.

The Loop Inductor is a single strand of 12 guage wire inside 1/2" or 1" PVC tubing. To construct the Loop, you require 4 pieces of PVC tubing that are 40" long, along with 3 90° elbows and 1 TEE connector. You also will need PVC glue.

Constructing the Loop is simplified by loosely threading the wire through the tubing and elbows and then gluing everything up.

The Loop is a 6.2 UH inductor with 0.4 Ohms resistance. The Loop Radiation Resistance is right at 10 Nano-Ohms and is not going to be a contest winner when it comes to Radiated Field Strength, however, it is a good basic antenna to get started with.

At 187.5 khz, the Loop is 7.304 Ohms X_L and C_1 is 9.266 Ohms X_C and is thought of as being a parallel resonant circuit. The actual resonant frequency of 6.2 UH and .094 mfd is 208 khz and if the coax capacity doesn't pull the frequency down enough, some additional capacitance will be needed. About an additional 26,000 pf will pull the loop down to 185 khz.

The feed Impedance is about 60 Ohms.

To operate the Loop antenna on the 472-479 khz band, simply change C_1 's value from 120,000 pf and substitute the value of 18,000 pf. C_2 will be needed to be changed to 6200 pf.

For the 500 khz band, change C_1 's value to 16,000 pf and leave C_2 at 6200 pf.

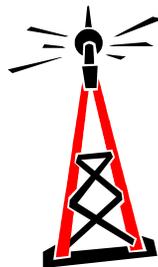
187.5 khz C_1 120,000 pf C_2 16,500 pf.

475 khz C_1 18,000 pf C_2 6200 pf. The Loop is the same for all 3 bands.

500 khz C_1 16000 pf C_2 6200 pf.

Not bad for a single wire Loop antenna to get started with.....Gary.....K5QNM.

Four State QRP Group
Where QRP and homebrew is alive and well!



On-the-Air Event: The Classic Exchange (CX) is a low key on air celebration of rigs of days gone by - particularly Boat Anchors. The latest CX Newsletter is available on the CX web site: www.classicexchange.org as well as details for the next CX on September 16th (for AM and SSB) and September 23nd (for CW). Please enjoy the newsletter, spread the word and join in the fun during the next CX.

73 Mac - WQ8U CX Newsletter Editor



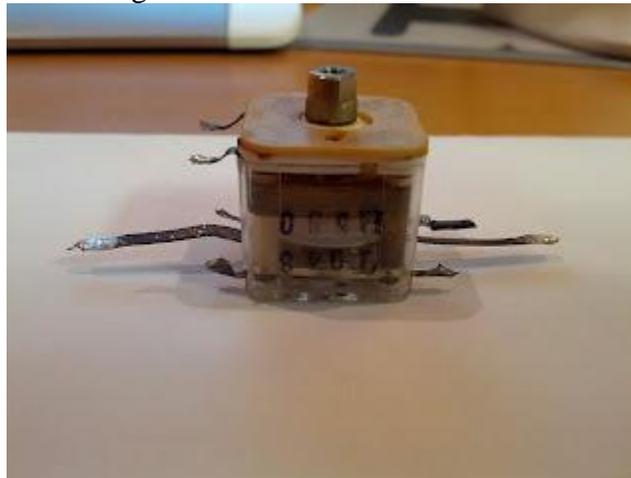
Build It !!!

Guest Article from T.J. – WØEA

[AA5TB End Fed Half Wave Tuner](#)

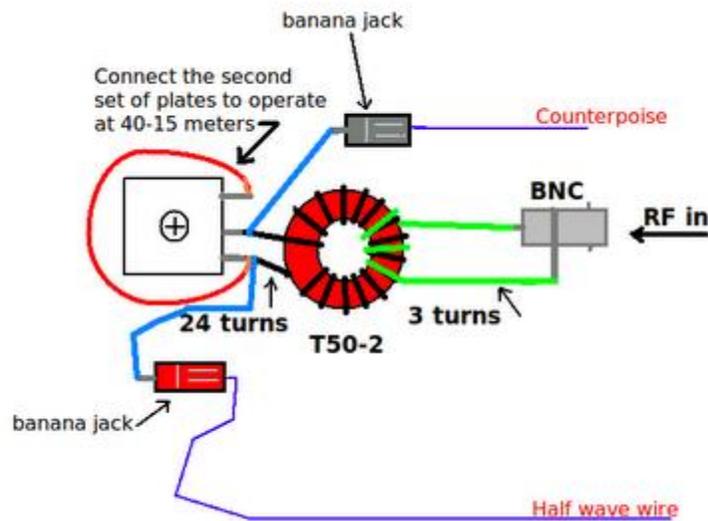
End Fed Half Wave antennas have been all the rage in QRP the last few years, and rightfully so, they are high efficiency, easy to deploy, and the simplest and lightest antenna you can pack. Many of us have been using the PAR EndFedz line (originally created by Dale Parfit, W4OP, now carried by [LNR Precision](#)) with great success. I have one of Dale's older QRP 10/20/40m models and it worked great for a long time but lately, for some reason, it does not want to tune up on 40 so I've been sticking to a random wire instead when in the field. I'd like to go back to the EFHW and I've always wanted to build one of those fancy EFHW tuners so I set off to do that yesterday. The missing link has always been the polyvaricon - a small variable capacitor often found in old transistor radios and the like. You can buy a set of 4 off of [QRP Kits](#) but they are pretty pricy.

Luckily, a friend of mine gave me an old Sanyo shortwave receiver a while back that was not working too well so I tore into it and was pleased to find a nice dual section polyvaricon, ripe for the taking.

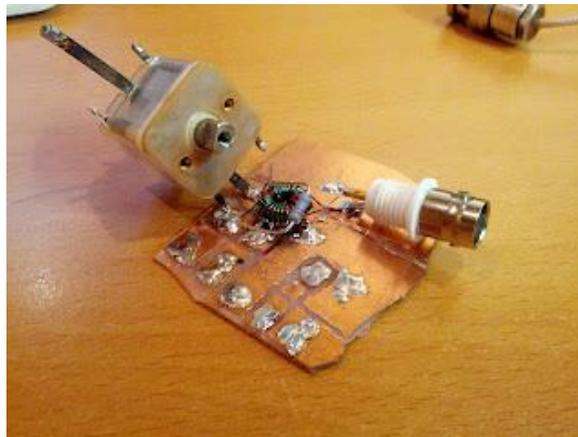


There are a bunch of other parts on that board that might be nice to have too: lots of can inductors, good looking caps etc. May have to rip this thing down further yet.

So now with the key component in hand, I could really get this thing going. The design I used was featured on [AD7BP's blog](#). It was originally designed by AA5TB.



As you can see, the design and construction are pretty foolproof. Here's my hacked together job:



I've got a 4.7kOhm resistor across the output for testing purposes and was pleased to find that I could get 1.3:1 SWR on 15-40m. Not too shabby! So I went ahead and boxed it all up nice and pretty and here's the end result:



Looks pretty sharp! I have not yet tried it on a real EFHW antenna but it does tune my doublet really well on 40m so apparently that is a pretty high impedance antenna there!

You might note that there is no SWR indicator on this tuner. After chatting with AD7BP, he said he didn't think you really need one and he's probably right. His argument is that the peak is so sharp that it is pretty easy to hear the SWR null and if you can get close enough, it will be within the tolerable range for most radios. In my brief testing, I found that to be the case but we'll see once we are using real wire!

Look for an update on the next portable outing!

Four State QRP Group Little Radios, Big Fun!
www.4sqrp.com



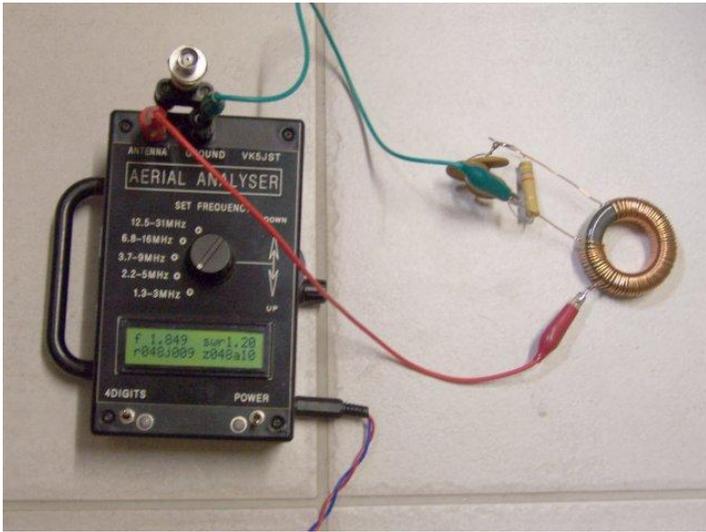
Build It !!!

Guest Article from Steph – VK5ZVS
(vk5zvs at via dot org dot au)

160m mini portable End Fed Half Wave Tuner - MkII.

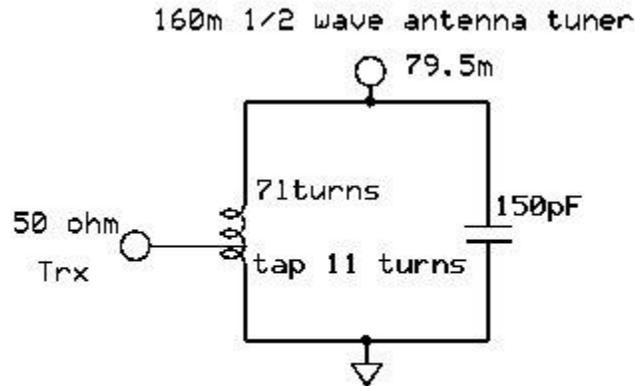
A small portable 160m EFHW tuner design.

This is the mini version of the previous version. The air core inductor is replaced with a toroid and the variable capacitor is replaced with a fixed capacitor combination.



Schematic

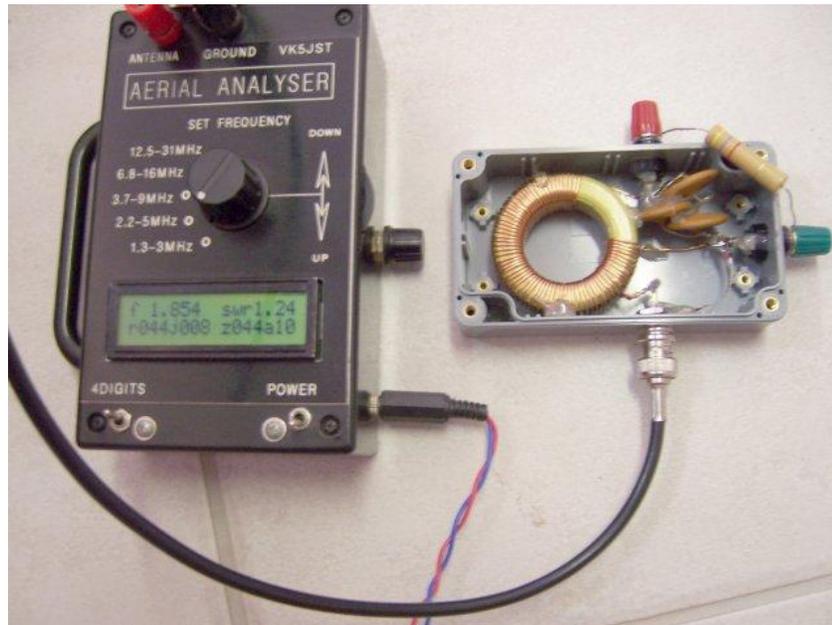
The schematic I've used. The capacitor is a fixed value because little tuning is required. The antenna can be further tuned by altering the length of the antenna. **UPDATE:** Practical field tests verified this - that altering the line length of the antenna (shortened by 2 metres in one instance) a vswr of 1:1 could be achieved.



T200-6 core, 1mm ecc wire
3 x 100pF 5kV

Put in a box.

Here's a photo of the bits in a box being tested.



Field testing.

What better way to test this set up than to conduct the 160m VK5 WIA callback on a Sunday morning! Not bad, considering the kite only came down once during the callback, went back up and stayed there. Low power and portable. Great day on the beach, too. The photo below shows the tuner connected in series with the broadcast reject filter feeding the radio using 50 ohm coax. The glove is for handling the kite wire!



Finished project

The final project with label. Another project completed. Just the thing to do, on rainy days



Portable kit

Most of what is seen here, is placed in the backpack (not shown) for the radio, with the exception of the kite (stored in it's own bag), the wire and spool assembly and fold-up seat (not shown), which are carried by hand.



Summary:

The setup for 160m and 40m using an end fed half wave tuner and a kite is simple and easy to setup. The results prove that good signal reports can be had using a half wavelength antenna with minimal grounding.



SMOKE CURLS..... by Jeff Davis, KE9V



It's a Racket

One of the things that I least enjoy about the hobby is logging.

There are at least a hundred reasons why but suffice it to say that it's an arduous task. Writing things by hand into a physical logbook takes us back to the days of the ancient scribes and what's more, it dead-ends the data in a paper file.

Then one day someone got the bright idea to make logging a computer driven task.

Great. Now the 50,000 entries that were made by longhand had to be typed, letter by letter, into a computer program. And besides that, most of the developers of decent logging software seem to think they should be paid for their efforts!

About the time I finally got all those old, handwritten entries entered into the database, and was starting to figure out how to use the logging program, the vendor I selected closed shop. That meant I had to buy yet another application and then sit with fingers crossed while hoping against hope that the import feature really worked.

And with the computer comes the challenge of getting the rig to talk to it. Serial ports, USB ports, special drivers, level converters, converters to convert one converter to another converter...

And don't even get me started on operating system limitations.

I'm telling you, this logging thing has got "racket" written all over it.

The same goes for exchanging [QSL cards](#). Most see it as an antiquated practice but the simple truth is that it was never a sensible notion. Think about it, the *only* reason radio hams exchanged cards decades before they had thought of awards (DXCC, WAS, WAC, etc.) programs was to prove to their friends and relatives that they really did indeed make contact with a distant station via radio.

I understand this perfectly as it was no different in my Novice days. As a teenager I would sit for hours in my bedroom working DX with an HW-16 and a set of cans clamped to my head. Immediately after working my first European station I ran to share that amazing news with my Mom and Dad and when their enthusiasm didn't quite match my own I felt that maybe they thought I was pulling their leg. After all, I was working CW and they couldn't very well understand the wireless conversation that was taking place.

But when the QSL card arrived with a postal mark from Great Britain, two skeptics suddenly became believers and we shared a hallelujah moment together!

So then QSLing began as an exercise in vanity and, amazingly, it continues for the exact same reason to this very day — people wanting to prove something to others that they know themselves to be true. And if you doubt that vanity is at the heart of the practice, just take a look at what hams have printed on the face of the card. Self-photos, shack shots, rig photos, antenna shots, etc.

These all scream “look at me!”

Of course cards can be used for award credit these days but given the advent of LoTW and ever escalating postal costs, there's really no logical reason for anyone to continue to exchange postcards except that the practice has been stamped on the DNA of a large segment of the amateur population gullible enough to have bought into the guilty nonsense that *the QSL is the final courtesy of the QSO*.

These chores aren't mandatory but they're required if you want to work towards certain awards. It's a conundrum I tell you, and a racket. Still, if we're going to participate in the madness of logging and QSLing, why haven't we at least made both chores easier through modern technology?

Why won't the 2015 Elecraft KX4 ultra-portable transceiver be capable of automatically logging contact information, date, time, frequency, and mode and then dumping that data to a nearby connected computer or smartphone?

That raw data could be stored onboard a memory chip and then transferred via Bluetooth. The transceiver might even include an encryption chip that would uniquely and positively identify the user so that when your data hits the network it would flow directly into your [Logbook of the World](#) account.

This would accomplish both logging and QSLing in a single step without all the associated hassles.

And it wouldn't necessarily kill the market for logging software, but it would change it. Applications would emerge that could import your LoTW data and permit you to go spelunking in that information. Churning out charts and graphs and discovering all sorts of things about your on-air adventures.

There's a better way to handle these kinds of silly chores and the technology is available today, it's not science fiction.

Heck, it was available a decade ago it's just that folks just don't like change and trust me when I tell you that many radio hams will be griping to their 75M roundtable in 2042 about the outrageous cost of \$11US to mail a QSL card while ten others shout him down for trying to kill a *great tradition*.

Sigh.



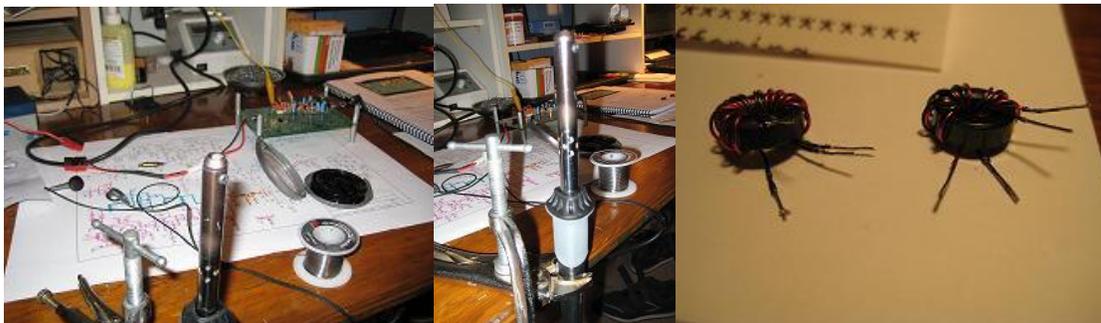
From:

Robert 'RC' – KC5WA

Found at the John Deere store, has a magnetic bottom, holds a steel scrubber in place to use with a soldering iron, and for secondary use it picks up component leads!



I used a radio shack soldering iron #64-2071 removed the tip. Filled the cavity with solder. Then trim the wound toroid to about 5/16" dip your wire and tin your toroids to with in 1/16" it does a real nice neat job. ((RC, did not invent the idea but it sure works))





Share the knowledge and help promote QRP by sending your Articles, help hints, radio mods, antennas, portable operations, mobile installations, pedestrian mobile, radio reviews, and any non-commercial QRP interest? You do not have to have a complete article, just give me an idea, pictures, etc, and you get published! Email the “Banner” at ozarkqrpbanner@gmail.com

Ozark QRP BANNER is a monthly publication of the Four State QRP Group and OzarkCon. www.4sgrp.com

Editor: Walter Dufrain - K5EST

- Deadline for publications copy is the end of each month -

For news, articles, inquiries for the Banner: ozarkqrpbanner@gmail.com

Copyright 2012 and all rights reserved - this September 2012 edition of the Banner. The articles are the property of the writers which have shared their time and effort to help promote the enjoyment of Ham Radio and/or QRP. Links or references to individuals or companies or vendors do not constitute an endorsement of any product or service you may receive from such sources. Websites and contents used by the author's permission.