

**K9MBQ COAX VERTICAL
FOR
160 AND 80 METERS**

April 2013

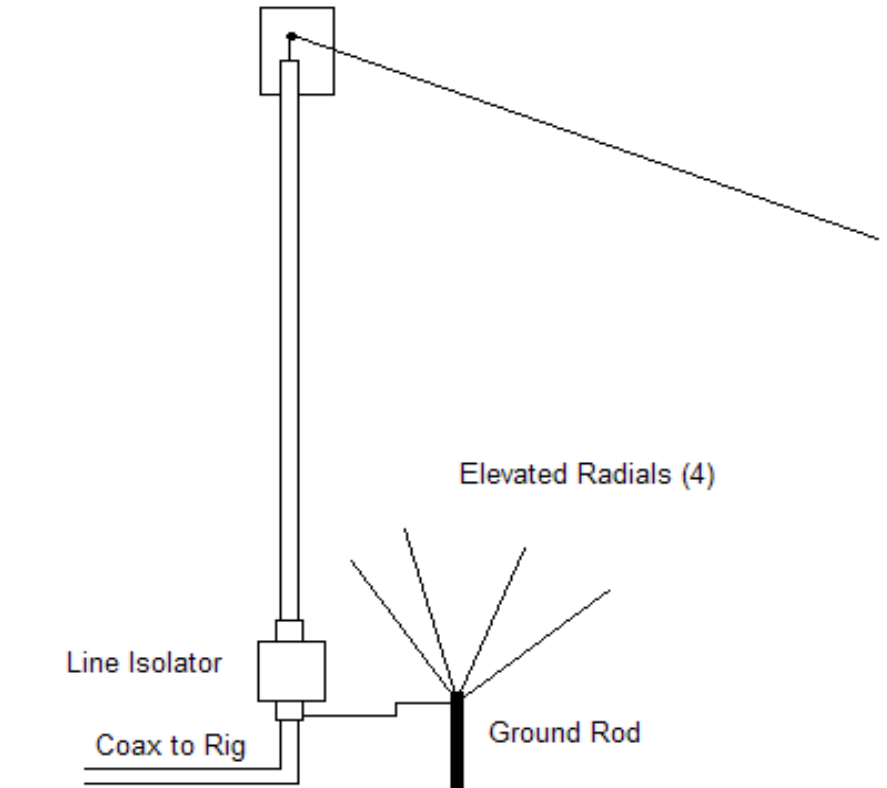
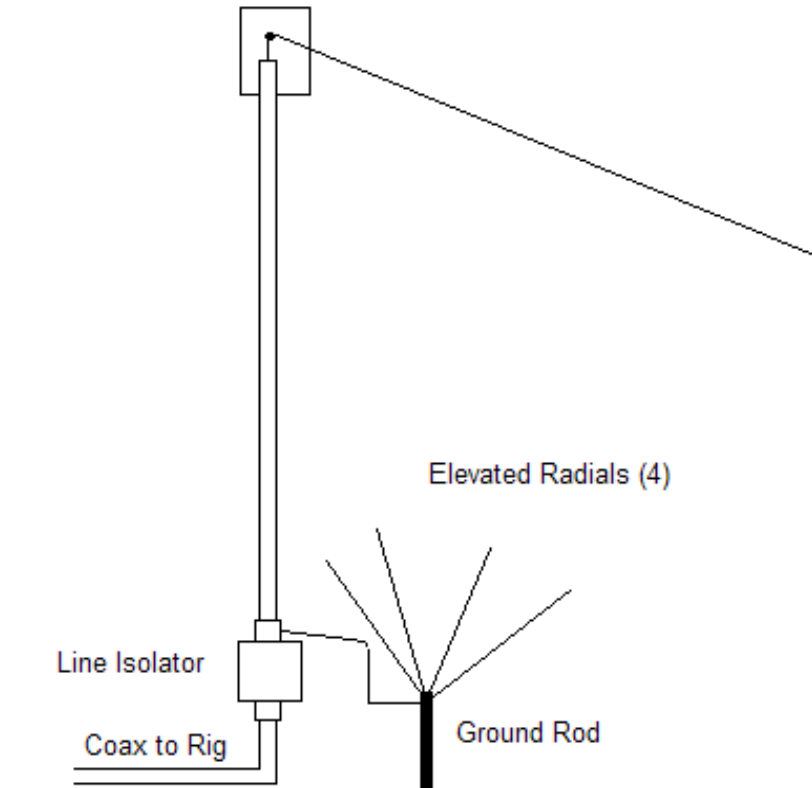
BACKGROUND

- Why? – Get DXCC on 160M
- Windom 160 (265 ft) in use – OK on 160 (80+ countries), but too low
- Mar 2012 QST Article by Scott – K4VWK on Resonant 80/160, elevated radial Coax Inverted “L” got my attention
 - No Capacitance needed at Base
 - I had the space
 - Always wanted to try and Inverted “L”

CONFIGURATION

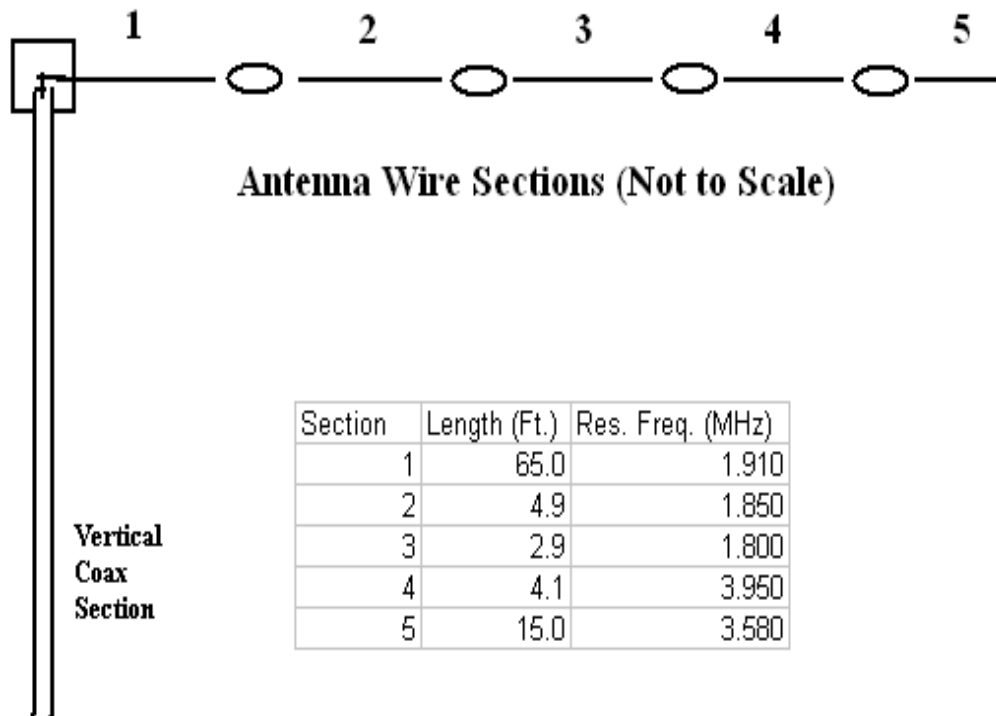
- Vert is 65 ft RG8
- Radials – 100 ft #18 Electric Fence Wire

- “L” 65 ft #14 Wire, plus extensions



TUNING LENGTHS

- K4VWK



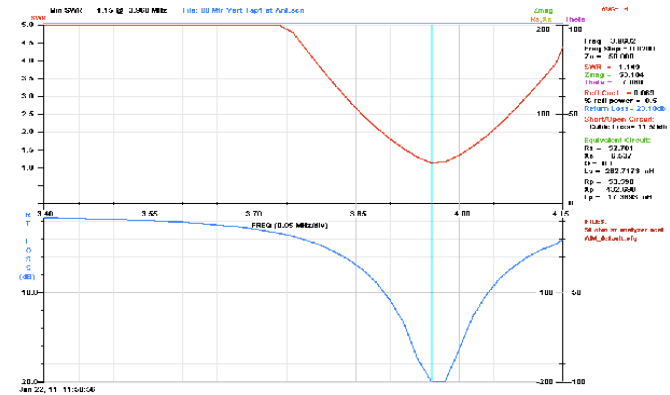
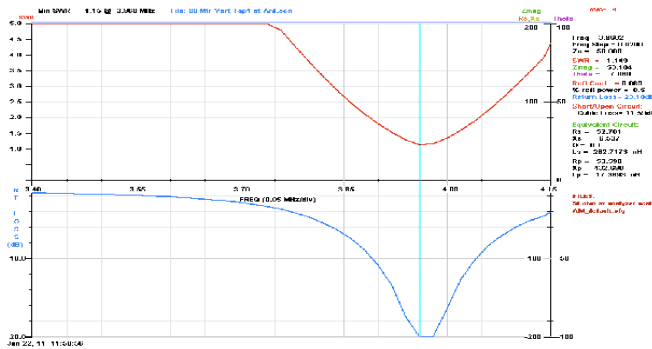
- K9MBQ
- – 1: 70 FT
- – 2 : NA
- – 3: 4 FT
- – 4: 8 FT
- – 5: NA
- Top at ~ 60 ft vs 65 ft, w/ coax loop at bottom
- Elevation and Angle of “L” change Loading

ANT HEIGHT EFFECT



BANDWIDTH

- 160 W/ #1 (70 FT L)
- 1820 TO 1910,
SWR < 1.5:1
- 80: 3750 – 3820,
SWR < 1.5:1

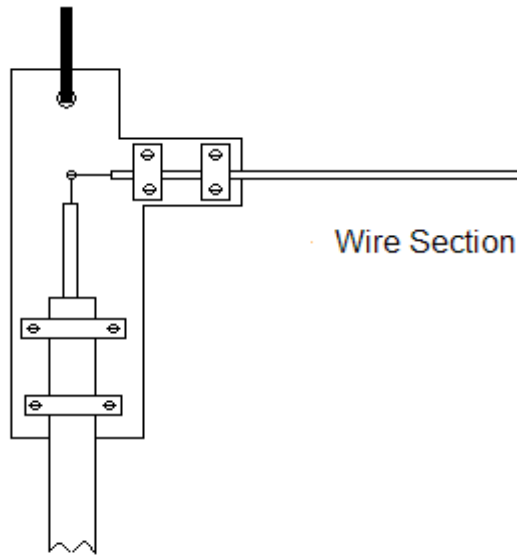


MECHANICS

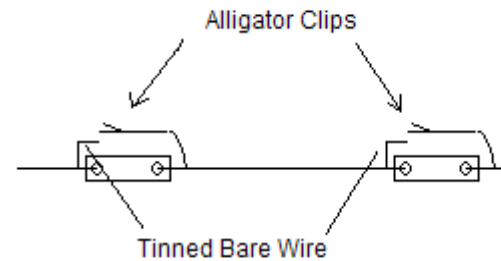
- K9MBQ used a plastic electric box

- Alligator clips from Radio Shack

Support Rope



RG8X Coax To Base



K9MBQ GROUND CONNECTORS AND BASE MOUNT



CENTER SUPPORT AND GROUND ROD CONNECTION



SECTION JUMPERS AND HI-TECH RADIAL INSULATORS



HOW DOES IT PLAY?

- 160: Excellent into EU and Caribbean
- 80: Armchair QSOs in DX Window into EU
- ARRL Phone Contest – 6 new countries on 160 on SSB
- Resonant, no tuner; 1500W load w/o issues.
- Still evaluating

BOTTOM LINE

- Easy to construct – no unique parts, but need a 65 ft support
- Plays well – Good DX Antenna
- No Extensive Ground Radial System
 - My 40M 4 Sq has 6K+ ft of #14 wire in radials
- Vertical COAX Insulation Prevents Tree Conductivity
- Manual Band Changing tolerable
- Glad I Built!!

BACKUP CHARTS

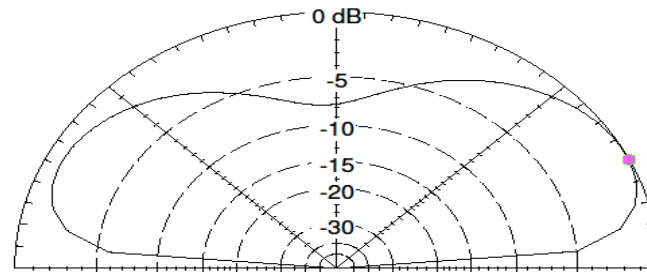
- K4VWK Charts

160M Radiation Pattern

160M

Total Field

EZNEC+



160 Inv L

1.9 MHz

Elevation Plot
Azimuth Angle 270.0 deg.
Outer Ring 1.69 dBi

Cursor Elev 25.0 deg.
Gain 1.69 dBi
0.0 dBmax
0.0 dBmax3D

3D Max Gain 1.69 dBi
Slice Max Gain 1.69 dBi @ Elev Angle = 25.0 deg.
Beamwidth 52.6 deg.; -3dB @ 8.3, 60.9 deg.
Sidelobe Gain 0.81 dBi @ Elev Angle = 155.0 deg.
Front/Sidelobe 0.89 dB

Antenna Diagram

- 160 Diagram

