



April 2008 Volume 38, Number 4

April Club Meeting

Date: Friday, April 25, 2008
Time: Socializing at 7 pm, Meeting at 7:30
Place: Covington School, 205 Covington Road, Los Altos
Speaker: TBD
Topic: TBD
Summary: TBD

There will be three prizes for the meeting. First prize is a Heil Handi Mic with HC-5 cartridge. Second is a Rigblaster Nomic Rig to Soundcard Interface with USB. Third is a 2008 Northern California Repeater Directory.

The club offers refreshments at the meeting. Be sure to attend for an enjoyable evening. Get your name in the Relay: bring your toughest questions for Dr. Know-It-All.

Upcoming Events

- Apr 25 7:00 PM, Club meeting, Covington School
May 1 7:30 PM, Board Mtg at the Los Altos Town Crier
May 3 8 am to 1 pm, VOMARC Hamfest
May 10 Electronics Flea Market, De Anza, 5 am to Noon
May 10 8 AM to 9 PM, Am-Tech Day, SLAC, 8AM-9PM
May 23 7:00 PM, Club meeting, Covington School
Jun 5 7:30 PM, Board Mtg at the Los Altos Town Crier
Jun 7 8 AM to 9 PM, Am-Tech Day, SLAC, 8AM-9PM
Jun 14 Electronics Flea Market, De Anza, 5 am to Noon
Jun 20 7:00 PM, Club meeting, Covington School
Jun 28-29 ARRL Field Day, FARS setup Jun 27
Thursdays 8:00 PM, FARS net, 145.230(-), 100 Hz PL
See more events, FARS Calendar <http://www.fars.k6ya.org/events/calendar>

VOMARC Hamfest

We would like to invite you and the members of FOOTHILLS AMATEUR RADIO SOCIETY (FARS) to the Valley of the Moon Amateur Radio Club (VOMARC) Hamfest on May 3rd (8am to 1pm) in beautiful Sonoma. Activities include a swap meet, VE session, breakfast, fox hunt and a lot friendly folks. Go to the website, www.VOMARC.org for more info, flyer and a map or e-mail us. Hope to see you there.

- 73, Dave Dammuller, Pres., and Eileen Adams, Vice Pres.

PADS



John Stearns, K3NDO, shows the Pneumatic Antenna Deployment System (PADS) that he built for the club, along with Steve Stearns, K6OIK (March FARS Meeting Speaker and club VP).

President's Corner

Membership Meeting. Our next meeting is Friday, April 25th at 7pm (http://www.fars.k6ya.org/meeting).

Am-Tech Day. The May Amateur Radio Technology Day is scheduled for Saturday, May 10th at the Stanford Linear Accelerator Center. Check the FARS web site (www.fars.k6ya.org/amtechday/) for the program schedule, directions, and the latest news.

Email Notices. Subscribe to the FARS Announcement list (www.fars.k6ya.org/mail/) to receive reminders of FARS activities and other news.

FARS Flea Market. I want to thank all the volunteers to helped out with FARS edition of the Monthly Electronics flea market on April 12th. Special thanks go to Susan Thomas KG6RZE, for coffee, Richard Baldwinson N6ATD for supplies, Rich Stiebel W6APZ for the donuts, Jim Rice K6AK for the loan of a cash box, and Dave Cooper KE6PFF for handling the financial stuff. Thanks to Tom Cascone KF6LWZ for arranging for use of the Red Cross equipment and Sven Jensen for the ice. Thanks to all our other volunteers including: Phil Hawkins KA6MZE, Jerry Haag K6GAC, Clark Murphy KE6KXO, Nimit Hongyim KI6JLD, Doña Kerns KI6DAR, Byron Beck KG6UOB, Rob Riley KI6INR, Kevin Weiler, K6XXX, Carol Randall W6GEM, Paul Zander, AA6PZ, Jeff Shuman AK6TGE, Ron Green, KG6RLG, Howard Takaoka KG6GRO, and everyone I've neglected to mention.

Next Flea Market. The next Electronics Flea Market is scheduled for May 10th and is hosted by SVECS.

- de Mikel, KN6QI

March Meeting Report

The March meeting speaker was Steve Stearns, K6OIK. He spoke about "Circuit Theory for Radio Amateurs." Steve described the history of electromagnetics and key dates in the development of circuit theory. He reviewed Maxwell's equations (or Heaviside's equations for Maxwell's theory), Kirchoff's laws, and mesh analysis. Steve also reviewed complex numbers and their use in circuit theory.



Steve Stearns, K6OIK March Speaker

5th through 1st Raffle Winners

Yes that's 5th through 1st prizes. Fourth and fifth prizes, both bicycle radio mounts, were won by Ken Ashe, KI6HLQ, and Mikel Lechner, KN6QI. Third prize, a 2008 Northern California Repeater Directory, was won by Phil Hawkins, KA6MZE. Second prize (a 100 ft. spool of 3/16 Dacron line) and first prize (a Yaesu Ft 1802M, 2 meter, 50watt Mobile Tcvr) were won by Susan Thomas, KG6RZI. The Wish You Were Here number for Lee Carlton, KG6EPQ, was chosen. Unfortunately, Lee was not present to claim the prize.

CLUB INFORMATION

President: Mikel Lechner, KN6QI
Vice President: Steve Stearns, K6OIK
Treasurer: David Cooper KE6PFF
Secretary: Rob Riley, KI6INR
Radio Officer: Phil Hawkins, KA6MZE
Training Officer: Kevin Weiler, K6XXX
Relay Editor: Mark Hardy, AF6DO

FARS Board: Dick Baldwinson N6ATD, Robert Flemate KE6TFU, Pink Foster KG6ILA, Kristen McIntyre K6WX, Barbara Neuhauser AE6RM.

Station Trustee: Stan Kuhl, K6MA
FARS Web Page: <http://www.fars.k6ya.org>
Download Relay: <http://www.fars.k6ya.org/relay>

Club members and non-members are encouraged to subscribe to the FARS Announcement list by browsing www.fars.k6ya.org/mail, clicking on Subscribe/Unsubscribe and following the instructions under "Subscribing to fars-announce."

You may submit announcements to the FARS Announcement at fars-announce@svpal.org. The list is moderated and messages will be posted as approved by the list moderator.

Contact the FARS board of directors at fars-board@svpal.org

Club meetings are held at 7 PM on the fourth Friday of each month except January (Winter Banquet); and sometimes there are changes for June (for field day) and Nov. & Dec (for holidays).

Annual club membership is \$20. Club badges are \$9. Visitors are always welcome! Directions in this newsletter. Talk-in: N6NFI (145.23-, 100 Hz) or W6ASH repeater (145.27-, 100 Hz).

FARS *Relay* is the official monthly newsletter of the Foothills Amateur Radio Society. Contributions to the newsletter from members, family, and guests are earnestly solicited! Contributions are subject to editing and/or compression. All readable forms welcome.

Here is how to reach the editor:

Mark Hardy, AF6DO
Mail: P.O. Box 2248
Santa Clara, CA 95055
Voice: 408-243-0701 (Before 9 PM, preferred)
Email: mark.af6do@gmail.com, At FARS meetings.

April Meeting Raffle Prizes

First prize is a Heil Handi Mic with HC-5 cartridge. According to the Heil website, the Handi Mic has its element mounted in an open enclosure, seated on a rugged Sorbothane© shock mount, and the resulting audio is the clearest, cleanest, most articulate audio you'll ever experience. The low handling noise and exceptional cardioid pattern make the Handi Mic ideal for mobile or portable use.



Heil Handi Mic



Rigblaster Nomic Kit

Second prize is a Rigblaster Nomic Rig to Soundcard Interface with USB. The kit includes the RIGblaster nomic, a 3-foot 8 Pin Round Circular Mic Cable, a 3-foot RJ45 Mic Cable, a USB Interface Cable, a 6-foot DB9M to DB9F Serial Cable, two 6-foot Mini Plug Audio Cables, an Owners Manual, and a free CD-ROM with software.

Third is a 2008 Northern California Repeater Directory.

Re-Programming the GE-Phoenix SE UHF – GMRS* Radio for the HAM Band Nimit - KI6JLD



***General Mobile Radio Service (GMRS).** The General Mobile Radio Service (GMRS) is a land-mobile radio service available for short-distance two-way communications to facilitate the activities of an adult individual and his or her immediate family members, including a spouse, children, parents, grandparents, aunts, uncles, nephews, nieces, and in-laws (47 CFR 95.179). Normally, as a GMRS system licensee, you and your family members would communicate among yourselves over the general area of your residence or during recreational group outings, such as camping or hiking. More detail can be found on the FCC website at http://wireless.fcc.gov/services/index.htm?job=service_home&id=general_mobile

This article is intended to provide information and programming tools, for the various digitally synthesized mobile radios that GE produced from the early 80's to the present. These radios include the Phoenix S/SX/ radios that can be picked up easily at hamfests, at the Flea Market or at EBAY auctions for around \$40. They are easily found for sale on the Web. Best of all, they're cheap and easily converted to operate on amateur bands. They're also a very solid work horse to use with IRLP, EchoLink or Packet.

This project was started on the Am-tech day March 29, 2008. I saw a box of radio gear on the bench near the BBQ area and I was informed by Dave, KE6PFF, that someone had dropped them there for some ham who want to do something with them. I cleaned them up and began an investigation on the web and found much information and learned about the radios. For those who wish to study more, there is much more information available than what is presented here on what's inside the code this neat radio.



EPROM Programmer

This is an intel hex file dump of a test image I used in a 2 channel Phoenix SX. The settings are:

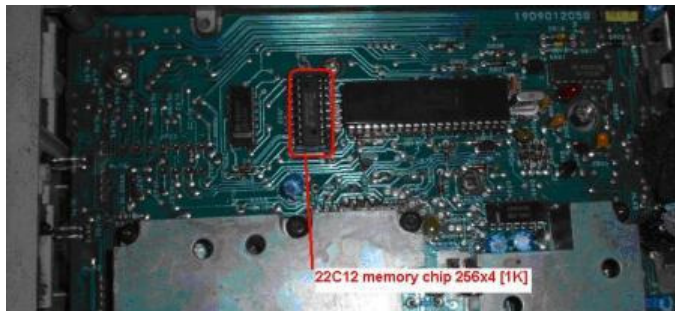
Ch A Rx = 442.900 162.2hz PL tone, Tx 447.900 162.2Hz PL tone
 Ch B Rx = 441.900 100hz tone, Tx 446.900/100hz tone
 CCT timer 2:30 minute, 12.5khz ch/spacing, and a 13.2Mhz reference

```

:100000000000000F00000000000000000002
:100010000004000000F0000000000000000E
:1000200002090003080009010209000308020B00B2
:1000300008080701080809010808070108020B005E
:100040000000000000F000000000000000092
:100050000000000000F000000000000000082
:100060000000000000F000000000000000072
:100070000000000000F000000000000000062
:100080000000000000F000000000000000052
:100090000000000000F000000000000000042
:1000A0000000000000F000000000000000032
:1000B0000000000000F000000000000000022
:1000C0000000000000F000000000000000012
:1000D0000000000000F000000000000000002
:1000E0000000000000F0000000000000000F2
:1000F0000000000000F00000000000000000E2
:00000001FF
  
```

02= PL tone enable

08 = CCT timer Enable



Memory Chip to be Reprogrammed

System Requirements. You need a windows XP computer running the PSX200 program to generate the EPROM image, an EPROM burner that supports your particular EPROM version, and a GE Phoenix SX radio (does not require the obsolete X22C12 E²PROM). You can also generate an EPROM image using my C++ language program available in the "Source Code" Microsoft Visual C++. It will generate Intel format that you can use the Any EPROM programmer to program it. I used the ALL Programmer hooked up with PC. Here is the detail on the location of the Freq and PL tone setting.

Below is a portion of the C- code that needs to be modified for the frequency that you will use for TX and RX. I programmed the frequency for the WINSYSTEM at LPRC.

You can download the C-code from my FTP server, which can be found at the following link:
<http://www.dgg2000.com/ftp/HAM/ge/X2212.c>

You can also email me and I will send the C code to you by email. You can easily compile the program with Microsoft visual C++ which will generate a filename with extension .exe, and then run that file in DOS mode and you will get the file name prom.hex.

I programmed and tested only the UHF 2 CH A-B, I did not have a VHF 2 Ch to try yet but it will need to change some parameter to match the requirement from the Instruction manual "LBI31266B." Here's the link from my Website
<http://www.dgg2000.com/ftp/HAM/ge/31266B.pdf>

Email me if you have this kind of radio or you have seen them at the Flea Market and picked them up for a good price and need to program them to the amateur radio Band. That's it for the technical detail.

```

/*===== MODIFY THE VALUES BELOW TO SETUP YOUR RADIO =====*/
/* radio wide definitions */
# define CCT 4          /* 0.7 carrier controlled timer n*30sec + 30sec [1:30 = 2] [2:30 = 4] */
# define REF 13.2      /* ref oscialtor in Mhz */
# define SPACE 0.0125  /* channel spacing in Mhz */
# define REFCODE 1     /* 2=13.2mhz ref osc and ch spacing of 5khz ***** UHF 1 CH A/B WILL USED 1 TO CALCULATE THE RX CODE*/
//#define REFCODE 2 USED REFCODE 2 For VHF
/* note. each channel can have its own refcode but unless you need 12.5khz */
/* channel spacing, we simplified the program to used one reference divider code */

/* for each channel, one has to define the following data... */
/* the first 8 are mode A and the second 8 are mode B */
struct CH{
    int cg_type;      /* see table 2 in LBI doc, 0 = none or PL */
    float rx;        /* rx freq ie 147.280 */
    int rxcg_code;    /* see table 3A in LBI doc 100hz = 0xB0, 141.3 = 0x51, 162.2 = 0x91 */
    int cct;         /* TX timeout timer enable for ch 0=none,8=enabled */
    float tx;        /* TX freq ie 147.880 */
    int txcg_code;    /* see table 3A in LBI doc 100hz = 0xB0, 141.3 = 0x51 */
}channels[16] = {
    /*cg RX freq cgcode CCT TX freq cgcode*/
    { 2, 442.900, 0x91, 8, 447.900, 0x91}, /* WINSYS =====> CH A if only 2 Ch assigned HERE */
    { 0, 0.00000, 0x00, 0, 0.00000, 0x00}, /* BLANK*/
    { 0, 0.00000, 0x00, 0, 0.00000, 0x00}, /* BLANK*/
    { 0, 0.00000, 0x00, 0, 0.00000, 0x00}, /* BLANK*/
    { 0, 0.00000, 0x00, 0, 0.00000, 0x00}, /* BLANK*/
    { 0, 0.00000, 0x00, 0, 0.00000, 0x00}, /* BLANK*/
    { 0, 0.00000, 0x00, 0, 0.00000, 0x00}, /* BLANK*/
    { 0, 0.00000, 0x00, 0, 0.00000, 0x00}, /* BLANK*/

    { 2, 441.900, 0xB0, 8, 446.900, 0xB0}, /* rEV wINS =====> CH B if only 2 Ch assigned HERE*/
    { 0, 0.00000, 0x00, 0, 0.00000, 0x00}, /* BLANK*/
    { 0, 0.00000, 0x00, 0, 0.00000, 0x00}, /* BLANK*/
    { 0, 0.00000, 0x00, 0, 0.00000, 0x00}, /* BLANK*/
    { 0, 0.00000, 0x00, 0, 0.00000, 0x00}, /* BLANK*/
    { 0, 0.00000, 0x00, 0, 0.00000, 0x00}, /* BLANK*/
    { 0, 0.00000, 0x00, 0, 0.00000, 0x00}, /* BLANK*/
    { 0, 0.00000, 0x00, 0, 0.00000, 0x00}, /* BLANK*/
}

```

C-Code to be modified

FARS 2008 MEMBERSHIP RENEWAL FORM

Date: _____

PLEASE fill out the form for all new/renewal memberships.

Name(s) & Callsign(s) & Class (E-A-G-T-N-None): _____

Mailing Address: _____

Home phone: _____ Work phone: _____

Fax (H or W?) _____ Packet BBS Address: _____

E-mail: _____ ARRL Exp Date(s): _____

Preferred modes: (e.g. HF-SSB/VHF/QRP/Other): _____

I'm willing to Elmer new hams with: _____

Special topics of interest / suggestions for club meeting speakers: _____

Dues: \$20 per year, new members add \$9 for badge fee. **Please note:** Membership runs from January 1 to December 31.

Send your check payable to FARS, to:

David A. Cooper
PMB 41
270 Redwood Shores Parkway
Redwood City, CA 94065-1173



How to get to FARS Club meetings (Visitors always welcome)

Meetings are held at the Covington Elementary School (directions below) on the fourth Friday. Socializing at 7 PM with the regular meeting at 7:30 PM. There may be changes in the meeting dates for January, June, November, and December.

DIRECTIONS:

From Interstate 280. take the El Monte exit Northeast. Cross Foothill Expressway. (A) At the first traffic light turn right on Covington. (B) Immediately at the fork take the left street (Covington). Go about 1/10th of a mile. Turn left into the parking lot. The gym is the tall building to your right with red and white stripes.

From Foothill Expwy., take the El Monte exit and go Northeast; then follow directions as above at point (A).

From US101 or El Camino: take San Antonio Road west (to Foothill Expressway). Then follow directions above at point (A).

TALK-IN via the [N6NEI](#) (145.230-; 100Hz PL) repeater or the [W6ASH](#) 145.27- (100Hz PL) repeater.