

Gordo tests the new five-band portable "Traveler" from TW Antennas in his back yard with promising results...

CQ Reviews:

TW Antennas TW-2010 Traveler™ Portable HF Antenna

BY GORDON WEST,* WB6NOA

Here is a compact, five-band, high-frequency antenna that swings open in seconds and is fully deployed, with its own ground system, in less than five minutes. The TW-2010 Traveler™ covers the 10, 12, 15, 17, and 20 meter bands, with a signal takeoff angle of approximately 27 degrees above the horizon.

This is a center-fed, modified-H design, double vertical dipole with a relay switch box at the feedpoint to click in coil inductance to cancel the capacitive reactance. The matching system naturally rests on 20 meters, so you don't even need to take along the tiny controller if you just plan to operate on 20 out in the park.

I was shipped the Traveler™ with the nifty and sturdy "Quadpod," which features four spring-loaded legs that swing out for a rock-solid platform onto which the heavy-duty 6061-T6 aluminum antenna network slides. When the wind picked up, the Quadpod encountered no problems. Some simple weights on each flat leg did the trick nicely. The Quadpod and antenna radiating elements are powder coated with a matte-black finish for stealth performance and for safety in case someone decides to touch the lower dipole element.

The TW-2010 controller is housed in an extruded-aluminum enclosure with a bright, easy-to-read, multi-colored LED front panel with a band-selector switch. The controller runs on 12 volts DC with a common power plug with center hole positive and a white stripe positive on the other end of the cable. I added Anderson connectors to the far end.

A control cable—an amazing 65 feet in length—comes with the antenna. One end plugs into the back of the controller and the other end plugs into the antenna relay box from the outside. You add your own coax cable, and I would recommend RG-8X rather than any larger cable. (I will explain shortly why smaller cable is preferred.)

The lower and upper dipole elements simply snap open. Large plastic knobs keep everything absolutely tight, straight, and aligned. The upper and lower elements slip into the relay control-box tube, and you are ready to go on the air on 10 through 20 meters.

The antenna incorporates a pre-tuned inductance switching array box which likely will have no need for internal adjust-

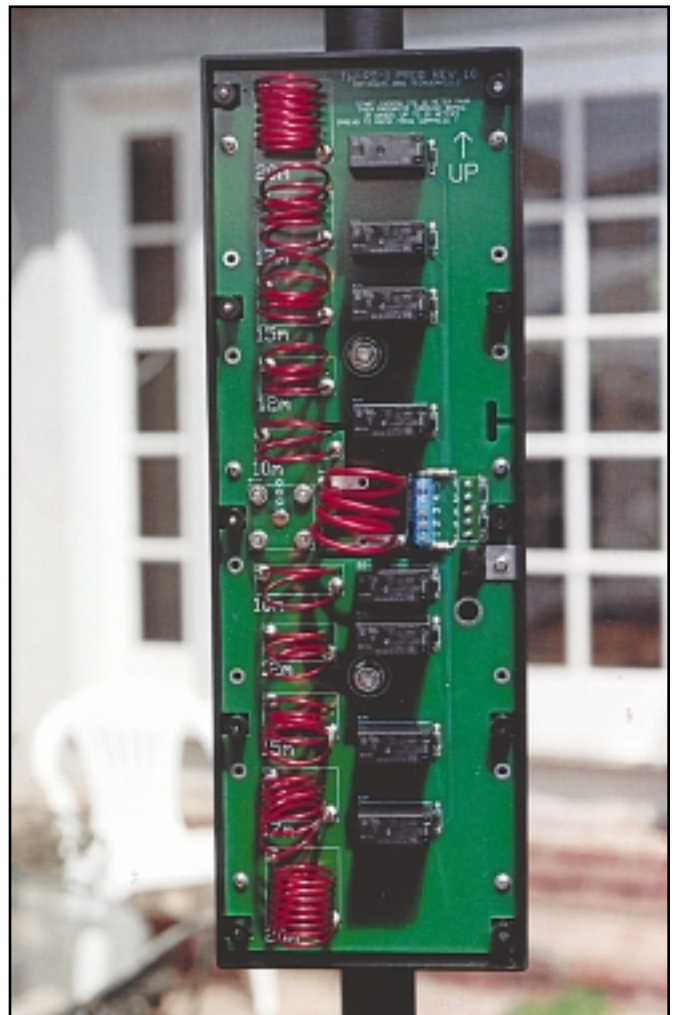


The TW-2010 arrives well-packed in several packages. The carrying case is visible at the top.

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This is the optional “Quadpod” portable base for the Traveler antenna. Also visible is the lower dipole element, just a foot off the ground.



A peek into the inductance matching box. Various band coils are to the left and the black relays are on the right. The relays switch in different coils for different bands.

ments because the antenna is a pre-balanced dipole array. Like all good hams, though, I *had* to see what was on the inside, so I opened up the box, per the instructions, and quickly spotted a simple design of relay-switched series coils to resonate the top and bottom elements for minimum SWR and little, if any, heat lost in the large element coils themselves. The instruction manual warned me not to lose the non-magnetic (no rust) screws, which, of course, I lost immediately in the wet lawn. Screw *keepers* would have been nice, along with an additional rubber seal around the edge of the plastic black box lid. Richard Rhodes from TW Antennas tells me that “there’s no gasket for the box because nothing inside the box really cares if it gets damp except the relays, and they’re individually sealed, so no worries. The box alone will keep the insides from drowning. Also, there’s no bare metal inside the box that can corrode under normal circumstances.”

A quick check of TW Antennas’ internet support group gave me same-day answers to some technical questions about those pesky screws holding on the back of the black box. I worked with Hollie, who usually got back to me with answers within an hour.

I added 12 volts from a small battery, hooked up my Yaesu FT-817, and the system sprang to life. Optional Yaesu and ICOM control cables are available in case one is too lazy to

push the button to select the correct band. ICOM and Yaesu offer band data out that will let the Traveler™ control box automatically switch in the correct relays for the desired band of operation. I tried both cable kits, one on an ICOM IC-7000 and the other on several portable battery-operated Yaesu HF transceivers, and magically the controller followed the bands perfectly.

Next was the SWR check. I started out with the handy MFJ SWR analyzer, and ran more comprehensive Smith chart checks with the portable TimeWave LCD analyzer. I also triple-checked SWR by noting the output indicator on each of the transceivers.

While the antenna did offer a peak in receiver background noise reception for the specific band I was on, the initial SWR checks were *terrible!* Ten and 12 meters were fair, but 15, 17, and 20 meters were SWR whacko. Check the book, I thought, but I was far away from the side of the house, which is built of stucco and chicken wire. I tested with the permanent mounting assembly in wet grass and still had high SWR.

A drawing on page 17 of the well-illustrated instruction manual gave me the answer. It showed the coax and controller cables coming off the center of the antenna at a 45-degree angle. Presto! All bands dropped right in and the SWR was now stable! However, I had to switch from RG-8 coax

A Second Test

A friend of Gordo's, Paul Bailey Gates, KA6GEM, recently purchased his own TW-2010 and recounted his initial impressions:

I set up the TW-2010 this afternoon in my front yard just to test it out. I soldered a set of Anderson PowerPoles® onto the controller power line and grounded everything as recommended. I'm using a new 75-foot length of RG-8X from Cable X-Perts. Everything worked as expected, but the bands were dead so I didn't make a single contact or hear any activity. The SWR meter on my FT-897D didn't move *at all!* In fact, my first impression was that something wasn't working.

The only problem I had was in the "Auto" mode, using the accessory Yaesu interface cable with my FT-897D. It switched OK for the 10- and 12-meter bands, but when I switched to 15, it jumped back to 10 meters... same for 17 and 20 meters. But the manual mode works so well that the auto mode almost seems unnecessary.

This antenna could prove to be a major game-changer. Its set-up was super simple and there was *no* tuning. With the growing number of very portable HF transceivers (ICOM'S new IC-7000 and the venerable 706, Yaesu's FT-897 and 857, and Kenwood's TS-2000, among others), there is, I think, a lot of demand for an antenna like this.

to lighter-weight RG-8X to keep the antenna from leaning; RG-8X is fine below 30 MHz, but the cables must *not* run down the lower mast.

My first on-the-air 20-meter check was with a station in Florida, indicating that my signal was good, especially for a back-yard ground-mounted antenna. On 17 and 15 meters, I snagged some mobiles, 1500 miles away via skywave, and they, too, reported a nice signal. In comparison to single-band inverted-V dipoles (not multiband), the physically longer, naturally resonant dipoles with slightly higher feed-point elevation gave me increased performance at the other end of the circuit by about 1 S-unit, or 6 dB. The best aspects of the portable Traveler™ antenna are its ultra-compact design, instant relocation to get it away from nearby cable-television drops, instant band switching, and no need for any additional mounting poles.

Finally, after running the ICOM 7000 into it for a rather long QSO, I put down (actually disconnected) the mic and immediately went over to feel the open 20-meter coils. They were hardly warm, not hot, indicating minimal current loading to achieve resonance in the upper and the lower radiating elements. (Actually, according to Richard at TW, the 2010 is physically sized for 10 meters, but with all coils engaged, it goes to 20 meters. In that range "good match" bandwidth is pretty small, and any further loading will cause subsequent bands to match across a very narrow range of frequencies.)

Keep the supplied multi-conductor control line and your supplied lightweight coax away from the lower radiating element and your SWR will drop to near zero. I tried rotating the antenna to see if it was directional, but couldn't tell much difference, other than some nice incoming strong signals. Most important, everyone I could hear, I could work.

For portable operation, the TW antenna was a kick to play with in my backyard, as well as at other locations in the California sun.

The list price for the TW-2010 Traveler is \$399.95; a complete package, which includes the antenna plus the Quadpod stand and a deluxe carrying case, is \$549.85, both plus shipping. For more information, visit <<http://www.TWantennas.com>> on the web and look for product number TW-2010.



The TW-2010 set up and on the air for testing, with the coil/relay box open. Note the control cable and feedline coming away from the box at an approximately 45-degree angle. This is essential for keeping the SWR low (see text for details).



The green LED on the control box (shaded by Gordo's hand so you can see it in the bright sunlight) shows that the relays rest on 20 meters with the controller turned off. The up/down buttons are used to select the other bands, and the LED switches to indicate which band is in use.