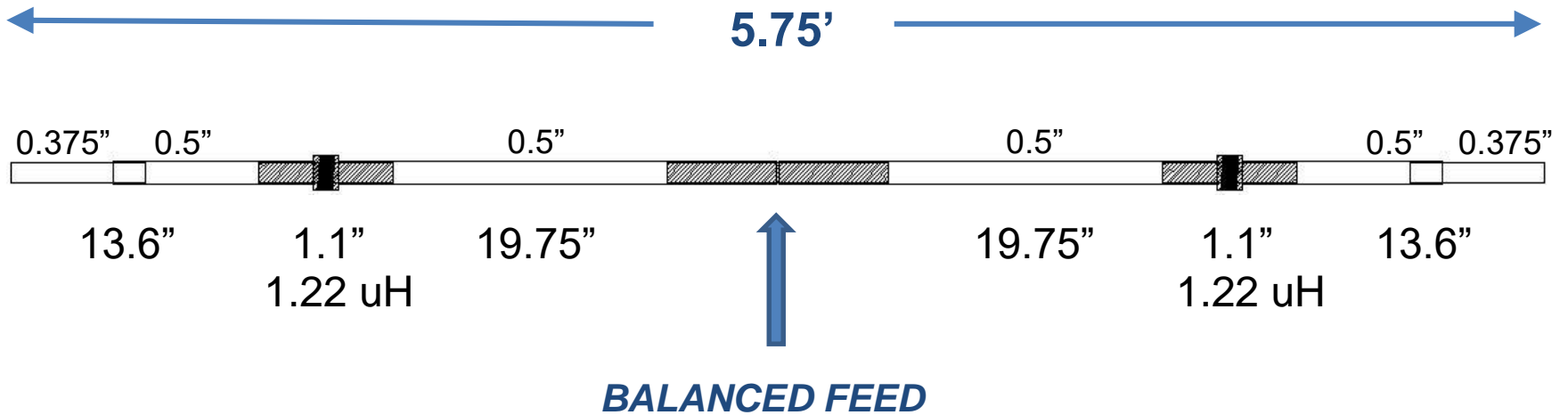


# LOADED DIPOLE ELEMENT

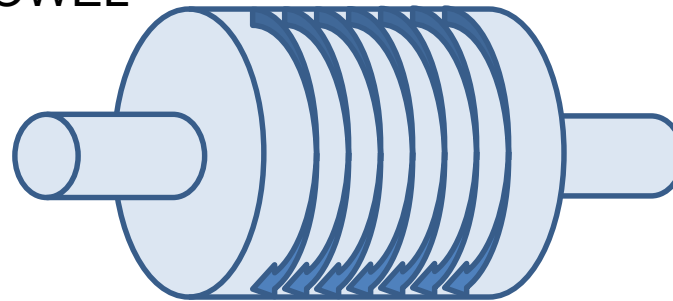


# ELEMENT PHOTOS



# 1.22 $\mu$ H LOADING COIL

1.0" DOWEL



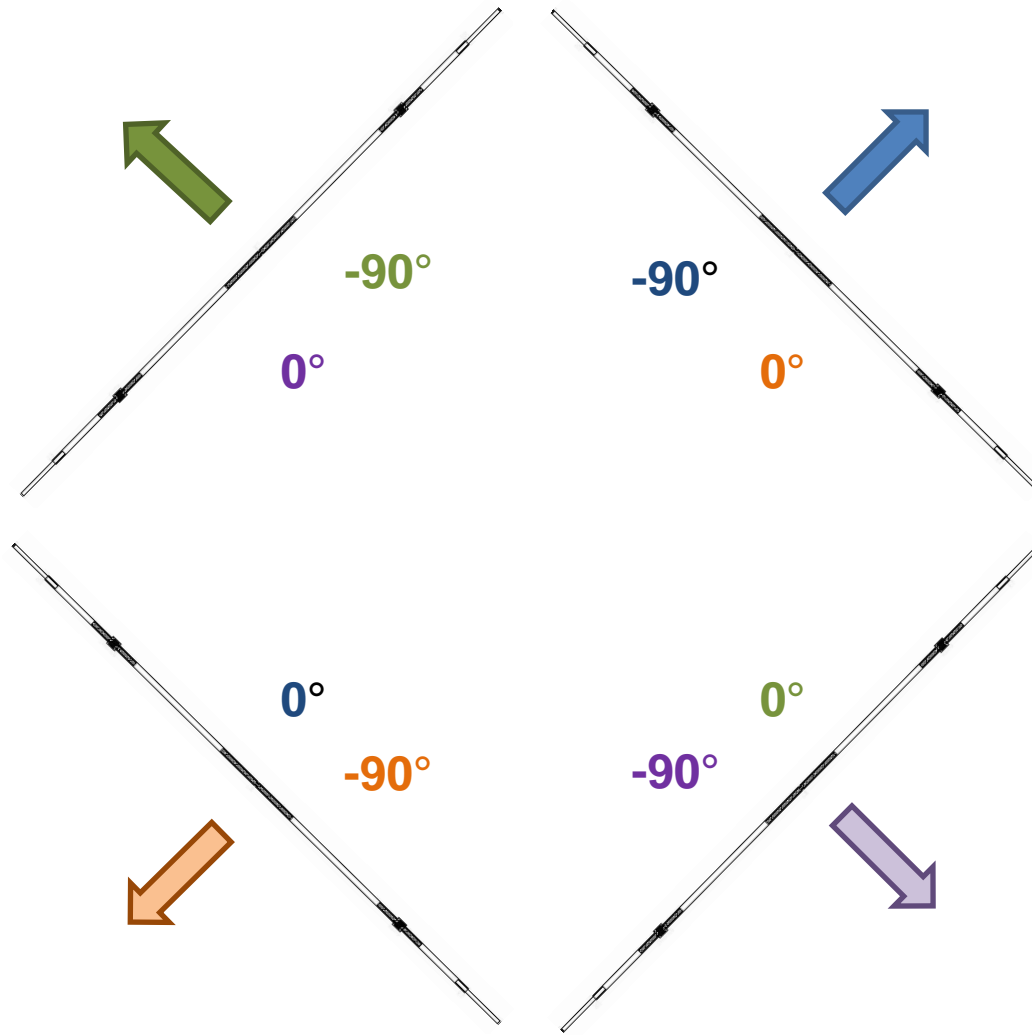
0.375" DOWEL

1.1" LENGTH

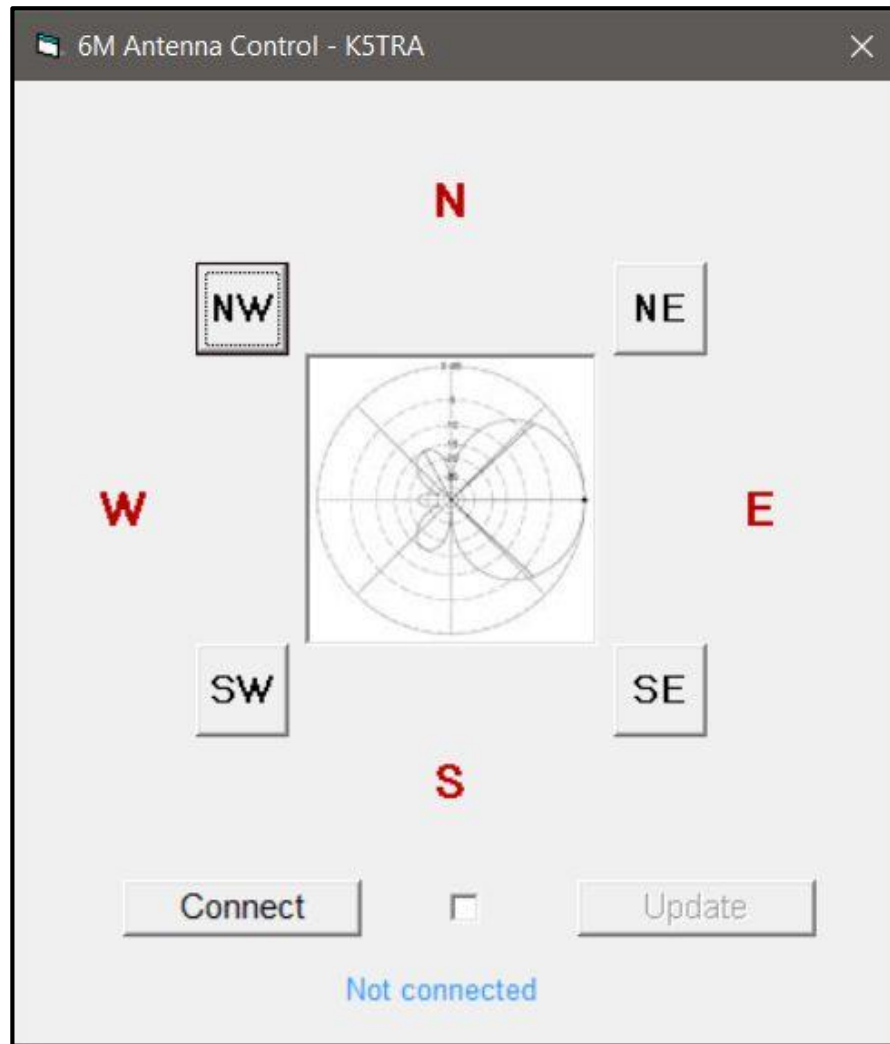


**7 TURNS  
16 GAUGE  
INSULATED  
CLOSE WOUND**

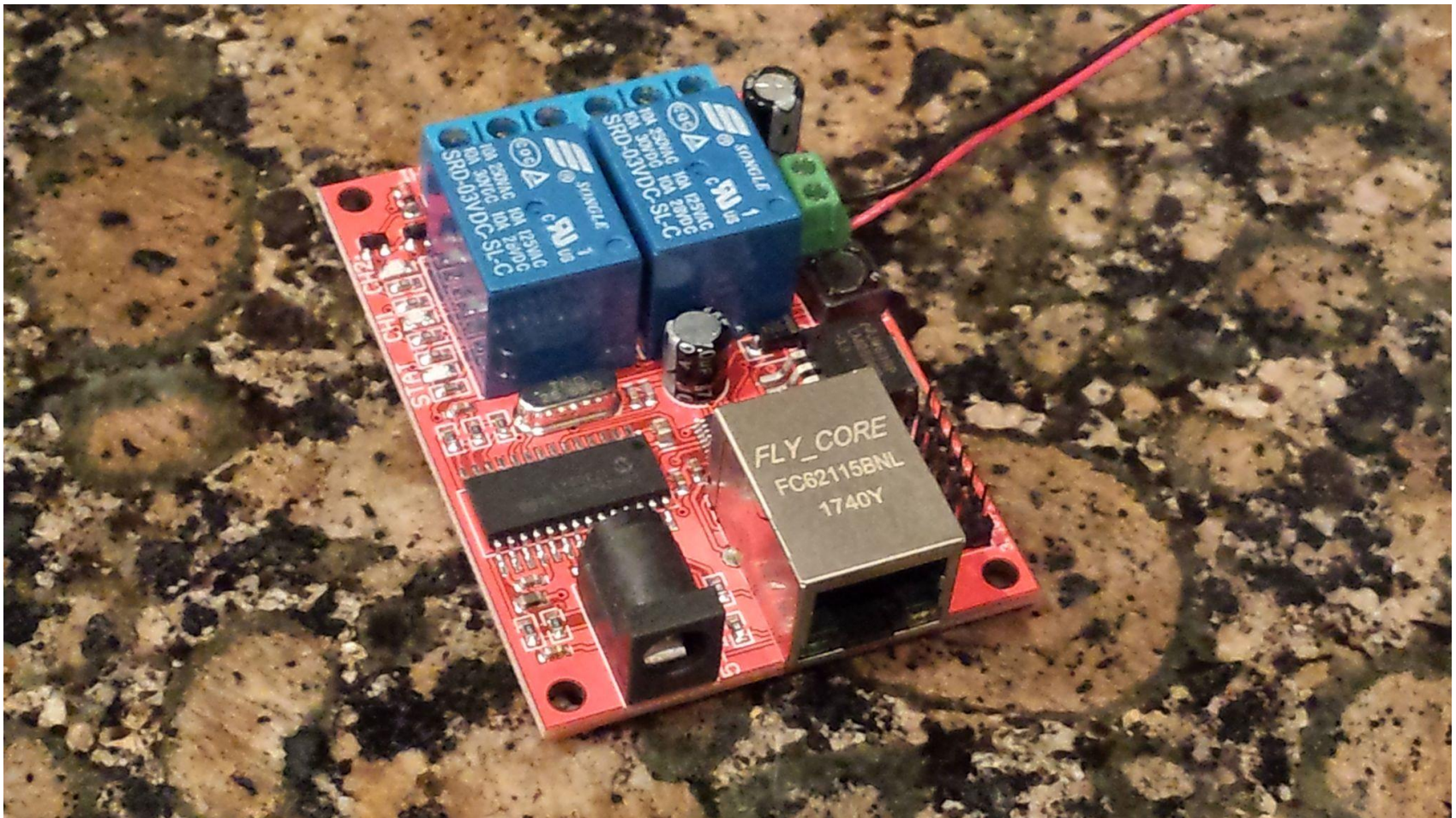
# PHASE STEERABLE GAIN DIRECTION



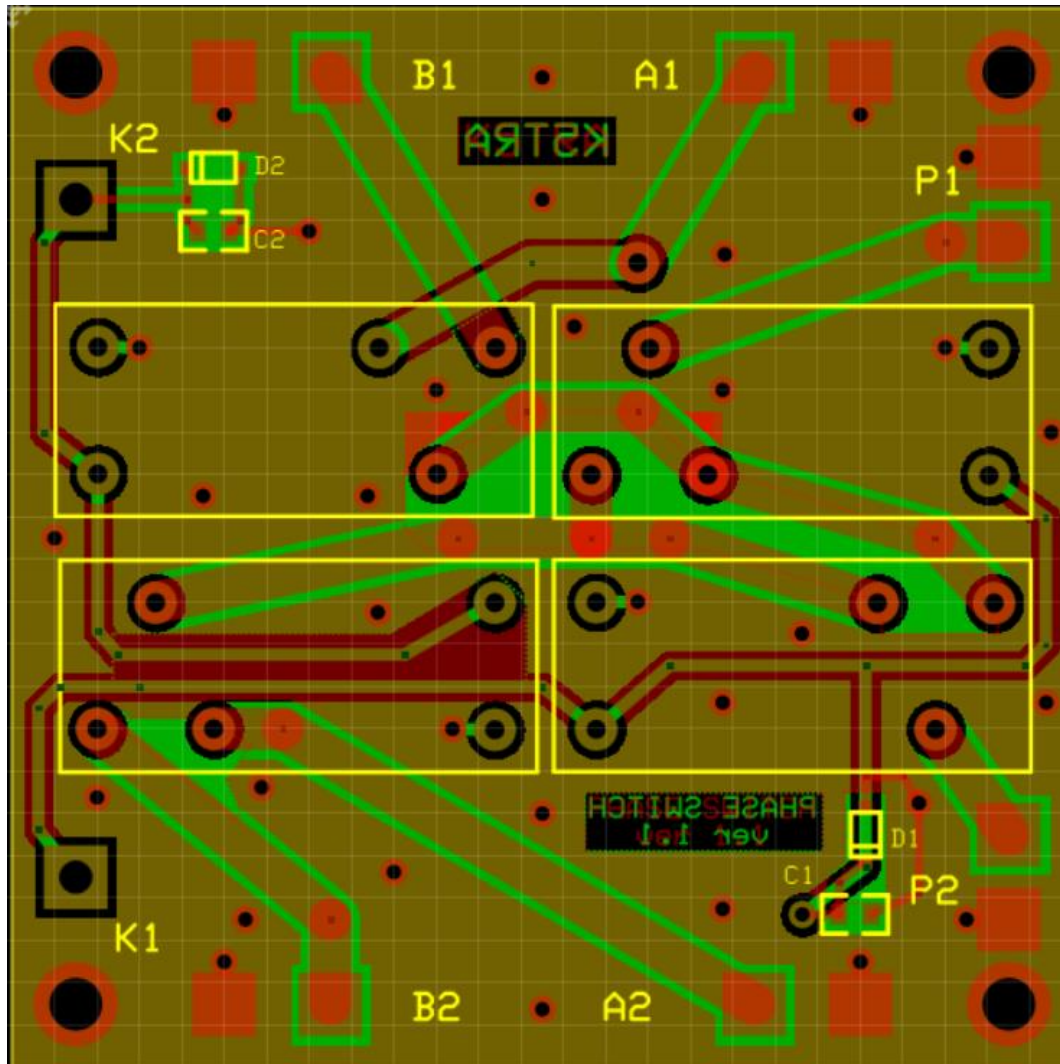
# WINDOWS CONTROL APPLET



# ETHERNET RELAY CONTROL BOARD

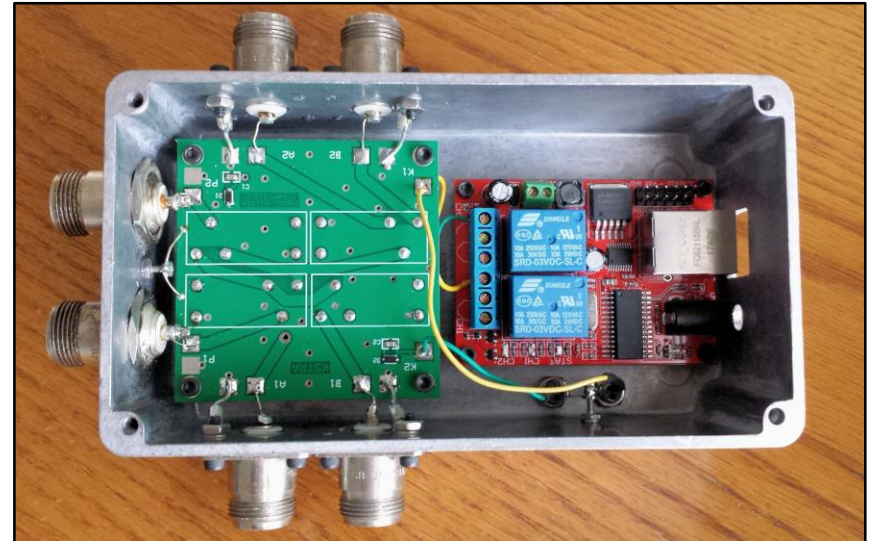
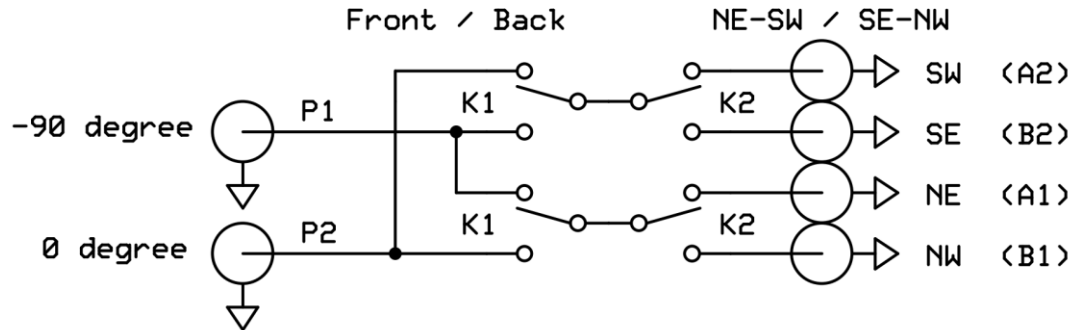


# RF PHASE SWITCH BOARD

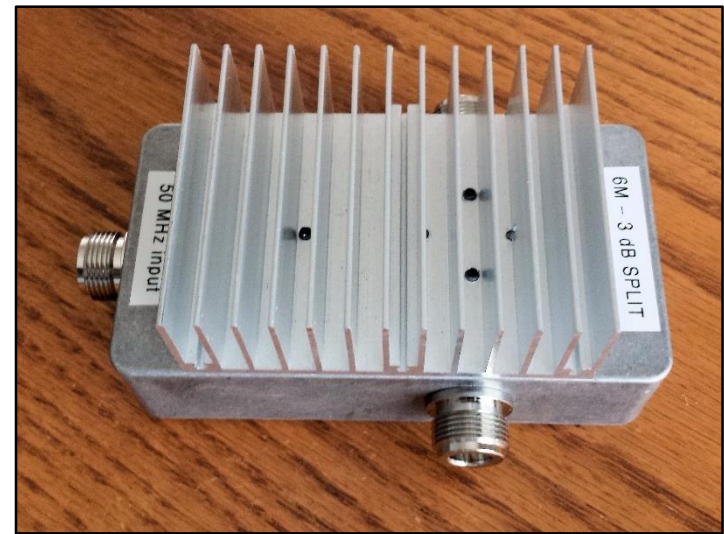
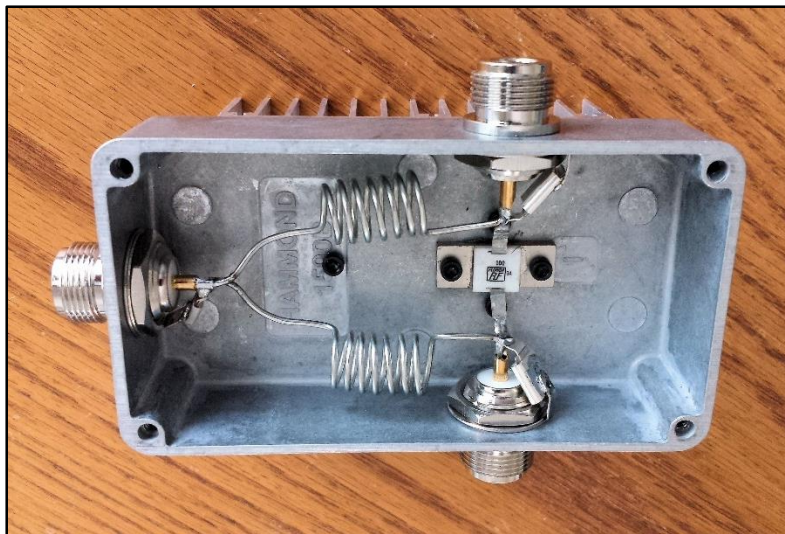
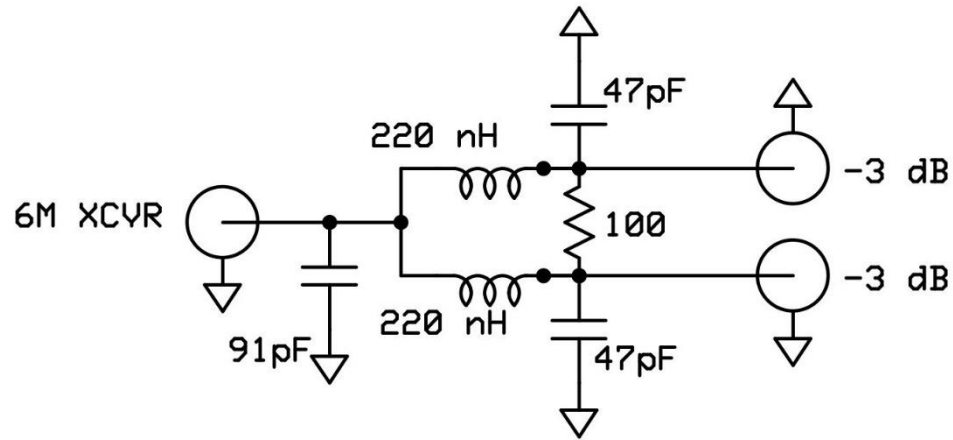




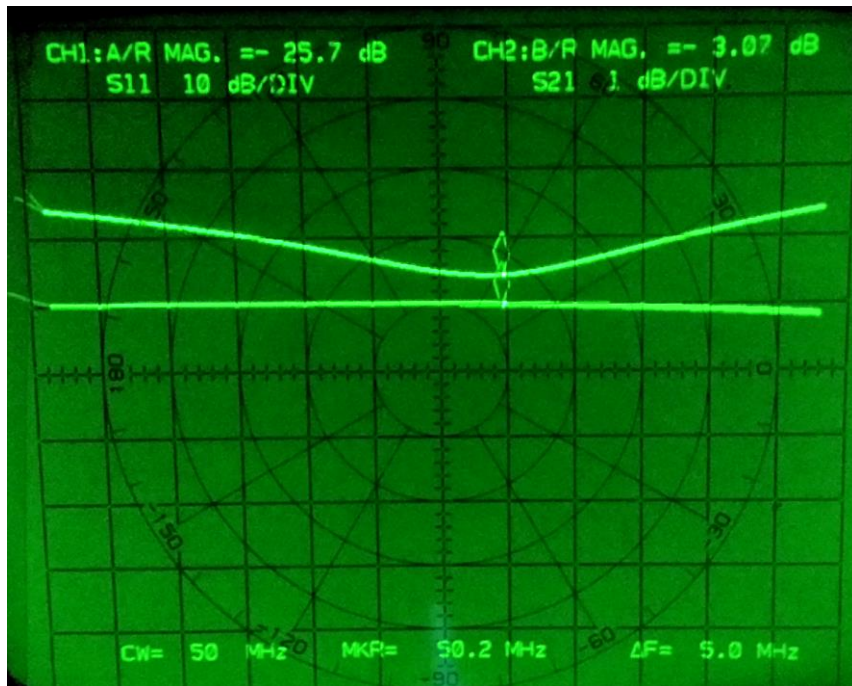
# RF PHASE CONTROL CIRCUIT



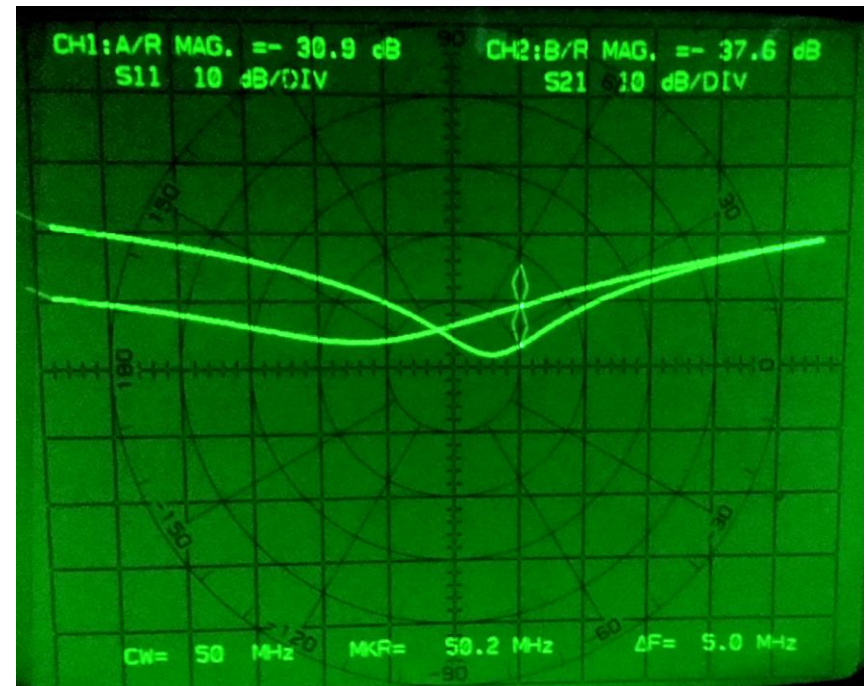
# 50 MHz LUMPED WILKINSON SPLITTER



# LUMPED SPLITTER MEASUREMENTS



*S11 = COMMON PORT  
S21 = COMMON to "A"  
and COMMON to "B"*



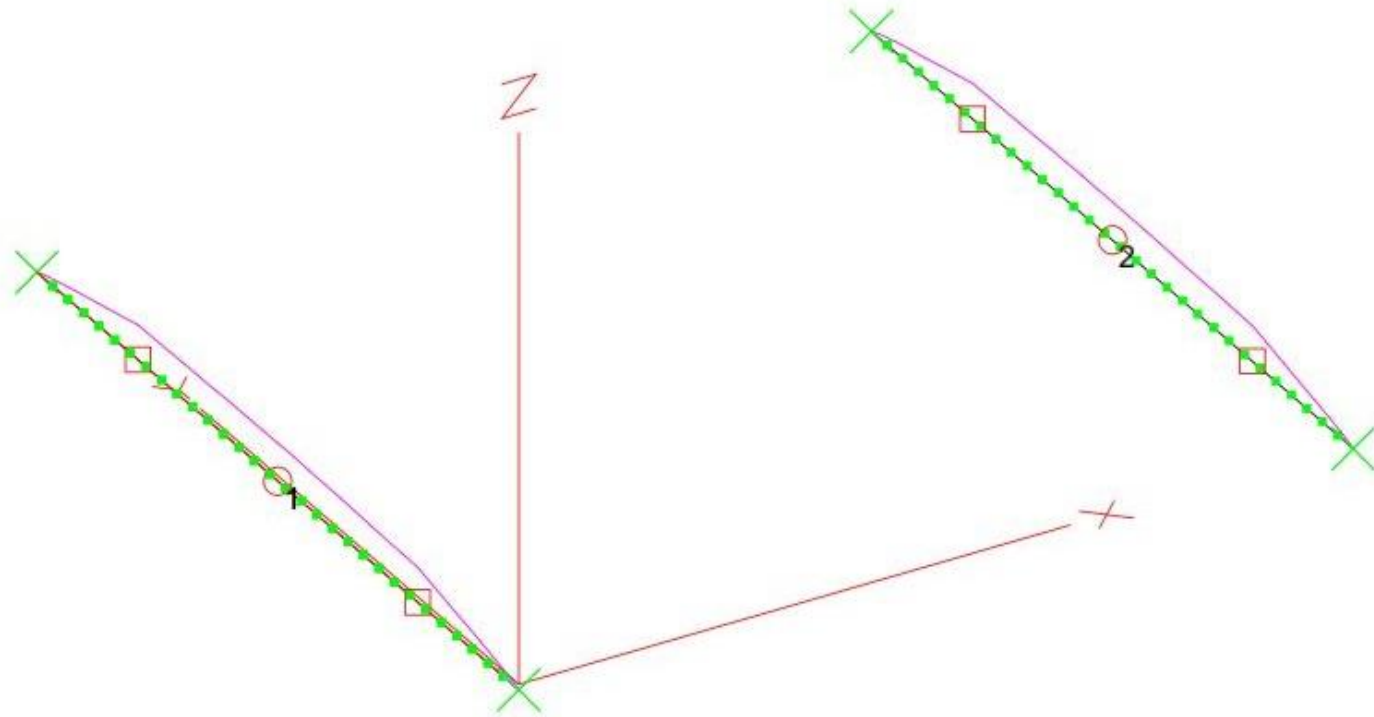
*S11 = SIDE PORT  
S21 = "A" to "B" ISOLATION*

# EZNEC Design

The screenshot shows the EZNEC v. 5.0 software window. The title bar reads 'EZNEC v. 5.0'. The menu bar includes 'File', 'Edit', 'Options', 'Outputs', 'Setups', 'View', 'Utilities', and 'Help'. On the left side, there is a vertical toolbar with buttons for 'Open', 'Save As', 'Ant Notes', 'Currents', 'Src Dat', 'Load Dat', 'FF Tab', 'NF Tab', 'SWR', 'View Ant', and 'FF Plot'. The main area displays a table of design parameters for a '6M 2 Element' antenna.

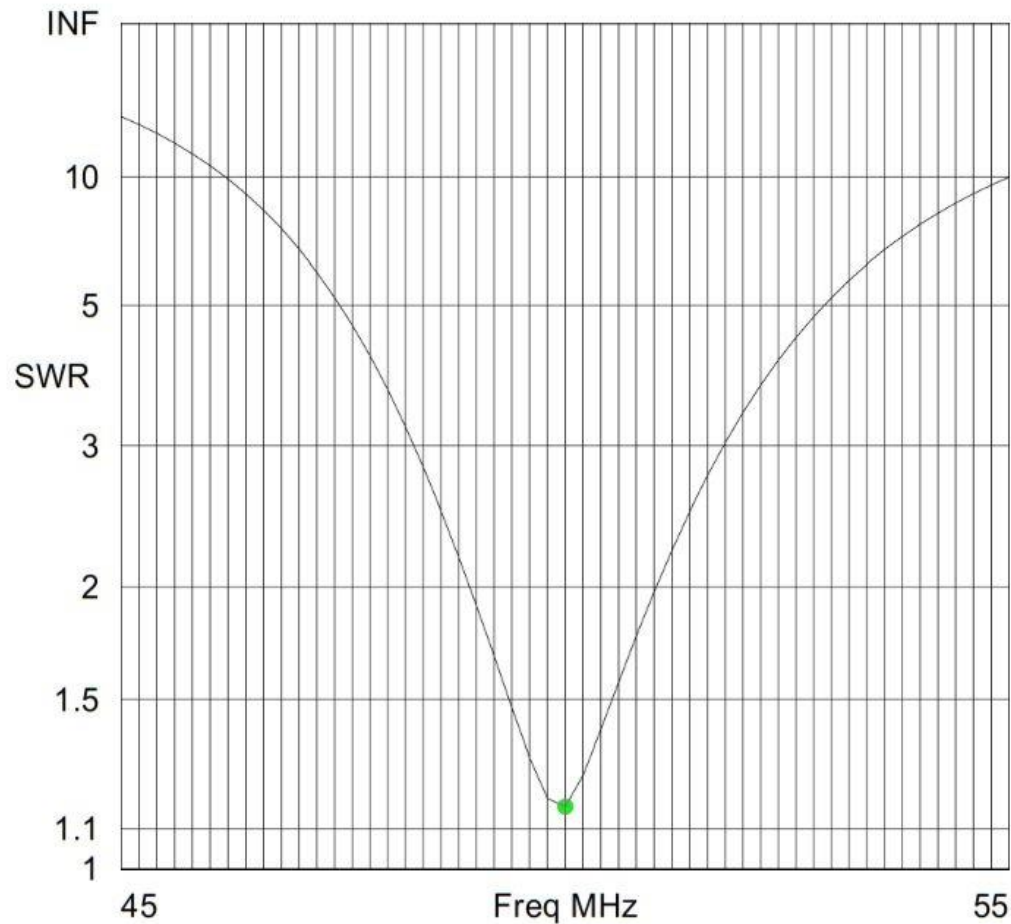
>		6M 2 Element
	File	K5TRA 6M v5.EZ
>	<b>Frequency</b>	50.1 MHz
	Wavelength	19.6322 ft
>	<b>Wires</b>	2 Wires, 62 segments
>	<b>Sources</b>	2 Sources
>	<b>Loads</b>	4 Loads
>	<b>Trans Lines</b>	0 Transmission Lines
>	<b>Transformers</b>	0 Transformers
>	<b>L Networks</b>	0 L Networks
>	<b>Ground Type</b>	Free Space
>	<b>Wire Loss</b>	Copper
>	<b>Units</b>	Feet
>	<b>Plot Type</b>	Azimuth
>	<b>Elevation Angle</b>	0 Deg.
>	<b>Step Size</b>	1 Deg.
>	<b>Ref Level</b>	0 dBi
>	<b>Alt SWR Z0</b>	50 ohms
>	<b>Desc Options</b>	

# TWO DRIVEN ELEMENTS



# VSWR

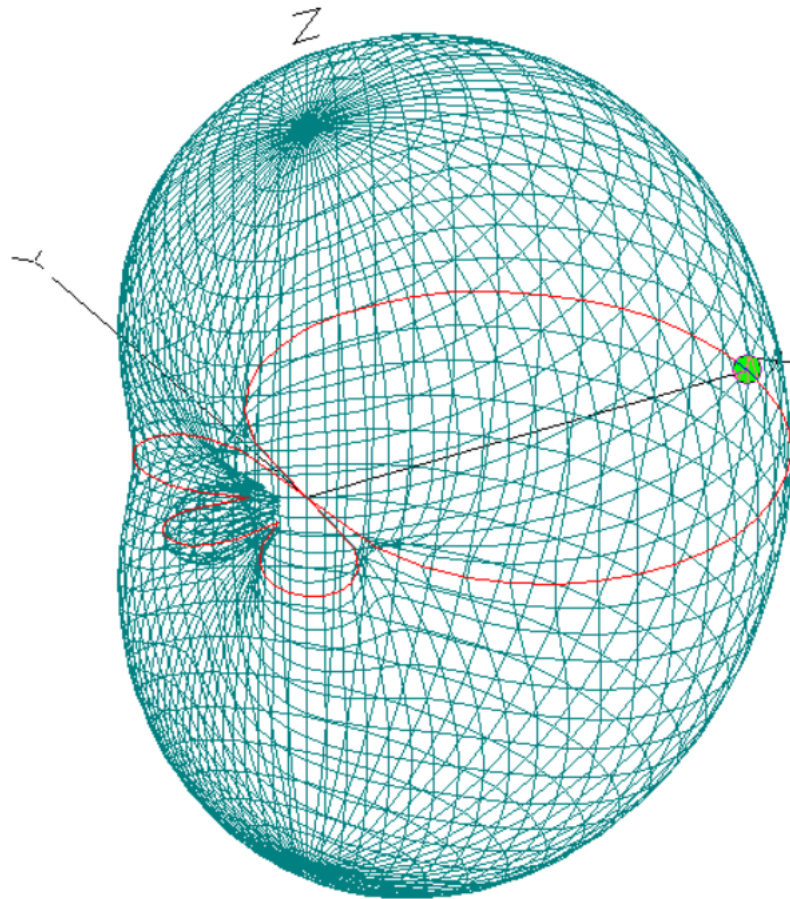
EZNEC



Freq 50 MHz  
**SWR** 1.16  
Z 43.79 at 3.7 deg.  
= 43.7 + j 2.824 ohms  
Refl Coeff 0.07366 at 154.14 deg.  
= -0.06628 + j 0.03213  
Ret Loss 22.7 dB

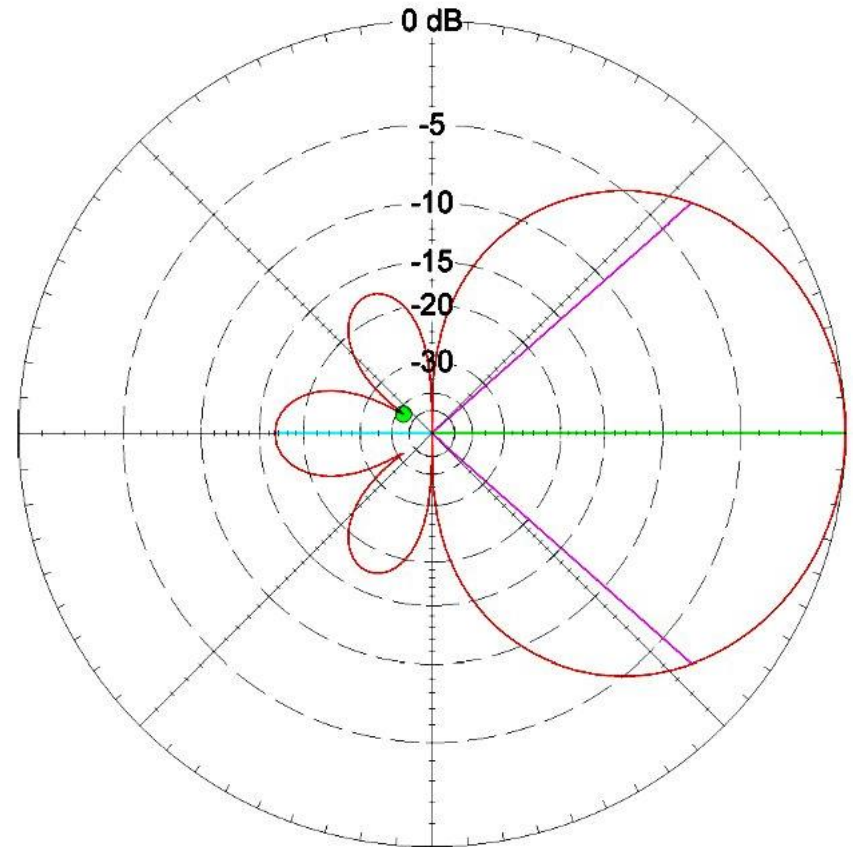
Source # 2  
Z0 50 ohms

# 3D PLOT



# AZIMUTH PATTERN

## *90° PHASE SHIFT EQUAL DRIVE*



Azimuth Plot

Elevation Angle 0.0 deg.

Outer Ring 4.71 dBi

Slice Max Gain 4.71 dBi @ Az Angle = 0.0 deg

Front/Back 19.6 dB

Beamwidth 84.4 deg.; -3dB @ 317.8, 42.2 deg.

Sidelobe Gain -11.41 dBi @ Az Angle = 117.0 deg.

Front/Sidelobe 16.12 dB



# SUMMARY

- Compact array (approximately 6' x 6')
- Phase steerable in four directions
- Ethernet control with windows applet
- +5 dBi, 20 dB F/B
- Perfect for attic or rover installation

# COMPLETED ARRAY

