

## Antenna Test with NANO VNA - Purpose to check 6 antennas SWR for baseline test only

SWA is just one measurement. Radiation pattern and many other factors needs to be considered.

Determine best way to test SWR HT radio antenna.?

Demystifying SWR: Ask Dave #28 30 mins: <https://dcasler.com/demystifying-swr-ask-dave-28/>

Video – Dave Casler OG! - How to use a nanoVNA for SWR in theory and practice

<https://www.youtube.com/watch?v=U-8YGAEF3OM&t=1696s>

HT Jig

<https://theblackmoor.net/analyzing-ht-antennas-is-hard/>

## ANTENNA TEST LIST

The spreadsheet and check his tabs the guy = really good.

My 5 antennas correlated well with his results.

<https://docs.google.com/spreadsheets/d/1WrGkUq32bSvUlu6kf3xob9RVPED5xYPMPZTKoMhpgnA/edit?ref=theblackmoor.net#gid=1695430220>

## Antenna - ..... NANO VNA

Calibrate for Start 146.065 M Stop 146.675 M W3FT Repeater.

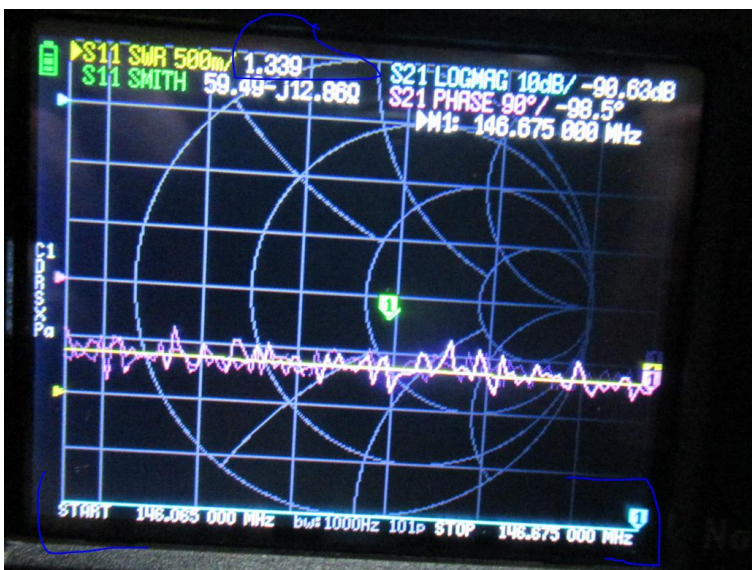
Load short open Calibrate

Record SWR value HT use Jig for ground plane

Retest a second day

Compare to another test set and another set of PEER tests for statistical check. 6 Sigma if not obvious result.

Hustler 2MB SWR 1: 1.339



**MY JIG:**

The Black Moor used metal food can that fits your hand grip. Cut a hole the size of SMA adapter.

I noticed the effect of not holding and in between. Human is the Ground Plane.

My repeater connect test pretty much mapped the SWR results.

The Jig a Drill Size Hole Guide- My grandfathers. 8<sup>th</sup> grade education self-taught machinist.



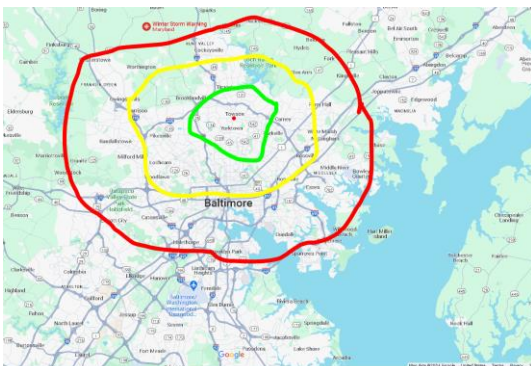
Radio Bfeng 4 WATT	Model	Signal Quality RS Worst	SWR low better>>> 2M	70
Antenna 1	Hustler 2 54 in	"4-8"	1.35	na
Antenna 2	RA-701 8 in	RS	7	3.84
Antenna 3	RA-711 14in	RS	none	none
Antenna 4	Tactical 48 in	RS	2.5	1.15
Antenna 5	Di-Pole	RS		
Antenna 6	STOCK	? 2 - 2 ?	8	1.75

My other goal is mapping success by Antenna type and distance for HT

I Get 10 miles with Hustler and RS – 4-8.

If the tactical works from my home awesome. I will also test in Towson this weekend and Perry Hall.

Be nice if the Stock antenna works to a 4 mile? Green circle. Red is 5/8 antenna 3 dbi gain Yellow I hoe tactical can handle.



New jig can



Site Visit Check List Ideas

<https://www.keysight.com/us/en/assets/7018-07001/white-papers/5992-3772.pdf>

<https://www.rfwireless-world.com/Articles/RF-site-survey-basics-and-RF-survey-tools.html>