Twin Lead Analyzer Adapter

Today's antenna analyzers are quite versatile instruments. In addition to measuring antenna impedance and resonance, they can be extremely useful in tuning coaxial stubs, locating cable faults, and measuring cable characteristics such as velocity factor (V_f). The manuals for most analyzers detail how to perform these measurements.

Figure 6 — The Type-N connector, its center pin, and the two alligator clips that make up the adapter. [Don Dorward, VA3DDN, photo]

Figure 7 — Version 1 of the modified Type-N connector converted into an adapter for checking twinlead type lines. [Don Dorward, VA3DDN, photo]

The analyzers are usually fitted with a Type-N connector, to which one must connect the item being tested. This is usually fine for testing antennas, as it is possible to connect an adapter to the Type-N plug for other connector types.

However, I wanted to check the Vf on some samples of ladder line and 300 Ω twinlead, but was unsure how to best connect these to the Type-N female on my analyzer. I finally devised this adapter.

I took a Type-N male plug of the crimp variety and, with a hacksaw, sawed off the back end. Then I soldered some mini-alligator clips on as shown in Figures 6 and 7.

In order to verify the performance of the clip connections, I connected a 1/2 W, 50 Ω carbon composition resistor to the clips and ran a SWR plot. The SWR at 150 MHz was about 1.5, which was not bad, but I wondered if I could do better.

I improved the adapter by cutting off only half of the knurled part (see Figure 8). This reduced the 150 MHz SWR to about 1.2 and the 200 MHz SWR to 1.3!

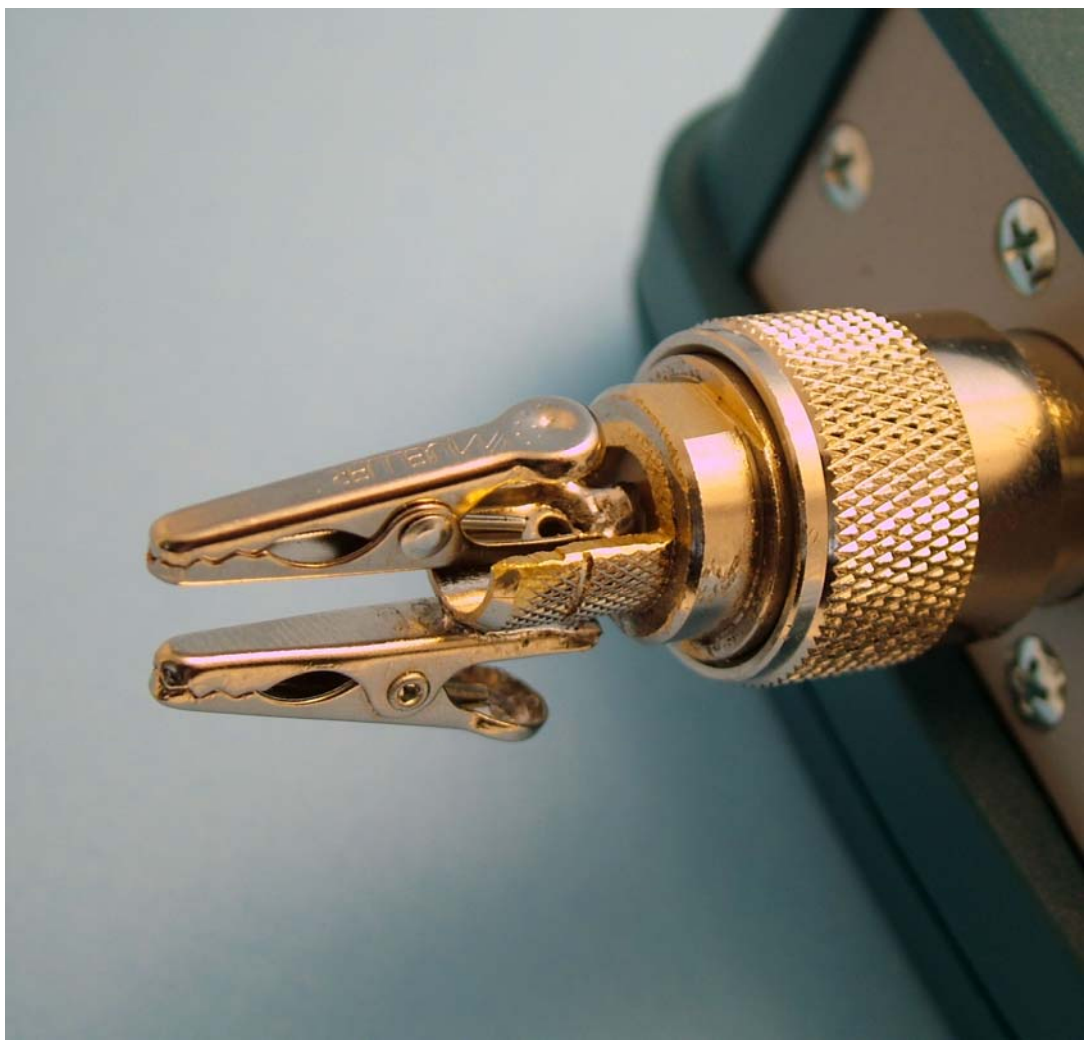

Figure 8----- This is version 2 of the adapter, with only half of the back end cut away. This design produced an improved SWR, [Don Dorward, VA3DDN, photo]

73, Don Dorward, VA3DDN,

1363 Brands Ct, Pickering, Ontario L1V2T2,

dorbs2000@yahoo.ca

"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