ARRL Periodicals Archive – Search Results

A membership benefit of ARRL and the ARRL Technical Information Service

ARRL Members: You may print a copy for personal use. Any other use of the information requires permission (see Copyright/Reprint Notice below).

Need a higher quality reprint or scan? Some of the scans contained within the periodical archive were produced with older imaging technology. If you require a higher quality reprint or scan, please contact the ARRL Technical Information Service for assistance. Photocopies are $3 for ARRL members, $5 for nonmembers. For members, TIS can send the photocopies immediately and include an invoice. Nonmembers must prepay. Details are available at www.arrl.org/tis or email photocopy@arrl.org.

QST on CD-ROM: Annual CD-ROMs are available for recent publication years. For details and ordering information, visit www.arrl.org/qst.

Non-Members: Get access to the ARRL Periodicals Archive when you join ARRL today at www.arrl.org/join. For a complete list of membership benefits, visit www.arrl.org/benefits.

Copyright/Reprint Notice

QST Issue: Nov 2004
Title: Tuning a Wire J-Pole Antenna
Author: Philip Karras, KE3FL

Click Here to Report a Problem with this File

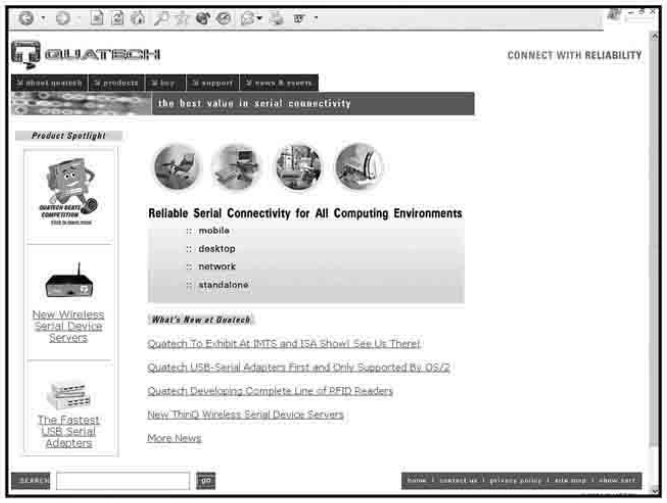

Figure 6—Quatech's home page (www.quatech.com). They supply USB/EIA-232 converters recommended by K1EHW.

adapters is that the COM-port number changes when starting the OS. *Windows XP* is particularly bad about it.

I do "a bit" of this stuff in the marine field, and this product is the only one that works for folks who have no technical knowledge. Once it is set up and running for them, it keeps working.

On my boat, I connect to a "four-porter": I run PACTOR on one, an NMEA autopilot on another and a GPS NMEA on another. They are always in the correct "place." The unit seems to be "RF proof," as it runs near marine radios and never flinches. —*Craig Owings, HP2XBA*; **craigo@pancall.com**

Another USB Story

◊ I saw your request for help with USB/EIA-232 devices. I can share my experience with such a device. I first needed a multiport board to implement a small RAS modem pool for our e-mail server. I found a company called Quatech that sells such a board (Quatech, 662 Wolf Ledgers Pkwy, Akron, OH 44311; tel 800-553-1170; **www.quatech.com**; **sales@quatech.com**). Their PCI multiport 232/485 board supports all modem lines. It has been in place now for four years.

I later had a need for a true EIA-232 port to expand a test set. I had written many *Visual Basic* programs that read torque data via a 19.2-kB standard COM port. As you stated, The old boxes (computers) had two standard COM ports COM1 and COM2. I purchased a new Compaq/HP box that had only USB ports. I went to Quatech again, and found they make USB/232 adapters, too. My program/hardware uses all the control lines for handshaking: RTS, CTS, CD, DSR and DTR. The adapter works flawlessly. The operating system in this case is *Windows 2000 Pro*. They (Quatech) supplied a CD that installed the drivers. (That was a bit confusing at the start because it kept reporting new hardware. That happened because it was installing a new device driver for each port.) I bought the four-port model: QSU 100. They make one-port, two-port, four-port and 16-port versions, in my case, COM3 through COM6. I set my source code to test each one, and again all lines are supported. I don't operate digital modes, but I'm sure the device will work with any rig requiring the hardware handshaking and a "STANDARD" EIA-232 interface. I hope this helps someone. Figure 6 is a screen capture of Quatech's home page.—*George Peters, K1EHW, 41 Barbara Dr, Norwalk, CT 06851-5306;* **k1ehw@arrl.net**

TUNING A WIRE J-POLE ANTENNA

◊ There have been many good 2-meter, or 2-meter/70-cm J-pole construction articles published in Amateur Radio magazines and numerous club newsletters. Unfortunately, they all fall short by not telling readers how to tune the new antenna.

I built two J-poles shortly after becoming an Amateur Radio operator. One tuned up just as advertised, the other was a lost cause. This antenna was constructed the same as the first, and I used the same batch of 300-Ω ladder line for both. I put this antenna aside for about three months, until one summer day I decided to discover just how to tune a J-pole antenna, first time *every* time.

Minimize SWR

I found that the distance between the feed point and the shorting bar determines the minimum SWR. If the antenna is too long or too short, the lowest SWR may be nowhere near 1:1. If you've followed the instructions and your dimensions are correct, however, that should not be the case.

I find it best to keep some extra wire at the bottom of the antenna matching section (about 2 inches). That lets me move the shorting bar up and down to find the minimum SWR. Do *not* use the stripped wire at the end of the matching section to form the shorting bar. Leave it straight and tack on a moveable shorting bar.

Resonant Frequency

Once you have the shorting bar set, do *not* cut off the extra wire at the bottom of the antenna. Move the shorting bar and the feed point *together*. Move them upward (shorter single wire) if the tuned frequency is too low, downward (longer single wire) if the tuned frequency is too high. Either way, maintain the distance between the feed point and the shorting bar. This insures that the SWR does not change.

The overall length of the antenna, the length of the matching stub, and the distance between the feed point and the shorting bar are not independent of one another. Since the construction-article authors have spent the time to optimize the antenna dimensions, however, you can treat these lengths as independent for the small changes needed to tune a J-pole.

A Bit More Information

I once constructed a J-pole antenna that was 3 inches too long, but with a matching stub of the correct length. The minimum SWR was about 3:1, and it would not resonate on 146 MHz, as expected. When I removed the extra length, it could achieve resonance on 146 MHz with a 1:1 SWR. Therefore, if an antenna cannot achieve a 1:1 SWR after you perform the steps above, check the overall length of the antenna again. The resonant (minimum SWR) frequency tells you if the antenna is too short (the frequency is too high) or too long (the frequency is too low).

I've built—or helped build—over 100 wire J-pole antennas, and I've yet to find one that couldn't be tuned using this method. If you have a problem wire J-pole in the closet, get it out and see if these instructions help.—*Phil Karras, KE3FL (OES, ORS, VE, and AEC), Carroll County, Maryland;* **ke3fl@juno.com**

Hints and Kinks items have not been tested by *QST* or the ARRL unless otherwise stated. Although we can't guarantee that a given hint will work for your situation, we make every effort to screen out harmful information. Send technical questions directly to the hint's author.

QST invites you to share your hints with fellow hams. Send them to "Attn: Hints and Kinks" at ARRL Headquarters, 225 Main St, Newington, CT 06111, or via e-mail to **h&k@arrl.org**. Please include your name, call sign, complete mailing address, daytime telephone number and e-mail address on all correspondence. Whether praising or criticizing an item, please send the author(s) a copy of your comments. QST