

Peter Martinez <Peter.Martinez=btinternet.com@groups.io> 13 Jun at 5:20 PM
To RSGBTechnical@groups.io

I have had to dismantle my HF vertical antenna today, after climbing up to the chimney to see why it was slightly off the vertical, and finding that the fibreglass pole was cracked near the base and the wooden support had started to rot. It's beyond repair and I speculated that it might not have survived the next gale (there's one tonight I understand). I don't use it for transmitting these days so I am thinking I will just replace it with a much smaller active antenna.

In days gone by I would have designed and built my own, but now I would prefer to buy a ready-made device but it might not be easy finding something that does the job as well as I would like. I want to go right down to 10kHz if possible, and up to 30MHz. I want to put it outside on the chimney where the vertical was. The coax and the power supply are already in place.

Is there anyone here on RSGB Tech who can recommend a particular antenna?

73, Peter G3PLX

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Andy G4JNT <andy.g4jnt@gmail.com> 13 Jun at 5:38 PM
To RSGBTechnical@groups.io Notification

The PA0RDT mini-whip is a firm favourite amongst LFers and goes to HF

<http://dl1dbc.net/SAQ/miniwhip.html>

also to be found on Ebay e.g. <https://www.ebay.co.uk/bhp/active-antenna>

Andy, www.g4jnt.com

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Adrian Rees (MW1LCR) <mw1lcr@elsasystems.co.uk> 13 Jun at 7:26 PM
To RSGBTechnical@groups.io

I have tried the PA0RDT mini whip with great success, and also PA3GZK's Wide Band Active Loop Antenna (published in the Antenna section of PA0FRI's website) is also a real winner. Particularly in noisy locations.

Worth a look?

Adrian, M1LCR

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Alan <g8lco1@gmail.com> 13 Jun at 7:26 PM
To RSGBTechnical@groups.io

Peter,

Would suggest that a position as far from house wiring and overhead lines might be a lot better than above the roof. I had about a 30 dB improvement from such a re-location. Common mode chokes are very useful in rejecting noise on the coax feeder.

Alan, G8LCO

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Martin - G8JNJ via Groups.io <martin_ehrenfried@yahoo.com@groups.io> 14 Jun at 9:49 AM
To RSGBTechnical@groups.io

On Wed, Jun 13, 2018 at 11:26 am, Adrian Rees (MW1LCR) wrote:

> I have tried the PA0RDT mini whip with great success, and also PA3GZK's
> Wide Band Active Loop Antenna (published in the Antenna section of
> PA0FRI's website) is also a real winner. Particularly in noisy locations.

Hi Adrian & Peter,

I don't think the PA3GZK Wide Band Active Loop Antenna is a particularly good choice for the VLF bands. It may be OK on HF but the MMIC that is specified doesn't really have good enough IMD performance and the relatively high value of amplifier input impedance doesn't provide the best S/N performance at the LF end.

The PA3FWM Mini-Whip design is better than the original PA0RDT as it's simpler and has a slightly improved IMD performance. This allows it to be used with a larger antenna such as a 1m whip in place of the PA0RDT small PCB plate, which helps to improve the S/N ratio.

I can hear the Russian Alpha beacons at around 11KHz (when they are running) using the PA3FWM and also the Chris Trask complementary push-pull circuit shown on this webpage <http://www.g8jnj.net/activeantennas.htm> (this is what we use for LF (0-2MHz) band coverage on the Farnham WEB SDR <http://farnham-sdr.com/>)

It's very good but we have a problem with noise from the IT recycling centre who are directly under the mast that they let us use for free.

You can also try the Trask antenna on my KiWi WEB SDR by selecting it with the antenna switching option.

http://southwest.ddns.net:8073/?ext=ant_switch

The main issue with E-Probe antennas is the very high value of feed point impedance and the resulting difficulty in choking off unwanted common mode noise on the feed line.

It's usually better to place such antennas in an electrically quiet location such as at the end of a garden, rather than trying to mount them higher up on a property.

If you want to experiment with different loop / active dipole antennas then the ZL1AQ ready built amplifier module is worth looking at, as it allows remote switching between two loops mounted at right angles or as an active dipole. There is a lot of information and loop

construction details on the website too.

<http://active-antenna.eu/amplifier-kit/>

You can also try one of these as it's currently connected to my KiWi WEB SDR and can be switched for comparison purposes. If you want to try the PA3FWM Mini-Whip I can fairly easily connect that in place of one of the other antennas so that you can take a listen.

I've also got an interesting 'Loop on the ground' antenna connected at the moment, I'm hoping that with a bit more work this may be of interest to folks who are suffering from VDSL interference and other local noise sources. But that's a story for another day.....

Regards, Martin - G8JNJ

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Brian Reay via Groups.io <g8osn@yahoo.co.uk@groups.io> 14 Jun at 12:13 PM
To RSGBTechnical@groups.io

Adding to Andy's comment, the 'mini whip' is indeed very popular- see YouTube.

I've just order a PCB to build one, probably not the cheapest option as compete units are available off Ebay for not much more but I like the smell of soldersmoke ;-)

The PCB's for the main unit (include the antenna area) and bias T are about £12 shipped from the Netherlands. Email me for details if you are interested. Complete units, of similar design, in various states of complete (with/without case, with/without bias T) are available off Ebay for between may be £14 and £40.

I plan to use mine with an SPM3 Selective Level Meter I was lucky enough to pick up off Ebay- after years of looking for a SLM.

73, Brian

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David Eckhardt <davearea51a@gmail.com> 14 Jun at 5:14 PM
To RSGBTechnical@groups.io Group Moderators

I have a home brew version of the J-310 / 2N5109 active ELF/VLF/low HF antenna. I'm using a section of single-sided PCB about 0.5-meter long as the passive portion. All is stuffed inside a 6-cm (roughly) diameter PVC tube and powered remotely. This only change I made to that presented on his www site is to use a resistor of some reasonable value accounting for voltage drop instead of the inductor to decouple DC from RF. The reason is due to lower frequency resonances with the inductor method of decoupling DC from RF. I've tried MMICs a number of times. They work OK for HF, but not so well at ELF/VLF. The very high-Z, nearly all capacitive, must be considered for ELF/VLF applications.

Dave - WØLEV

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