

### Set Your Goals

- amateur radio can take you in a lot of different directions
- there are all kinds of things you can do in the hobby, many of which you can do with some basic equipment
- setting some goals ahead of time may help you save money as well as get you where you want to go faster
- deciding some basic things, like am I only interested in working VHF/UHF bands? do I want to chase DX? am I interested in digital modes? do I want to work mobile or base stations, or both?
- And of course, budget; amateur radio can be expensive, inexpensive, or in between depending on what you want to do and whether you buy new or used equipment and how patient you are for deals

### Basic Gear

- Radio and antenna a hand-held with an antenna is all you have to have, but we'll assume you want to go beyond that at this point
- Choosing a radio for a ham station will depend on whether you want to be able to go mobile with it or just work from home
- If your interests are only the VHF/UHF bands then a mobile radio can serve both functions—you can use the mobile in the car and then move it into the house as needed
- I would recommend at least a dual band radio, and these can be found for under \$200 used, or a bit over that new (of course the sky is the limit in terms of how much you *can* spend—just giving some idea for a basic setup
- The big difference in cost will come between radios which can receive one band at a time, and ones which can receive both bands simultaneously and allow transmit on one while receiving the other
- A mobile antenna can also pull double duty, but at home, if possible, I would try to set up a good base antenna for 2m/440 if possible
- Spend less on a radio and buy a better antenna if you have to choose between the two (include support masts and coax in figuring your costs – you want to get that baby high in the air with really good quality coax!)
- You will need a power supply for the radio inside, something large enough to more than equal the power requirements of your radio as it transmits
- Go a little overboard with the power supply—it is worth it in the end as it produces less wear and tear, and you can run other things from it'
- That's it for a basic VHF/UHF station; of course you can add a power/SWR meter, desk microphone, speakers, etc., but this is all you need for those bands

## Basic HF Station

- An HF base station can get a bit more expensive, but doesn't have to
- For example, a wire dipole for your antenna and decent coax will cost much less than a commercial VHF/UHF antenna with excellent coax
- A used HF rig can cost anywhere from \$200 on up; a lot depends on what features you want and how new it is
- If you have someone to teach you about old radios, there can be some great bargains; but you will need someone to help you if using radios with vacuum tubes!
- Don't discount a radio just because it may be old—many were made quite well, and if maintained, will work for years, particularly solid-state radios
- When buying used equipment, always try to get someone experienced to help; if no one is available (of course that's part of why we're here on this net!!), at least do some good research on the radio models you are considering
- Check out the links in this week's notes when they are posted in the Elmer section on the OHKYIN website; there is a great review site where amateurs rate radios, antennas, and all types of amateur gear
- Here again you need a radio, and antenna, and a power supply as a minimum; some radios may also require a speaker if one is not built into the radio
- Since many radios put out 100 watts or more, you will need at least a 25 amp power supply or more, and again, larger is better
- Linear power supplies are heavier and more costly sometimes, but they do not have as much potential for causing interference
- Switching power supplies are usually cheaper, but they are often electrically noisy, especially on HF bands; you don't need your power supply causing problems with the signals you are trying to hear!
- Depending on the antenna(s) you choose for HF you may need a tuner if your radio does not have one built-in
- A tuner (more correctly called a *transmatch*) matches your radio and antenna reactance to roughly 50 Ohms, allow your radio to send full power out to the antenna
- An external tuner has some advantages over a built-in tuner in that it can usually handle greater ranges of SWR mismatches, as well as having more robust parts
- These can also be purchased used, but new ones are not too badly priced for 100 watts or less
- Make sure your tuner has higher capability than what your radio can produce to keep from damaging the tuner or the radio!
- Again a power/SWR meter is useful if not built in to your tuner; the ones in the radio are sometimes a bit inaccurate, so this is something you will want to add fairly soon

- Your antenna system is more important than your radio in many respects—almost any radio made in the last 30 years will perform well enough that it will be quite usable
- Spend more time getting the best antenna system you can to make sure you hear and send the best signal you can
- That doesn't mean things have to be expensive; a wire dipole antenna can work wonders; just spend the time to learn antenna theory (or work with someone who does) to get a good antenna
- An expensive or full-featured radio is nice, and that is something you can certainly enjoy—but the antenna system is far more important to being heard!

### HF/VHF/UHF Radios

- There are a number of radios offering both HF and VHF/UHF capability, and this is something you might want to consider
- There are pros and cons to having one radio do-it-all, but it might be an option
- Most of these radios will have at least two antenna ports on the back, one for HF/6 meters, and the other for VHF/UHF
- When the price is considered for two radios, sometimes one radio that has all these features may be just as cheap
- The downside is that you have all your eggs in one basket, as they say, and you can only listen to one side or the other at a time

### A Digital Station

- If your interests lay in HF digital modes, you will need a computer and at least a built-in sound card and the cables to connect your radio, as well as software to run the digital modes
- You can of course also work only from a computer using Echolink, IRLP, or D-Star, especially if you already have a computer and funds may be an issue
- While D-Star requires some additional equipment, for around \$200 and a computer you can talk around the world to other hams through the D-Star network
- With Echolink and IRLP, even technicians license can talk around the world to other hams through the Internet
- SDR radios are another option which is getting less and less expensive as new models come out and many older models may be found used
- The SDR radios work like regular radios in that they use an antenna for sending and receiving, but everything is handled through a computer card or interface box
- Just be aware that since signals are being transmitted over the air, your license class limitations are in effect

A radio, an antenna, and a power supply (or just a computer!); pretty basic!

## Resources

Ham Radio Retail/Used Sources (In no particular order, and not exhaustive by any means)

- R&L Electronics (local store) -- <http://www.randl.com/shop/catalog/>
- GigaParts -- <http://www.gigaparts.com/radioindex.php>
- Ham Radio Outlet -- <http://www.hamradio.com/>
- Universal Radio (great catalog info even of discontinued radios) – <http://www.universal-radio.com/catalog/index2.html>
- Ham City -- <https://www.hamcity.com/store/pc/home.asp>
- Texas Towers -- <http://www.texastowers.com/>
- AES -- <http://www.aesham.com/>

## Review Resource

EHam -- <http://www.eham.net/reviews/>  
Google (of course!) – [www.google.com](http://www.google.com)

## Used Equipment

- Most of the above-mentioned stores
- Ebay
- qrz.com in the swapmeet forums
- EHam in their classified sections
- Hamfests!!! (where hams go to meet!)