

# $\alpha$ ALPHA ANTENNA®

**Introduction:** The Basic, Deluxe, and Enhanced are subsystems of the MIL/FMJ EmComm antenna system.

## Deployment Best Practices

### 1. Site Selection:

- Choose a location with minimal obstructions for DX to ensure a clear path to the horizon.
- For NVIS (Near Vertical Incident Skywave), ensure the site allows adequate space for the elements to be fully deployed.

### 2. Grounding element:

- All deployments need a ground wire or element to complete the circuit, reduce noise, and drain common mode current. Users report that a Faraday Cloth can serve as an alternative.

## Understanding DX and NVIS

- **DX (Long-Distance Communication):** DX communication is a favorite of amateur ham radio operators. DX relies on *low-angle* radiation patterns to reach distant locations by reflecting off the ionosphere.
- **NVIS (Near Vertical Incidence Skywave):** NVIS communication is a favorite of military and EMCOMM operators. NVIS relies on *high-angle* radiation patterns to cover short to medium distances by sending signals almost vertically to the ionosphere.
- **Now you** can have both DX and/or NVIS when using this system.

**Configurations Options 1 through 3** vary based upon the subsystem (Basic/Deluxe/Enhanced) that you have.

### 1. Directional DX and omnidirectional NVIS (*Figure 1*, Basic System & *Figure 2*, Deluxe System)

- **Configuration:** Set up the Auto Match about 5½ feet high or on the ground mount/spike. Attach the vertical element and the 25' NVIS wire to the top, then secure the 8' ground wire to the bottom bolt/nut. Position the NVIS and ground wires in opposite directions (180 degrees) to match the signal pattern shown in *Figure 1* or *2*.

### 2. Omnidirectional pattern that enhances DX or NVIS (*Figure 3*, Enhanced System)

Note: DX and NVIS are simply enhanced using either option A or B. Both configurations will still experience some DX/NVIS no matter which option is deployed.

- A. **For enhanced omnidirectional NVIS:** Deploy the system as displayed in *Figure 3*. Then attach the clip to the bolt/nut towards the bottom of the Auto Match.
- B. **For enhanced omnidirectional DX:** Deploy the system as displayed in *Figure 3*. Then attach the clip to the top bolt/nut of the Auto Match below the Vertical Element.

### 3. Omnidirectional pattern that optimizes NVIS (*Figure 4*, Enhanced System)

- **For optimum omnidirectional NVIS:** Deploy the system as displayed in *Figure 4*. Then attach the clip to the bolt/nut at the top of the Auto Match.

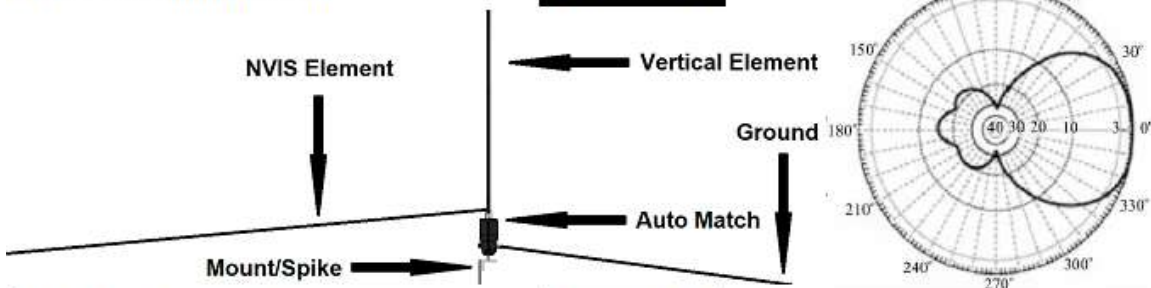
## NOTES

- A. The Basic & Deluxe systems cover 6-80M; the Enhanced system covers 10-160M.
- B. Use 80M at night and 40M during the day for NVIS. For DX, use 10M–20M by day and 40M–80M by night.
- C. A tuner can be used to present the best SWR to equipment, for example when poor ground conditions exist.

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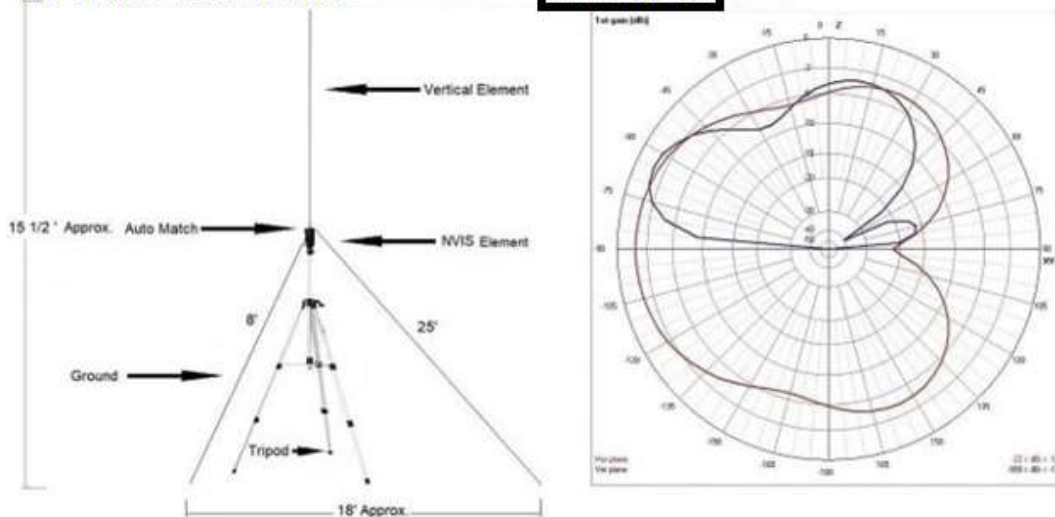
MIL EmComm Basic

FIGURE 1



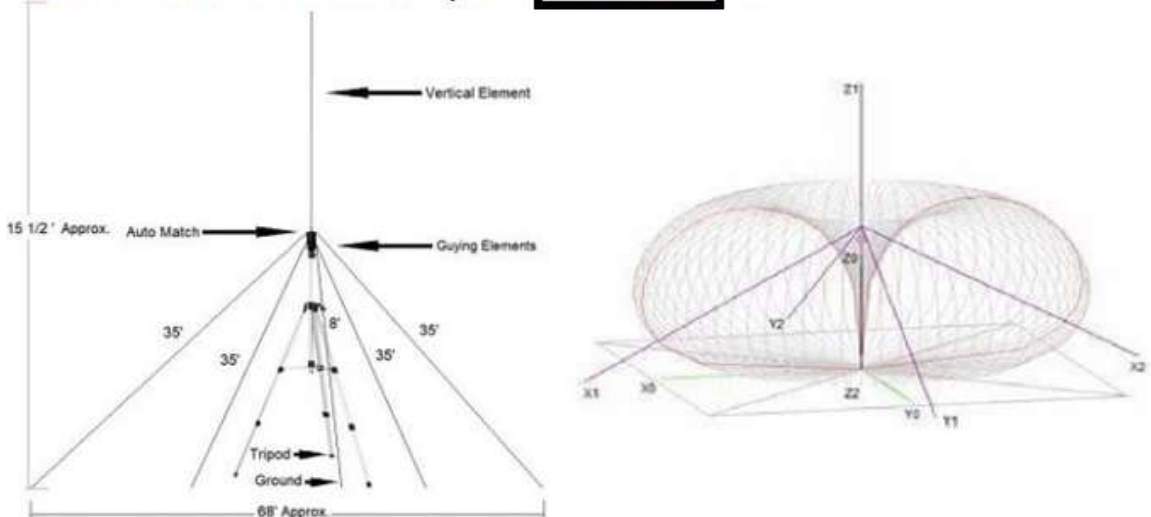
MIL EmComm Deluxe

FIGURE 2



MIL EmComm Enhanced Opt A

FIGURE 3



MIL EmComm Enhanced Opt B

FIGURE 4

