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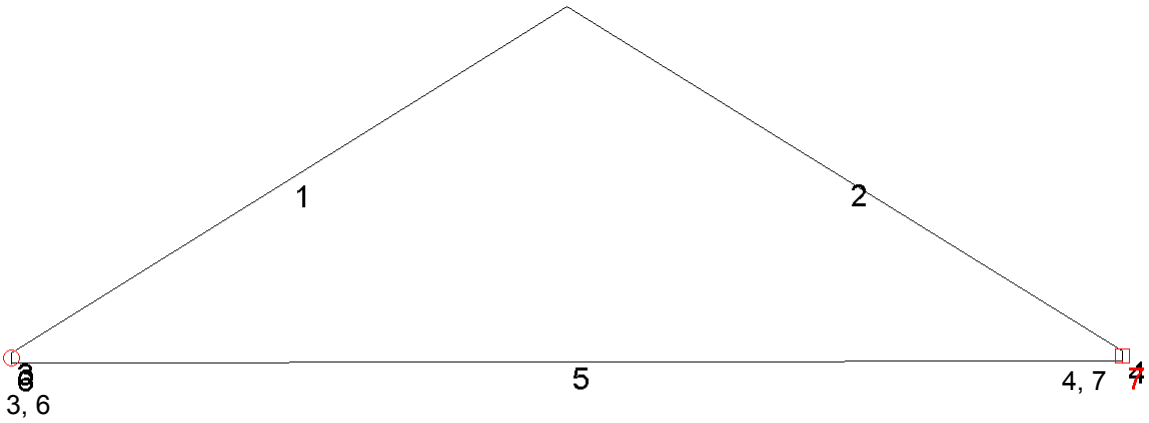
Manual for Installation of AS-WV-xxx

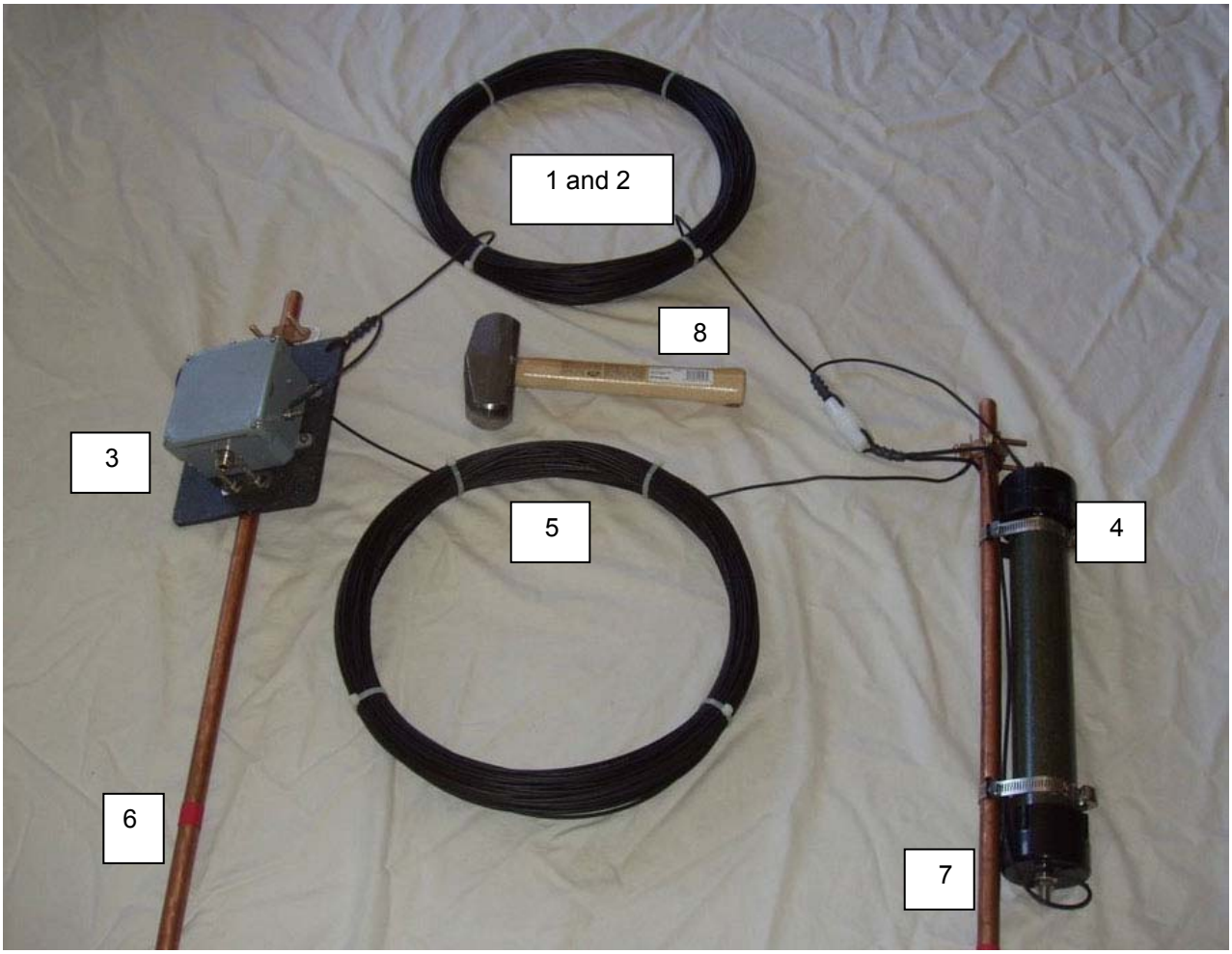
- VSWR Typically <2:1 over operational range of 1.8-60 Mhz
- No Tuner required for all modern radios, including ALE capable R/Ts
- Power rating >1KW CW
- Antenna wire stranded copperweld with UV black poly jacket
- Weight ~ 3 KG20 Lbs
- Counterpoise wire – Silicon covered stranded wire very flexible and easy to deploy. Will not corrode.
- Input impedance 50 Ohms, Type-N, or SO239 (UHF) connector

Configuration



Parts of Antenna

1 – ½ of the antenna stainless steel stranded wire
2 – ½ of the antenna stainless steel stranded wire
3 – Left side, source of the antenna is a sealed matching transformer 50 ohm input
4 – Right side is the sealed antenna matching load
5 – Counterpoise wire, silicon covered stranded wire, may or may not be used depending on ground conditions
6 – Left hand side is a ground stake which also supports the matching transformer, antenna wire and counterpoise wire
7 – Right hand side is a ground stake which also supports a sealed matching terminator. antenna wire, and counterpoise wire
8 - hammer

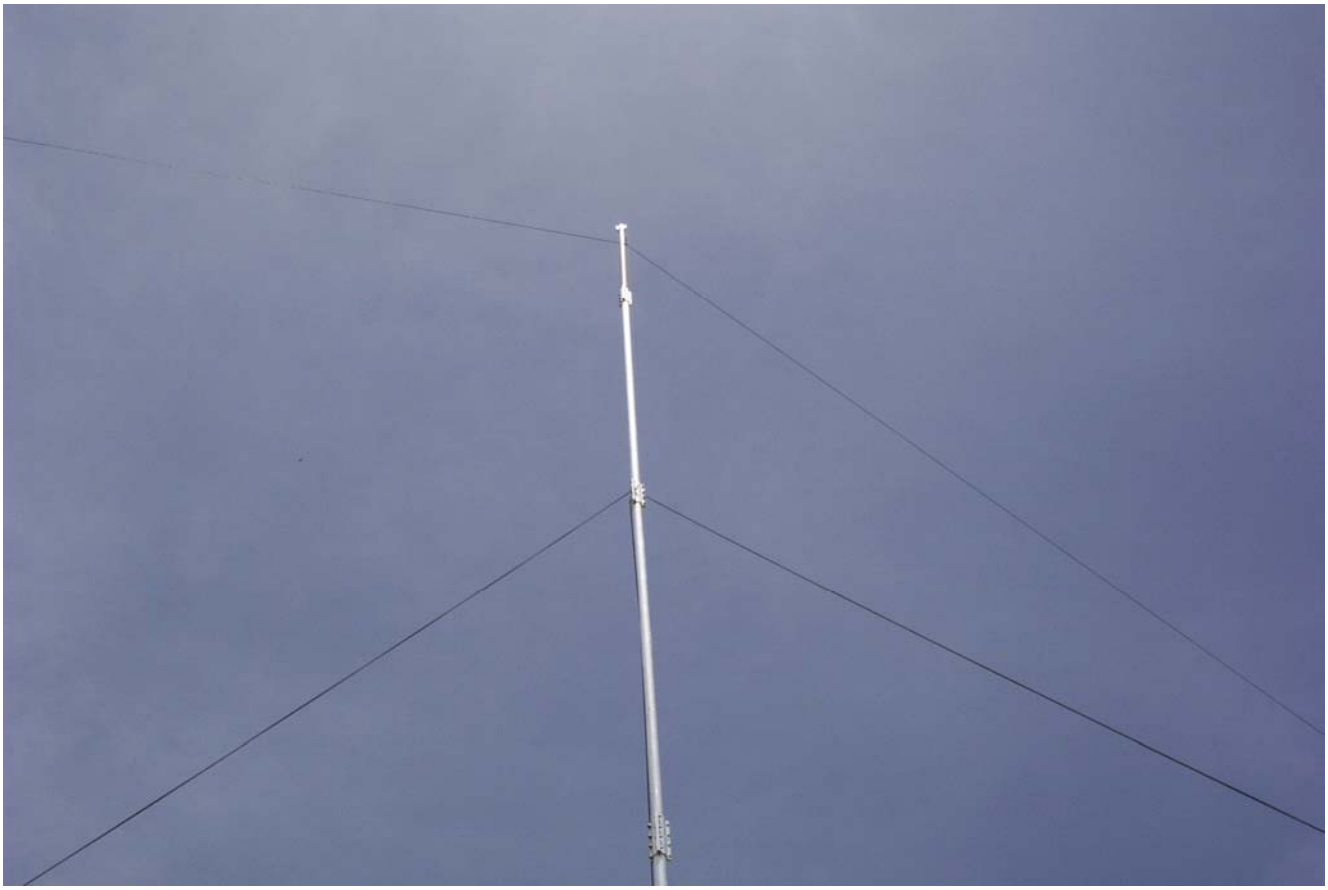


Parts of the AS-WV-110SS

Installation:

1. Lay out antenna by stringing the antenna wire from your support structure in the middle of the antenna. It should be at least 30 feet (9m) high. Make sure the wire is insulated from the support structure by suspending it from an insulator at its apex. Our AS-PEN-38.5 38.5 foot mast is perfect for this since it has a 4 foot fiberglass insulated top mast. Detaching the antenna wire from the load resistor (7) makes this easy.
2. Detach the antenna wire by removing balun (3) and termination load (7) before driving in the ground rods, it is also good practice to detach the termination load antenna wire and the balun plate before driving in the ground rods to prevent damage to them. This can be done very quickly and easily with proper hand tools.
3. Drive in ground rods (6, and 7) . Drive them in a position such that the antenna wire is taut when tensioned from the ground rods.
4. Re attach the antenna wires to the
5. Run counterpoise wire (5) between the two ground rods. It is slightly long and can be routed around trees and other obstacles without effect on the antenna pattern. Attach the counterpoise to the ground rods with the clips on this wire, or for a permanent installation the clips should be replaced with terminals. Many times this counterpoise wire will not be needed since the ground may be medium to good. Check the SWR without the counterpoise wire to see if it is needed.
6. Attach the radio feedline to the matching transformer's (3) RF connector. For a permanent installation seal the connection with a good quality water-proof tape.

7. Test VSWR at all frequencies to be used. To further enhance the system's radiation efficiency you may deploy wire RF ground radials attached to the feedpoint ground rod and the terminator ground rod. You can bury them or lay them on the ground. Make them at least 25 feet (7.5 m) long. Four or more radials should enhance the efficiency of the system over poor ground.



AS-WV-xxx Antenna supported at top with rope halyard. Top of mast is insulated model of mast is AS-PEN-38.5 and is 38.5 feet tall.

Feed Point of AS-WV-xxx Antenna showing balun mounted to plate and attached to antenna wire.

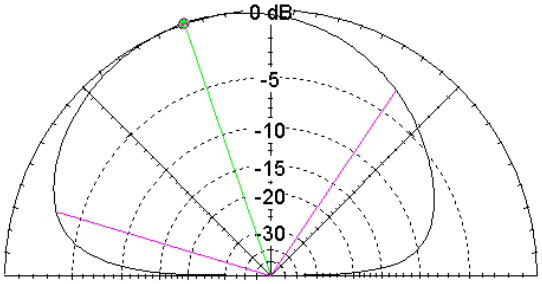
Termination detail of AS-WV-XXX Antenna, showing strain relief insulator system, Rugged Load, and ground rod.

Optional Antenna Wire Winder to keep your antenna wire from getting tangled and easy to take down and put up.

View of antenna from far end looking back at the Mast. This robust antenna can be used for Emergency communications in heavy weather, and in the field as a tactical antenna, using trees as supports. The Geometry of the antenna is not extremely important and it can be deployed using any available mast, and trees along its length. Even stretched out on sand will work.

Gain Plots of typical AS-WV-xxx

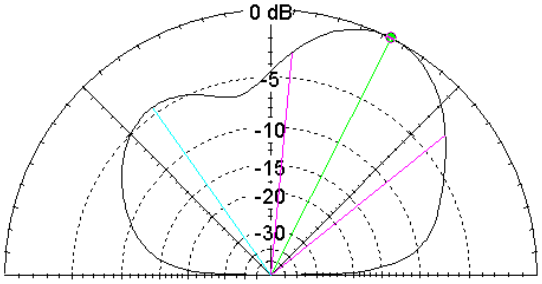
Total Field EZNEC+



2 MHz

Elevation Plot		Cursor Elev	109.0 deg.
Azimuth Angle	0.0 deg.	Gain	-9.79 dBi
Outer Ring	-9.79 dBi		0.0 dBmax
Slice Max Gain	-9.79 dBi @ Elev Angle = 109.0 deg.		
Beamwidth	107.2 deg.; -3dB @ 56.1, 163.3 deg.		
Sidelobe Gain	< -100 dBi		
Front/Sidelobe	> 100 dB		

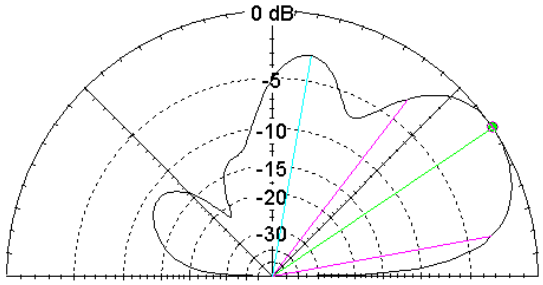
Total Field EZNEC+



5 MHz

Elevation Plot		Cursor Elev	63.0 deg.
Azimuth Angle	0.0 deg.	Gain	-5.84 dBi
Outer Ring	-5.84 dBi		0.0 dBmax
Slice Max Gain	-5.84 dBi @ Elev Angle = 63.0 deg.		
Beamwidth	45.8 deg.; -3dB @ 38.8, 84.6 deg.		
Sidelobe Gain	-10.31 dBi @ Elev Angle = 125.0 deg.		
Front/Sidelobe	4.47 dB		

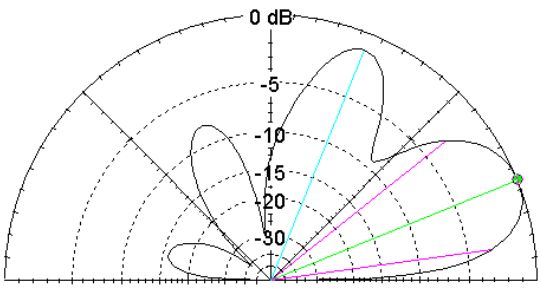
Total Field EZNEC+



9 MHz

Elevation Plot		Cursor Elev	34.0 deg.
Azimuth Angle	0.0 deg.	Gain	-2.51 dBi
Outer Ring	-2.51 dBi		0.0 dBmax
Slice Max Gain	-2.51 dBi @ Elev Angle = 34.0 deg.		
Beamwidth	42.1 deg.; -3dB @ 10.4, 52.5 deg.		
Sidelobe Gain	-5.5 dBi @ Elev Angle = 80.0 deg.		
Front/Sidelobe	2.99 dB		

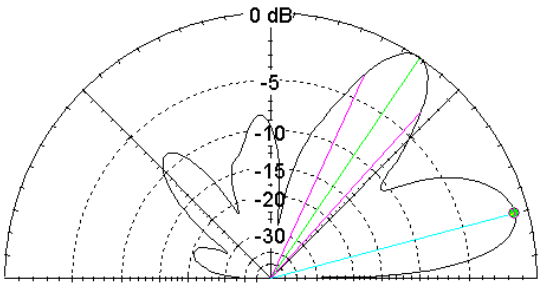
Total Field EZNEC+



12 MHz

Elevation Plot		Cursor Elev	22.0 deg.
Azimuth Angle	0.0 deg.	Gain	0.39 dBi
Outer Ring	0.39 dBi		0.0 dBmax
Slice Max Gain	0.39 dBi @ Elev Angle = 22.0 deg.		
Beamwidth	30.5 deg.; -3dB @ 8.0, 38.5 deg.		
Sidelobe Gain	-0.83 dBi @ Elev Angle = 68.0 deg.		
Front/Sidelobe	1.21 dB		

Total Field EZNEC+



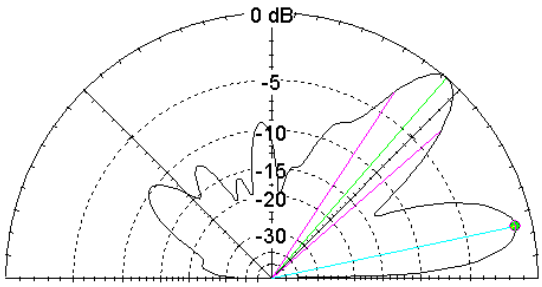
16 MHz

Elevation Plot
Azimuth Angle 0.0 deg.
Outer Ring 1.5 dBi

Cursor Elev 15.0 deg.
Gain 0.58 dBi
-0.92 dBmax

Slice Max Gain 1.5 dBi @ Elev Angle = 56.0 deg.
Beamwidth 17.5 deg.; -3dB @ 47.9, 65.4 deg.
Sidelobe Gain 0.58 dBi @ Elev Angle = 15.0 deg.
Front/Sidelobe 0.92 dB

Total Field EZNEC+



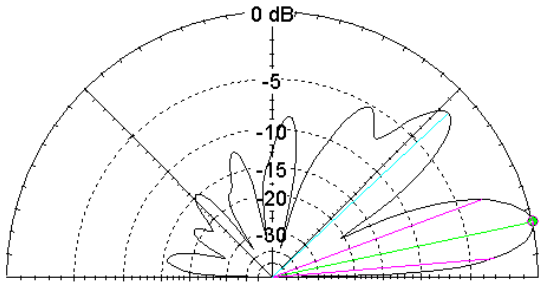
20 MHz

Elevation Plot
Azimuth Angle 0.0 deg.
Outer Ring 2.41 dBi

Cursor Elev 12.0 deg.
Gain 1.26 dBi
-1.15 dBmax

Slice Max Gain 2.41 dBi @ Elev Angle = 49.0 deg.
Beamwidth 15.4 deg.; -3dB @ 41.1, 56.5 deg.
Sidelobe Gain 1.26 dBi @ Elev Angle = 12.0 deg.
Front/Sidelobe 1.15 dB

Total Field EZNEC+



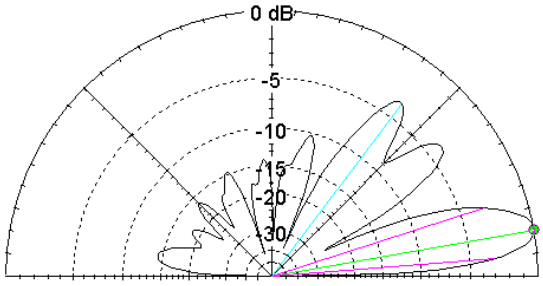
24 MHz

Elevation Plot
Azimuth Angle 0.0 deg.
Outer Ring 4.77 dBi

Cursor Elev 12.0 deg.
Gain 4.77 dBi
0.0 dBmax

Slice Max Gain 4.77 dBi @ Elev Angle = 12.0 deg.
Beamwidth 15.4 deg.; -3dB @ 4.9, 20.3 deg.
Sidelobe Gain 2.99 dBi @ Elev Angle = 43.0 deg.
Front/Sidelobe 1.78 dB

Total Field EZNEC+



29 MHz

Elevation Plot
Azimuth Angle 0.0 deg.
Outer Ring 6.46 dBi

Cursor Elev 10.0 deg.
Gain 6.46 dBi
0.0 dBmax

Slice Max Gain 6.46 dBi @ Elev Angle = 10.0 deg.
Beamwidth 13.2 deg.; -3dB @ 4.5, 17.7 deg.
Sidelobe Gain 2.91 dBi @ Elev Angle = 53.0 deg.
Front/Sidelobe 3.55 dB

NVIS performance over the NVIS frequencies and low angles for medium and long distance communication links at the higher long distance short wave frequencies.