



Linear Lines

Trident Amateur Radio Club (TARC) Newsletter
February 2014

TARC Nets:

Every Tuesday, 147.27 MHz PL 123.0

- 7:30 PM CW practice
- 8:00 PM Net

Upcoming Events:

Feb 8-9 Technician License Class
Feb 17 Club Meeting
Feb 23 Fox Hunt!

Contact: Tom W4DAX

Mar 3 Board Meeting (all welcome)
Mar 17 Club Meeting



SPAR Winter Field Day 2014 – the air was crisp, and the conversation lively. Thanks to all who helped with the event. We improved on last year's score!

From The President

Another great month! We had a great **Winter Field Day**. We had lots of members come out and we made many contacts. Some of the best contacts were made in the tent by members seeing what we were doing and meeting everyone. I am looking forward to **Field Day** in June. I know it will be a lot warmer. We then enjoyed a fantastic **Hamfest** in North Charleston. We again got lots of eyeball contacts with hams we had not seen in months. The club purchased some coax to make available to hams in the area.

We will be having a **Technician Licensing Class** on Feb 8th and 9th in Ladson so if you know anyone interested have them check out tridenthams.org for info.

Thelma K4MTJ is putting together a **Dinner Group** and will let everyone know when and where that will be. Again, check out tridenthams.org for info.

The big news is the formation of a **Builders Group** for those interested in building things related to ham radio. This should be a great opportunity for those hams who love to build. For more information see articles below and check out tridenthams.org.

Tom Lufkin, W4DAX

ARRL Centennial

On 18 July 2014, thousands of members and friends of ARRL will gather at the Connecticut Convention Center in Hartford, ARRL's birthplace, to celebrate the organization's first 100 years of "Advancing the Art and Science of Radio."

QRZ

Everyone should visit QRZ.com and input your call sign. See what is listed – if there is not an entry, you should think about putting a small blurb about yourself and your ham related activities.

From the VP shack

Winter field day has passed once again. We didn't set any records, but we did exceed last year's score. Results of total score will follow upon review. **ARRL Field Day** is right around the corner on the last weekend of June. Preparations are already beginning. Stay tuned!

73 Steve KE4THX

Builders Group

Trident Amateur Radio Club has formed a builders group that will meet whenever at Larry KI4VPS's house. The group will both build various antenna's and other ham related items and help new hams get some basic things built. They will also introduce the use of microprocessors using the PIC and Arduino platforms. This should be a fun group and an excellent opportunity for everyone to develop or sharpen their DIY skills.

New Ham Licensing Trends

The following report of FCC licenses issued is supplied by Maria Somma, AB1FM, ARRL VEC Manager.

Somma notes that new licensees increased by 7% over 2012 (28,886 in 2013 versus 27,082 in 2012). Licensed US Amateur totals as of December 31, 2013 were at a new high of 717,201, a 1% increase over the 2012 year-end total of 709,575

Year	Tech	General	Extra	Total
2011	21,316	9,667	3,426	34,409
2012	23,974	10,132	3,259	37,365
2013	25,621	9,567	3,023	38,211

Treasurer's Report

The treasury remains solvent this month, thanks to all who have paid dues. The club now has for purchase, coax (RG-8x), adapters, and PL259s for the ends. Anyone can purchase these items. They do not have to be a club member or even a ham. Now anyone who needs coax etc for their antenna project will have a local source for them with no tax or shipping. Prices are as follows:

- Coax: \$0.35 per foot
- Adapters: \$1.00 ea
- PS259 \$2.25 ea

There are lots of activity/events coming this year. I encourage everyone to get involved, and if they have any ideas about events they would like to see/participate in, please let us know at the board meeting.

73 Bob NG4R

Selected Upcoming ARRL Events

February 7-9 -- Northern Florida Section Convention (Orlando HamCation® -- Regional ARRL Centennial Event), Orlando, Florida

March 1-2 -- Alabama Section Convention (BirmingHAMfest 2014), Birmingham, Alabama

March 7-8 -- North Carolina Section Convention (Charlotte Hamfest), Concord, North Carolina

April 19 -- Roanoke Division Convention, Raleigh, North Carolina

May 16-18 -- Dayton Hamvention, Dayton, Ohio

Homebrew Baofeng programming cable using your Arduino

By Ron Davis K4TCP

Do you have one of those new Baofeng handheld transceivers? Do you need to program frequencies and settings into your new Baofeng radio? Don't have a programming cable? No worries! I will show you how to make a cable and use your Arduino to program your Baofeng.

Things you'll need:

- Arduino Uno development platform or equivalent (I'm using the **Sparkfun RedBoard** but any will do)
- CHIRP (Free open source radio programming tool)
- 2.5MM male audio jack
- 3.5MM male audio jack
- Some hookup wire, solder, soldering iron, needle nose pliers, wire stripper, etc.
- Baofeng handheld UV-5RE. Other models will work and you can even modify the cable to program other radios like the Icom and Yaesu. For now I will focus on the Baofeng since it is difficult to manually program on the fly.

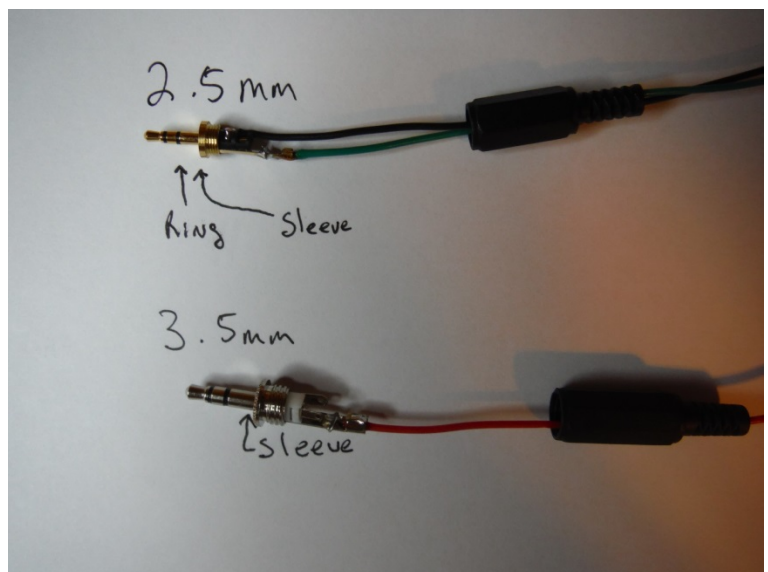
Explanation:

So we are not really using the "Arduino" microcontroller to program the radio but we are going to hijack the USB to Serial TTL converter that's onboard. You may have a sketch already loaded into your Arduino and this procedure should not alter your sketch in any way or cause any issues. There may be one exception to this, if your sketch uses the COM port to send data back your PC via the serial monitor while it's running, this could interfere with our use of the COM port. If this is the case simply save your sketch and upload the basic example "blink" sketch.

Construct the cables:

1. Cut 3 long pieces of hookup wire, I used 22ga solid wire about 16 inches long.
2. Solder 1 wire to the sleeve connection of the 3.5MM plug
3. Solder 1 wire to the sleeve connection of the 2.5MM plug
4. Solder 1 wire to the ring (center) connection of the 2.5MM plug
5. All other connections are NC.
6. Strip the ends of the wires about 1/4".

Here is a pic of what they should look like.



Once the hookup wire is soldered to the audio plugs we can insert the ends of the wires into the corresponding Arduino header sockets.

Starting with the 2.5MM plug (there should be 2 wires connected to this plug), insert the wire connected to the sleeve to any **GND** terminal on the Arduino. The wire connected to the ring of the plug will go to **TX (PIN1)** on the Arduino.

Now connect the 3.5MM plug wire to **RX (PIN0)** on the Arduino.

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Connect to the BAOFENG:

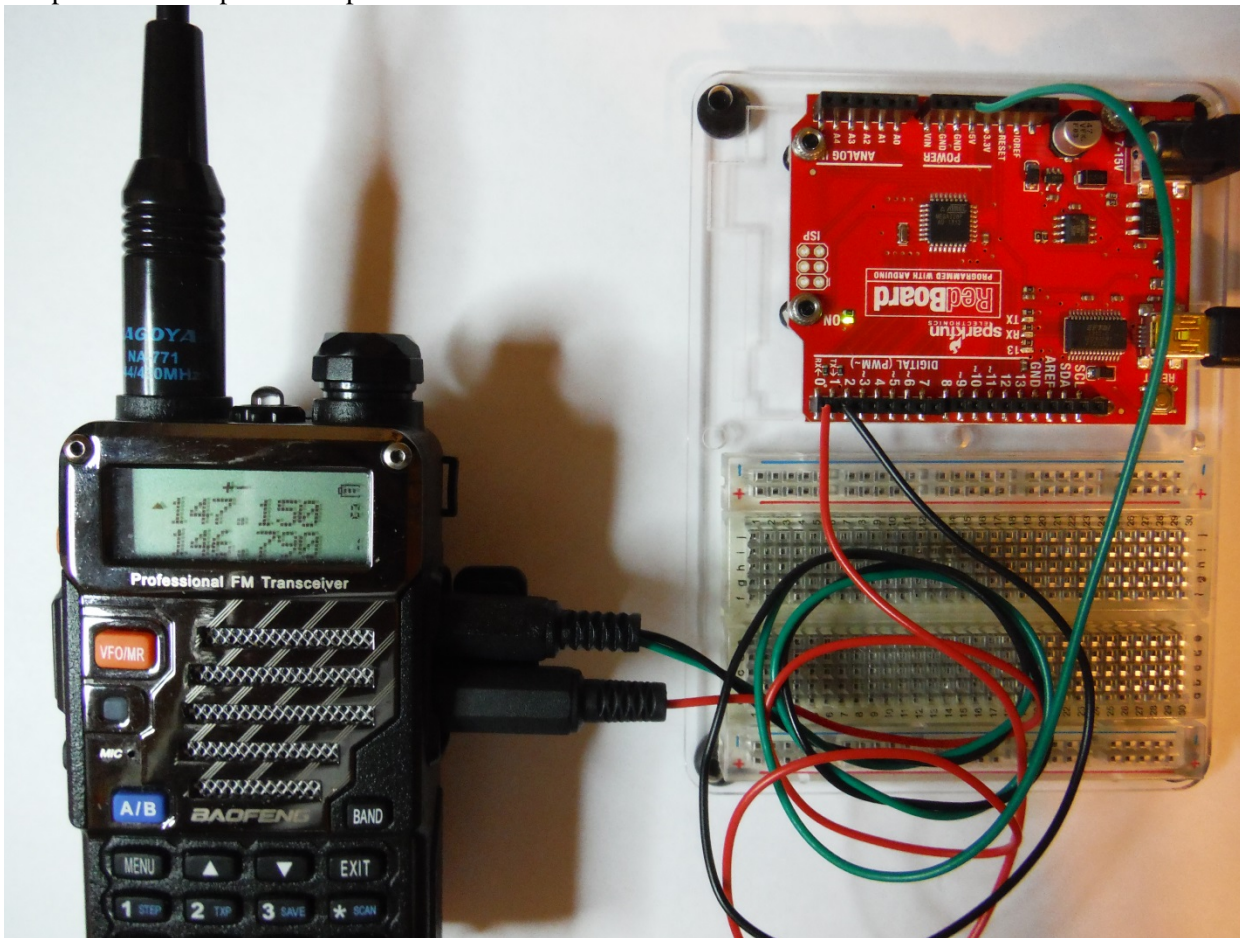
Power off the Baofeng and insert both the 2.5mm and 3.5mm plugs into the HT. Be sure they are completely inserted (my first attempt at programming failed because the TX line wasn't pushed in completely).

Switch on the radio; connect the Arduino to the computer via the USB cable as if you were going to program it, but do not launch the Arduino IDE.

Install CHIRP:

Download and install CHIRP by following the installation instructions from the web site. Below is the link:
<http://chirp.danplanet.com/projects/chirp/wiki/Download>

Follow CHIRP instructions on retrieving current settings from the radio by selecting Radio/Download from Radio. Here is a pic of the completed setup:



Note:

It is possible to use an USB to FTDI converter board used for ICSP (In circuit programming) instead of using your Arduino to make a dedicated cable. That part usually costs about \$10-\$15 and you can make a more permanent version of this programming cable. Also it is possible to program the UV-3R as well as several other radios with the same setup, you'll just need to change the pin-outs for the plugs to match the particular radio.

I would be glad to demo this procedure at the builders group meeting or at any TARC meeting. For further information or details on how this works under the hood, please drop me a line.

Ron – K4TCP (Ron.Davis@gmx.us)

Want to see something in Linear Lines?
If there's something you want to see in Linear Lines, please send it to Robert KV4LV <kv4lv@arrl.net> by the second Monday of the month.