



Smoke Signals

Newsletter of Fullerton Radio Club
December 2015

REMINDER!

This Friday, December 18 is the Club annual dinner meeting, new officer installation and raffle. QSO begins about 6:30 PM with dinner served at 7:00 PM sharp. Marie Callender's restaurant, Yorba Linda Boulevard at Kraemer in Placentia. I trust you made reservations.

DON'T FORGET

Fullerton Radio Club
P.O. Box 545, Fullerton, CA 92836-0545

President

Albert Solomon, AG6OF
Phone: (714) 348-7938
E-mail: billpreston@roadrunner.com

Vice President

Bill Preston, KZ3G
Phone: (714) 393-8004
E-mail: billpreston@roadrunner.com

Secretary

Linda Endsley, KJ6IHB
Phone: (714) 992-4645
E-mail: lindierend@sbcglobal.net

Treasurer, Public Service, Membership

Gene Thorpe, KB6CMO
Phone: (714) 680-4258
E-mail: kb6cmo@juno.com

HDSCS

April Moell, WA6OPS
Phone: (714) 879-6895
Emergency Coordinator, HDSCS
E-mail: emcom4hosp@aol.com
www.hdscs.org

T-Hunt

Joe Moell, K0OV
http://www.homingin.com
E-mail: homingin@aol.com

OCCARO Representatives

Robert Gimbel, KG6WTQ

License Trustee

Albert Solomon, AG6OF
Phone: (714) 348-9097
E-mail: albertsolomon18@yahoo.com

Directors

Larry McDavid, W6FUB
Phone: (714) 630-5672

Robert Gimbel, KG6WTQ
Phone: (714) 657-2862

Mike LeFevre WD6AQH
Phone: (714) 674-7687

Richard Belansky, KG6UDD
Phone: (714) 970-6385

Director & Newsletter Editor

Paul Broden, K6MHD
Phone: (714) 871-9478
E-mail: pbroden@sbcglobal.net

Show –and–Tell

Bring something of interest to the meeting to show and share your story.
Something old, new, or just of interest to hams.

Web site: www.FullertonRadioClub.org

**No Board Meeting Minutes this month
due to auto accident and injury to our
Secretary. Get well Linda**

HOW ACCURATE IS YOUR FREQUENCY

We all use crystal oscillators in our ham radio and test equipment to set and check our frequency; we are required by the FCC to know we are operating within our assigned bands. Should we trust the settings on our radios? Remember, we are required to know our transmitting frequency and explaining that we just set our radio dial correctly will not satisfy this requirement.

Rigs today rely on quartz crystals to control frequency. But, these have finite accuracy and are temperature sensitive, as well as shock and vibration sensitive. So, how do you know what frequency you are tuned to? It starts with a requirement for known accuracy of an oscillator. Remember, crystal oscillators are easily changed in frequency so at some point they must be calibrated.

Today, by far the easiest and most accurate means of establishing frequency accuracy is by using the GPS satellite navigation and positioning system. Positioning is basically determined by time and time is determined by frequency. Our Air Force maintains the accuracy of the GPS satellites by very often adjusting their internal frequency standards from ground stations. Without this maintenance our GPS navigators would rapidly produce errors of miles. So, how can we as citizens and ham radio operators use the GPS system to establish accurate frequency? It turns out it is easy.

Cell phone towers must have accurate time in order to pass off a cell phone call from tower to tower without loss of data. Thus, it is common for cell phone towers to include GPS timing receivers. This equipment is replaced surprisingly often and the old but perfectly serviceable GPS timing receivers become available surplus. I've run one of the HP Z3801A GPS Disciplined Oscillator units for several years; it produces a high-accuracy 10 MHz signal. How accurate? Well, typically you can expect an accuracy of 1E11 or better. That's one Hertz in 10 GHz! There is simply no easier way to get this level of accuracy easily--and inexpensively.

How inexpensively? Well, various GPSDO units are readily available on eBay. I've recently been buying and evaluating a particularly inexpensive and excellent small GPSDO built on a roughly 3 x 5-inch circuit board. Several interchangeable versions of this board are available on eBay. The one I have been buying is identified as a "Used 10MHz Trimble 65256 GPS

OCXO Precision Clock circuit board oscillator" as eBay Item Number 111770391613. This used GPSDO sells for about \$69 with free shipping from China; other versions are sometimes priced higher or lower but it is hard to beat 1E11 accuracy for \$70!

The board requires only 6 vdc input and a GPS antenna to produce precision 10 MHz. This precision 10 MHz can be used as an external timebase for a frequency counter or signal generator. It's easy to do! Many of these boards have been sold and I know of none that does not work. The supply of these used units is not infinite so if you want one I suggest you order one while they are available. You will also need two MCX-to-BNC adapter coax cables, also readily available on eBay.

Folks, it's almost plug-and-play! Put the board in a small enclosure, provide 6 vdc and you've got a 1E11 accurate 10 MHz frequency source. Hard to beat.

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Larry McDavid W6FUB

Annual Jr. Tennis Tournament

It's that time of the Year again!!! Fullerton Jr. Tennis Tournament Time is Here Very Soon.

Jan. 30 & 31, 2016 and Feb. 6 & 7, 2016 are the Dates for this Year's Event.

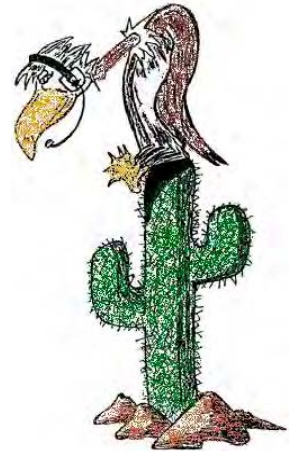
We need 36 Amateur Radio Operators for this Event so far. Please Contact Gene Thorpe KB6CMO@Juno.com with Name, Call Sign, Phone#, Date(s)/Time(s) available.

2016 SW Division Convention

Yuma Hamfest

Yuma, Arizona

Feb. 19 & 20, 2016



Yuma County Fairgrounds
2520 East 32nd Street, Yuma, Arizona

www.yumahamfest.org

Check the Website for Additional Information

Gates Open for Camping Thursday, 2 pm Vendor Setup Friday, 7 am - Noon	Event Hours Friday, Noon - 5 pm Saturday, 8 am - 5 pm	Hamfest Dinner & Grand Prize Drawing Saturday Night 6:00 - 8:00 pm
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Vendors & Exhibitors
Consignment Sales
License Testing
Hourly Door Prizes
On-site RV Camping
Hamfest Dinner
ARRL Speaker
Transmitter Hunt
\$5.00 Admission

Tailgating (Swap Meet)
Full Seminar Schedule
DXCC Card Checking
Incredible Grand Prizes
Emergency Preparedness
Admission Prize
Hospitality Area
Near Space Balloon Launch
Antenna Clinic

Hamfest Talk-In Frequency: 146.840 (-) PL 88.5 Hz

Email Contact: info@yumahamfest.org



We are proud to have the Amateur Radio Council of Arizona (ARCA) as a sponsor of our event.

The Yuma Hamfest is an American Radio Relay League (ARRL) sanctioned event.



Presented by the Yuma Amateur Radio Hamfest Organization



*The Associated Radio Amateurs
of Long Beach*

presents

ARALB Ham University



Extra License Class

Begins Saturday, January 9, 2016

9:00 AM – 12:00 Noon

Runs weekly; exam on February 27

Class will meet at the
The Church of Jesus Christ of Latter-day Saints
3824 Woodruff Ave., Long Beach

- ☞ \$45 class fee includes class materials, book and testing fee.
- ☞ Last day to sign up is Monday, December 28.
- ☞ Class size is limited to 20 people.
- ☞ License exam will be on February 27.

Download a registration form at:
<http://www.aralb.org/aralbhamuniversity/index.htm>

For more information, contact:
Bill Bradley, WD6FON
by email at WD6FON@arrl.org

Club Changes for 2016

Membership dues payments are in arrears for many of you. Some haven't been paid members since 2011. We will be reviewing the membership list, and those who have not paid membership dues will receive personal reminders. Continued non-payment may result in removal from membership roles and from receipt of Smoke Signals.

Another change; we will be looking to all members for increased input to Smoke Signals. How about a brief description of active radio projects? Might be something simple as DX contacts or 10-10 reports; maybe a special contact by CW. Would be best if it could include a photograph. Smoke Signals needs YOUR INPUT!

MEMBERSHIP RENEWAL / APPLICATION

Fullerton Radio Club
PO Box 545, Fullerton, CA 92836

(Please Print)

Name #1 _____ Call: _____ Class: _____

Name #2 _____ Call: _____ Class: _____

Address: _____ City: _____ State/Zip: _____

Phone #1: _____ Email #1: _____

Phone #2: _____ Email #2: _____

ARRL Member Yes No

Special Amateur Radio Interests: _____

Dues are \$20 per member, or \$25 per family. Students (full time) \$10
Bring your application and dues payment to the next meeting or mail to the above address.