

Software for Contesters – Computer Basics

When I started this column a year ago, Carl suggested that from time to time I might want to shift my sights a little. Instead of writing for the contender who is already immersed in computer applications, he suggested I assume a reader who, for whatever reason, has been only minimally involved with these things before.

OK, here goes. Let's say you have never bought a computer for ham-shack use, have used computers only at work, and haven't gotten into either the hardware or software. A first issue is, simply, what to buy. *PC Magazine* used to have a mantra – "The computer you want always costs \$5,000." Well, these days, from a ham's standpoint, that should be revised to read, "The computer you want costs less than **\$400**, and prices are dropping daily."

Am I for real? You bet – in fact, I just saw an advertisement from the largest manufacturer of PCs, offering their base machine for under \$300. No gimmicks, and no small print, like the "monitor not included" that you see so often in ads. Manufacturers have driven costs out of their machines to an incredible degree, without, for the most part, compromising quality. An individual probably can't build a comparable machine for that price.

It is necessary to pay a little attention to the fine print, though. Some things to watch:

- These new machines will come with Windows XP. Despite grouching by some old-timers (including me), XP is the way to go now. It will run most DOS applications, and there are a variety of ways to boot and run an XP machine in real DOS if you need to. One of XP's great strengths is the ability to set System Restore Points, so that you can recover from any problems that may arise while you tinker with your system or add the latest new software. As the name implies, you can restore your system to the way it was before you did whatever you did. Priceless!
- Make sure to get at least 256 MB of RAM, either as the base configuration or as an upgrade. RAM is cheap, and Windows XP is sluggish with 128 MB.
- Basic machines will tend to have both audio and video "on board" the motherboard, and the video shares RAM with the processor; another good reason to get 256 MB. There's no reason, for ham applications, to shy away from these solutions.
- Some of these low-end machines have built-in network cards, and some do not. You'll need a network connection of some sort for broad-band Internet. If I were doing mine over again, I would use a wireless network "card" in my PC, rather than a wired network. The only computer

problems I have had to date with lightning were the result of induced voltage on my wired network cabling; wireless networking does away with the need for such a risky “antenna.”

- Most low-end machines like this will come with only one parallel and one serial port. If you want to control one or two radios, you’ll need more. An add-on card with 2 serial and one parallel port can be bought for less than \$20. If your software can use USB ports, that’s another approach, though you will probably need USB-to-serial converters to talk to your radios.
- If you can swing it, upgrade from the basic CRT monitor to an LCD panel. I have owned 3 inexpensive LCDs so far, and have been delighted. Their prices are falling very fast, and it won’t be long before they will be standard. A 15” LCD panel has almost the same viewing area as a 17” CRT, weighs maybe 10 pounds versus over 30 pounds for a big monitor, and takes up far less space. The big plus is that most LCDs are dead quiet across the HF bands, while it is a rare CRT monitor that doesn’t have birdies somewhere.
- Also, consider substituting a DVD R/W (DVD “burner”) for the CD R/W drive that now comes with most basic PCs. With hard drives routinely at least 40 Gigabytes in size, doing a full backup quickly becomes prohibitive in terms of the number of CDs (and the amount of time) required. My last full backup before I got my DVD drive required 15 CDs; a larger backup this time went on three DVDs in less than half the total time. DVD R/W prices have also come down steeply – I got mine, a high-performance Lite-On unit, from www.newegg.com, for less than \$50.

Once you have a PC in the shack, you’ll need software. Before discussing ham radio software, forgive me if I harp once more on the need for doing backups of your data regularly. Hard drives don’t fail often, but when they do it is sudden and catastrophic. Software or services that can restore data from a trashed disk are mostly very expensive and may not work, depending on the state of the drive.

Windows XP includes a Backup utility. Most people don’t know it’s there, because it is not part of the baseline Windows XP Home installation, but you can find out how to install it, from your Windows XP CD, at <http://support.microsoft.com/?kbid=320820>.

My solution, for whatever it’s worth, is to use *Norton Ghost 2003*, which I got as part of *Norton Systemworks 2003*. Since this was an old version, I got it for about \$25 from a software discounter on the Internet, yet it works fine with all my newer hardware, including the DVD R/W drive, and can do a full image backup and then restore any file or files from it.

There are also lots and lots of free backup software packages out there. The best single listing I have seen is at <http://www.hsinlin.com/software/backup.html>. Please be forewarned, though, that I have not tried any of these yet. I may, because a full image backup is a fairly long process, and a number of these

claim to offer incremental backup (backing up only changed files). Some will even do so directly to a DVD, they say, though again I haven't tested this claim.

The second real essential, particularly if you are going to be connected to the Internet on a broadband system like cable or DSL, is protection from viruses and intrusion. There are a variety of good virus protection packages out there, some quite inexpensive. But even more important, in my estimation, is a firewall, to hide your computer from external probing. Windows XP has one built in, in the Service Pack 2 version, and your Internet router may have one too. There is also an excellent free firewall, *ZoneAlarm*, available from www.zonelabs.com. One way or another, the protection is worth it.

Once your machine is set up, and these system basics have been taken care of, you're ready to load whatever ham software piques your interest. I'm not going to get into recommending particular software, or take sides in any of the almost religious arguments that this can provoke, particularly when logging software is concerned. I will go out on one limb, however –I would try to avoid DOS software. The reasons are fairly straightforward:

- The display of information in Windows is far superior in flexibility and readability; the ability to multi-task (run more than one program simultaneously) is a great plus as well
- Increasingly, computers are being delivered with USB ports in lieu of classical serial ports; some laptops have none at all. I am not aware of a USB port driver for DOS programs.

If I were starting from scratch, once I had installed e-mail and web browser software, I would begin with the following ham software applications. The basic \$300 computer I discussed earlier is more than adequate to run any and all of these:

- *4NEC2* (<http://www.wyger.nl/usr/4nec2/>) is a free Windows front-end for the standard NEC-2 antenna modeling software, but in recent years has become much more; it offers an optimizer which can be used with any antenna model and a gorgeous 3-d antenna pattern visualizer. The user interface will take some study, but it is worth it.
- VOACAP, from <http://elbert.its.bldrdoc.gov/hf.html>. Your US taxpayer dollars paid for development of this powerful propagation modeling software, so it's only fair that it should be free. The user interface has almost too much flexibility, but you can use HamCAP, freeware from <http://www.dxatlas.com/HamCap/>, to simplify and tailor to ham radio needs.
- *HFTA*, for modeling the effects of terrain on the radiation pattern of your HF antenna. It includes arrival angle statistics for many areas of the world to your QTH, allowing you to judge how changes in your antennas will

affect your results. *HFTA* is bundled with recent editions of the ARRL Antenna Book (www.arrl.org).