

**ENDFEDZ EF-SWL  
HF END FED RECEIVE ANTENNA**

**PARTS LIST**

PART NO.	QTY	DESCRIPTION
SUB30001	1	EF MATCHBOX
3001	1	RADIATOR 45'
1403	1	END INSULATOR
14417	3	#10 SPLIT RING LOCKWASHER
2814	3	#10 STAINLESS HEX NUT
2815	6	#10 STAINLESS FLATWASHER
32767	1	SHIPPING BOX
3002	1	EF-SWL MANUAL

**FIG. 1**



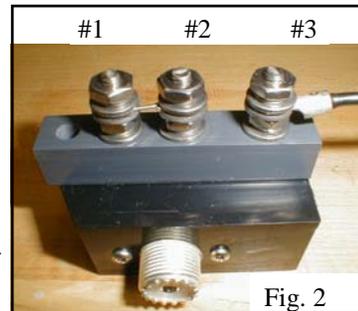
## ASSEMBLY

1. The antenna comes assembled. The user must make 2 decisions:
  - A. How to hang the antenna– either horizontally, as a sloper, vertically, or as an inverted vee. Some polar plots are included to help you with this decision.  
The sloper is our favorite as it allows for a very short RF ground at the antenna.  
Remember, if a ground wire is 1/4 wavelength long– it is virtually invisible.
  - B. How to configure the grounding. This will vary from location to location. The 9:1 binocular core transformer has both the primary and secondary ground leads brought out to 10-32 stainless studs. See Fig. 2. Default is with these two connections (#1-#2) shorted and attached to an RF ground close to the matchbox . This connection may also be left ungrounded and then grounded at the receiver. However, this connection may result in noise pick up on the shield of the coax. Depending on the efficacy of the receiver ground, more noise may be present with this connection, and the outer shield may also act as part of the antenna. Alternatively, the shorting connection may be removed and the antenna side grounded at the antenna (#2), the receiver side (#1) may then be grounded back at the receiver location, or left ungrounded– whichever results in less man made noise pick up . The thought here is that noise generated in the home (dimmers, fluorescent lights etc) can be conducted along the coax to the antenna. This is the instance at my listening location. This may be especially true if your antenna is located a distance from the home. When making comparisons, do not judge by the S meter– but rather, choose weak stations on a number of different frequencies.
  - C. A good RF ground may be provided at the antenna and/or at the receiver by use of a 6' copper clad ground rod intended for electrical grounds. These are commonly available at any of the home construction stores like Lowes or Home Depot.

#1=SO-239 shield

#2= Ground lead of the antenna side of the 9:1 transformer

#3= Antenna side of the 9:1 transformer



Our intent is to give the end user as much flexibility as configuring the antenna for his particular circumstances.

2. The 1/4" holes in the matchbox and in the end intended for support lines. These may be metallic or

3. Although the matchbox is weather tight, it is recommended that the SO-239 and PL259 junction be weather sealed, either by uniform wraps of a quality electrical tape or commercial products like Coax-Seal, specifically designed for this purpose. Silicone RTV is not to be used as the curing agent is acetic acid, and this may corrode the metal.

4. If one or both ends of your antenna are mounted on a structure that can move ( eg. Trees etc) you MUST provide a means of relieving the thousands of pounds of strain that can develop. A pulley attached to the support and a weight would be the most common method of providing this. If this is not done, the antenna will surely be destroyed over time.

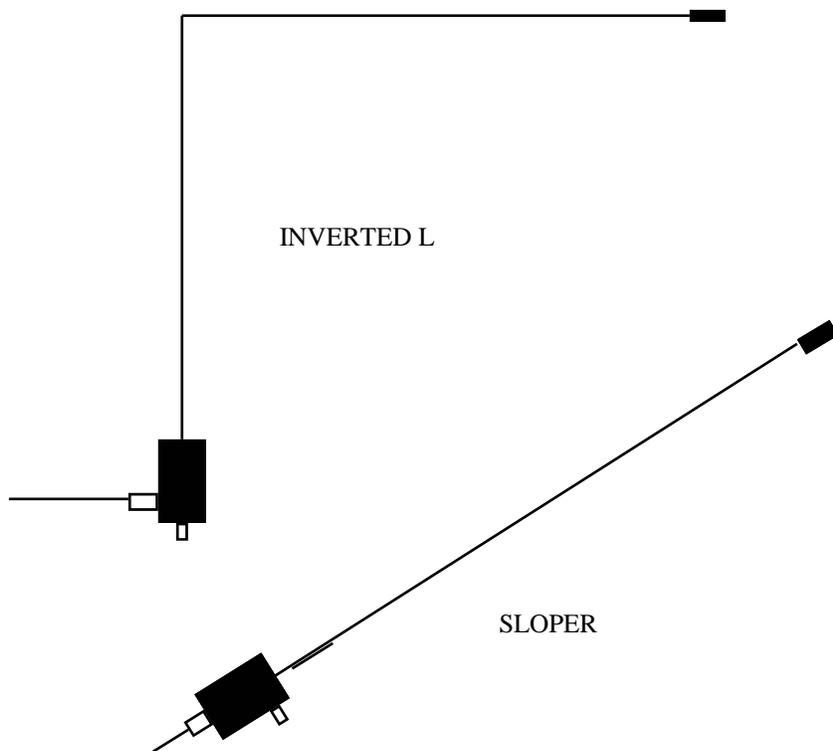
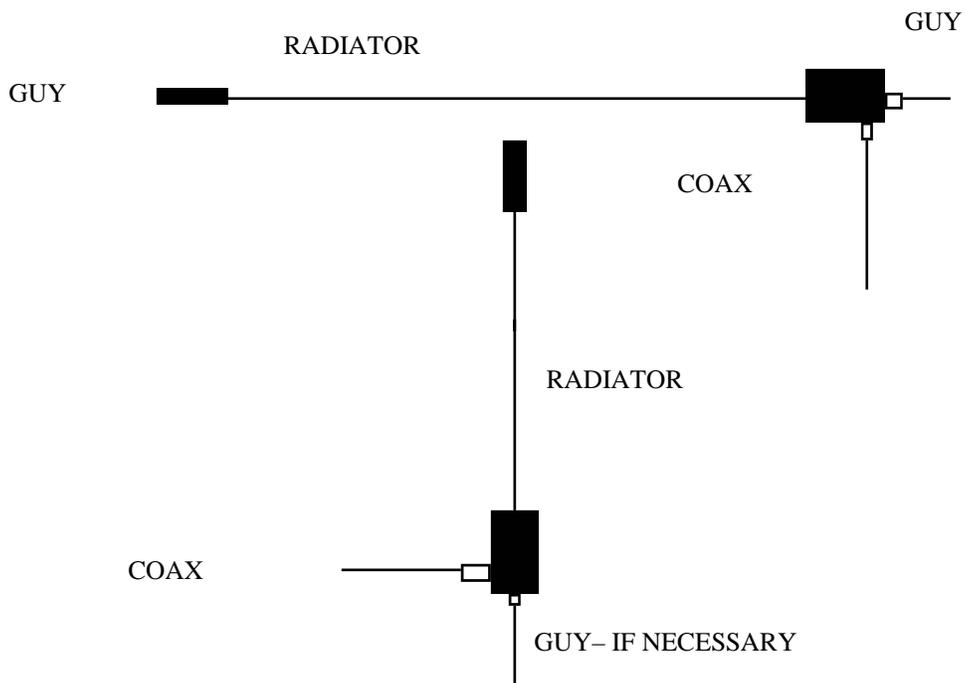
## ANTENNA PATTERNS

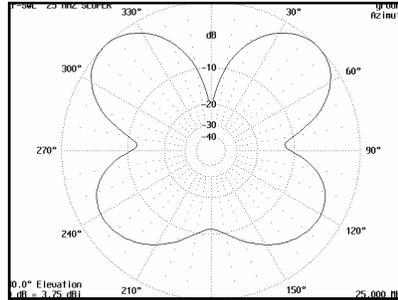
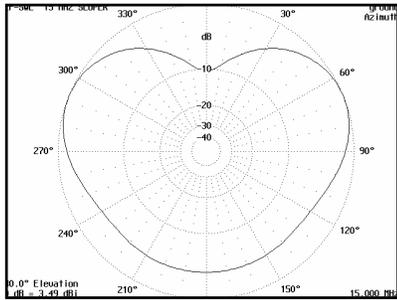
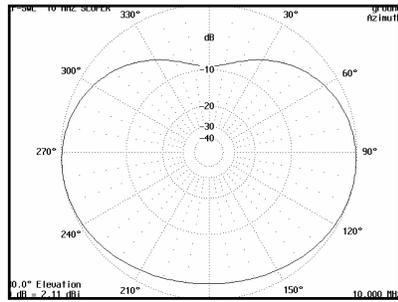
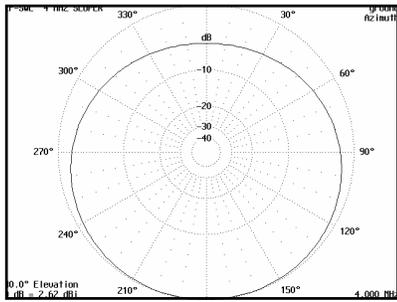
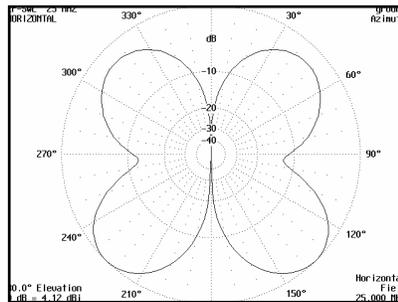
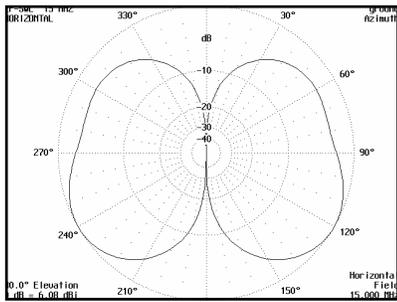
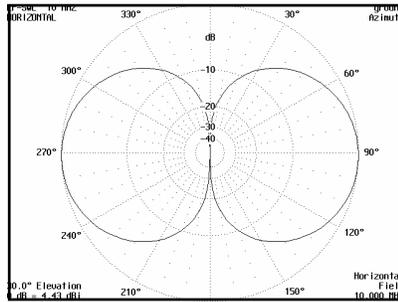
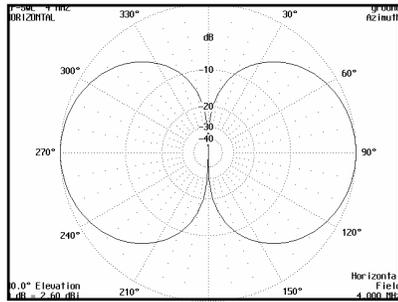
Azimuthal plots are provided for this antenna for a number of different frequencies and 2 orientations– sloper and horizontal. If suspended vertically, the antenna will provide omnidirectional coverage– but may be more susceptible to noise pick up.

The azimuthal plots are taken as a slice at 30 degrees elevation and 30' above ground (sloper configuration– matchbox at ground level, far end at 30'). Height above ground will alter the azimuthal plots somewhat, but the largest effect is to lower the elevation of the main lobe. That is, the higher the antenna, the lower the main lobe, and the better a DX antenna it becomes. In modeling, the antenna was oriented so that it runs 0 to 180 degrees. For the sloper, the lower end (matchbox end) is at 180 degrees. Note the text in the lower left of each plot as it identifies the dBi level of the outer circle for each plot. Plots include ground gain. We can attempt to supply plots for other installations on a time permitting basis via E-Mail.

possible in

insulator are non-metallic.





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