

APRS Digipeater in A Box

APRS digipeaters come in a variety of flavors. Nowhere near the 28 varieties that Howard Johnson's offers, but enough to make things interesting

The original APRS digipeater flavor consisted of the requisite radio equipment (transmitter, receiver, antenna, cables and accessories) and a TNC connected to a computer running some version of APRS software. You configure the APRS software, which sets the TNC to act as an APRS digipeater.

The second flavor again consisted of the requisite radio equipment and a TNC connected to a computer. Instead of running some version of APRS software, the computer ran APRS digipeater emulation software. The TNC simply acted as a conduit for packets that it relayed to and from the computer. The APRS digipeater software is called *aprsdigi* and it runs on the *Linux* operating system. Alan Crosswell, N2YBK, created *aprsdigi*.

Around New Year 2000, Kenwood introduced its TM-D700A dual band (144 and 440 MHz) transceiver. The TM-D700A has a built-in TNC and APRS software, which can be configured as an APRS digipeater *without* a computer. The necessary configuration can be performed using the controls on the front panel of the radio.

Last month, Marco Savegnago, IW3FQG, announced the availability of APRS digipeater firmware, called *UIDIGI*. You replace the firmware in a TNC2 or TNC2 clone with the *UIDIGI* firmware and the TNC (with the requisite radio equipment) functions as an APRS digipeater. A computer is required to configure the software before burning the EPROM that contains the firmware.

These four flavors of APRS digipeaters have advantages and disadvantages.

The Pros

The "original" APRS digipeater supports the state-of-the-art WIDEn-n and/or TRACEn-n digipeater functions *only* if those functions are supported by the TNC used with the APRS software. (Current PacComm TNCs support TRACEn-n, while current Kantronics TNCs support both WIDEn-n and TRACEn-n.) The APRS software that configures the TNC is available for many computer platforms including *DOS*, *Mac OS*, *Windows*, *Linux*, *Palm OS* and *Windows CE*.

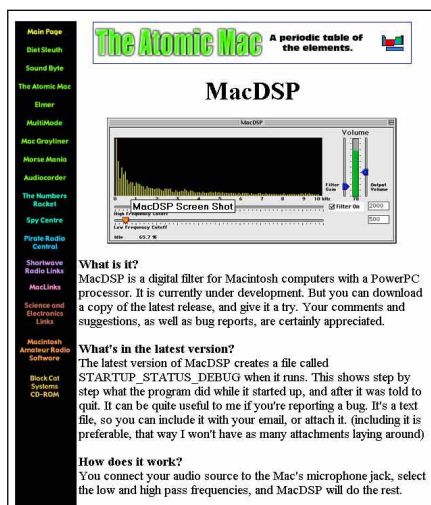


Figure 1—A view of the MacDSP Web page.

N2YBK's *aprsdigi* supports the WIDEn-n and TRACEn-n digipeater functions.

The TM-D700A is a good choice for emergency communications and public service events because it is self-contained "APRS in a box" and only requires an antenna and power source. It can be up and running very quickly.

UIDIGI supports the WIDEn-n and TRACEn-n digipeater functions. It is a good choice for remote sites because the configuration is permanently stored in memory. Power outages will not affect the configuration, so a computer is not necessary to reconfigure the system. It is also the most inexpensive APRS digipeater flavor because TNC2s and TNC2 clones are plentiful and cheap.

The Cons

The "original" APRS digipeater does not support WIDEn-n and TRACEn-n digipeater functions if those functions are not supported by the TNC used with the APRS software. It is not a good choice for a remote site because you need a computer to reconfigure the TNC whenever it loses its configuration due to power outages and such, which are more likely to occur in remote locations.

N2YBK's *aprsdigi* ties up a computer all the time. It also runs on the *Linux* operating system, which is not the most common, friendly or easy-to-learn operating system around.

The TM-D700A does not support the WIDEn-n and TRACEn-n digipeater functions, therefore, it is not a good choice for a permanent APRS digipeater installation in a network using WIDEn-n and/or TRACEn-n.

UIDIGI requires the equipment and the ability to burn EPROMs. Any changes in the digipeater configuration require burning a new EPROM and installing it in the TNC.

Getting It

There you have it. If you are interested in getting it, here is where it is available: Various versions of APRS are available from <ftp://ftp.tapr.org/aprssig>. N2YBK's *aprsdigi* is available from <ftp://ftp.tapr.org/aprssig/linux>. The TM-D700A is available from your favorite Kenwood dealer. *UIDIGI* is available from <http://gw.ir3ip.ampr.org/~iw3fqg/files/UIDIGI16.ZIP>. TNC2s and TNC2 clones are available at any ham radio flea market.

More New Good Stuff

Chris Smolinski, N3JLY, has released a preliminary version of *MacDSP*. As its name implies, it is a digital signal-processing (DSP) program for the Macintosh computer. Feed audio into your Macintosh's microphone jack, select the low and high frequency cut-off, then *MacDSP* filters the audio and plays the results through your Macintosh's speaker(s). *MacDSP* requires a PowerPC Mac. Download a copy at <http://www.blackcatsystems.com/software/macdsp.html>.

Rob Wittner, KZ5RW's, long awaited *APRS/CE* (APRS for the Windows CE operating system) is now available in a beta test version. Download a copy using the following URL: <ftp://ftp.tapr.org/aprssig/wince/aprs-ce.exe>. By the way, *APRS/CE* can use any *APRS* (*DOS*), *MacAPRS*, *WinAPRS*, or *pocketAPRS* map and they may be obtained at <ftp://ftp.tapr.org/aprssig/maps/>. 