

Portable Antenna System

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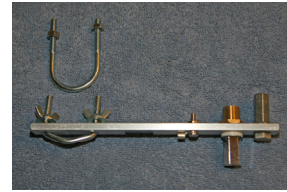
RS10 Light Stand



CRM Mount



AX-75



901 Dipole Mount



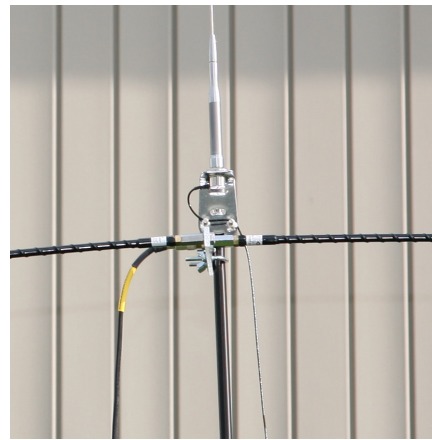
Hamstick



Case



Light Stand with UHF/VHF Vertical Antenna and Horizontal Dipole Hamsticks Antenna



Introduction

Those who had to carry heavy radio equipment through the subways and around New York City during the Sept 11th World Trade Center incident really know the true meaning of "lightweight" and "portable." Often, if something has a handle on it, it is considered portable. However, lightweight is the most important feature when traveling. Unfortunately, high frequency (HF) antennas are usually large and heavy. During personnel recruitment, the type equipment an operator needs to carry should be announced prior to arrival at the incident. During the Sept 11th WTC incident, only UHF/VHF equipment has been selected.

For portable use, the smallest, lightest, and the most practical of the antennas and equipment was selected.

Photographic Light Stand

The Smith-Vector 10 foot aluminum light stand extends to 10 feet high and weighs only 3 pounds. It collapses to 32" and easily fits into a 36" light stand case. The top section has a diameter of 5/8", which is suitable for most mounting clamps. The case is wide enough to accommodate the #901 dipole mount, while permanently mounted to the top section of the light stand.

UHF/VHF Antenna

The Maldol AX-75 Dual Band Mobile Antenna was selected because it is a 1/2 wave, 30", antenna that will easily fit into the 36" case. The Smith-Victor 10 foot light stand uses plastic connecting parts, which are not conductive. Therefore only the top section will conduct and it will provide the 1/2 wave 19.6" ground plane counterpoise required for UHF/VHF mobile antennas.

HF Antenna

A dipole hamstick configuration can be used with the Lakeview # 901 dipole mount. The dipole configuration is heavier than the AX-75 antenna and therefore will require guying during moderate to high wind speeds. The Pro Am Valor hamsticks are recommended because they can be tuned prior to use. Then the antenna can be taken apart without tools and without affecting the tuning. The Pro Am Valor is not currently available for 60 meters. Fully assembled, the hamsticks extend to 8 feet long. With two hamsticks in a dipole configuration, there will be a total length of 16 feet. Disassembled, the length of the hamsticks will be 49 inches. Hamsticks come with a plastic carry case. Hamsticks are available in all frequencies including the new 60 meter band (Lakeview brand, which requires a tool),'

The light stand will not provide enough ground plane area for a vertical HF antenna. If a vertical HF antenna is needed, a counterpoise braided cable will be required.

Near Vertical Incident Sky wave (NVIS) is accomplished using horizontal dipole configuration for communications at distances from 200 miles to 800 miles. See the chapter on Antennas for more information about NVIS. A 25 foot or more length of RG8X cable will be required. Hamsticks need to be tuned with an antenna analyzer or bridge.

Parts List

Smith-Victor, RS10, 10 ft. Aluminum Light Stand, Folds to: 32 in., Footprint: 47 in., Weight: 3.0 lbs. - \$45

Davis & Sanford, DATC Tribag, 36", Padded Tripod Case - \$20

Diamond, C211, SO239 mount with RG8X extension cable for 16.5 feet total - \$50

Diamond, CRM, Right Angle Bracket with U Bolts - \$17

Maldol, AX-75 2m/70 cm, 1/2 wave, Dual Band Mobile Antenna, 30" - \$60

Two Pro Am, Valor PHF20, Valor 20 meter 8', 3/8-24 whips (1/4 wavelength) - \$24

Two Pro Am, Valor PHF40, Valor 40 meter 8', 3/8-24 whips (1/4 wavelength) - \$24

Two Pro Am, Valor PHF80, Valor 80 meter 8', 3/8-24 whips (1/4 wavelength) - \$24

Two Lakeview, Hamstick, 9160, 60 meter 8', 3/8-24 whips (1/4 wavelength) (tools required) - \$30

Lakeview, # 901, dipole mount - \$19 + 3/8-24 5/8" bolt, 1-1/8" spacer, 3/8" washer, shorter u-bolt

Reliance Best Power Peg Plastic Stakes-12 inch, www.campmor.com, Item Number: 21768, 6/\$3.99

Tent Mallet, www.campmor.com, Item Number: 26006, \$3.99

1/8" nylon cord for guying

Above prices effective as of 5/2/07