

# PackTenna Mini End-Fed Wire Antennas

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As an avid activator in the National Parks on the Air (NPOTA) and Summits on the Air (SOTA) programs, I often find myself in the backcountry operating my QRP rig. Operating in these locations, pack weight and antenna setup time are critical factors for a successful activation. Getting to these remote locations on foot requires careful selection of my hiking and radio gear. Along with my Elecraft KX3 transceiver, I need an antenna that is lightweight, durable, and most importantly, easy to deploy and stow away. One such antenna well suited for this task is the PackTenna Mini, made by Nick Garner, N3WG, and George Zafiropoulos, KJ6VU, owners of PackTenna.

## Overview

The PackTenna Mini is a trail-friendly, lightweight antenna designed for portable HF use. Two versions of the PackTenna Mini are available — the End Fed Random Wire antenna and End Fed Half Wave antenna.

Both antennas are centered around the main body of the antenna mount which is constructed from PC board material. This board serves three functions: an attachment point for the coax cable (BNC connector), a mount for the toroidal matching transformer, and a self contained winder for the 26 gauge copper clad steel element wire. The winder reduces tangling and allows for quick deployment (see Figure 19).

Small banana jacks located on the PC board allow for attachment of additional counterpoise wires or radials. Plenty of holes have been added to the PC board, allowing for a variety of hanging configurations whether by fiberglass fishing pole or by paracord.

Each antenna comes with a Mylar bag for



**Figure 19** — The PackTenna Mini End Fed Random Wire with an optional S-clip on the end, wrapped up and ready for a backpack. The 9:1 matching transformer is under the yellow sleeve, and coax connects to a BNC jack at the bottom.

storage. PackTenna online has an excellent manual in PDF format that gives some good background information and directions for setting up your antenna system. This is an excellent resource and I would

## Bottom Line

The lightweight, compact PackTenna Mini end-fed portable wire antennas offer a lot of features specifically for backpack portable operators.

like to see more amateur manufacturers providing manuals for their products with this attention to detail.

## Two Models Available

The End Fed Random Wire, which uses a 9:1 UNUN (unbalanced to unbalanced) matching transformer, is rated for 100 W PEP, and is a multiband antenna. This model has a yellow heat shrink protective sleeve and requires a tuner to use. The antenna includes 40 feet of wire, and you will need to trim it. PackTenna's recommendation is 29 feet, which is not a multiple of  $\frac{1}{4}$  wavelength for any HF ham band.

The other version is the End Fed Half Wave antenna, which uses a 50:1 matching transformer and is also rated for 100 W PEP. This model has black heat shrink protecting the balun. The antenna also comes with 40 feet of wire and needs to be cut to length for the band you want to use (20 meters or shorter wavelength). Because it is resonant, no tuner is required, but it only works on one band. Using the guidelines given by PackTenna, I cut my wire element to 31 feet 3 inches for 20 meter operation.

## Setting Up

Deployment of the PackTenna Mini is very simple and straightforward. Having the wire wound on the antenna mount makes for a very easy deployment and cuts down on time to set up. My ideal standard is to be able to set up a portable antenna in 10 minutes or less.

The antenna only requires two attachment points. I usually attach the Mini antenna mount to a tree near my operating location (see Figure 20) and hang the wire end to a tree roughly 35 feet away. This allows for simple, quick setups and short coax runs to my Elecraft KX3. I use short lengths of strong, lightweight paracord to hoist and tie off the antenna. PackTenna offers

optional “S-clips” (plastic carabiners) which are handy for attaching the antenna to supports, and I installed one on the end of my antenna wire.

Other configurations I have tried are sloper and vertical (using a fiberglass fishing pole). One of the features of the PackTenna that I really like is the small hole at the top, allowing the operator to thread the antenna mast through the hole for instant mounting. That’s an excellent feature when you’re wearing gloves in cold environments.

### Operation

During the spring and summer I used both versions of the PackTenna Mini in more than 34 NPOTA and SOTA activations. Locations have been everywhere from the beach in Maine to the summits of North Carolina near the Blue Ridge Parkway. Considering the typical portable operations that I do, the antenna was often not very high due to time constraints and yet still worked well.

I made a total of 322 QSOs with the antennas and my KX3 (15 W maximum), with contacts as far as Alaska and France. I used the End Fed Half Wave on 20 meters, and the End Fed Random Wire on 40, 20, and



**Figure 20** — The PackTenna Mini End Fed Half Wave uses the same construction as the Random Wire, but has a black sleeve and uses a 50:1 matching transformer. Note the antenna wire fed through several holes at the top right to provide strain relief for the PC board connections.

10 meters. The tuner in my KX3 had no trouble matching the Random Wire version on the various bands.

What improvements could be made? One minor issue I had was remembering which antenna model I was currently using. While each one can be identified by the color of the heat shrink, I would like to see both models specifically labeled indicating the antenna version (9:1 or 50:1 UNUN).

Also, after winding the wire element on the antenna body, I needed a way to secure it to prevent unwinding while stored in my pack. I solved this by attaching a rubber band from the S-clip to one of the ears of the antenna body to secure the antenna wire.

Ultimately, when reviewing gear, the most important questions to ask is: If I lost my PackTenna Mini antenna, would I replace it? The answer is most definitely yes. Along with my AlexLoop portable magnetic loop antenna, the PackTenna Mini has a permanent spot in my portable antenna arsenal.

**Manufacturer:** PackTenna Portable HF Antenna System; e-mail [support@packtenna.com](mailto:support@packtenna.com); [packtenna.com](http://packtenna.com). Price: \$89.99 for either version. S-clips, \$0.99 each.