



Cathay July 2012

www.cathayradio.org

President: George Chong, W6BUR **email:** W6BUR@comcast.net

Vice President North: Leonard Tom, NX6E **email:** nx6e@hotmail.com

Vice President South: Bill Fong, W6BBA - **email:** w6bba@arrl.org

Secretary/Membership: Bill Chin, KC6POF - **email:** bill.kc6pof@comcast.net

Editor: Rodney Yee, KJ6DZI - **email:** rodyee2000@yahoo.com

Treasurer: Vince Chinn aka Mingie, W6EE - **email:** vince@vincechinncpa.com

Web Master: Edison Fong – WB6IQN - **email:** edison_fong@hotmail.com

Mission: The Cathay Amateur Radio Club is basically an active social club of Ham Radio Operators and their spouses. We support local community requests for HAM emergency communications. Several of us are trained in CPR/ First Aid and are involved with community disaster preparedness.

Monday Night Net Time: 9 PM PST, Frequencies: 146.67MHz -600KHz PL85.4 and 442.70 +5MHz PL 173.8. The repeaters are linked. The CARC Monday night net is the best way to find out the latest club news. All check-ins are welcome.

Message from the President: George Chong, W6BUR

Hello Cathay Amateur Radio Club members and friends,

Field Day:

On Saturday June 23, 2012 we had a fabulous HAM Field Day and luncheon pot luck at our house in the Oakland hills.

We had a nice showing of Cathy Amateur Radio club members, but not quite as many as the previous Field Day. We missed some of the regular Field Day attendees but we also had some new members show up.

Gary Gin - Kn6lv and Maria - w6sij (mother) did a demonstration on a Bluetooth designed for use with HT's, I just loved it, no wires attached!

That's not all, Robotic Gary Gin, the Champion King of Destroyers has more goodies up his sleeve. He showed off two of his aluminum dies that makes super accurate ice balls. Ever see ice melt super fast without hot water or flames? It was a very, very interesting demonstration of endothermic reaction.

For those folks missing in action, too bad you missed Gary's demonstration. Better luck next time, Charlie!

The food people prepared and brought to our pot luck luncheon was a fabulous feast for all. Rose and Dirk brought an incredible and eye pleasing dishes that looked like it came out of a high end restaurant. It was a specially prepared artistic pineapple and watermelon feast.

Hetty- wb6shu had lots of potted plants for all who came just for the taking. Hetty says there more potted plants for the taking; just let her know when you can drop by the house.

Here is a list of some of the attendees in alphabetical order: w6bur, w6day, wa6gty, kj6hkd, k6opd, w6qnt, wb6shu, w6sij, wb6tcf, kj6wgr, kj6whf, Ki6yrl, and ke6zuy.

Featured Tech Article:

It has been substituted with the **Technical HAM Session**. The Technical HAM Session is a combination HAM party event and technical presentation by our former CARC president, Edison Fong. Ed - WB6IQN will be hosting a Technical HAM Session at his home in Sunnyvale on July 14, 2012. Free lunch will be provided and a raffle will be held for prizes. Further details are within the **Technical HAM Session** portion of this newsletter.

Please read the Public Service Announcement on the plight of the California Historical Radio Society (CHRS).

Public Service Announcements

Bart Lee – K6VK

Attention all HAM, it is MayDay!!

The California Historical Radio Society (CHRS) and its amateur radio station W6CF is caught up in its landlord's bankruptcy (Inner Cities Broadcasting). This forces CHRS to purchase the Berkeley KRE building and property now or lose it.

CHRS members and friends raised over \$500,000 toward the goal of \$750,000. CHRS needs the support of our fellow HAMs. All donations to the CHRS are tax deductible and will be for the good cause of preserving the KRE building.

KRE 2012 - after CHRS Restoration



For additional information see: <http://www.californiahistoricalradio.com/>

Tony – KR6EG

ACS Info

The Auxiliary Communications Service (ACS) was organized by the San Francisco Office of Emergency Services (OES) following the 1989 Loma Prieta Earthquake to support the communications needs of the City and County of San Francisco when responding to emergencies and special events.

The Auxiliary Communications Service holds General Meetings on the third Tuesday of each month at the San Francisco Emergency Operations Center, 1011 Turk Street (between Gough Street and Laguna Street), from 1900 hours to 2100 hours local time. All interested persons are welcome to attend.

The ACS Net

The ACS Net begins at 1930 hours (7:30 p.m.) local time each Thursday evening, on the WA6GG repeater at 442.050 MHz, positive offset, tone 127.3 Hz. The purpose of this net is to practice Net Control skills, practice checking in with deployment status in a formal net, and to share information regarding upcoming ACS events. Guests are welcome to check in.

ACS Members should perform Net Control duty on a regular basis. On the second Thursday of each month, the net will be conducted on the output frequency of the WA6GG repeater, 442.050 MHz no offset, tone 127.3 Hz, simplex.

For more information, please attend an ACS meeting, check in on a net, or call 415-558-2717. Upcoming meeting: Tuesday 7pm, July 17, 2012

Gilbert – KJ6HKD

Free Disaster Preparedness Classes In Oakland:

<http://www.oaklandnet.com/fire/core/index2.html>

CORE is a free training program for individuals, neighborhood groups and community-based organizations in Oakland. The underlying premise is that a major disaster will overwhelm first responders, leaving many citizens on their own for the first 72 hours or longer after the emergency.

If you have questions about the recertification process, you may contact the CORE Coordinator at 510-238-6351 or core@oaklandnet.com.

Free Disaster Preparedness Classes In San Francisco – SFNERT Taught by San Francisco Fire Department

Saturday, June 30th: NERT Plan & Play Workshop, 8:45am-1:00pm, followed by potluck lunch. Red Cross Pier 54, Terry Francois Blvd.

Sunday, July 8th: Get Really Ready event 9:45am-5:30pm, SFFD DOT*

Saturday, July 28th: Intro to Ham Communications Team (HCT) 101, 8:30 a.m. - 4:00 p.m., SFFD DOT* New or interested HAM operator's beginner course (no license required) HAM operators that want disaster communication instruction are welcome after lunch

Visit www.sfgov.org/sffdnert to see more about the training, other locations, and register on line. RSVP to sffdnert@sfgov.org or call 415-970-2024 to register

HAMs In The News:

CARC Member Ron Quan - KI6AZB (June 4,2012)

Ron has just completed writing his book. It is 109,000 words with 23 chapters.

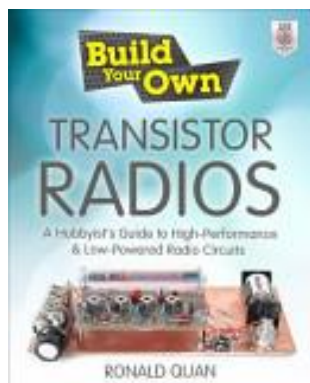
It will be available later this year. The manuscript and figures have been submitted to the publisher for assembling them into a book.

See link

(http://books.google.com/books/about/Build_Your_Own_Transistor_Radios.html?id=cQ7huQAACAAJ)
or the description below.

Build Your Own Transistor Radios:

A Hobbyist's Guide to High-Performance and Low-Powered Radio Circuits



McGraw-Hill Companies, Incorporated, Nov 22, 2012 - 400 pages

A do-it-yourself collection of innovative, high-quality projects for electronics enthusiasts "Build Your Own Transistor Radios" pushes the envelope of DIY radio designs. Ronald Quan, an electronics engineer with more than 65 patents, presents a range of projects, suitable for advanced beginners and more experienced engineers that go far beyond the standard crystal sets of the past.

This book covers traditional radios -- TRF (Tuned Radio Frequency), reflex, regenerative, and super-heterodyne topologies - as well as front-end circuit designs for SDR (Software Defined Radio), the emerging future standard for radio technology.

Using widely available materials and the book's easy-to-follow plans, you can make radios that run for years on a single battery (even an organic "potato" battery or minimal solar cell array).

Other projects include simple TRFs with enhanced reception performance; reflex radios that amplify both audio and radio frequency signals in a single unit; a "green"

superheterodyne receiver, comparable in quality to commercially manufactured sets, but with vastly extended battery life; and other high-performance, low-power-consumption designs.

Provides practical circuits for the hobbyist that use easily available off-the-shelf parts bridges theoretical knowledge with intuitive explanations and practical examples.

Presents explanations of circuit designs and an introduction to signal theory--no advanced math training necessary!

Gives alternative circuitry choices and recommended parts hacks Covers fundamental radio circuit design principles you can apply to other radio types, such as ham, short wave, and long wave.

Comprehensive coverage:

- Overview of Various Radio Circuits;
- Calibration Tools and Generators for Testing;
- Parts and Improved/Hacked Parts for Building the Radios;
- Building Simple Test Oscillators and Modulators;
- A Low Power TRF Radio; Reflex Radios;
- Low Power Regenerative Radios; Superhet Radios;
- A Low Power Superhet Radio; Exotic Superhet Radios;
- Inductorless Radios; Software Defined Radio Circuits;
- Oscillator Circuits; Mixer Circuits and Harmonic Mixers;
- Sampling Theory and Sampling Mixers;
- IQ Signals;
- IF Circuits;
- Detector/AVC Circuits;
- Amplifier Circuits;
- Resonant Circuits and Band Pass Filters;
- Image Rejection;

About the author (2012)

Ronald Quan is a member of SMPTE, IEEE, and the AES. He worked on the design of wideband FM detectors for an HDTV tape recorder at Sony Corporation, and a twice-color subcarrier frequency (7.16 MHz) NTSC vector-scope for measuring differential phase and gain for Macrovision, where he was a Principal Engineer.

Ronald currently holds at least 65 US patents in the areas of analog video processing, low noise audio and video amplifier design, low distortion voltage controlled amplifiers, wide band crystal VCOs, video monitors, audio and video IQ modulation, audio and video scrambling, bar code reader products, audio test equipment, and video copy protection.

Tech Session in Sunnyvale Saturday July 14, 2012. (Includes Free Lunch)

Time: July 14th – 12 noon – 3PM

Subject: *What's This BaoFeng Dual Band Transceiver?*

Place: 1163 Quince Ave. Sunnyvale, 408-245-8210 monitor 146.52 MHz

Cost: *FREE to Cathay Members and Guest - Raffle Tickets: \$5 each*

Directions: *DeAnza College is on the the corner of Stevens Creek and Stelling Rd.*

If you are coming from the DeAnza College Flea Market, just head North on Stelling Rd.

Go 2 miles, past Homestead Road, past Fremont Ave. (Stelling Rd. will change names to Hollenbeck Ave. after you cross Homestead Rd.)

After Fremont Ave., watch for the first signal light which is Torrington, make a left. Go one block and you will run into Quince Ave. We are at 1163 Quince Ave.

I will monitor 146.52 MHz if anyone gets lost.

If you need precise directions from where you are coming from, go to www.googlemaps.com.

They seem to give the best directions or give me (Ed Fong) a call on the phone:408-245-8210.

This Tech Session event is just after the DeAnza College Electronics Swap meet. Before heading home from the swap meet, swing by my house and have a great lunch and meet new HAM friends. Lunch will consist of lasagna, pizza, salad, drinks, chips and desserts.

My daughters (Mei-lin – KJ6QXM and Violet) will serve homemade brownies and chocolate chip cookies. Why pay for lunch after the swap and then to HRO's? Drop by, save your money, and still have time to go to HRO's.

This year's Tech Session Topic: ***"What's This BaoFeng Dual Band Transceiver?"***.

So what is the latest scoop on the Handie Talkies (HT) coming out of China? In the past year there has been a lot of talk about these HT radios coming out of China. First there was the Wouxun model KG-UVD1P. This was a full featured 5 watt dual band hand held transceiver for just around \$100. Would you have ever dream of having such a radio 20 years ago?

I remember my first hand held was a Tempo FMH, it was a 6 channel crystal control single band VHF hand held that put out 2 watts way back in 1973. The cost of the radio alone ran me \$200. It was what everyone would talk about at the local ham meetings. I had to buy the crystals, one for receive and one for transmit.

By time this radio was loaded down, I would have easily put \$300 into it. It didn't even come with the rechargeable batteries. That cost another \$25. To put the cost in perspective with

today's money, in 1973 the US national average price of a gallon of regular gasoline was 39 cents and we all know too well the ridiculously sky high price of gasoline today!

Those early days of the primitive HT are now long gone. HT's of today have hundreds of memory channels, all synthesized, computer programmable, dual band (VHF and UHF), very high capacity Li-on battery packs, and the list of features just goes on and on.

One of the most interesting new affordable HT's on the market is from the BaoFeng Company of Sheng Zen, China. What put this company on the map was not that they introduced just another run of the mill dual band HT, but they introduced a tiny dual band HT (Model UV-3R Mark II) that sells for the ridiculously low price of \$40. Yes, \$40.

It took the ham community by storm. Within a few weeks of its release, there were thousands of HAM owners which naturally drew comments on Yahoo and QRZ.com.

It got me thinking, how could I go wrong? Total cost of the BaoFeng 3V-R Mark II was \$40 plus \$5 for shipping and duty tax from Hong Kong. I've paid more for a Cathay Amateur Radio Club dinner banquet.

I wasn't expecting much from the BaoFeng UV-3R Mark II, but when I received this gem in the mail, I was pleasantly surprised.

In a nut shell the specs are as follows:

Dual band VHF/UHF (full transmit capability 130-230 MHz, 420-520 MHz), separate receiver chip for FM broadcast – Also covers 220 MHz both transmit and receive with the modified software

2 watts output – both VHF and UHF (250 mw on 220MHz)

Programming software (for Windows 7 and XP), 100 memory channels

Dedicated FM Broadcast receiver chip (even detects stereo with headphone and a slight modification). Has it own 15 memory channels.

Built-in LED flashlight

Complete with 1500 MaH Lithium-ion battery

Smart Charger with USB cable so you can charge your HT anywhere there is a USB jack

Dual Band Antenna

Belt clip and Earphone microphone

For this low price, one would have expected a poor quality radio from BaoFeng. NOT SO.

The BaoFeng UV-3R Mark II is the same size as the Yaesu VX3R and even uses the same internal battery (NP60) and user interface.

Rumor has it that it comes out of same factory in China where by day the factory manufactures Yaesu's radios and by night they make the BaoFeng's radios.

Most of the Yaesu VX3R accessories will fit the Baofeng UV-3R Mark II. Just recently the BaoFeng UV-3R Mark II was certified under FCC rules Part 90.

After using it for a few days, I got really curious about what was making this little marvel tick. It turns out this is a state of the art "software defined radio" (aka SDR). The BaoFeng UV-3R radio uses an RDA 1845 chip which is a single transceiver on a chip.

RDA Microelectronics is a semiconductor chip design company located in Shanghai, China that has been designing set top box (STB) chip sets now for about 10 years. Because the RDA 1845 chip functions are software defined, its capabilities are only limited by your imagination.

I have my BaoFeng UV-3R Mark II working to the following frequencies.

- 130-230 MHz (yes, it will work on 220MHz with the proper software)
- 420-520 MHz (includes T-band)
- FM Broadcast radio

With 100 memory channels, I have pre-programmed VHF/ UHF ham, 220 MHz, MURS, FRS, GMRS, Marine and more.

At the July 14th Tech Session at my house in Sunnyvale (right after the DeAnza Swap meet) I will give a slide presentation on how this BaoFeng UV-3R Mark II radio operates.

I have the schematic of the both the radio and chip set.

The BaoFeng UV-3 Mark II has an SDR (software defined radio) architecture so it is quite different from the conventional single or dual conversion radios you may be accustomed to.

I will be raffling off two versions of the BaoFeng radios; One will be BLACK in color and other other in RED. Raffle tickets will be \$5 each.

We will provide for the food the following: Pizza, Lasagna, Salad, Desert and Drinks.

My two daughters, Mei-lin (KG6QXM) and Violet will make brownies for the desert.

We encourage you to buy raffle tickets to cover the cost of the food and radios prizes.



BaoFeng UV-3R Mark II - Black



BaoFeng UV-3R Mark II - Red