

The Short Circuit

<http://www.avarc.av.org>



The official publication of the Antelope Valley Amateur Radio Club

June 2008

President's Corner

Jon Clark N6NQ

Tinkering is a great part of Ham Radio!

I see three major areas of amateur tinkering. They are: 1) Antenna Design and Building. 2) System Integration, including linked repeater systems, such as IRLP, EchoLink, the Wind System and station integration such as remote control, single-op-two-radio contest stations, audio and antenna switching and finally 3) radio design and building.

Many people feel that this last area is dead, but nothing could be further from the truth. There are many false ideas that go along with this basic belief. "Everything is digital, you can't build an analog radio anymore." "The components are too small, only a robot can build electronics." "Modern radio's many functions are too hard to implement." "It's too hard to match the performance of modern radios." All wrong!

You can still design and build analog radios. Dan Sherwood and I recently demonstrated the RockMite transceivers we built. *You* can do surface mount soldering. The parts are smaller and they are different. But I've read the accounts of 70+ year olds learning to surface mount solder and there still are thru-hole components.

When it comes to bells and whistles, most are nice but you don't really need them to perform basic radio operation. Besides, with software defined radios, all the bells and whistles are done with software.

Regarding performance, some of the simple designs can surprise you. The RockMite is the quietest receiver I've ever heard. The Softrock Lite Version 8.3 is claiming a receive sensitivity of -130 dBm or 0.07 uV for 10db S/N. My 746Pro only does about -120dBm or 0.16 uV.

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UNITED WE STAND

Meeting Notice

Thursday, June 5, at 7:30 pm, will be the next meeting of AVARC, in the Primrose Room of the Larry Chimbole Center in Palmdale. Talk-in is available on 146.73 MHz. if you need directions.

This month's meeting will feature our annual Field Day presentation. This is our premier operating event of the year, so you won't want to miss this one. Mark your calendars and be sure to join us!



From The Veep

Margie Hoffman KG6TBR

I just received my new copy of my latest e-message from ARRL. Here is a quote that got me to thinking this month: "June is a great month for radiosport, with both the ARRL June VHF QSO Party and Field Day. While Field Day is more of an operating event than a contest, it is modeled after a contest in that points are earned for making contacts."

We all grew up loving sports and loving to watch sports, but think of this: Wouldn't it be much more fun to participate and get involved instead of watching from the sidelines. This is how I view Field Day. This is your chance to join in the fun and bring with you what you have to offer. One important way is in getting ready for the day to begin. It may be pitching in and helping out to set up and assemble towers, spread out coax, arrange tables, chairs, displays, or to prepare refreshments. There is always something anyone can help to do prior to actually working the radios. And it's not just the work, but as Larry Bianchi AF6GF stated recently when we were all working on Baker 2 Vegas, more importantly, it's the camaraderie of just being with each other and working together with all those that have a common interest in this great hobby.

The 2008 ARRL Field Day is June 28-29. Let's all begin getting ready and thinking about what we can do to contribute to make this the best Field Day for the AVARC yet. On June 5, we will be holding our annual Field Day presentation which will entail a discussion of what is planned and it will give those an opportunity to express where they can be involved. Bring your ideas, but be prepared to put those in motion when

(Continued on page 2)

From the Secretary's Desk



AVARCGeneral Meeting 1 May 2008

Opening: John Clark (N6NQ) called the meeting to order at 7:46 p.m.

Venue change: Club members scrambled to relocate the meeting site due to a scheduling conflict. The location was successfully changed from the Chimbole Center to the Hampton Inn. (Thank you Walt for arranging the meeting place!) In the impromptu setting, the flag salute was conducted using the Stars and Stripes emblem on Keith's vest. (Thank you Keith, K6GXO!) Introductions and roll call followed. Thirty-nine individuals participated.

A motion was made to accept the March **meeting minutes** as published in the newsletter. Motion approved and minutes accepted.

Treasurer Don Jackson K6GET presented the **Treasurer's report:** Current funds: \$4,968.98, an increase of ~ \$111 since the last meeting. Club insurance is estimated to be ~ \$340. Club voted to set aside up to \$400 to pay the coverage.

New & Old business:

Keith Hoyt K6GXO presented photographic evidence of the famed **Jackalope** to club president Jon. ☺

WB6X antenna: A law suit was filed in State Superior Court on behalf of Alec WB6X against the City of Palm Dale regarding the antenna conflict. A WB6X defense trust fund for court expenses has been set up. The hat was passed and approximately \$158 was collected. Board members will be discussing the possibility of a donation on behalf of the club.

Miscellaneous: K6CEV John has equipment for sale. The Alaska conven-

tion is scheduled for August 1 – 4. Keith is investigating solar panels.

VE Session: Adrienne Sherwood WA6YEO. The May session, a GLAARG session, is scheduled for Monday, 5 May, 7 pm at the church. Fee \$4.00. The June session will be held Monday, June 2.

Field Day: Margie Hoffman KG6TBR discussed field day. George Becker demonstrated Field Day T-shirts. Please order shirts ASAP.

Break ** Refreshments **** Sale of raffle tickets for the evening 50/50 *****

NUE-PSK digital modem: James N5GU1 demonstrated PSK digital modems during the break.

Presentation: Ken Chafin W6CPA and Leon Brown KC6JAR from Eagle Rock gave an excellent talk on D-Star.

Raffle: The 50/50 raffle was conducted.

The meeting concluded at 9:40 p.m.

Respectfully Submitted,
Carol Humpherys KI6DWE
AVARC Secretary 2008

From the VEEP...

(Continued from page 1)

Field Day arrives! I will have another list for sign ups for working in different areas. Please show your support for this very important event.

For those of you who just come out to the field on Saturday, please plan on staying for a while and jump in there and provide back up relief for those who are out for the three days. They will appreciate it and you will gain enjoyment in being part of this exciting weekend event. See you at the meeting.

73,

Margie KG6TBR

Swap Shop

RADIOS FOR SALE

Marine VHF XCVR—Icom IC-M120, new in box with marine antenna. \$150 or trade for ?

Ten-Tec 2 KW antenna tuner, like new. \$200 or trade for ?

Guitar—Epiphone Emperor II Joe Pass model, new in new factory case. \$500 or trade for ?

Call KB6R on Hauser

TOWER FOR SALE

This is a three section, 51 foot, medium duty, self supporting, crank-up tower. It does require a concrete base to anchor the tower. It is hot-dipped, galvanized steel construction. It comes with the fixed base, with reinforced rebar to be placed into the concrete base. A detailed mechanical drawing of the tower can be viewed at: <http://www.tashtowers.com/crankup.html>
Asking \$800. Bill
W2WHC bcrews56@verizon.net or
661-816-9115

For Sale: HEIL Handi Mic, model HM-5 Compact Microphone. Pre-wired for Kenwood radios with modular RJ-15 type connector. Could be used with most other rigs, (except ICOM), if a different plug is wired on. Brand new in the box. \$65.00.

Motorola Spectrum VHF Mobile VHF antennas. 5/8 wave, high-quality commercial-grade units made in the USA. These will work for 2-meters. Includes RADIALL/LARSEN NMO thru-hole mounts and coax kits. New in shipping tubes. \$25.00 each.

Contact Dan Sherwood, WA6PZK at
(661) 264-1863.

President's Corner...

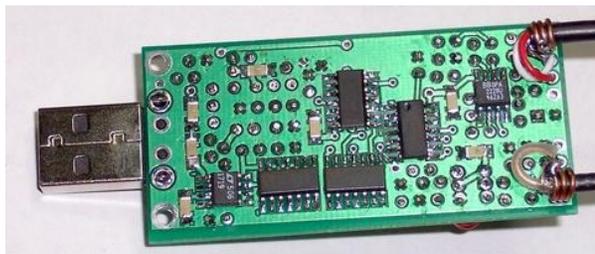
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There are several active groups doing development work with software defined radios. One is the GNU Radio group. They are based on a fairly advanced (expensive) hardware design and the open source GNU Radio software.

One of the most vibrant development groups in the SoftRock40 group on Yahoo groups. They are comprised of over 4500 members. Most are watchers and learners. Several hundred have built or ordered the various kit versions. Probably 15-20 people contribute most of the design work. In the last year they have exchanged over 21000 emails on the group site. Who knows how many direct emails. You can find them at: <http://groups.yahoo.com/group/softrock40>

What is a Softrock40?

Don Jackson, K6GET, introduced us to an early version last year. At that time, it was a receive only, single band unit. See below.



Now they are a complete transceiver with about 1 Watt of output. Some are driving amplifiers. The latest version can tune all of the HF ham bands.

The receiver is direct conversion to audio frequencies. The receiver produces two output signals, the "In Phase" and the "Quadrature" or 90 degree phase shifted signal. These signals are still the modulated signals. They have just been down-converted into the audio range. To make this point clear, if the signal contains human understandable audio, you still can't hear it because the final audio signal hasn't been detected or demodulated yet. That's done by the sound card and processor in your computer thru the magic of mathematics.

For each frequency that you tune the front-end to, you feed about 40-100 kHz of adjacent bandpass into the soundcard. This width depends on the sampling rate of the sound card you are using. This is where the bandscope displays, that you may have see on SD radios, comes from. With the software on the computer, you choose a frequency and bandwidth from within this bandpass, click a button to choose a demodulation scheme, such as FM, AM, SSB, PSK, RTTY. This selects a smaller set of the data that is



flowing into the sound card and the math that will be applied to it to produce the output signal or data.

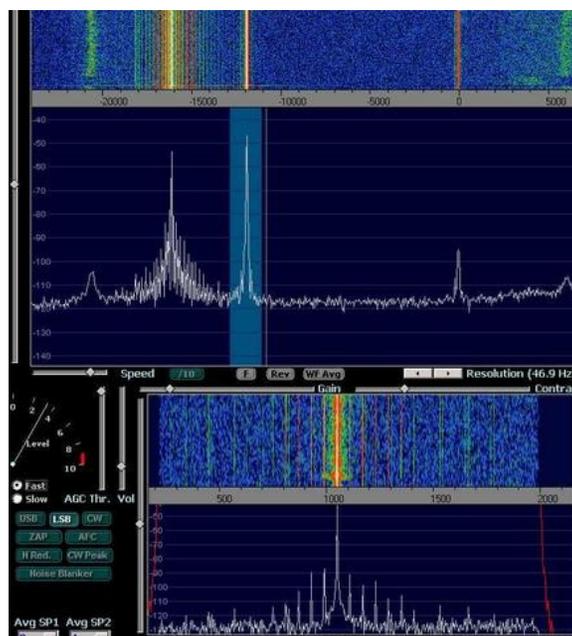
What do you need to build a software defined radio?

One of the Softrock kits. They cost from \$26 to \$52 depending on the configuration.

A decent sound card. Some of the Creative 24 bit cards are okay. MAudio makes some good choices.

A reasonably fast computer, last two years maybe, running Windows 98 or XP. There are some Linux software packages as well.

Some free software. There are several choices. Rocky is one. The folks that sell the Flex-5000 SDR make their software available to homebrewers, free of charge. There are several others.



This is Winrad processing signals from a Softrock.

I've joined the Yahoo group. I've ordered one of the 8.3 kits and I'm going for it. Let's see how far I get.

I'll make progress reports and do a presentation later in the year, depending on progress.

What to join me?

We can share notes, tools, techniques, blood, sweat and tears. But mostly the fun of learning. Seriously, I'd be happy to have anyone along for the ride.

73,

Jon N6NQ



Antelope Valley Amateur Radio Club 2008 Officers

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