

# HOMING IN

Radio Direction Finding for Fun and Public Service

## New Products, New Hunt Opportunities, and Foxhunting “Down Under”

**“I** want to start transmitter hunts in my area, but I need a fox transmitter. What shall I use?”

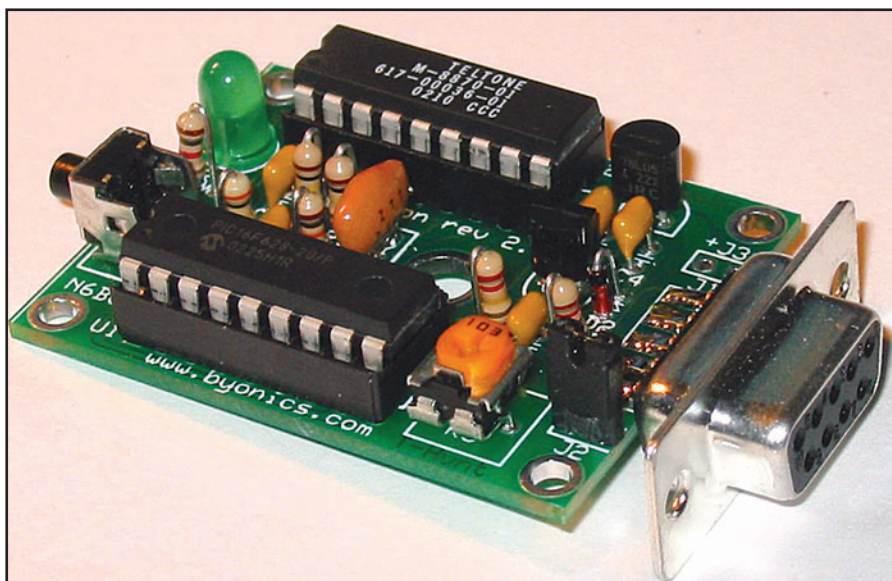
That’s near the top of the list of frequently asked questions in my e-mail inbox. It also shows up regularly on internet mailing lists for radio direction finding (RDF) enthusiasts. Often the requester has just won his (or her) first hidden transmitter hunt, which might be called a T-hunt or foxhunt, depending on where he lives. He is looking for a transmitting device because it’s his turn to hide for the next hunt.

For a club of beginners who will be doing RDF in their cars, the first hunt can be very easy for the hider. Just drive to an unlikely location and yak into the microphone at intervals called for by the hunt rules. Give them verbal taunts or read articles in *CQ VHF*. If they are having lots of trouble, you may need to give a clue or two.

For a few ham clubs, this continues to be the usual format for mobile hunts, especially when they occur only a few times a year. The hiders wait and transmit in the parking lot of a restaurant where everyone will eat afterwards, or they set up a picnic or barbecue in a park that everyone has to find.

Most groups eventually graduate to more difficult hunts (or they run out of new restaurants and parks!). An unattended foxbox adds to the fun and saves the hider’s voice. The familiar vehicle is no longer a giveaway. An unattended fox (or “T”) frees you to move around, drawing attention away from the transmitter’s location. You can enjoy the spectacle of the hunters scurrying to locate it. It saves your voice, too. The easiest audio source for this purpose is an MP3 file of voice or random notes. To cycle the T on and off, put a blank file in the rotation and use a transmitter with VOX.

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*PicCon from Byonics turns any VHF/UHF handie-talkie or mobile radio into a fox transmitter with distinctive tones and on/off timing. (Photo courtesy Byon Garrabrant, N6BG)*

Mobile T-hunts around the country have an endless variety of rules, calling for transmissions ranging from a few seconds every few minutes to continuous. On the other hand, championship on-foot foxhunts under International Amateur Radio Union (IARU) rules<sup>1</sup> require five synchronized fox transmitters sending a prescribed CW message for 60 seconds each in numbered sequence.

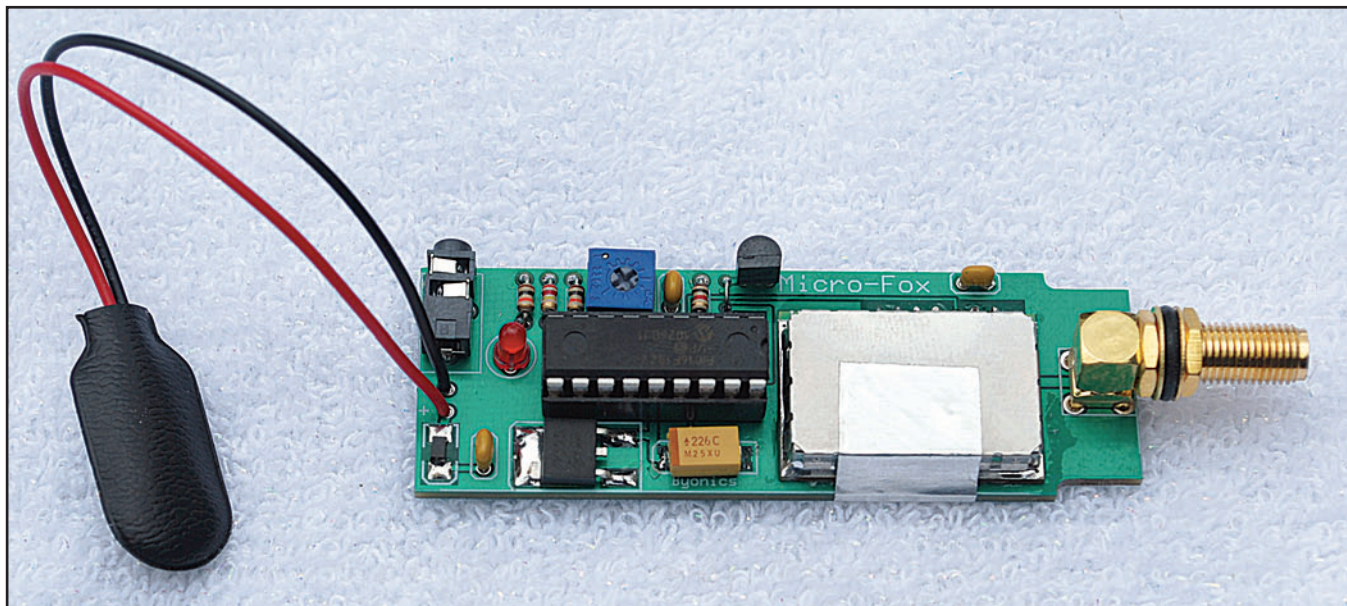
The optimum solution for most hunts is a device with no moving parts that provides distinctive audio and versatile on-off cycling for ordinary mobile and handheld transceivers. Several designs for fox controllers have appeared in recent years, using CMOS logic, microprocessors, or PICs.

For a controller that’s almost ready to plug and play with your rig, consider PicCon by Byon Garrabrant, N6BG. This was the first product of Byonics, his company, and it has become the most popular controller for both mobile T-hunting and on-foot amateur radio direction find-

ing (ARDF). PicCon has fully programmable transmit on/off timing and a delay feature to start transmissions automatically at hunt time. With a connection to a receiver, you can change programming from a remote location before or during the hunt.

PicCon’s parts are packed onto a 1<sup>7</sup>/<sub>8</sub>" × 1<sup>3</sup>/<sub>4</sub>" circuit board. You can build it from a kit in about 30 minutes if you have a fine-tip soldering iron. It is also available assembled and tested. Connectors and cables for the mic, speaker, and push-to-talk (PTT) lines of the radio are not included. Byon sells cables for many popular radios, or you can make them yourself.

When you first activate a new PicCon, it sends a pre-programmed 3-second tone sequence over and over for 30 seconds and then identifies in CW with the software version number. Your first task is to change the CW message to your call sign and set the transmission on and off times as appropriate for your local hunts. You do this by sending DTMF com-



*Micro-Fox 15 from Byonics is a synthesized 2-meter transmitter and foxhunt controller powered by a 9-volt battery. (Photo by Joe Moell, KØOV)*

mands to the fox transceiver connected to PicCon using another radio that transmits on the frequency where the fox rig is listening.

You can get fancy by designing your own tone sequence. There are 99 tone pitches to choose from, and the sequence can have up to 28 tones before repeating. The speed of the tone sequence is programmable, as is the speed of the CW ID. You can even program a repeating 8-event series of tone sequences, off times, and IDs.

Want to hide your T on Thursday and have it come on at hunt time on Saturday? One DTMF command lets you specify a delay of up to 100 hours before the first transmission. If the hunt must end at a

certain time, another command will terminate all transmissions after a pre-programmed duration.

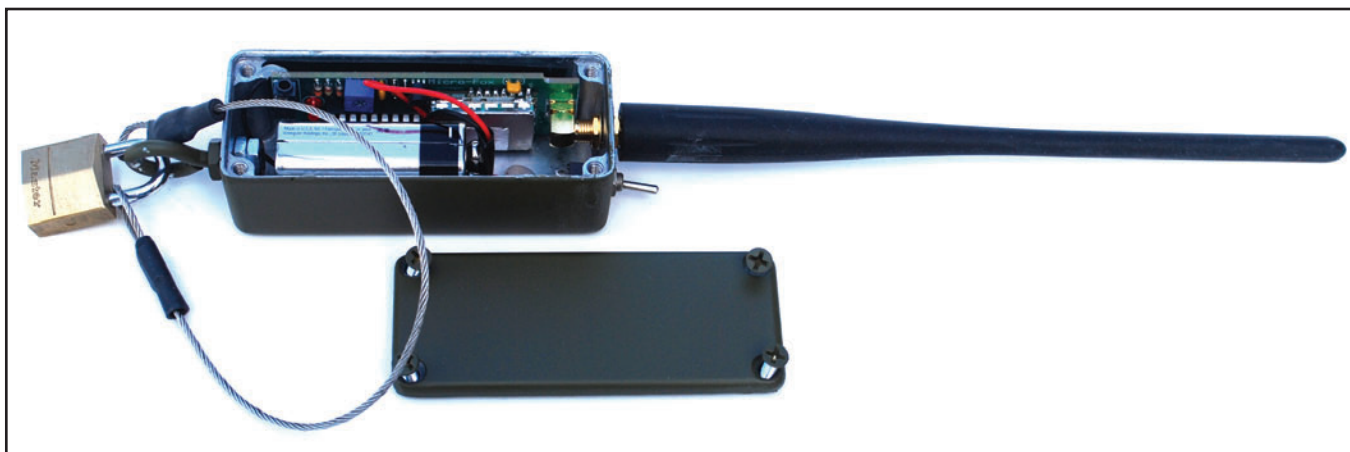
## A New Micro-Fox

For Byonics' latest transmitter hunting product, Byon teamed with Allen Lord of VHS Special Services to create Micro-Fox 15, a complete QRP 2-meter transmitter and controller on a 1" x 3" circuit board. It is ideal for hamfest foxhunts in city parks and for short-range ARDF training sessions.

Instead of DTMF tone programming like PicCon, the Micro-Fox has a RS-232 data cable. Configuration software, available for free download from the

Byonics website, sets the transmit frequency, on/off cycle times, delay for turn-on and shut-down, plus callsign or message for modulated CW ID. The software also lets the user enter a custom tone pattern, which could be MOE/MOI/MOS messages for ARDF.

Not many new computers have RS-232 ports. In my closet was a laptop that is 10 years old and runs a very early version of Windows® XP. After Byon made a minor modification to the software so that it would run on that XP build, it was easy to program the Micro-Fox with its serial port. I also used a USB-to-serial adapter to test the software on my Windows® 7 laptop. Once I figured out that the adapter was on COM7 and I set the software



*The Micro-Fox 15 in a LMB die-cast enclosure with lockdown wire, ready to deploy for a transmitter hunt. Not shown is the label with my cell phone and pager numbers, in case a passer-by reports it as a suspicious package to the authorities. (Photo by KØOV)*