

Newcomers and Elmers Net: Computer Control and Logging Software Oct. 6, 2013 Robert AK3Q

Amateur Radio and Computers

It might seem hard to imagine now, but computers were not always a part of amateur radio

- as soon as computers were available many hams immediately tried to find ways to integrate them into the hobby for logging, control, schematics, etc.
- before long computers were being used for sending data packets, DX cluster BBS and satellite pass predictions and more
- today it is hard to find any aspect of the hobby which doesn't involve computers in one form or another

Two particularly useful areas I want to cover tonight are computer control of radios and logging contacts, probably the two most commonly used functions overall

- almost every radio made for the last 20 years or so has had some ability to connect to a computer
- unfortunately many manufacturers have been slow to move with the times regarding connections such as USB ports, but more on that later
- HTs, mobiles, and base stations all allow connecting to computers for various functions
- I'll start with computer control, and then move on to logging

Computer Control

Computer control of a radio is pretty much like it sounds – you can use a software interface to send commands to the radio for tuning, adjusting filters, memory storage and so on

- one of the advantages of software control is that if your radio uses a lot of menus where you have to perform several button presses to get to the option you want, software is usually faster
- For a long time only base station radios offered computer control capabilities, but as base/mobile operations have converged, so too many mobiles allow for computer control if the radio has HF capabilities
- usually all that is required is a cable to run between your radio and the computer, either a serial cable or a USB cable/converter
- some more modern radios also allow a keyboard to be attached to the computer to handle some in-radio software
- but most radios send data out a special port for computer control
- this can get a bit confusing depending on the radio, since data ports can also be used for other things such as modems, digital processing, and programming

- most base radios have several ports on the back of the rig to separate these functions, but mobile radios can sometimes interchange these functions
- make sure you understand what your radio can and cannot do (and what does what!) before purchasing anything or hooking anything up to it!



The back of a typical base radio has connections for CAT control (computer command control of the radio), one or two data ports for things like digital modes, amplifiers, etc., and other connections

- your particular radio will need the appropriate connector which you can build or buy, and then software to recognize your radio
- most radios from Alinco, Icom, Kenwood, and Yaesu are recognized going back quite a few years, so if your radio allows for computer control most major programs will be able to control it

VHF/UHF radios (mobiles and HTs) generally do not have computer control capability, but this is changing as these units are becoming more and more complex

- more often than not these radios will only allow channel programming (which is vital in today's radios with 500 or 1000 channels!) and data output to a TNC or sound card for the digital modes
- HTs usually only offer programming, but some allow data out and some DStar radios allow for remote control operation

Control Software

There are many software programs out there with various strengths and weaknesses, and I recommend you try out several different flavors to see what you like

- I will use Ham Radio Deluxe (or HRD) as an example because it is what I regularly use, but this is not a push in their direction by any means
- HRD is typical of many programs out there, and therefore useful as an example only!
- (Resource list at the end for some other examples)

Control software requires some basic setup, just like any other program

- connection port and speed information, radio type/model, layout etc.
- some programs also come with logging software which integrates into the computer control section so that information can be passed between them
- usually there will be a basic graphic representation of the radio you have selected, or a common interface which then contains your radio's controls
- tuning, filters, switches, almost every control possible will be represented on the screen (so a big monitor is a plus!)
- the layout can often be customized to your particular liking, as well as color schemes etc.
- data modes are also a part of most control software, and this allows both radio control and data input for things like PSK31, RTTY, and so on
- data modes like PSK31 also show a waterfall display of a range of frequencies and activity over time, while another window shows tuning controls and another the test being sent/received
- many control programs will also give you control over an antenna rotor if you have one, as well as assist with satellite tracking

Logging

Logging software allows you to record and track your contacts, see visual representations of the Grayline, monitor DX clusters, and give you a visual representation of stations on a given band

- computer radio control may be built into the logging program or be separate, but usually when connected to a radio the software will allow changing bands or frequencies by just clicking on the appropriate button
- in a listing of stations on a band or in a DX cluster window, the frequency of the radio will be set to the cluster sighting, as well as some form of automatic callsign lookup if you are a member of a website like QRZ
- fields for the station callsign, name, frequency, band, location information are all auto-filled if available, and this greatly simplifies the logging process
- in fact one of the dangers with logging software is that you get so used to clicking on a few buttons based on the stations shown you forget to search the bands yourself
- just because stations are not showing up on a DX Cluster or band on the software, doesn't mean no one is there!
- logging/cluster software depends on sightings by other hams who enter in their contacts, called "spots"
- many times I have found a band quite active with little or no spots being shown

Logging software is really a database

- not only can your contacts be logged, but the data can then be manipulated in numerous ways

- awards can be tracked, regions and locations can be mapped out, some software even keeps track of who you need to work to get awards, and with a click or two you can see who you have worked before and on what bands
- like any database the information can be sorted numerous ways, so you can see listings by country, name, station worked, bands worked, etc.
- many of these programs can also upload contact reports to Logbook of the World (ARRL), eQSL, HRDnet, and so on
- a lot of other useful features are available, such as solar propagation tracking, QSL card tracking, notes and comments about a contact, contest information and tracking, recording audio to computer, etc.
- most programs use several standard formats for maintaining the log, and these can be imported and exported to other programs as needed
- while a lot of people do not log their UHF/VHF contacts from a local area, there is nothing wrong with doing it, and it is a good way to keep track of new contacts, interesting discussions, or special propagation conditions

Computer Control and Logging Links

(Web search will turn up dozens more, just a few listed here; some are free others cost \$\$ -- you have to decide what is best for you!)

<http://www.dxlabsuite.com/commander/>

<http://www.dx-buddy.net/en/>

<http://www.hrdsoftwarellc.com/>

<http://www.dogparksoftware.com/MacLoggerDX.html>

<http://www.dxlabsuite.com>

<http://www.n3fjp.com/>

<http://www.arrl.org/logbook-of-the-world>

<http://www.logger32.net/>

<http://www.prologsystem.com>