

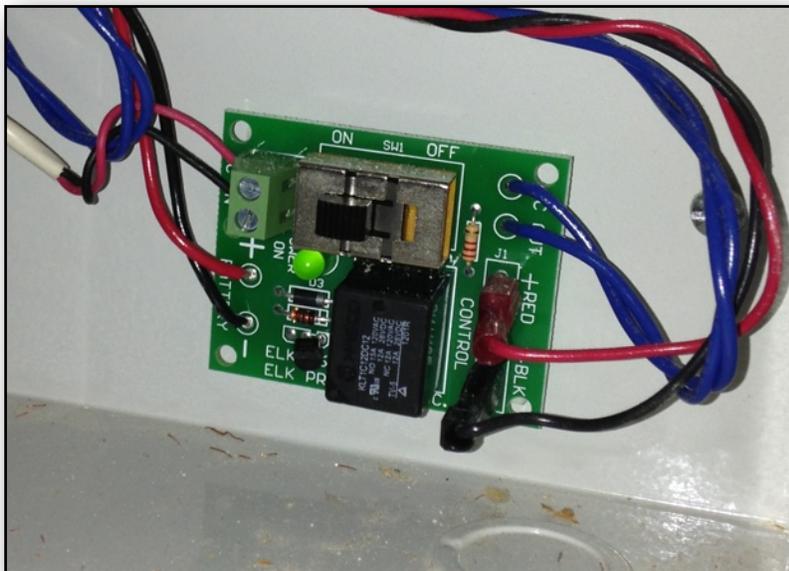


BROOKHAVEN NATIONAL LABORATORY AMATEUR RADIO CLUB AUGUST 2013

NEWSLETTER

The Alarming Truth about RFI

How to bypass trouble! by KD5SFQ



One Sunday morning I discovered that the dipole I installed was a bit too close to my home alarm system wiring. When I keyed up on 40 meters, it would set off an alarm. Fortunately the manufacturer had a

solution. The module pictured above allows the system to be shutoff without setting off a power outage alarm and it also prevents RFI from wiping out the programming in the flash memory.

In the Shack

Unused equipment will be sold to help finance a replacement rotor and the repair of the existing one.

We are still looking for those interested in restoring vintage equipment that was donated to the club.

Repeater News

The repeater will be relocated in the trailer at some point in the future. Those wishing to help may contact Rich Conte or myself.

The repeater will also be powered down while work is being done on the tower.

*-Gary Stevens
KD5SFQ*

EF2000iS Mini-Review

If you are looking for a portable generator that is quiet and can run your computer or other sensitive electronics then the Yamaha EF2000iS may be what you are looking for. Weighing in at 44 pounds this unit is super fuel efficient. It can run up to 10.5 hours on 1 gallon of gas. It also has a 3 year warranty.



The noise level is 51-5 to 61 db. You can stand next to it and have a conversation in your normal voice.

The power output is 1600 watts with 2000 watt surge. I was able to power a refrigerator, TV, cable box, internet, gas fired hydronic heater and a few lights during hurricane Sandy.

In spite of the steep price tag of about \$1000, It get thumbs up from almost every owner.



The Tale of the Dead Soldiers

By Rich Conte,
N2RRQ

Simply using these radios on my motorcycle commute to work over the years has created the carnage depicted in the photo. The radios and parts are arranged in the approximate order I acquired them from left to right.

First radio on the left is a partial non-working Yaesu FT-530 donated to me by Mark N2FLF. The second FT-530 from the left is my first radio purchased about a year after I obtained my ham license. The donor radio from Mark provided parts to rebuild the original FT-530 which had multiple problems that I can no longer remember. I swapped over a few boards and got it working but it's extremely unstable and fragile. Only a few memories can be programmed into it before the processor gets confused and the display goes to hell. It also always loses the memories if the battery is allowed to die and that happens even with a good lithium back up battery in it. This HT happens to be my base radio and transmits the full 5 watts on both bands if necessary but if I talk for too long it can set clothes on fire.



The third part from the left is just a front case for the Yaesu FT-51 which is the fourth item from the left. I purchased the FT-51 used on EBay and ran it on the bike for a few years. It's also the radio that I was using on the motorcycle one morning while talking to the late W2OHM Rich Pierce. When I unkeyed the PTT there was no repeater any more and within a few minutes I discovered the radio was no longer in my pocket and my connecting cables were dragging behind the motorcycle. Since my transmissions generally tend to be rather long there was quite a bit of distance to backtrack to try to find where the radio went. I eventually found it about 10 minutes later on the side of the road all scratched up with a bent rubber duck and about 1000 feet back from where I had stopped and so you see the reason for the extra case in the picture. I plugged everything back in and resumed the commute and conversation with Rich who was worried that something had happened to me. The radio was retired when it became intermittent for both transmit and receive but it remains my favorite out of all the HT's for it's ease of use and not getting hot on high power.

The fifth item from the left is a Yaesu FT-60 that I purchased new after the FT-51 died. Mechanically the radio is quite strong as I mistakenly ran it over with my 2000 pound pop up and it still worked fine after that with just a couple scratches. In total it lasted about two years before the transmit on both bands died. It now puts out milliwatts on both bands.



Sixth item from the left is a Kenwood TH-F6A purchased new. It lasted about two years as well. The 70cm band transmit section died about three months ago. It puts out a few milliwatts now on 70cm but the 2 meter and 220 bands still work correctly. That's not much help to me on the BNL repeater however.

The last item on the right is the "potato head" microphone from my Yaesu FT-8500 mobile radio. I actually bought the radio with the MH-39 microphone which was Yaesu's answer to all the potato head complaints they were receiving. But I soon found that the radio was almost impossible to use with that mic so I took a beating and bought the potato head mic. It lasted many years but eventually started changing bands and memories on the radio by itself and I finally gave up. I'm back to using the MH-39 mic that came with the radio but I necessarily don't try to do anything more complicated with the mobile than talk on K2BNL.

My current stable of working HT's consists of a Yaesu VX-2 which is too low powered to use on the motorcycle, a Wouxn KG-UVD1P that is about 2 or 3 years old and a recent addition is the Baofeng UV-B5. The Wouxn seems to work better on the motorcycle than the Baofeng so I'll probably make it my next motorcycle radio which means it's likely to be the next dead soldier. When that happens the Baofeng will move to the motorcycle chopping block.

Possible General License Class in 2014

If you are or someone you know is interested in taking a general license class Beginning sometime in January or February of 2014 let us know your preferences.

Onsite or Offsite, weekdays during lunch or Saturdays for 8 hour sessions, club members only or open to the community?

Send your thoughts to kd5sfq@verizon.net or gstevens@bnl.gov

I will also entertain requests for an Extra Class Mid 2014

73's
Gary (KD5SFQ)

Effective Radiated Power

by KD5SFQ

To Calculate the Effective (ERP) is really simple.

$$ERP = Power + gain(s) - loss(es)$$

Suppose we want to know what the ERP of a Boafeng UV-5R is using a Pryme AL-800 antenna.

The UV-5R output is **4 watts** and the AL-800 has a gain of **3.2db** on 2M and **5.6db** on 70cm

The insertion loss of an SMA connector is negligible so we will use zero loss in our calculation.

Therefore:

$$ERP = 4 \text{ watts} + 3.2\text{db} - 0\text{db at } 2\text{M}$$

$$\text{Gain/loss ratio} = 10^{(db/10)} = 10^{(3.2/10)} = 10^{.32} = 2.089$$

$$ERP = 4 \times 2.089 = \mathbf{8.36} \text{ watts at } 2\text{M}$$

$$ERP = 4 \text{ watts} + 5.6\text{db} - 0\text{db at } 70\text{cm.}$$

$$\text{Gain/loss ratio} = 10^{(db/10)} = 10^{(5.6/10)} = 10^{.56} = 3.63$$

$$ERP = 4 \times 3.63 = \mathbf{14.52} \text{ watts at } 70\text{cm}$$

As you can see the math is not overwhelming. Not only is it useful to be able to do this to make sure you don't exceed power limits on your antenna, it is also required knowledge for your extra ticket!



Calendar

September 9th at 12 noon

The Technician Class will begin.

It will be held on M-W-F each week until completion. Please show your support by attending a class. You can help with demonstrations and by fielding questions from students.

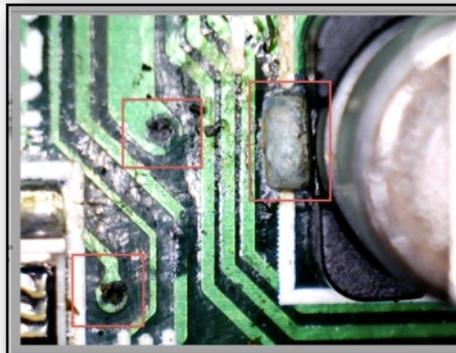
September 17th at 12 noon

Club meeting onsite at the Shack.

TS-50S Backlight Issue.

By Gary Stevens
KD5SFQ

If you look closely at C1 in the photo above right, you will notice corrosion on the negative lead of the SMD capacitor. These capacitors are notorious for leaking oil and eroding the traces of printed circuit boards. Examine the via (plated trough hole) directly to the left of C1. It is eaten away and completely open. That trace just supplies voltage to Q1 that in turn supplies voltage to PL1-4 that illuminates the back lighting for the LCD.



The photo below right shows my repair. Fortunately there was ample room for a standard Electrolytic Capacitor of the same value. I also fed a piece of 30 gauge wire through the open via and soldered it on both sides.

Above you see the results. A fully illuminated LCD!

Contributors



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CLUB
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Treasurer



YOUR NAME
GOES HERE

Let's face it, clubs
are more fun when
people participate.

Share your HAM moments
with us by writing a short
blurb for the NEWSLETTER.
Just send me your article or
chicken scratch. It's all good!