

Will D-STAR be the Next Big Star in the Digital Dimension?

What is going to be the next big thing in the digital dimension of Amateur Radio? Could it be ICOM's D-STAR system? ICOM introduced the system at the Dayton Hamvention in May and showed it again at the Digital Communications Conference in September.

D-STAR is a 1.2-GHz system for the transmission and reception of digitally modulated voice/data and access to high-speed data via the Amateur Radio airwaves. ICOM developed the system in collaboration with JARL (Japan Amateur Radio League) and is field-testing the system now. For example, a pair of D-STAR transceivers are with TAPR (Tucson Amateur Packet Radio) now for on-the-air trials (see www.tapr.org for news about the trials).

ICOM's D-STAR ID-1 digital transceiver digitally modulates voice at 8 kbit/s and data at 128 kbit/s using GMSK (Gaussian Minimum Shift Keying). The ID-1 also supports analog voice, using FM. USB and Ethernet connections to a computer permit full operation from the computer's keyboard. In addition to the transceiver, ICOM also designed a 10-GHz 10-Mbit/s digital repeater as an integral part of the D-STAR system (the repeaters handle both digital and analog voice).

D-STAR is off-the-shelf, plug-and-play, high-speed digital mode operation—a combination that has been unavailable to the radio amateur—until now. ICOM profers that “the resulting system seamlessly transmits high-speed IP (Internet Protocol) compliant data and digital voice. Amateur Radio operators now have a system that will allow them to explore the benefits of wireless high-speed integrated digital connections. Potential applications are only limited by your imagination, but certainly emergency services and amateur digital TV quickly come to mind.”

That is a lot to absorb, but once you sit down and take it all in, you realize that D-STAR just may be the next big thing in the ham digital dimension. How big depends on what applications we develop to take best advantage of the system.

VHF Propagation Software

Recently, I heard about a new computer application for analyzing VHF radio propagation. Being a VHF guy, I am definitely interested in adding a new tool to my ham-radio software collection,

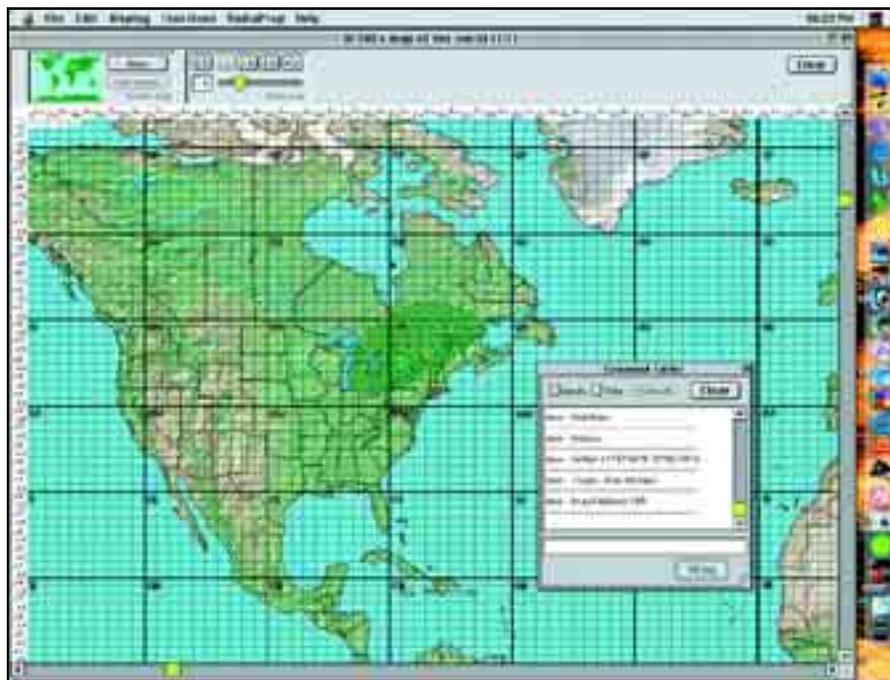


Figure 1—A new VHF propagation software application, *BeamFinder*, displays the aurora/FAI (Field Aligned Irregularities) hotspots for central Connecticut.

I browsed to www.df5ai.net and downloaded a copy of the software.

The name of the application is *BeamFinder*, and it enables the user to apply sophisticated scientific models for practical VHF DX modes such as, aurora, sporadic-E, FAI (Field Aligned Irregularities), E-layer and F-layer multiple-hop propagation, as well as other types of radio propagation.

BeamFinder is also a multipurpose geographical instrument optimized for ham radio operators. That is, it can display observational data, calculated results and DX statistics on a large world map that overlays the Maidenhead grid system. If you move the mouse cursor across the map, the map header displays the geographical coordinates, grid square, distance and azimuth of any place in the world (in relationship to your station) without typing data on the keyboard.

BeamFinder has an easy-to-use graphical user interface (GUI) using features that should be familiar to most ham-radio operators: grid squares, geographical coordinates, distances, antenna headings and frequencies. The user may write scripts and upload data files from the hard disk using the built-in Beam-Finder Command Language (BFCL). *BeamFinder* is

compatible with other applications and the user can remotely launch commands and data by using *Apple Events*.

BeamFinder's creator, Volker Grassmann, DF5AI, knows his stuff, as is evident in his software. Volker studied physics at the University of Göttingen, Germany. In 1983, he joined the Max-Planck-Institute for Aeronomie (MPAE) where he worked with the multinational EISCAT (European Incoherent Scatter Association) research group. The focus of his research was thermospheric winds in the upper atmosphere, gravity waves, aurora borealis, sporadic-E and the incoherent backscattering of radio waves in the ionosphere.

The minimum requirements of *BeamFinder* are an Apple Macintosh Power PC (PPC) running MAC OS 8.x or 9.x (currently, it does not support native Mac OS X) with 60 Mbytes RAM, 12 Mbytes of hard-disk space and a high-resolution monitor providing 32,768 screen colors.

It's Time Again

It is time again to send all “Digital Dimension” readers Season's Greetings from all the members of the WA1LOU family: Stan, Laurie, Hayley, QT-Pie, Oliver, Molly and Fish Face! 