

Portable Antenna Systems

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System 1 - HF / VHF / UHF



Tripod



VHF/UHF Antenna



Dipole Mount

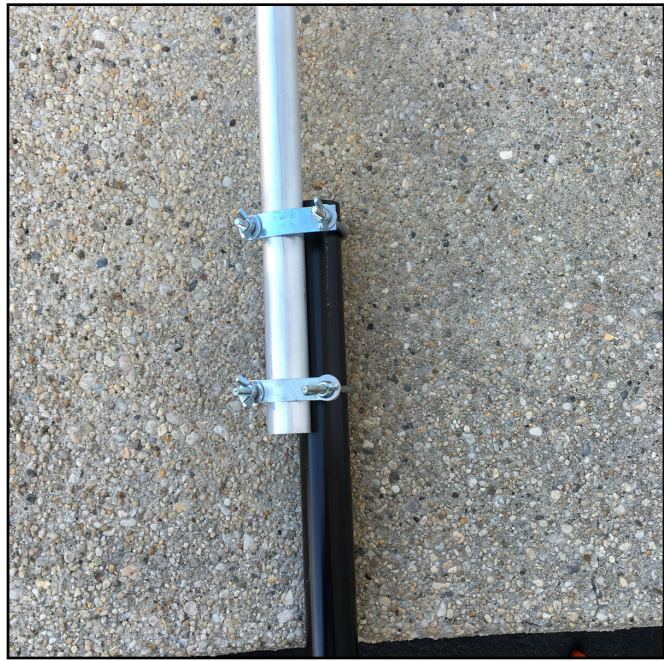


HF Hamstick



Case





Introduction

This antenna configuration is intended to be sturdy. Guying will not be required for most applications. The height of the mast will be about 12 feet. It is easy to construct without any machining and with only a few hand tools. This system uses a combination of VHF, UHF, and HF antennas.

Tripod

The tripod used, comes in a set of two. Remove the vertical inside section from one tripod by unscrewing 3 nuts and bolts. Then, insert it into the end of the inside vertical section of the first tripod. The height of the tripod mast will be about 9 feet with a mast diameter of 1.5 inches. A 1.25 inches 3 feet aluminum tube is added because the dipole mount requires a maximum diameter of 1.25 inches. The total height of the mast is now 12 feet.

UHF/VHF Antenna

The diamond X30A antenna can be used in place of the X50A antenna. The X30A antenna is 4.5 feet tall and has a gain of 3.0/5.5 db. The X50A antenna is 5.6 feet tall and has a gain of 4.5/7.2 db. Use 1/4-20 wing nuts in place of the hex nuts supplied for faster assembly.

An alternate VHF/UHF antenna would be to use a 1 inch diameter 3 feet mast in place of the 1.25" diameter 3 feet mast and a Diamond CRM UHF mount with a mobile antenna such as

the Diamond SG7900A. The Diamond SG7900A is 62 inches long and has a gain of 5.0/7.6 db and costs about the same as the X50A. Other dual band mobile antenna can also be used.

HF Antenna

Hamsticks was the original name brand for the mobile whip antenna listed below. The only antennas of this type are currently being manufactured by MFJ. A dipole hamstick configuration can be used with the MFJ MFJ-347 Dipole Mount. The bolts that come with the MFJ dipole mount are not quite long enough to fit a 1.25 inch tube. The use 50 mm long bolts are required. Fully assembled, most hamsticks extend to 8 feet long. With two hamsticks in a dipole configuration, there will be a total length of 16 feet. Hamsticks are currently available in 10 meters, 20 meters, 40 meters, and 75 meters. Hamsticks should be tuned with an antenna analyzer before normal use.

Parts List

Pair of Ignite Pro Tripod DJ PA Speaker Stands Adjustable Height Stand, \$39.99

Gator Speaker Stand Bag, GPA-SPKSTDBG-50, 52 inches long, \$19.95

MFJ MFJ-347 Dipole Mount, \$19.95

Diamond X50A Dualband Base/Repeater Antenna, 4.5/7.2 db gain, 5.6 feet - \$95

(2) MFJ-1610T, HF STICK, 10M, 3/8-24, W/WHIP, MOBILE ANTENNA - \$14.95 x 2 = 29.90

(2) MFJ-1620T, HF STICK, 20M, 3/8-24, W/WHIP, MOBILE ANTENNA - \$14.95 x 2 = 29.90

(2) MFJ-1640T, HF STICK, 40M, 3/8-24, W/WHIP, MOBILE ANTENNA - \$14.95 x 2 = 29.90

(2) MFJ-1675T, HF STICK, 75M, 3/8-24, W/WHIP, MOBILE ANTENNA - \$14.95 x 2 = 29.90

(4) 18-8 Stainless Steel Hex Head Cap Screw, M6 Thread, 1 mm Pitch, 50 mm Long

(1) Multipurpose 6061 Aluminum Tube, 1-1/4" OD, 0.065" Wall Thickness, 3 feet long

(4) 304 Stainless Steel U-Bolt, with Mounting Plate, 1/4"-20 Thread Size, 2" ID

(8) 18-8 Stainless Steel Wing Nut, 1/4"-20 Thread Size

(8) #8 flat washers

(2) CABLE XPERTS, CXP08XC50, 50 feet RG8X Coax, PL-259 Male both ends \$38.95 x 2?

Above prices were seen on 3/6/16

System 2 - VHF / UHF



Light Stand



CRM Mount



VHF/UHF Antenna



Case



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." For portable use, the smallest, lightest, and the most practical of the antennas and equipment was selected. It is easy to construct without any machining and with only a few hand tools. The extra 50 feet of coax and barrel connector may or may not be needed depending upon the distance from the antenna to the transceiver.

Photographic Light Stand

The Smith-Victor 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" case. The top section has a diameter of 5/8", which is suitable for most mounting hardware. The case is long enough to accommodate the CRM mount, while permanently mounted to the top section of the light stand.

UHF/VHF Antenna

The Diamond NR7900A Dual Band Mobile Antenna was selected because of its high gain and doesn't require a substantial ground plane. NR indicates No Radial. It is 57 inches long assembled. It can be taken apart with the supplied hex wrench for travel. It has a gain of 3.7/6.4 db (2m/70cm). Other less expensive dual band mobile antenna should work as well.

Parts List

Smith-Victor, RS10, 10 ft. Aluminum Light Stand, folds to: 32 in., weight: 3.0 lbs. - \$45

Neewer 36"x5"x5" Heavy Duty Photographic Tripod Carrying Case - \$12.95

Diamond, C211, SO239 mount with RG8X extension cable for 16.5 feet total - \$49.95

Diamond, CRM, Right Angle Bracket with U Bolts - \$16.95

Diamond NR7900A Dualband Mobile Antenna, 57", gain: 3.7/6.4 db - \$84.95

CABLE XPERTS, CXP08XC50, 50 feet RG8X Coax, PL-259 Male both ends - \$38.95

LP, UHF-11, Double UHF Female - SO-239 - Barrel Connector - \$4.99

Above prices were seen on 3/6/16