

Wouldn't it be great to be able to have a tiny handheld transceiver that contained an Android app that could access your home router from anywhere in the world and allow you to chat with hams around the world using DMR, System Fusion, or D-STAR? That transceiver can be your 800-MHz one-watt Android cell phone.

800 MHz QRP: Globe-Spanning Ham Radio QSOs from Anywhere

BY DENNIS LAZAR,* W4DNN

It all began on a dark and stormy Saturday afternoon (great start for a ham radio mystery). My HF vertical, VHF/UHF J-pole, and satellite Yagi were all unplugged as the typical Florida afternoon lightning flashed through the sky. I guess it's time to join the XYL in front of the TV and watch one of her cooking programs. But wait ... I remembered the URL of a website that one of my ham club buddies had given me. "Just check this out," he had urged. "You'll see how much fun DMR can be, especially since we have this available on our club repeater."

I assured him that I would take a look, although I was thinking, "But that's not really ham radio."

Now, with nothing better to do (*Photo A*), I turned on the computer and brought up "hose.brandmeister.network" in my search engine. There before me appeared a screen full of little boxes, each with a title and a little national flag in the corner. These were DMR (Digital Mobile Radio) talk groups. I clicked on one (talk group 91) that was labeled "international." Suddenly I was listening in to a very interesting QSO between a ham in Iowa and another in London, England.

Three Steps to Digital Mobile Radio Fun

Because I love a good ragchew, I was intrigued. I clicked on a talk group from Munich, Germany and heard hams chatting in German. Another little box let me in on a roundtable of amateur astronomers. "This could be fun," I thought. But I was not about to dive into spending hundreds of dollars and

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Photo A. Lots of radios but no joy as Florida lightning storms flip the "off" switch.

devoting many hours to attending the club's intimidating sounding course on DMR until I really knew if this was something for me. Listening in was step one in my three steps to Digital Mobile Radio fun.

The same friend who had provided the URL to be able to listen in also provided me with the website to download a free digital voice program designed by Doug McLain, AD8DP, that could enable me to actually talk to folks using DMR, System Fusion or D-Star.¹ All I needed was my computer and preferably, a separate microphone. I went to <http://dudestar.gw8szl.com> and downloaded the "Dudestar for Windows" program.

But not so fast! I learned that before I could use any internet-accessible digi-

tal mobile radio service, I needed to verify that I was really a licensed ham. To do this, I had to scan or photograph my license, save it as a .jpg and send it to <RadioID.net>. Then I needed to go to Brandmeister.network and provide them my new ID and receive a password. Both tasks went like clockwork and soon I was able to set up my call in the Dudestar program (*Photo B*).

In short order, I was having QSOs on the DMR Brandmeister network and, after a 25-minute chat with a bloke in Worcester, England, and a 40-minute ragchew with an Austrian ham, I was hooked. It sure beat staring out of the window at the downpour or watching cooking TV. My former attitude that "this is not really ham radio" began to morph

into, "Well, hams talking to hams might still be ham radio."

Looking for Clarity

While Duestar worked well, it did not seem as crisp and clear as what I was hearing on the Brandmeister website. As luck would have it, a recent magazine article featured a standalone digital radio called the DVMEGA Cast. It is based on an internal Raspberry Pi board. It sounded like a fantastic way to get into these modes without the steep learning curve, code plugs, and investment needed to use an HT and hotspot. But the price and the difficulty of the setup as detailed in that article sound-



Photo C. DVMEGA Globetrotter is billed as the "Swiss army knife of digital voice." (Photo courtesy DVMEGA.nl)

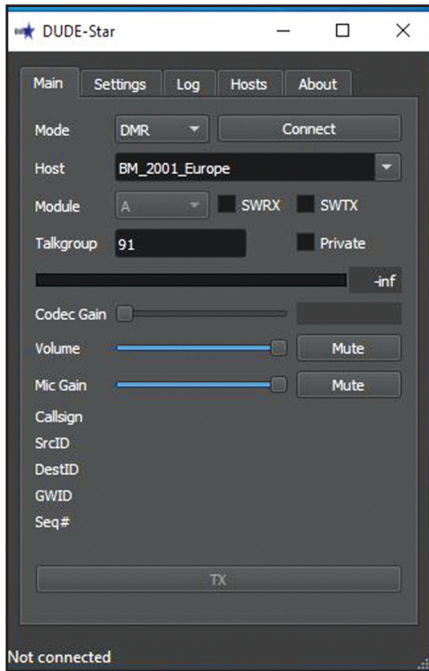


Photo B. Duestar operation is easy. Select a talk group and click Tx.



Figure 1. Windows® operation of BlueDV made chatting with Feng in Beijing, China easy. (Image courtesy of DVMEGA.nl)

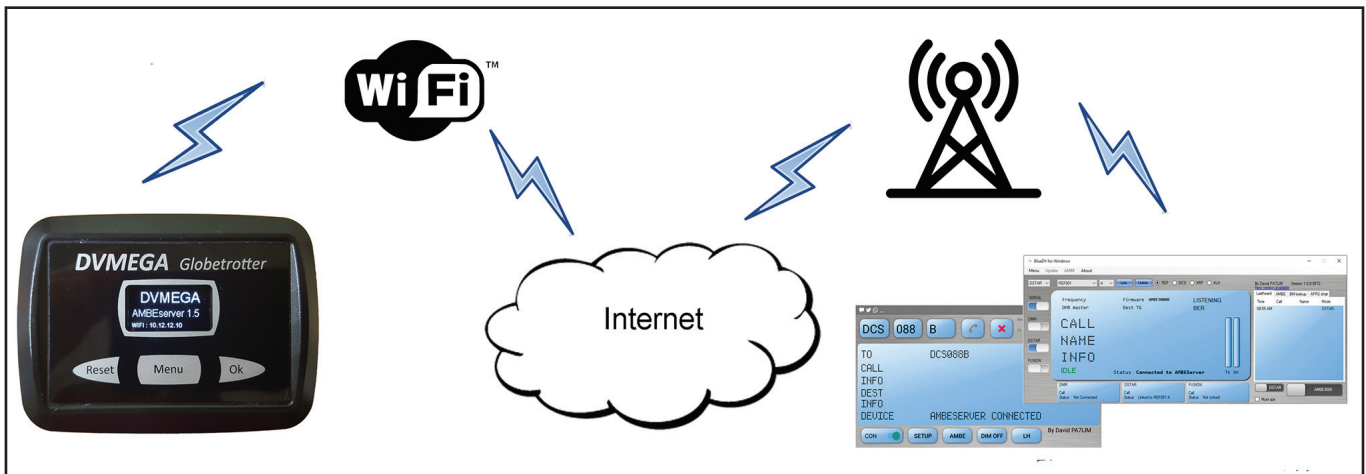


Figure 2. In the RV, on the boat, or in a hotel room, ham radio is only as far away as your cell phone. (Image courtesy of DVMEGA.nl)

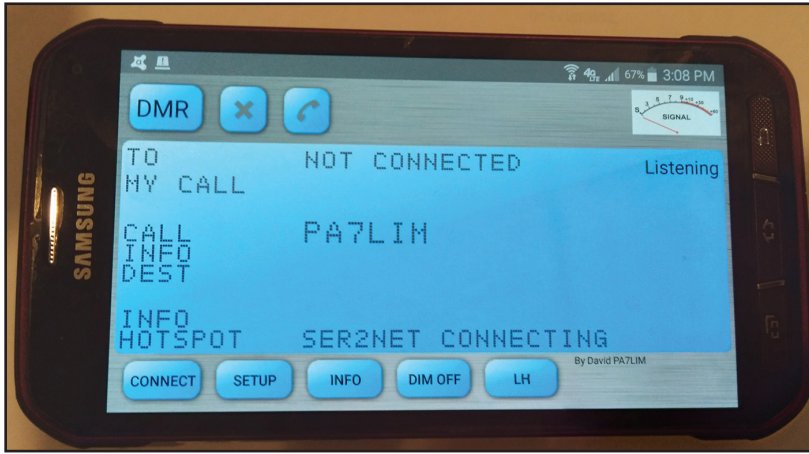


Photo D. Your cell phone is your rig with BlueDV for Android.



Photo E. Yes, Virginia, you can earn awards for contacts made using DMR. Check out <DMRwards.org>. (Photo from DMRwards.org website)

ed like a bit too much for me. I was looking for something simple and cheap.

On the DVMega website, I noticed a cute little box called the DVMega Globetrotter (Photo C). Wow, this was my kind of gadget. The Globetrotter is a combination of an AMBE 3000 dongle that can plug into the USB port on a computer and a standalone AMBE server. (Advanced Multi-Band Excitation or AMBE, is a vocoder technology owned by Digital Voice Systems). This meant that I could use my computer for crystal clear operation on all three modes or, with a few clicks of the Globetrotter buttons, I could instruct it to inde-

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pendently link to my Wi-Fi router and then, access it through my cell phone from anywhere in the world. Now my "800 MHz, 1-watt handheld transceiver" had a worldwide ham radio reach (Photo D).

DVMEGA The Swiss army knife for Digital Voice

Globetrotter

By using the Globetrotter in combination with BlueDV, you have a powerful digital voice communication tool that allows you to communicate from anywhere to anyone with just a simple internet connection.

The Globetrotter is basically an AMBE server and AMBE dongle in one. It can be switched between server and dongle in a few simple steps. With the server active you can connect your Android BlueDV AMBE app to the Globetrotter anywhere within range of the internet (WiFi). It is also possible to use the Globetrotter on the road while it is physically at your home.

In dongle mode, the Globetrotter is connected with a micro USB cable to the machine running BlueDV.

For the more experienced user, the Globetrotter can also be used as a remote AMBE server for Peanut etc.

The auto update mechanism checks for new firmware each time it is switched on. It is then installed by a single push of a button

Technical data :

- Support for DMR, D-Star and Fusion.
- 1" Bright Oled display.
- Solid ABS box.
- Instant boot (< 2 sec)
- Simple menu structured settings for WiFi configuration.
- Possibility to set the UDP port.
- Static or DHCP IP.
- Use a standard phone charger for the power supply.
- Baudrate 230400 in dongle mode.
- Auto update mechanism.
- Dimensions 90 X 62 X 30 mm.
- 5 Vdc micro USB-B.
- Micro USB-B to USB-A cable included.

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How it all Goes Together

The Windows or Android programs associated with the Globetrotter are called BlueDV (Figure 1). They were designed by Dutch ham David Grootendorst, PA7LIM, as a hobby project and made available to the ham community free of charge. David has produced nice instruction books in PDF format for both versions of the program. You can download the program free at <pa7lim.nl/bluedv-windows/>.

Setup was easy, even for me! Programming the Globetrotter makes use of three push buttons and the little LCD screen. DVMega provides a video on its website that illustrates the step-by-step setup for both Globetrotter and BlueDV programs.

It is important to carefully input the necessary information or all this will not work. Initially, I neglected to provide my Brandmeister password in the BlueDV setup field that said "pass0word" and DMR would not function. I could make contacts on System Fusion, but DMR would not connect. It's one of those times when you hit yourself in the side of the head and yell "dummy" for not seeing the obvious.

Once everything was up and running, I had a ball, especially on Brandmeister talk group 91, where I could throw out my call and get an answer from England, Israel, Japan, or anywhere else around the globe (Figure 2). You never know who in the world would enjoy a crystal-clear digital ragchew. And you might even earn yourself an award (Photo E).

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Notes:

DMR, System Fusion and D-STAR are the most commonly used digital voice protocols in amateur radio today. Most systems operate on VHF/UHF and use repeaters, which are in turn linked via the internet into wide-area networks.