

From: **Richard Saunders (K6RBS)** g0ery@cox.net  
 Subject: FW: 5 element tape measure dimensions  
 Date: January 16, 2019 at 6:28 PM  
 To: WA6ED wa6ed@cox.net

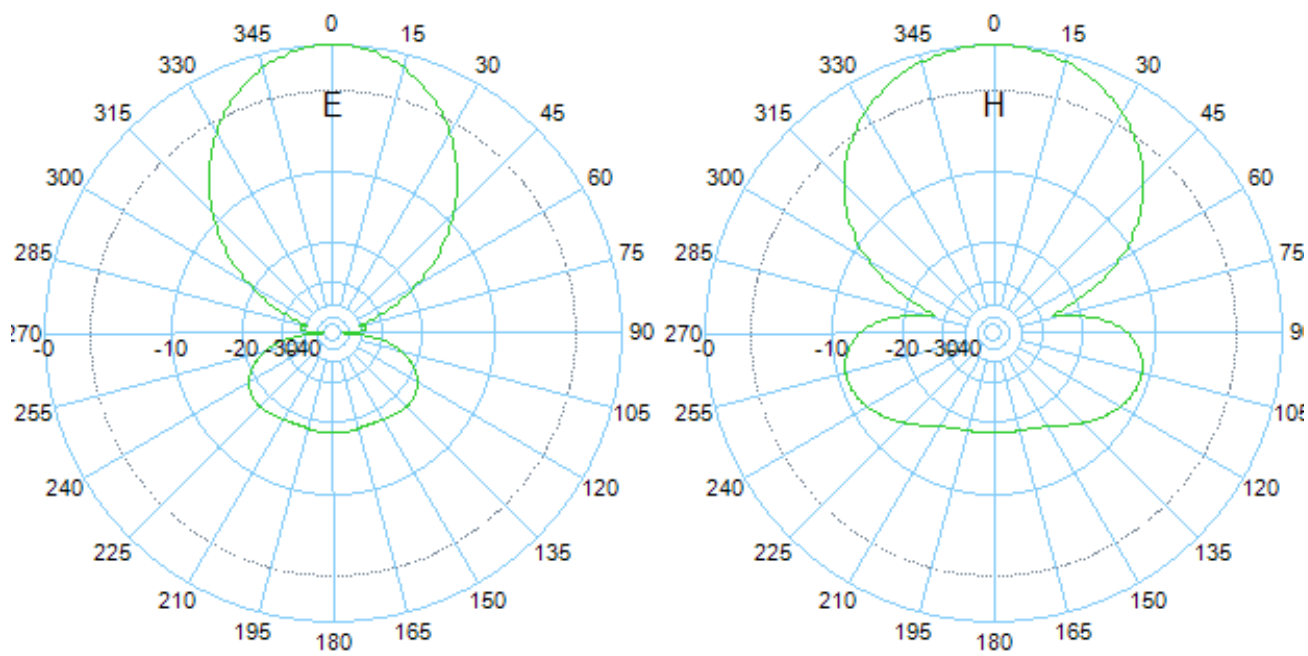


One correction... this is the one I use.

YagiCAD6 6.2.6 Copyright © Paul McMahon VK3DIP 1991 - 2017

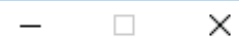
File Edit

YagiCAD6 6.2.6 Copyright © Paul McMahon VK3DIP 1991 - 2017  
 WB2HOL TAPE MEASURE FOX HUNT YAGI Pattern



Frequency = 146.57 MHz, 3dB Beamwidths; E = 55.5 Degrees, H = 72 Degrees  
 Gain Relative to Maximum Gain of 7.58dBd at 0 Degrees

YagiCAD6 6.2.6 Copyright © Paul McMahon VK3DIP 1991 - 2017



File Edit Calculate Toolbox Help

Title: WB2HOL TAPE MEASURE FOX HUNT YAGI Source: WB2HOL

FILE: C:\Users\g0ery\AppData\Local\YagiCAD6\K6RBS.YC6

LAST SAVED: 1/16/2019

Comments: Simple narrow band sniffer beam

Frequency: 146.565 MHz

Eff: 100.0 %

Total NEC2 segs. = 105

Total Loads = 0

All Dimensions in Inches

Elem.	Position	Length	Diam.	Material	Type	Segs.
R1	0	41.29921	0.4094488	Lossless	Dipole	21

Drv.	8.039985	35.39993	0.4094488	Lossless	▼	Dipole	▼	21	▼
D1	20.39252	35.07842	0.4094488	Lossless	▼	Dipole	▼	21	▼
D2	32.7456	34.82842	0.4094488	Lossless	▼	Dipole	▼	21	▼
▶ D3	45.0976	34.57842	0.4094488	Lossless	▼	Dipole	▼	21	▼

Direct Connection of Transmission Line Impedance = 50.0 Ohms

**From:** Richard Saunders (K6RBS) <[g0ery@cox.net](mailto:g0ery@cox.net)>  
**Sent:** Wednesday, January 16, 2019 4:30 PM  
**To:** 'WA6ED' <[wa6ed@cox.net](mailto:wa6ed@cox.net)>  
**Subject:** RE: 5 element tape measure dimensions

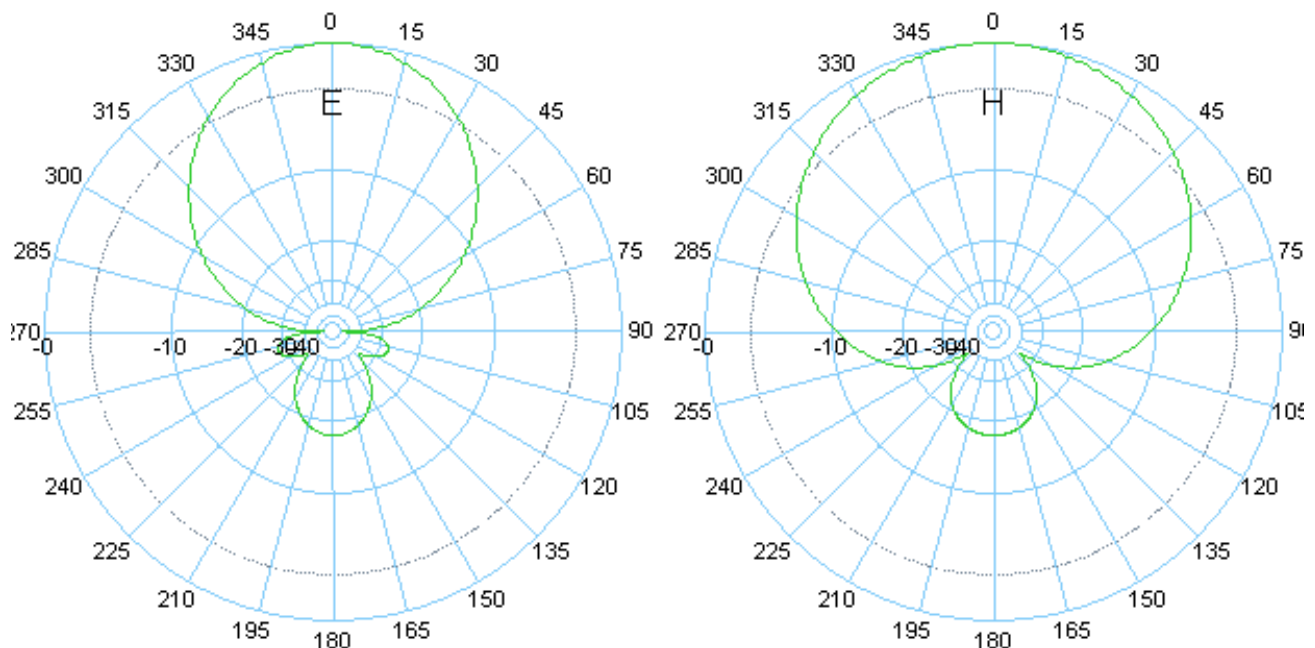
Hi Ed.

Here is a plot of the original 3 ele yagi (according to YCAD6):

YagiCAD6 6.2.6 Copyright © Paul McMahon VK3DIP 1991 - 2017

File Edit

YagiCAD6 6.2.6 Copyright © Paul McMahon VK3DIP 1991 - 2017  
 WB2HOL TAPE MEASURE FOX HUNT YAGI Pattern



Frequency = 146.57 MHz, 3dB Beamwidths; E = 66 Degrees, H = 105 Degrees  
 Gain Relative to Maximum Gain of 5.69dBd at 0 Degrees

YagiCAD6 6.2.6 Copyright © Paul McMahon VK3DIP 1991 - 2017

File Edit Calculate Toolbox Help

Title:  Source:

FILE: C:\Yagi\TAPE1.YC6 LAST SAVED: 12/9/2018

Comments:

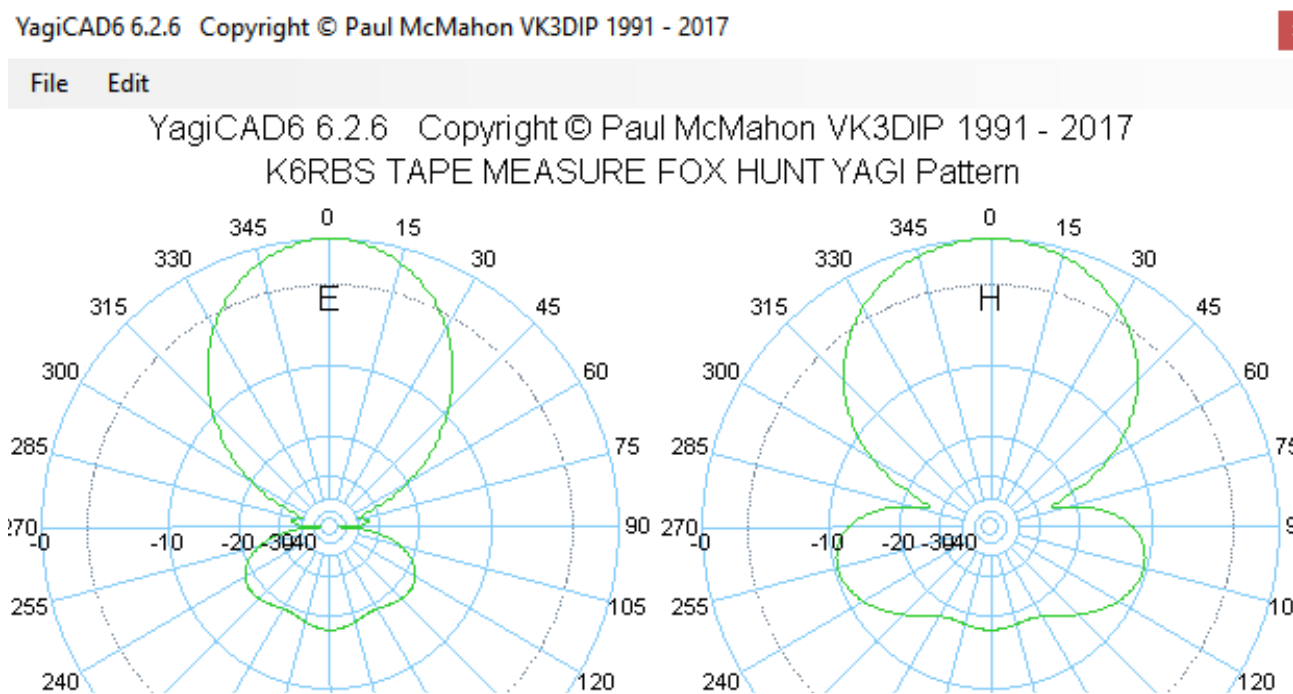
Frequency:  MHz Gain: 5.18 dBd (cf 4.76) Z IN: 17.5 - J 52.88 OHMS Total NEC2 segs. = 63  
 F/B: 50.74 dB Eff: 100.0 % Total Loads = 0

All Dimensions in Inches

Elem.	Position	Length	Diam.	Material	Type	Segs.
R1	0	41.29921	0.4094488	Lossless	Dipole	21
▶ Drv.	8.039985	35.39993	0.4094488	Lossless	Dipole	21
D1	20.39252	35.07842	0.4094488	Lossless	Dipole	21

Direct Connection of Transmission Line Impedance = 50.0 Ohms

Here is what I use (the 1<sup>st</sup> 3 elements are common)





Frequency = 146.57 MHz, 3dB Beamwidths; E = 54 Degrees, H = 70.5 Degrees  
Gain Relative to Maximum Gain of 7.66dBd at 0 Degrees

YagiCAD6 6.2.6 Copyright © Paul McMahon VK3DIP 1991 - 2017

File Edit Calculate Toolbox Help

Title: K6RBS TAPE MEASURE FOX HUNT YAGI Source: WB2HOL

FILE: C:\Users\g0ery\AppData\Local\YagiCAD6\RBS.YC6 LAST SAVED: 1/16/2019

Comments: The one RBS uses

Frequency: 146.565 MHz Gain: 7.66 dBd (cf 7.48) Z IN: 23.07 - J 46.1 OHMS Total NEC2 segs. = 105  
F/B: 17.75 dB Eff: 100.0 % Total Loads = 0

All Dimensions in Inches

	Elem.	Position	Length	Diam.	Material	Type	Segs.
	R1	0	41.29921	0.4094488	Lossless	Dipole	21
▶	Drv.	8.039985	35.39993	0.4094488	Lossless	Dipole	21
	D1	20.39252	35.07842	0.4094488	Lossless	Dipole	21
	D2	32.7456	34.82842	0.4094488	Lossless	Dipole	21
	D3	45.0976	35.07842	0.4094488	Lossless	Dipole	21

Hairpin Match - Hairpin LENGTH 1.366 SPACING 1.575 DIAM. 0.0394

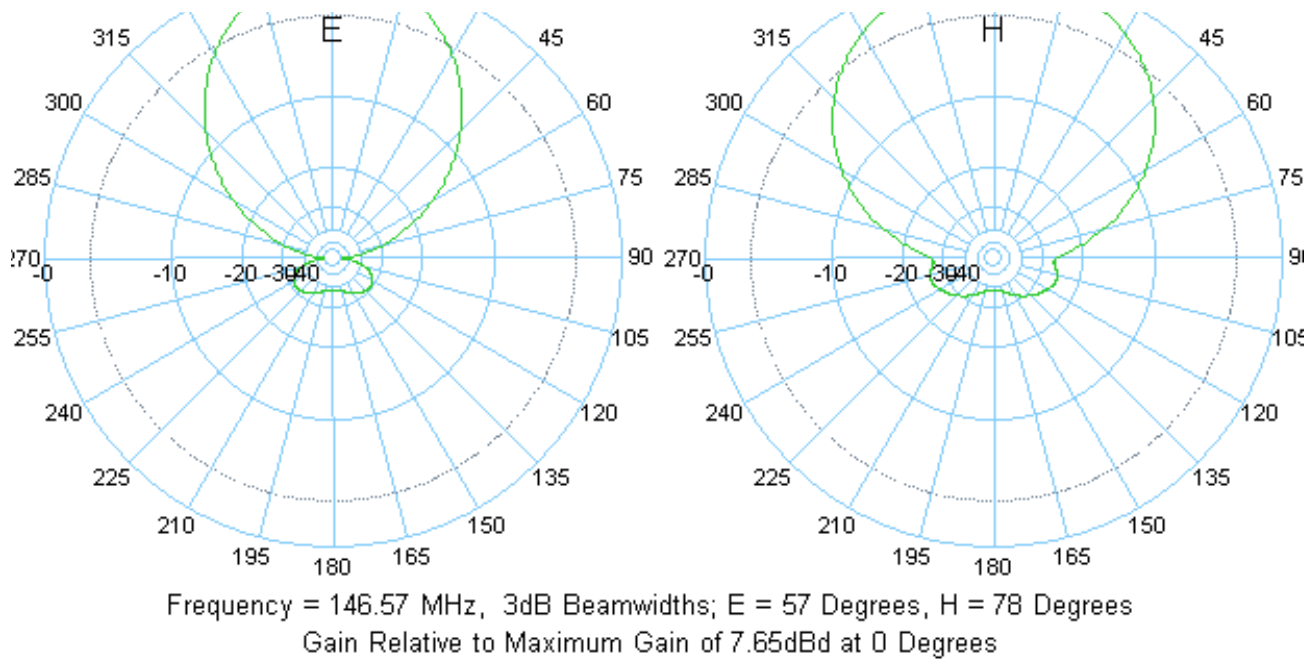
It has 2 dB more gain, a narrower beam width but there are some side lobes and the F/B could be better.

One can run it through the optimizer and get this:

YagiCAD6 6.2.6 Copyright © Paul McMahon VK3DIP 1991 - 2017

File Edit

YagiCAD6 6.2.6 Copyright © Paul McMahon VK3DIP 1991 - 2017  
K6RBS TAPE MEASURE FOX HUNT YAGI Pattern



YagiCAD6 6.2.6 Copyright © Paul McMahon VK3DIP 1991 - 2017

File Edit Calculate Toolbox Help

Title: K6RBS TAPE MEASURE FOX HUNT YAGI Source: WB2HOL

FILE: C:\Users\lg0ery\AppData\Local\YagiCAD6\K6RBS2.YC6 LAST SAVED: 1/16/2019

Comments: 5 Ele T hunt beam

Frequency: 146.565 MHz Gain: 7.65 dBd (cf 8.08) Z IN: 14.96 - J 21.74 OHMS Total NEC2 segs. = 105  
F/B: 37.86 dB Eff: 100.0 % Total Loads = 0

All Dimensions in Inches

Elem.	Position	Length	Diam.	Material	Type	Segs.
R1	0	39.93799	0.4094488	Lossless	Dipole	21
▶ Drv.	8.071134	36.78841	0.4094488	Lossless	Dipole	21
D1	17.50918	36.48274	0.4094488	Lossless	Dipole	21
D2	33.58741	34.30498	0.4094488	Lossless	Dipole	21
D3	53.65173	30.49567	0.4094488	Lossless	Dipole	21

Hairpin Match - Hairpin LENGTH 0.761 SPACING 1.575 DIAM. 0.0394

The main lobes are a bit wider, the gain is about the same but the pattern is much cleaner than my original. Note that this is 53.65 inches long so it would be a bit of a handful

nanuuu.

To be honest the model doesn't show a huge improvement over the original 3 ele but now you have the details in case you want to share.

RBS

-----Original Message-----

From: WA6ED <[wa6ed@cox.net](mailto:wa6ed@cox.net)>

Sent: Wednesday, January 16, 2019 2:50 PM

To: Richard Sanders <[g0ery@cox.net](mailto:g0ery@cox.net)>

Subject: 5 element tape measure dimensions

Richard,

Do you still want me to post anything for the Feb 2 SOARA Saturday for a 5 element tape measure antenna?

Eric W6INE was asking about a 5 element on the radio this morning.

73,  
Ed, WA6ED

Sent from my iPhone.