Add 17 Meters To a Hustler (Newtronics) 4BTV VERTICAL
Do the Conversion for Pennies!

by Don Butler N4UJW

**The Hustler 4BTV is a multi band vertical covering 40, 20, 15, and 10 meters as it comes from the factory as you probably know.
I have used the 4BTV for some time now with very good success GROUND MOUNTED AND NO RADIALS but I wanted to get on 17 meters and this antenna did not cover this fun band.**

It was DEAD on 17 meters! Only VERY STRONG signals could be heard and it was useless as far as transmitting on 17 was concerned. I did consider using a tuner with it but decided against it in favor of this project!

This project is nothing more than adding 1/4 wavelength of wire along side the existing 4BTV mast in parallel with it and extended away from the vertical portion a short distance!

**This article and project will enable you to modify your Hustler 4BTV for use on 17 meters with almost NO expense other than a bit of labor (fun) if you have about
1/4 wavelength of wire laying around gathering dust and cobwebs.**

You only need about 13 feet or so (I used #14 from the junk box) to make the 4BTV work on 17 meters.

**This is such a simple modification, that I can't understand why I had not thought of
it before!**

The basic 17 meter modification to the original 4BTV requires no holes or any other modification that requires damaging the original mechanical structure of the antenna.

**All you simply do is calculate about 1/4 wave of wire at your center frequency on 17.
I choose 18.130mhz. 234/ 18.130 = 12.9 feet. I rounded this off to 13 feet.**

Then it a simple matter of attaching one end of the 1/4 wavelength

**of wire to the feed
point at the base of the 4BTV, extending it horizontally out and away from the base
mount about 6 inches and running it parallel to to the main antenna to the top and
hanging and insulating it from the Top Hat structure supporting it with heavy cord, string, etc.**
See Pictures at bottom of article and more mods from other builders.

There is very little weight to 13 feet or so of wire so I don't think you need be concerned with the weight bending one of the Top Hat elements. (See additional mods below)

**The wire can be simply attached near the feed point on the tubing above the bottom feed point with a hose clamp. This is the area just above where the coax is normally attached; and then just extend it to the top of the antenna, however, this may give you swr problems with wind blowing it close to or touching the main element. I first tried it this way but noticed the swr changing with the wind..... although not much.
This is why I used the bottom extender or spacer to get the wire away from the main element.
This also changed the tuning of the wire to get it to an acceptable swr and match for 17 meters.**

**I made the spacer from a short flat (about 6 inch) piece of aluminum and about
3/4 inches wide.
I formed it into an L shape and drilled one small hole at the longest end so the wire could get thru it. You could also just attach the end of the wire on the end of the CONDUCTIVE spacer using nuts, bolts etc, as long as it is making electrical contact with the main
element of the 4BTV base. In other words, the spacer would become part of the 17 meter antenna. Again....see pictures.**

**Attaching and tuning the wire was the hardest part of this project.
I removed the main portion of the antenna from the base mount and layed it on the ground.
I then attached the "top" end of the wire to a nylon cord (acting as an insulator)
and tied the other end of the cord to one of the Top Hat elements making certain the the wire was hanging straight down and parallel with the rest of the antenna and not twisted around the**

vertical element.
Then I re-mounted the 4btv back on it's base mount, attached the remaining end
of the wire to the connection point near the feed.
After several attempts at "tuning" the 1/4 wave section of the wire, I finally arrived at an acceptable swr and match.

2 to 1 SWR bandwidth
16.625mhz 2:1
19.175mhz 2:1

18.068mhz 1.1 to 1
18.168mhz 1.2 to 1
Match efficiancy 99% (all figures above using MFJ 259b)

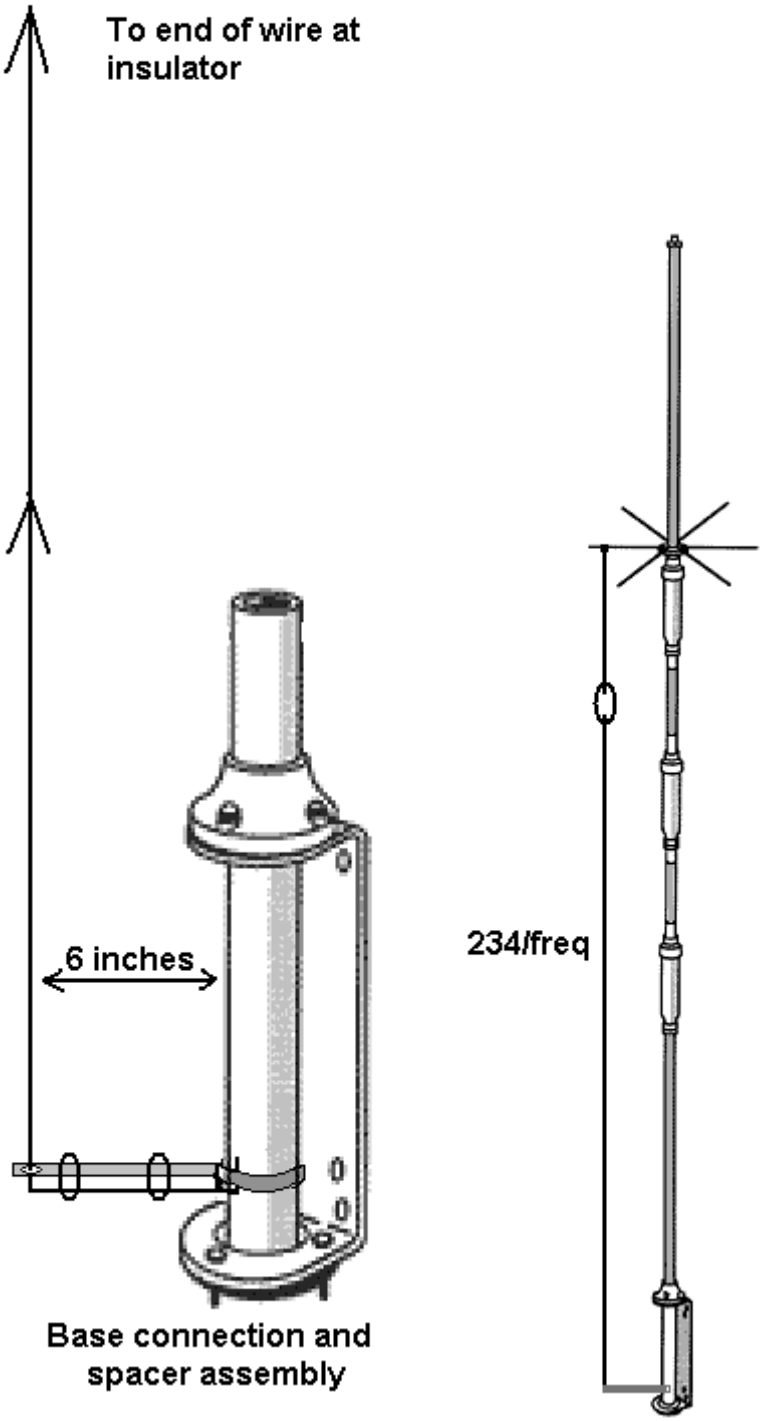
After final installation of the modification, swr was checked on the "normal" bands, 40, 20, 15 and 10 meters with no noticeable change from previous readings. Some builders of this project mod have experienced a slight swr problem on 15 meters, but adjusted that portion of the original antenna with no problems afterward.

It should be noted that the 4BTV is not a very tall antenna. It is only approximately 21 feet tall from the ground and can be easily handled ON THE GROUND BY ONE PERSON.
Attempting this project up on a roof or ladder by yourself could cause some very serious harm to more than the antenna! Get some help and remember to keep it away from those power lines!
Also as an afterthought remember that your installation IS and WILL BE different from mine. I used NO ground radials and the antenna is ground mounted in poor dry Texas soil...clay and sand!
Your length of wire will probably be different than mine so some fun will be had in tuning this antenna. The starting point for the wire length is 1/4 wave long or a bit longer.
234/freqmhz = length IN FEET. This should be the length from the main radiator at the bottom of the main antenna to the tip of the modification, but allow a few inches for tuning if needed.

If you try this modification and have any input as to different ways to do this with
the 4BTV that will help others....email me.....I would love to hear from you! 5BTV and 6BTV owners.....EXPERIMENT!
The proof is in the pudding!
On the air tests made my Yaesu FT-107 come ALIVE on 17 meters

with this modification and I am still making contacts while I write this article!
I had NONE on 17 meters before!
Italy was 5 9 + 10 over today! California was a bit weaker!
IS 12 METERS NEXT??? !!! 73 Don.....N4UJW

PICTURES BELOW (Original artwork Copyright Newtronics. Mods N4UJW)



NOTES: In drawing above left, the 2 ovals near the bottom do not represent coax shield. They represent nylon wire ties to secure the wire to the aluminum bracket.

These are the ruff measurements that I used above. Your wire lengths may be different! Connection at the base feed point area (left picture above): aprox 3 inches from bottom L plate.
The wire can be secured to the spacer with two nylon ties as in the picture.
End of wire extends out from the connection point about 6 inches and then turns 90 degrees and up to about 3 inches below the top most trap and attached to an insulator.
I see no reason why you could not use aluminum tubing instead of wire for a stronger mod. Another project for me? Could be!

A bit of tuning should get you up and running on 17 meters!
Drawings are close to scale.

Comments from builders:

"Thanks for the simple 4BTV mod--works great on 17 now. Good flat SWR.
I used an old CB mobile mounting bracket for the base stand-off with a hose clamp.
Think I'll add one more band with same approach--either 12 or 6 meters. "
WJ8L

"The very first time I fired it up, the SWR was less than 1.1.,
So I left it alone.
And as in the original mod, the other bands were not affected.
This was an easy and fun project. I wish I'd thought of it myself! hi hi"
K7TUC
AND ON AND ON BY OTHERS!

[See another mod using Lucite Rods by K7TUC here]
[See also the 5BTV mod by KK5ID HERE]

73 (DO YOU HAVE THAT 12 METER MOD READY YET?