

# SCCARA-GRAM



## Santa Clara County Amateur Radio Association

Volume 30, Number 4

April 2014



## Prez Sez

First a little self-indulgence; it does pertain to amateur radio although it may not seem that way at first.

From Wikipedia we get: *Benjamin Franklin (January 17, 1706 - April 17, 1790) was one of the Founding Fathers of the United States and in many ways was "the First American." A world-famous polymath, Franklin was a leading author, printer, political theorist, politician, postmaster, scientist, inventor, civic activist, statesman, and diplomat. As a scientist, he was a major figure in the American Enlightenment and the history of physics for his discoveries and theories regarding electricity. As an inventor, he is known for the lightning rod, bifocals, and the Franklin stove, among other inventions. He facilitated many civic organizations, including Philadelphia's fire department and a university.*

Franklin was truly a great man. If he had lived in our times I'm sure he would have been a ham. Can you see him flying his kite with antenna attached?

As a lad of 14 I witnessed the running of an electric truck through the downtown streets of Philadelphia. The front wheels were hard rubber with chain driven cog rear wheels. The truck may have been a one of a kind and was rumored to be built in 1902. The truck bore the placards of an electric battery company. It made quite a sound running on the cobblestone streets with those cog wheels.

The Baker Electric Car was first produced in 1899. In 1902 the Franklin Automobile Company started manufacturing automobiles in Syracuse, New York. With a name like Franklin you would expect the car to be electric, perhaps powered by a, trolley-like, overhead kite. Sadly, the name Franklin was a coincidence for the up scaled luxury car. It was powered by an air-cooled internal combustion engine.

In 1963 or perhaps 1964 I witnessed the running of an electrified 1961 Corvair in Santa Barbara. The car was being demonstrated by no less than the US Secretary of Transportation. Later an up scaled version was dubbed the Electrovaair III. The car was not a commercial success but did lead to do-it-yourself conversion kits for Corvairs. There are supposed to be 4143 of these vehicles in existence today.

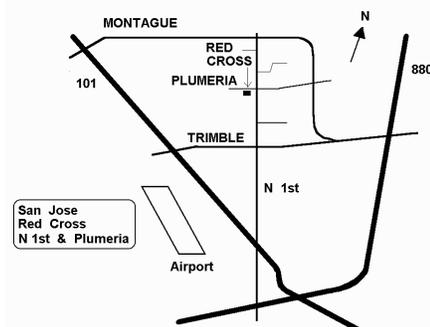
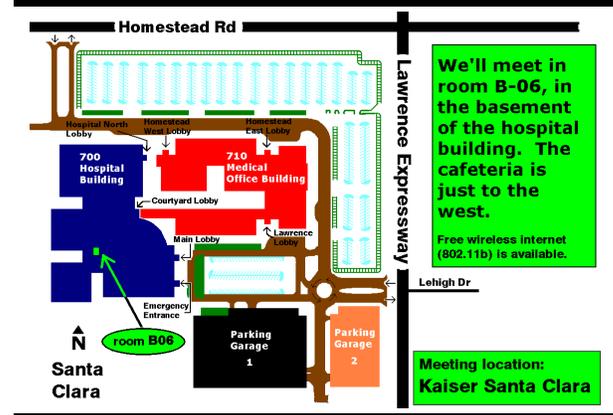
I had a 1961 Corvair coup. I liked the idea of going electric but I didn't like the idea of giving up my entire trunk volume to

## Calendar

- 4/14 SCCARA General Meeting
- 4/12 DeAnza electronic flea market
- 4/21 SCCARA Board Meeting--(San Jose Red Cross, 7:30p, all are welcome)

## General Meeting

- Day: Monday, April 14, 2014  
Time: 7:30 PM  
Place: Kaiser Santa Clara, B06 Hospital Bld.  
Featuring: Jim Peterson K6EI on Youth-Energized a club's Field Day



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**The deadline for articles is the last Monday of the month.**

SCCARA was formed in 1921 and became a non-profit corporation in 1947. SCCARA is an affiliate of the American Radio Relay League (ARRL). The club station is W6UW.

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**SCCARA REPEATERS**

SCCARA owns and operates two repeaters under the call W6UU:  
2 meter: 146.985 - PL 114.8  
70 cm: 442.425 + PL 107.2

Phone auto-dial and auto-patch is available. The two meter repeater is located at Eagle Rock near Alum Rock Park in the foothills of east San Jose. The 70 cm repeater is located at the Regional Medical Center (formerly Alexian), east of downtown San Jose, north of 280 and 101.

**SCCARA NETS**

On our two meter repeater: Mondays at 7:30 PM, (not the second Monday--our meeting night). Coordinator: Don Village, K6PBQ. On ten meters, 28.385 MHz USB, Thursdays at 8:00 PM. Net control: Wally Britten, KA6YMD. Visitors welcome.

**N0ARY PACKET BBS**

SCCARA hosts the packet BBS N0ARY (connect to n0ary-1). User ports: 145.09 MHz at 1200 baud, 433.37 MHz at 9600 baud, and telnet [sun.n0ary.org](http://sun.n0ary.org) (login "bbs"). Sysop: Gary Mitchell, WB6YRU. For general packet info, see the NCPA web site [ncpa.n0ary.org](http://ncpa.n0ary.org).

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batteries. I had a 50 watt, all tube, 2 meter radio that just fit between the two front wheel-wells of the Corvair trunk. Whenever I transmitted the lights dimmed and the car slowed down, no joke.

After seeing the electrified Corvair I knew what I liked and what I didn't like in an electric car. I set about designing my own car. I decided that nothing would be included in the design unless it really made sense. I would start from scratch. Even the wheels, the four on the ground and the steering wheel, had to make sense for an electric car or I wouldn't use them. The design progressed slowly. The microprocessor premiered around 1970. In 1975 I moved to San Jose and started the design over based around a microprocessor. The microprocessor solved a lot of design problems but I still had two insurmountable problems. No money for the project and no time for detailing the design.

Whenever Detroit came out with an electric car design like the EV1 I drove it. I was not impressed with anything they made. I just knew it could be better designed. When the Tesla (0 to 60 in four seconds) came out I was impressed. Here was a car similar to what I had already designed; a car that was designed from the ground up to be an electric car. For a mere \$100,000 or so, I could own one.

The bugaboo in any electric car design has been the battery. The Tesla uses the lithium Ion battery (Li-ion), the same battery used in newer HTs and cell phones. The original design used 13,000 Li-ion cells. Today it still uses 6,000. These cells are the principle reason why the Tesla costs a \$100,000.

Li-ion batteries are good technology. They are superior to lead acid batteries in almost every regard. However, I have always thought that further improvements in Li-ion technology or alternative technologies would be needed for the electric car industry to be a success. The good news I thought that amateur radio would piggy-back on any of those battery improvements. After all, who wants to lug around lead or even nickel cadmium batteries when Li-ion is much lighter per watt hour pound.

Then a company called, A123, came out with what they called "Nanophosphate® Lithium Iron Phosphate Battery Technology." LiFePO4 as it is known was proclaimed to be everything good from the Li-ion without the danger of lithium combustion fires that are accelerated when you apply water to their burning.

Many amateurs have already purchased A123 batteries for portable operation. Without a doubt they are superior to the familiar lead acid gel cell and all its derivatives. Unlike their Li-ion cousins they are rated as safe for airline transport. (Don't be surprised if TSA still thinks all lithium batteries bigger than a 'F' cell are banded when you try to take A123 through.)

There were a lot of smiles when the Federal Government announced early in the first term of the Obama administration they were funding research at thirteen wind, solar, and battery companies, among them A123 and Solyndra in Fremont. A123 was to provide batteries for the Tesla also located in Fremont. Here was an American car company and an American battery company teaming with the blessings of the Federal Government all in Silicon Valley. Surely jobs would be wrested from the Chinese and goodness and prosperity would follow.

It was not to be. Prior to the 2012 elections the Solyndra scandal erupted. Subsequently all thirteen companies failed, with most including A123, going into bankruptcy. What went wrong? Was the Federal Government the kiss of death?

In reality companies like Solyndra seemed like they were structured to fail from the beginning. Most of their bonds were rated as "Junk Bond" quality, so the financial community knew

something was wrong from the get go. But one reasoned that A123 had a promising technology. Why had this marriage of technologies failed?

It turned out there were some serious misconceptions about LiFePO4. For one, it was not more efficient than Li-ion. In fact LiFePO4 was less efficient. Then what about safety you ask? Safety is very important in a car.

In a collision Li-ion is really a safer technology than LiFePO4. The chances of a chemical fire, i.e. the lithium burning are much less than the chances of an electrical fire, i.e. the cells shorting and burning downward. Sparks are not the same as flame.

On the Tesla the battery compartment is located under the car. To date Teslas have had three fires. In each case the non-lithium fire burned downward and fell out of the car. The driver was never really in danger. Nevertheless Tesla has announced they are voluntarily adding a titanium barrier between the driver and the battery to guarantee the driver doesn't get a hot seat.

What about the future of amateur radio in electric cars? It seems certain that amateur radio will continue to piggy back on the electric car industry technology but LiFePO4 will not replace Li-ion any time soon. New HTs will continue to be powered by Li-ion batteries. Rigs in electric cars may be another matter.

What about my car design? Next month, more about how the new technologies are working on the side of amateurs and how the Chinese are not.

73, Fred, AE6QL, ae6ql@arrl.net



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## April Meeting

Jim Peterson (K6EI) will be speaking on How To Youth-Energize Your Club's Field Day. Jim has been a licensed radio amateur for 40 years and enjoys CW, contesting, and operating portable. Jim has been very active with Field Day and has acquired a lot of insight that he would like to share.

I hope to see you all at the meeting.

73 Gregg KF6FNA

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## SCCARA HF station at Stanford

SCCARA has had a HF station at the Stanford Native American POW WOW on Mother's Day week end for a number of years now. It is a good way to showcase our hobby and publicize our club.

We will be near the North East corner of the POW WOW grounds which is in the Eucalyptus Grove bounded by Galves Street (campus extension of Embarcadero Road), Campus Drive, Lausen Street and Arboretum Road. Talk in on the SCCARA repeater, 146.985- pl 114.8 Hz.

Help set up the station/antennas on May 9th in the afternoon. Operating hours will be during daylight hours starting Friday after the antennas are up, also Saturday and Sunday (May 9th, 10th and 11th).

Before your operating shift, enjoy the drumming, dancing,

arts and crafts that has made this the biggest POW WOW in the area.

Lou WA6QYS

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## Remote Control for the Amateur Radio Station

by Don Steinbach, AE6PM

There are various reasons why one might want to operate their home ham radio station from a remote location, or, conversely, move their station to a better location and operate it remotely from their home. In my case, I travel a lot and like to maintain a presence on HF in the Bay Area from wherever I happen to be, as well as to use a local 2-meter repeater.

The 2 meter remote operation was easily solved using EchoLink. I can operate from anywhere that I can find an internet connection. EchoLink then allows me to connect to an EchoLink node (i.e., a repeater connected to the internet such as K6SA). EchoLink functionality in this mode is basically push-to-talk to control the remote repeater plus an audio link to carry the voice back and forth. My remote station for that consists simply of a PC and a headset. EchoLink, as I understand it, is not well suited for more complex situations such as controlling a HF transceiver. However, it's ideal for my situation where I simply want to connect to a local EchoLink-enabled repeater such as K6SA. Best of all, it required almost zero effort on my part other than getting the software permissions.

The solution to the HF remote problem was somewhat more complicated since I needed to be able to control the station transceiver (band, frequency, mode, etc.), the station power supply and the station antennas as well as provide a two-way voice link. There are commercial solutions to this but I didn't feel like spending \$500 to \$1,000, plus, in some cases, buying a new transceiver as well. Besides, what could be more interesting than designing and building your own system?

### System Design

My basic design concept was that the local station would be a fully functional HF/VHF/UHF station plus a PC, and the remote station would be nothing more than a PC and headset. The two would be connected via the internet. Transmit and receive audio would be via the internet as well. Power control and other functions would be done via telephone landline using DTMF tones.

The most basic components of a remotely controlled station are obvious: (1) a transceiver capable of being remotely controlled, and (2) some way of controlling it. In my case I had a Yaesu FT-847, controllable via its built-in CAT serial interface, and a EeePC computer running Windows XP. As a test, I interconnected the two using a USB-to-serial adapter and 9-pin cable and installed Ham Radio Deluxe on the EeePC to control the FT-847. Using this minimal test bed I was able to confirm that I could indeed control the FT-847 radio from the EeePC computer. There would be no sense in continuing if this step failed. Emboldened by this success, I continued on.

Now that I had established a working interface between the EeePC and the FT-847, and proved that I could control the FT-847 using the EeePC, there were more items to tend to. Some were "needs" and some were mere "wants".

1. Need to have internet connectivity to the EeePC and to my

laptop.

2. Need to be able to operate the EeePC remotely from my laptop via the internet.
3. Need an audio interface between (a) the FT-847 and the EeePC, and (b) over the internet from the EeePC to my laptop.
4. Need to be able to turn the dc power supply for the FT-847 on and off remotely.
5. Want to be able to turn the EeePC on and off remotely.
6. Want to be able to monitor the dc voltage and current from the station power supply feeding the FT- 847.
7. Want to be able to monitor the RF power output and SWR at the FT-847.
8. Want to be able to control a 3-position antenna switch from my remote location.

## Internet Connection

The internet connectivity to the EeePC already existed at my station in the form of a cable modem and range extender. I had been using that configuration for some time, so there was little or no risk in the setup. On the downside, my ISP (Comcast) has managed to totally obliterate that link in the past when they feel compelled to do something to their system and the cable modem stops working. They manage to get it working after I call them—the failure is always the result of a “glitch,” never anything they did! On at least one occasion that knocked the range extender out of whack and I had to do a power on/off reset. Unfortunately, I wouldn't be able to do that if I wasn't here, so at that point it would be goodbye remote operation. Stuff can happen! Leave a key with a neighbor.

## PC Control

There are several applications available that allow one to “see” and operate one computer from another. I chose to use a free program called LogMeIn. That allowed me to operate the station computer (EeePC) from my Sony Vaio laptop over the internet. With that in place I could launch Ham Radio Deluxe on the EeePC and control the FT-847 remotely from my laptop. One more step accomplished.

## Audio Interface

I chose to use the EeePC sound card interface to handle the audio. There were two issues here: (1) getting audio to/from the FT-847 to the EeePC and (2) getting an audio link over the internet between the two computers.

There is a ‘data’ connector on the back of the FT-847 that provides audio at about 200 mV independent of the volume control setting—perfect for this application. I built a circuit with an isolation transformer and level-adjust potentiometer and connected that between the FT-847 and the microphone input of the EeePC. I used a similar circuit to connect the EeePC headphone jack (audio output) to the microphone connector on the front of the FT-847. I incorporated all of the circuitry into a PC/Radio Audio IFU, built specifically for the purpose. See Figures 1 and 2.

Skype seemed like a logical choice for handling the audio over the internet so I created a separate Skype account on each computer and tested it to make sure I could call each computer from the other. It worked perfectly! I configured Skype on the EeePC so that it launches when the PC starts up, leaving one less thing to do when establishing the remote connection.

A bit of experimenting is required at this point to set the audio levels correctly using the potentiometers in the IFU and making sure that neither the computers nor Skype is allowed to make any audio level adjustments on their own.



Fig. 1. The PC/Radio Interface Unit provides DC isolation and amplitude adjustment for the audio signals between the transceiver and the PC.

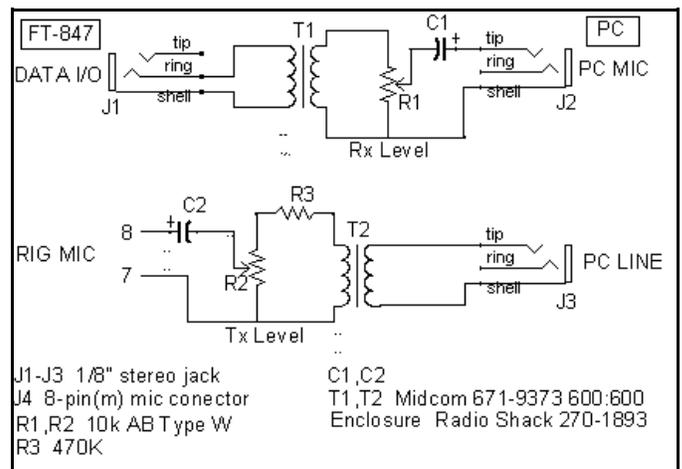


Fig. 2. Schematic diagram for the PC/Radio Audio Interface Unit.

## Station AC/DC Power Control

My original plan was to remotely control the ac power to the station 13.6 Vdc power supply, and then separately control the dc power to the FT-847. That's probably the best way to do it since the power supply would have time to ‘settle down’ before its dc output is connected to the radio. However, I did some testing leaving the power supply and the FT-847 both turned on and switching the ac to the power supply only. No adverse effects were noted, so I elected to take advantage of this small bit of simplification and simply switch the ac power to turn the dc power on and off.

At this point I modified a commercial power strip by replacing the on-off switch with a relay and rewiring it so that the outlets were switched by the relay. Then I built up a Remote Power Controller (Fig. 3) circuit to interface that relay to a Ramsey DTMF Controller (Fig. 4) so that I could control the power remotely over the conventional telephone line. I built the DTMF Controller from a kit but one could certainly build one from scratch—it just takes a

lot longer and probably isn't much cheaper. The DTMF Controller continuously monitors the telephone line and provides a separate output for each of the 16 possible DTMF tone pairs from a touchtone phone. In order for this to work, someone has to answer the telephone, of course, and I assigned that task to my answering machine.

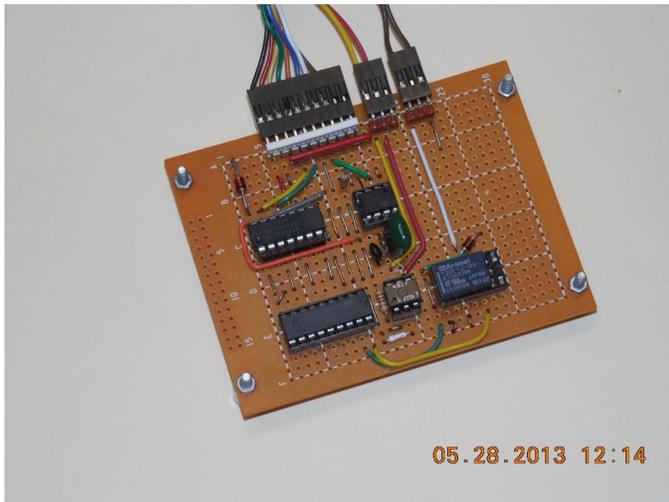


Fig. 3. The Remote Power Controller provides an opto-isolated switch closure to the PC for power control and provides relay drive for AC power switching.



Fig. 4. The DTMF Controller decodes the DTMF tones from the telephone line and provides 16 independent logic-level outputs. This was assembled from a kit from Ramsey Electronics.

## PC Power Control

I wanted to be able to turn the EeePC power on and off remotely. Whether or not that was a good decision remains to be determined—there are issues with that as I shall discuss later.

This was perhaps the scariest part of the whole project. I had determined that pressing the EeePC power key momentarily would turn it on, and holding the key for 1 or 2 seconds would turn it off.

I briefly considered actually using an electromechanical solenoid to do just that. Twenty-twenty hindsight suggests that perhaps I should have chosen to use a small tower computer rather than the laptop (EeePC) and just switched the ac power to it.

Up to this time I had never been inside a laptop computer, but since the power switch seemed likely to be accessible from within, I decided to try to bring out two leads to jumper the switch. I found some helpful instructions on the internet and managed to get the EeePC open and the switch exposed with no fatalities. What I found wasn't a switch but rather a thing with too many terminals. Fortunately, I was able to find a schematic on the internet and deduced the two terminals that would let me take control of the power. I soldered two wires to the 'thing' and drilled a hole in the case to bring them out as seen in Fig. 5. I found that the two wires had 2.93 Vdc between them and that momentarily connecting them switched the power. I added a circuit to the Remote Power Controller using an optocoupler driven by one of the DTMF Decoder outputs to incorporate this power control functionality.

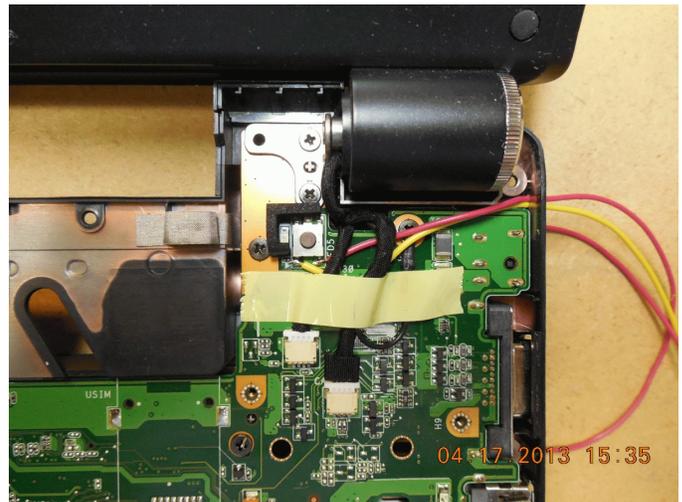


Fig. 5. Power control for the EeePC is provided via the red and yellow wires soldered to the switch terminals and brought out through the side of the case. An optocoupler in the Remote Power Controller does the switching.

There is a capability known as Wake On LAN that is intended to control PC power remotely. My BIOS doesn't support this and after reading several articles on the subject it appeared that getting it to work (even if supported by my BIOS) could potentially be another huge time sink.

## DC and RF Monitoring

I wanted to be able to remotely monitor some station parameters such as rf power, SWR, dc voltage and current. Several years ago I added a WaveNode system to my station. It connects to a USB port on the EeePC and displays the desired parameters on the PC screen that I can then view on the remote computer. There are certainly other ways to do this, but I chose to use what I already had in place. Simply launching the WaveNode software on the EeePC from the remote laptop lets me see more than I probably really need to know.

## Antenna Switching

I wanted to be able to remotely switch between two HF antennas and a dummy load. I have a 3-position remote antenna switch built

from a QST article and controlled via my homebuilt Station Control Unit (Fig. 6). I modified that box, adding connections from the WaveNode system to switch the antennas. Again, I used an existing capability and added the remote control functionality that I didn't have before.

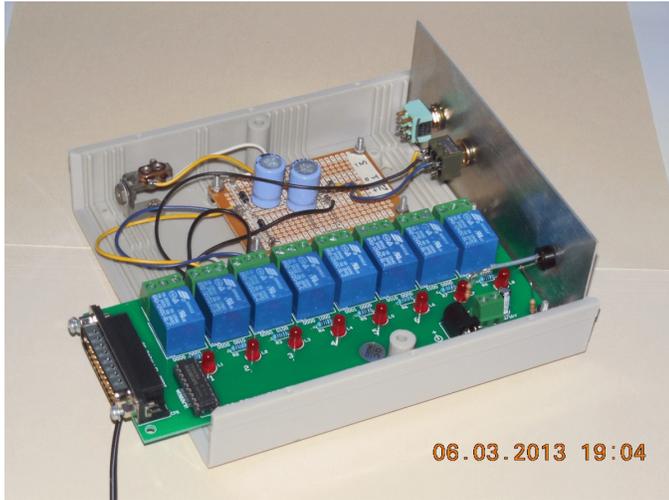


Fig. 6. The Station Control Unit provides for antenna switching. The relay board is from qkits.

### Issues and Problems

After I assembled the Ramsey DC12 DTMF Interface Controller I connected it to the telephone line for testing. The initial test results were disappointing since the decoding was erratic. I spent several hours troubleshooting to see what I had done wrong and eventually discovered that there was a design error in the DC12—not something I did. The design had the tip and ring signals at the connector on the unit reversed such that signal and ground were reversed. I solved the problem by adding the homebrew Telco Isolator in Fig. 7. I sent an email to Ramsey asking about the problem and they've never responded.



Fig. 7. The Telco Isolator is simply a 1:1 audio isolation transformer connected to the telephone line through a 2 uF non-polar capacitor.

My decision to turn the EeePC power on and off had pitfalls. Specifically, I was using Windows, and at startup or shutdown a screen would sometimes appear that required some sort of action from the EeePC keyboard. Guess what—I'm not there to respond and there the remote system simply grinds to a halt. Repeatedly shutting the PC down and restarting it would sometimes clear the problem, but I was never sure whether power was on or off, or if the PC was waiting, or whatever. I eventually installed a X10 Internet TV Camera so that I could see the EeePC screen but it died after about two weeks. My final solution was to just let the EeePC run all of the time and never let it go to sleep or hibernate.

As mentioned earlier, Comcast sometimes does something such that the cable modem doesn't work anymore. When called, the standard instructions are to turn off this, unplug that, etc. There is no one home to do all that and eventually they will figure out how to fix the problem. I need to use a range extender at home and the Comcast outage has caused it to lose contact and require a power-on reset. Again, leave a key with a neighbor.

Finally, I turned off all automatic updates, especially Microsoft and Norton, since they invariably wait for an operator response which will never happen.

### Summary

Remote operating capability is now in place for my home station. I needed to design and build some very simple new hardware (PC/Radio Audio IFU, Telco Isolator, and Remote Power Controller), assemble a kit (DC12 DTMF Controller) and modify some existing hardware (the EeePC and Station Control Unit). I figured out what parameters to change in my wireless router and how to change them, and how to incorporate an internet television camera and set up port forwarding for it. Small technical challenges like these are one of the things that keep the hobby interesting.

Schematic diagrams for the Telco Isolator and the Remote Power Controller can be found at [http://ae6pm.com/Presentations/Remote\\_Control\\_for\\_the\\_Ham\\_Radio\\_Station.ppt](http://ae6pm.com/Presentations/Remote_Control_for_the_Ham_Radio_Station.ppt). There is a system interconnect diagram there as well.

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## ARRL News

From the *ARRL Letter*, March 6, 2014

### ARRL BOARD REQUESTS MEMBER COMMENTS ABOUT DIGITAL MODES

At the January 2014 ARRL Board of Directors meeting, a resolution (see below) was passed which asked for member feedback and input pertaining to the increasing popularity of data modes. The information gathered by this investigation is to be used by the HF Band Planning Committee of the Board as a means to suggest ways to use our spectrum efficiently, so that these data modes may “compatibly coexist with each other.”

As per the resolution, the ARRL Board of Directors is now reaching out to the membership and requesting cogent input and thoughtful feedback on matters specific to digital mode operation on the HF bands. The feedback may include, but is not limited to, the recent proposal the ARRL made to the FCC, RM-11708, regarding the elimination of the symbol rate restrictions currently in effect.

The Board of Directors believes that member input in the decision-making process is both valuable and important as well as

fostering a more transparent organization. It is to this end that we open this dialogue.

Comments must be received no later than March 31, 2014, to be included in the Committee's report to the Board at the July 2014 ARRL Board of Directors meeting. Please e-mail your comments to [HF-Digital-Bandplanning@arrl.org](mailto:HF-Digital-Bandplanning@arrl.org) Concerned members may also contact their Division Director by mail, telephone or in person with any relevant information.

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From the *ARRL Letter*, March 13, 2014

## **HAMS' EXPERIMENTAL VLF SIGNALS HEARD IN THE UK, EUROPE**

In what's believed to be a "first," a very low frequency (VLF) signal from a ham radio experimenter in New York was heard across the Atlantic. Bob Raide, W2ZM, was transmitting on 29.499 kHz under a Part 5 Experimental license, WH2XBA/1. His very slow-speed (QRSS) CW signal was initially detected in the UK just before 0000 UTC on March 3 by Paul Nicholson, an SWL, and later by Mike Dennison, G3XDV, and Markus Vester, DK6NM, in Germany. Nicholson also copied a 29.501 kHz transmission from Dex McIntyre, W4DEX, in North Carolina, operating as WH2XBA/4.

"In recent weeks a number of amateur tests have been running from the USA to Europe around 74 kHz and at 29.499 kHz using several hundred watts to large antennas," blogged Roger Laphorn, G3XBM. He said that signals on 74 kHz were "well copied," but that "the surprise" was detecting the 29.499 kHz signal. "As far as I know, these 29.499 kHz VLF signals are the first amateur VLF [transmissions] to span the Atlantic -- fantastic results by well-equipped stations using suitable receivers and good software."

Warren Ziegler, K2ORS, who is on the Experimental license as WH2XBA/2, told ARRL that he and several other radio amateurs have obtained Part 5 licenses to experiment on 500 kHz and on 137 kHz. Ziegler, who has been a participant in the ARRL-sponsored experimental operations on 500 kHz as WD2XSH/23, said Raide wanted to be the first to span the Atlantic on VLF, which he defined as between 3 kHz and 30 kHz, so Ziegler applied for and received the WH2XBA Experimental grant, and included Raide and four others on the license.

"I was ready," Raide told ARRL. His transmitter has a 3CX3000A7 tube in the final, running grounded grid and generating 800 W. The effective isotropic radiated power (EIRP), however, was estimated to be approximately 1 mW. To operate on 10,000 meters, Raide has a 90 foot vertical antenna using a reconfigured Zepp, fed via a huge loading coil that is 4 feet tall, more than 1 foot across and comprised of some 2000 feet of #14 wire. He employs a few thousand feet of "chicken wire" for his radial system.

The transmission consisted of "XBA" sent at a rate of 120 seconds (2 minutes) per dot and 360 seconds (6 minutes) per dash of CW. In the UK Nicholson copied the signal on software using a PC sound card with a preamplifier ahead of it. His antenna is a pair of orthogonal loops, each 20 meters square, at ground level, transformer coupled to the preamplifier. Read more at [www.arrl.org/news/hams-experimental-vlf-signals-heard-in-the-uk-europe](http://www.arrl.org/news/hams-experimental-vlf-signals-heard-in-the-uk-europe).

-- Thanks to Warren Ziegler, K2ORS, Bob Raide, W2ZM, and Joe Craig, VO1NA

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From the *ARRL Letter*, March 20, 2014

## **ARRL TO FCC: "GROW LIGHT" BALLAST CAUSES HF INTERFERENCE, VIOLATES RULES**

The ARRL has formally complained to the FCC that a "grow light" ballast being widely marketed and sold is responsible for severe interference to the MF and HF bands. The League urged Commission action to halt sales of the Lumatek LK-1000 electronic ballast and to recall devices already on store shelves or in the hands of consumers. In a March 12 letter, ARRL General Counsel Chris Imlay, W3KD, told the FCC Enforcement Bureau and its Office of Engineering and Technology (OET) that, during ARRL Laboratory testing, the Lumatek device exhibited conducted emissions that exceeded FCC rules.

The Lumatek LK-1000 electronic ballast.

"ARRL has received numerous complaints from Amateur Radio operators of significant noise in the medium and high frequency bands between 1.8 MHz and 30 MHz from 'grow lights' and other RF lighting devices generally," Imlay said in the complaint. "The level of conducted emissions from this device is so high that, as a practical matter, one RF ballast operated in a residential environment would create preclusive interference to Amateur Radio HF communications throughout entire neighborhoods." An extensive Conducted Emissions Test Report detailing the ARRL Lab's test results was attached to the League's correspondence.

"[T]he Report concludes from the conducted emissions tests that the six highest emissions from the device in the HF band vastly exceed the quasi-peak limit specified in Section 18.307(c) of the Rules," Imlay told the FCC. The ARRL further pointed out that, while an FCC sticker had been affixed to the device, it lacked FCC compliance information. FCC Part 18 rules require RF lighting devices to provide an advisory statement with such a device, notifying users that it could interfere with radio equipment operating between 0.45 MHz and 30 MHz.

The League noted that the device is imported into the US and marketed and sold by Sears, where ARRL purchased its test sample, as well as by Amazon.com and other retail outlets. The ARRL also called on the FCC to consider enforcement proceedings against the importer, Hydrofarm Horticultural Products of Petaluma, California. Read more at [www.arrl.org/news/arrl-to-fcc-grow-light-ballast-causes-hf-interference-violates-rules](http://www.arrl.org/news/arrl-to-fcc-grow-light-ballast-causes-hf-interference-violates-rules).

## **FCC INVITES PUBLIC COMMENT ON PETITION AFFECTING 10-10.5 GHZ BAND**

The FCC has invited public comment on a Petition for Rule Making (RM-11715) that would make a significant portion of the 10.0 to 10.5 GHz band available for wireless broadband services. The Petition by Mimosa Networks Inc proposed a band plan for 10.0 to 10.5 GHz that, it said, would protect frequencies most often used by radio amateurs. The petition hinges on FCC adoption of rule changes that would put the 10 GHz band under Subpart Z of the Commission's Part 90 rules. Subpart Z currently sets out regulations governing wireless licensing, technical standards, and operational standards in the 3650 to 3700 MHz band.

"[T]he application of the coordination procedures and requirements provided in Subpart Z will ensure that Amateur Radio operations in the band will not be disrupted," Mimosa told the FCC. "In addition, as a further safeguard, Mimosa proposed a band plan for the 10.0-10.5 GHz band that would protect frequencies in the band that are most often used by Amateur Radio operators." The proposed band plan would specify 10.350 to

10.370 GHz as an "Amateur Calling Band," and 10.450 to 10.500 GHz for Amateur-Satellite operations in the midst of 21 wireless broadband channels and a small guard band.

Mimosa has proposed to include in the rules a requirement for wireless broadband service operation in the band "to avoid harmful interference with Amateur service and Amateur-Satellite service operations in the band."

Mimosa contended that its proposal would "promote the Commission's goal of providing broadband access to all Americans, would benefit wireless Internet service providers, mobile wireless carriers, and telecommunications equipment providers, and would benefit the national economy." Mimosa cited the band's "long-reach, high-capacity characteristics" and called 10 GHz "a promising candidate for wireless broadband."

ARRL Chief Executive Officer David Sumner, K1ZZ, said that while the League appreciates Mimosa's efforts to acknowledge existing and growing 10 GHz Amateur Radio activity, several aspects of the petition are of concern.

"Use of the band for fixed or mobile wireless broadband would be contrary to the international Table of Frequency Allocations and would inject a new sharing consideration that is not contemplated in the preparatory work being done for World Radiocommunication Conference 2015 (WRC-15)," he said. "Mimosa's proposed power limit of 55 dBW EIRP is very high, particularly for point-to-multipoint operations, and no mechanism has been proposed for ensuring that harmful interference to amateur operations does not occur."

Sumner said that while the ARRL has not yet adopted a position with respect to the petition, "some aspects of the petition require careful study."

Interested parties may comment on RM-11715 using the FCC's Electronic Comment Filing System (ECFS). Read more at [www.arrl.org/news/fcc-invites-public-comment-on-petition-affecting-10-10-5-ghz-band](http://www.arrl.org/news/fcc-invites-public-comment-on-petition-affecting-10-10-5-ghz-band).

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## Flea Market Date Change

Due to the fact that the Red Cross has withdrawn from the schedule, all the clubs have moved back one month. SCCARA will now have the honor of hosting the July De Anza Electronic Flea Market on July 12th. Please reserve the day and mark your calendar accordingly.

The flea market is the only fund raising activity the club has and SCCARA relies on your participation.

### Electronics Flea Market - Updated Host Schedule:

Apr.12 West Valley Amateur Radio Association.  
May10 Palo Alto Amateur Radio Association.  
June14 South Peninsula Amateur Radio Klub.  
**July12 Santa Clara County Amateur Radio Association**  
Aug.9 Southern Peninsula Emergency Communications System.  
Sep.13 Foothills Amateur Radio Society.

Lou WA6QYS

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# Meeting Minutes

## General Meeting, March 10, 2014



Kaiser Hospital, 710 Lawrence Expressway, Santa Clara CA 95051 Status: Unreviewed

The SCCARA General Membership Meeting was called to order by Fred Townsend AE6QL at 19:34.

Members and guests introduced themselves. Lou WA6QYS announced that meetings would move to the basement room for meetings from April until September, and then return to the usual C1/C2 room. Watch for posted signs each meeting that will give directions to the room. Fred AE6QL introduced club officers.

### Announcements:

Lou WA6QYS gave a report on the electronics flea market: the past Saturday was the first flea market of the season, held by SVECS. He thanked the SCCARA members who helped out. They had a good turnout of vendors and customers, but he observed that after the fee to DeAnza, and the truck rental to replace the Red Cross truck, it is almost more of a community service than a fund raiser. All clubs will have a similar problem replacing the Red Cross truck. The SCCARA flea market is tentatively in August. Fred AE6QL mentioned that a covered trailer, already loaded and parked somewhere would be ideal. John W6JPP announced the American Legion has an enclosed utility trailer, and are discussing making it available to clubs for a nominal donation.

John also announced there would be a memorial service for Hermann's brother Henry at the merican Legion Hall on March 16.

Gary WB6YRU offered an idea for the club: Don KK6MX has an ATV repeater and nowhere to put it. There is room where the SCCARA BBS is, if the club were interested in exploring this activity.

Don K6PBQ thanked SCCARA for the cards, sympathy, and article for Joan. Regarding the holiday banquet, he is seeking comments on location: people should let him or the directors know if they are happy with the restaurant or if they know of a better place. Our usual location is now a Mexican restaurant, but with the same cooks, and they will serve us the previous menus. John W6JPP observed that the club makes no money from the banquet: other clubs are charging \$75 for their banquets. Don would like to make reservations early.

Fred AE6QL announced that after the presentation, there will be a raffle for a 2013/2014 repeater directory donated by the ARRL Pacific Division.

Don K6PBQ announced the club station would be open on the last Saturday of the month (the 29th), and reported there was a nice turnout last month.

John W6JPP has heard from Sarla VU2SWS who visited us for 6 months last year. She will be on 14.240 at 1800 PDT every night; John suggests if you can't hear her over the long path, try the short path.

Gregg KF6FNA announced the evening's speaker, Don Steinbach AE6PM (previous president), speaking on his experience operating his ham shack remotely, between Montana and Saratoga. His Montana location has a high noise level; a magnetic loop was effective but resulted in a low signal level. He gave a sample of his literature search for available solutions. Anyone buying a new radio should check out the new support features available, but he wanted to use his existing rig, and control it by a co-located remote PC as well. He presented his design requirements, and an overview of his solution, followed by more detailed block

diagrams, circuit schematics, and description of the software he selected. He explained some of the challenges he had in debugging across the distances involved (start with the remote station in the same house!, and dealing with the PC's operating system.

Fred adjourned the meeting at 20:53, and everyone enjoyed the leftover donuts donated to our meeting by SVECS.

Viki Moldenhauer, Secretary KI6WDS

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## Board Meeting, Oct. 21, 2014



{No minutes received. – Editor}

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## Packet Pieces

### Downloaded from the BBS packet network:

=====  
Date: 26 May 2010 02:35  
From: W1GMF@W1GMF  
To: HUMOR@USA  
Subject: Dating Service  
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A woman went to a computer dating service and said she didn't care about looks, income or background. All she wanted was a man of upright character.

Then a man came in and told them the only thing he was seeking in a woman was intelligence.

The service matched them together at once because they had one thing in common – they were both compulsive liars.

=====  
Date: 7 Jun 2010 02:41  
From: W1GMF@W1GMF  
To: HUMOR@USA  
Subject: Defensive Driving Course  
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One of my co-workers got a speeding ticket and was attending a defensive-driving course to have points erased from his license. The instructor, a police officer, emphasized that being on time was crucial and that the classroom doors would be locked when each session began.

Just after one class started, someone knocked on the locked door. The officer opened it and asked, "Why are you late?"

The student replied, "I was trying not to get another ticket." The officer let him in.

## Need Help?

Amateurs have a long history of helping each other. An experienced amateur who helps another is traditionally called an "Elmer." If you have a question or problem, you are encouraged to ask one of SCCARA's Elmers. Below is a list of topics including who to contact for each. If your topic isn't listed, ask one of the Elmers under the topic that comes closest and we'll ask around.

If you consider yourself to be reasonably competent in at least one area of amateur radio and would be willing help others, please fill out an Elmer form from the club secretary.

Antennas, feed-lines, tuners: WB6EMR, W6JPP, K6PBQ, WB6YRU  
Lightning protection, grounding: WB6YRU  
Station set-up, equipment: K6PBQ, W6JPP  
TVI/RFI: WB6YRU  
Homebrew projects, construction: KD6FJI, WB6YRU  
Computers: older IBM PC: WB6YRU  
Packet Network (BBS, forwarding): WB6YRU  
Code operating and installations: WB6EMR, K6PBQ  
DX (long distance/propagation): WB6EMR  
Emergency operating/preparedness: WA6QYS  
HF operating techniques (SSB, CW): WB6EMR, K6PBQ  
Legal/FCC rules: WB6YRU  
SCCARA (club inner workings): K6PBQ, WB6YRU, WA6QYS  
EchoLink: KK6MX  
License testing, new amateurs: W6JPP

WB6EMR, James D. Armstrong, Jr.,  
evening & msg: 408-945-1202

KD6FJI, Lloyd DeVaughns,  
408-225-6769 e-mail: kd6fji@arrl.net

KK6MX, Don Apte, 408-629-0725  
e-mail: kk6mx@aol.com

W6JPP, John Parks, 408-309-8709  
e-mail: w6jpp@arrl.net

K6PBQ, Don Village, 408-263-2789  
e-mail: donvillage7@yahoo.com

WA6QYS, Lou Steirer, 408-241-7999  
e-mail: wa6qys@arrl.net

WB6YRU, Gary Mitchell, 408-269-2924  
packet: home BBS NOARY  
e-mail: wb6yru@ix.netcom.com

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## Newsletter Notes

Thanks to Don AE6PM for another of his fine technical articles.

Please remember that you don't have to be an engineer to write an article for the SCCARA-GRAM. If you have anything of interest to Amateur Radio, that's good enough!

73, Gary WB6YRU, editor

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**SCCARA**

Santa Clara County Amateur Radio Association  
PO Box 106  
SAN JOSE CA 95103-0106

Affiliate of the ARRL,  
American Radio Relay League



**FIRST CLASS**

**ADDRESS SERVICE REQUESTED**

**SCCARA Membership Form for 2014**  
If none of your info has changed, fill in name and call only

Name: \_\_\_\_\_ Call: \_\_\_\_\_ Class: E A G T N

Address: \_\_\_\_\_ Licensed since (yr): \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ - \_\_\_\_\_ Licence Expiration  
Date (mo/yr): \_\_\_\_\_

Telephone: ( ) \_\_\_\_\_  New Member  Renewal  
 I'm also a member of the ARRL

E-mail: \_\_\_\_\_

make sure your e-mail is legible and correct if you want the newsletter by internet

Memberships begin January 1 and expire December 31.

**If renewing:** annual membership dues (base rate) are: \$20 Individual, \$25 Family, \$10 Student (under 18)

**For new members:**

If joining in January: base rate

If joining in February through October: base rate x (11 - month) x 10% (e.g. for June, that would be: base rate x 50%)

If joining in November or December: free for November and December if paying the base rate for the following year

\$ \_\_\_\_\_ **Dues payment for:**  individual  family  student

For family memberships (at the same address), please include a separate form for each family member.

**I want the newsletter by:**  U.S. Mail  internet  
(costs the club about \$35/year)

Give this completed form (or copy) with payment to the Secretary or Treasurer at any meeting or mail to the club address.