

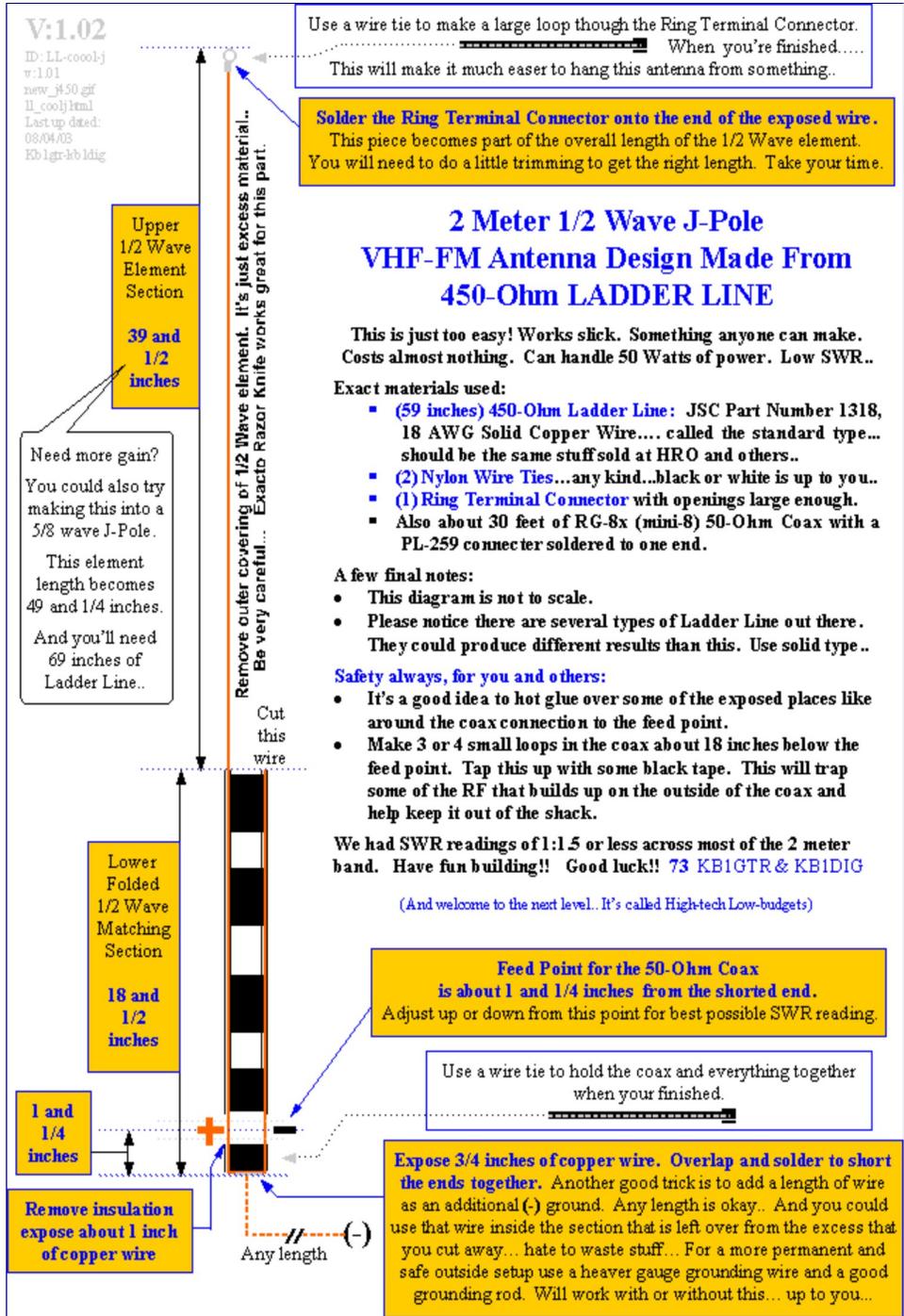


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Make that 2 Meter Rig "Sing" with the "LL COOL J"
450 OHM LADDER LINE J POLE ANTENNA
 From KB1DIG



2 Meter 1/2 Wave J-Pole
VHF-FM Antenna Design Made From
450-Ohm LADDER LINE

This is just too easy! Works slick. Something anyone can make.
 Costs almost nothing. Can handle 50 Watts of power. Low SWR..

Exact materials used:

- (59 inches) 450-Ohm Ladder Line: JSC Part Number 1318, 18 AWG Solid Copper Wire.... called the standard type... should be the same stuff sold at HRO and others..
- (2) Nylon Wire Ties...any kind...black or white is up to you..
- (1) Ring Terminal Connector with openings large enough.
- Also about 30 feet of RG-8x (mini-8) 50-Ohm Coax with a PL-259 connector soldered to one end.

A few final notes:

- This diagram is not to scale.
- Please notice there are several types of Ladder Line out there. They could produce different results than this. Use solid type..

Safety always, for you and others:

- It's a good idea to hot glue over some of the exposed places like around the coax connection to the feed point.
- Make 3 or 4 small loops in the coax about 18 inches below the feed point. Tap this up with some black tape. This will trap some of the RF that builds up on the outside of the coax and help keep it out of the shack.

We had SWR readings of 1:1.5 or less across most of the 2 meter band. Have fun building!! Good luck!! 73 KB1GTR & KB1DIG

(And welcome to the next level.. It's called High-tech Low-budgets)



As you can see in the photo above. Had to make a few adjustments.
 Re-heating and moving the feed point can be a little difficult.
 The next step is to cover everything exposed with the hot glue.
 Also, it's a good idea to get some of that glue in between the wire tie and the coax.
 This will lock everything into place and help keep the weather out. Fewer problems..
 Less headaches later...



This decoupling loop is sometimes mistaken for a matching balun.
 We'll just call it a choke and not put everyone to sleep with a long discussion of antenna theory.
 Just a few points on this topic.. Adding a choke like this is a good habit to get into.
 Another idea for this is one of those plastic snap-on ferrite cores.
 They come in different sizes depending on the size coax used. Either way is up to you.
 This J-pole is a balanced antenna going into an unbalanced feed line and can cause RF
 to get back into the Rig and into the shack. Save your equipment and try to protect yourself..
 This is easy to do.. So, take this extra step.. Please be safe..

Surprisingly, the 18 gauge wire in this ladder line is very rugged.
 It's good to keep some open space between the tip of the antenna and whatever you decide
 to hang it from. Try not to place the antenna close to any metal objects as well.
 We hang ours from some string thrown over a tree branch. Good to get the antenna at least
 10 feet off the ground. And, remember height determines range at 2 meters.

The gain for a 1/2 wave J-pole is approximately 2.4 dbi over a 1/4 wave whip.
Not bad for only a few bucks.



Construction Improvements & Modification Ideas

 1	 2	 3	 4
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Most every antenna we did had this happen. This is what to do:

Ref: 1 If you discover that the point between the "upper 1/2-wave element" and the "lower matching section" is starting to look like this image. Don't begin to panic. No problems. Always solutions.

Ref: 2 Just trim back a little of the insulation. About a 1/2 inch or whatever you decide works best.

Ref: 3 Look through some of that scrap plastic that you removed and make yourself a little spling. Place a slice down one side. Now it can snap over the copper wire of the upper 1/2-wave element section.

Ref: 4 Lock everything into place with a good coating of hot glue.

Email Steve for more details if needed. [buck0 AT comcast.net](mailto:buck0@comcast.net)

[Visit the original project with much more detail.](#)

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