Alpha Antenna Multiband System

Purpose

Alpha Antenna design’s easy use systems for modern day challenges. As the first line of contact or last line of resort; Alpha Antenna is your small business manufacturer for Alpha Antenna systems.

Definition

**Multiband System:** A multipurpose antenna system, which can be configured to launch your signal as circumstances require.

**Purpose:** Targeted Deployment for purpose driven missions.

**Deployment Options:** A) Base Camp, B) Portable, C) Mobile, and D) Manpack.
Mobile Deployment
The Multiband mobile System is simply a Rugged and Compact HF mobile antenna system rated at IP69K that requires:

- No extra whips
- No adjustments required for band changes.
- No moving parts
- No power required
- No control interface boxes

Mobile Deployment is enabled when the optional Stainless Steel Spring, Ferrule, and 5 (five) foot Stainless Steel Whip is installed on the Multiband System. This configuration supports 7MHz to 54MHz when used in tandem with a wideband antenna tuner.

Base Camp/Portable Deployment
Ease of deployment and use are designed into the Multiband System. This enables Base Camp and Portable setup to occur and usage to begin in less than 5 minutes.

Tripod Deployment enables you to achieve a SWR of 1.1:1 on 3.5 to 54MHz by pressing a single button on your broadband antenna tuner.

The legs on the tripod can be independently raised for uneven terrain.

The tripod serves as a full-metal jacket enclosure that encases the Multiband System antenna system when not in use.
NVIS Targeting

The Multiband System is a multipurpose antenna system, which can be configured to launch your signal in the manner as circumstances require.

The use of the Multiband System enables you to target another position, whether near or far. The preset target positioning includes ranges of: 25 miles, 0-300 miles, and positions at greater than 300 miles.

A ground wave occurs at 0-25 miles.

A NVIS (near vertical incidence sky-wave) signal occurs at 0-300 miles.

DX (Long Distance Communications) are those targets at distances greater than 300 miles.

Specifically, NVIS radiation characteristics are achieved through the use of a horizontal EMCOMM element. The target area can be made smaller an optional NVIS element.

Essentially, the shape of the radiation pattern of the horizontal EMCOMM element is constant, until enhanced and reflected with an NVIS element that is placed directly under the EMCOMM element.

Manpack/Portable Deployment

Manpack and Portable options utilize the MilStick element that is comprised of 26 inch aluminum sections, and supports from 3.5MHz to 54MHz.

The Portable and Manpack Multiband System is balanced with counterpoise, matching transformer, and MilStick whip. For use with a broad band tuner.

The antenna system is composed of a BNC-type connector, matching network, flexible aerospace aluminum element, a 150 pound tensile break point counterpoise, and can be installed upon any mount with a 3/8 inch hole.

The flexible aluminum upper element provides protection when obstacles are hit. The counterpoise includes an aluminum spike with a built in insulator for multiple deployment options.

The upper element can be folded for stowage, and includes a built-in 8740 Steel (chrome moly) cadmium plated male 24x3/8 inch stud with female hex nut.
Construction
The story behind the construction of each component:

*The Tripod:* Constructed primarily of aluminum, the tripod provides a full metal jacket that surrounds the entire antenna system when stored. The extension legs adjust quickly and securely to uneven terrain. A built-in carry strap is included.

*The Alpha Match:* The protective outer shell of the Alpha Match is made of 310 Stainless Steel. The inner coating of the stainless steel is then lined with free floating organic felt that is saturated with asphalt. Inside the Alpha Match are soldered connections to the core of the matching transformer. High-voltage wiring from the core is then crimped onto ring connectors, which are held in place with externally facing stainless steel bolts and a silver plated SO239.

*The MilStick Whip:* The composite of the .490 inch diameter MilStick whip is a high strength, high quality, aerospace 7075-T9 alloy. Each element has a scratch-resistant hard-anodized surface. Bonded inserts make up the physical construction points, where full contact RF connectivity is used to ensure maximum efficiencies are achieved. At the base in an embedded 8740 Steel (chrome moly) cadmium plated stud.

*The Wiring Used:* Sheathed copper wiring is used in the Multi-band System and has a tensile break strength of 500 pounds that withstands temperatures from -40°C to +75°C.

*The Field Bag:* Made from 600D nylon and high quality zippers, the bag option has a dedicated front zippered pocket and a larger inner compartment, plus a shoulder strap.

The Company
In 2004 the founder of Alpha Antenna was hit head-on by a semi-truck. During Steven Deines’ year long rehabilitation, a journey to give back began. In December of 2005, Productive Industries, LLC was formed, and the brand name Alpha (meaning beginning) was established.

For over 10 years, Steven has not accepted a salary from Productive Industries, LLC. Rather, all profits go towards charitable organizations, employee needs, and business expenses. Including paid leave specifically for the purpose to enable employees and their families to donate their time during business hours to charitable organizations.