

Big Rapids Area Amateur Radio Club

February 2013

PO Box 343 Paris MI 49338 Pres. Jeff Sell

Web Page: www.braarc.net

Editor: Phil – phildolly@power-net.net

| | | | | | | |
|---------------------------|---------------|---|-----------------|---|---------------|---|
| Inside this Issue: | Pres Mssg | 1 | Jan Mtg Minutes | 2 | Announcements | 2 |
| | KB6NU article | 4 | Digital Net | 5 | Winter FD | 5 |
| | | | | | Tech Question | 6 |



Presidents Message

Last month I carried on about the digital radio and how rapidly it is moving. I mentioned Software Defined Radio (SDR) and that I had no experience with it. Well, now I have some experience. After seeing the article on

page 30 of the Jan 2013 issue of QST, I

decided to try SDR in the form of a SDR dongle receiver. And I must admit it is really fun and has some nice advantages over conventional receivers. One is the ease of visualizing qso's at a glance by viewing the software spectral or waterfall display. Another is that it can feed other software for digital signal decoding such as packet, APRS, PK31 etc. Finally, it is super portable, as it is just a USB stick that plugs in to your computer. The QST article does a good job of explaining how to choose and set up SDR with one of these dongles. The one they talk most about (RTL-SDR) is cheap (\$25) but can not directly hear HF frequencies so you need a transverter to shift HF to VHF frequencies. Another option is to buy a FunCube Pro + dongle (about \$200) that does not need a transverter to get HF. See below photo of my setup. There are several choices on software- the two most popular are SDRsharp and HDSDR. Both work well with either of these dongle types. I like being able to visualize the different types of



How Do You Choose an Antenna Analyzer?

By Dan Romanchik, KB6NU

A reader recently e-mailed me:

"In the past you told me you started with the Autek RF-1, and later moved to the Palstar ZM-30. I am finally getting around to thinking about purchasing an antenna analyzer, but I am stumped by the choices. In order of increasing purchase price this is what I've turned up:

- * Autek RF-1 - \$139.95
- * Autek RF-5 - \$229.95
- * Rig Expert AA-54 – \$340.00
- * Palstar ZM-30 \$399.99
- * W4RT Electronics MiniVNA \$399.99
- * Rig Expert AA-230PRO \$690.00
- * Timewave Technology TZ-900S \$899.99

"How does one decide? Where does one go to find out the differences? Other than asking a fellow ham, how does one find out which one is the best antenna analyzer without paying an arm and a leg (unless the feature(s) so purchased are deemed worth the cost)?"

"Thanks! 73"

When I replied, I noted that he had actually missed several other good choices:

- * Autek VA1 – \$199.
- * MFJ 259B - \$240.
- * YouKits FG-01 – \$250.
- * Comet CAA500 – \$450.

The Autek VA1 is actually the antenna analyzer that I first purchased. The MFJ 259B is arguably the most popular antenna analyzer on the market. MFJ has several other models with different feature sets. The YouKits FG-01 is a very cute, little analyzer with a small graphical display. It is made in China and sold in the U.S. by TenTec.

So, how do you choose just one from this list? Well, I think the first thing that you have to ask yourself is how you're going to use the analyzer. If all you're going to do is to check the SWR of your HF dipoles, then buy the Autek RF-1. It's the least expensive unit, is reasonably accurate, and is small and lightweight, making it easy to use outside where your antennas are located.

If you want to do some more serious frequency analysis, then you should be looking at the W4RT miniVNA or, if you have more cash, the Timewave TZ-900s. These instruments can help you do a lot more in-depth analysis of your antenna system. The software for the miniVNA, for example, will easily plot the SWR of a multi-band vertical antenna from 3 – 33 MHz.

Some antenna analyzers do more than just SWR. For example, what sold me first on the Autek VA1 and then on the Palstar was that they also measured reactance. So, you can use the antenna analyzer as an LC meter as well. Palstar also says that you can use the ZM-3 as a low-level signal source. While I have used my Palstar to measure inductance and capacitance, I have yet to use it as a signal source.

Next, you need to consider what bands you'll be using it on. Many antenna analyzers only cover the HF bands. That's a bummer if you like operating 6m, or like to experiment with VHF/UHF antennas. A friend of mine bought the Palstar antenna analyzer after talking to the company at Dayton. At the time, they said that they were planning to come out with a model that covered 6m, as well as the HF bands.

Unfortunately, they never did come out with a 6m version, and he was sorely disappointed. He ended up buying a miniVNA instead. The miniVNA can be used up to 170 MHz right out of the box, and up to 1.5 GHz with an optional extender.

Asking your fellow hams about the antenna analyzers they have is actually a good way to figure out what's best for you. If you ask nicely, they might even let you borrow their analyzers or come over and show you how it works on your antennas.

Reading the reviews on eHam is also a good way to gather information before making a purchase like this. You certainly have to take the reviews there with a grain of salt, but if several reviewers mention a particularly good or particularly bad feature of a product, then it's certainly something worth taking a hard look at.

If you're new to the hobby, starting out small and working your way up might be a good strategy. You could buy one of the less expensive models and get used to how they work, then sell it and make the leap to a more sophisticated unit. The way things are going, you should be able to sell your first antenna analyzer for at least 80% of what you paid for it.

The March 2012 QST contains an in-depth review of four analyzers (available online to ARRL members), including the Comet CAA-500, MFJ-266, RigExpert AA-54, and the Youkits FG-01. Each analyzer reviewed had various plusses and minuses. Even if the unit you are considering was not reviewed, the article provides a guide to the kinds of questions you should be asking as you go through the selection process.

=====

When he's not analyzing antennas, Dan, KB6NU blogs about amateur radio at KB6NU.Com, writes and publishes the "No-Nonsense" series of amateur radio license study guides, and just has fun with amateur radio. You can reach him by e-mail at cwgeek@kb6nu.com, @kb6nu on Twitter, or on 40m CW many evenings.

Last month's tech question:

In speaking of transistors, heat is:

- a. Important because current increases as temperature increases
- b. Important because current decreases as temperature increases
- c. Unimportant as it pertains to majority current
- d. Important only as it pertains to minority current
- e. Not a factor to be considered

ANS: a. Important because current increases as temperature increases.

This month's tech question:

A 6000KHz carrier is modulated by a 3KHz tone that contains a high second harmonic content. What is the bandwidth?

- a. 3.2KHz
- b. 12.0KHz
- c. 6.4KHz
- d. 21.2KHz
- e. 60KHz

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 7 | 6 | 3 | 9 | 8 | 4 | 1 | 2 | 5 |
| 9 | 1 | 4 | 5 | 2 | 6 | 8 | 7 | 3 |
| 5 | 8 | 2 | 7 | 1 | 3 | 9 | 6 | 4 |
| 6 | 9 | 1 | 2 | 3 | 8 | 4 | 5 | 7 |
| 8 | 3 | 5 | 6 | 4 | 7 | 2 | 9 | 1 |
| 2 | 4 | 7 | 1 | 9 | 5 | 6 | 3 | 8 |
| 3 | 7 | 9 | 8 | 6 | 1 | 5 | 4 | 2 |
| 1 | 5 | 6 | 4 | 7 | 2 | 3 | 8 | 9 |
| 4 | 2 | 8 | 3 | 5 | 9 | 7 | 1 | 6 |

Solution to last month's puzzle

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 9 | | 7 | 3 | | | | 5 | |
| 2 | 6 | | | 1 | 5 | | | 4 |
| | | | | | | | | 7 |
| 4 | | | | 6 | | 3 | | 1 |
| 8 | 7 | | 4 | | | 2 | | |
| 5 | | | | 8 | | | | 9 |
| | | | 1 | 4 | | 7 | | |
| | | 2 | | 5 | | 8 | | |
| | 9 | | 8 | | 2 | | | |

This month's puzzle.

BREAKFAST

Sharon's Restaurant

9:00AM

Saturday, February 2

Come order from the menu or
enjoy the breakfast buffet!!!



February 2012
PO Box 343 Paris MI 49338

