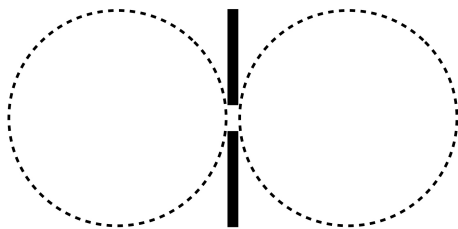
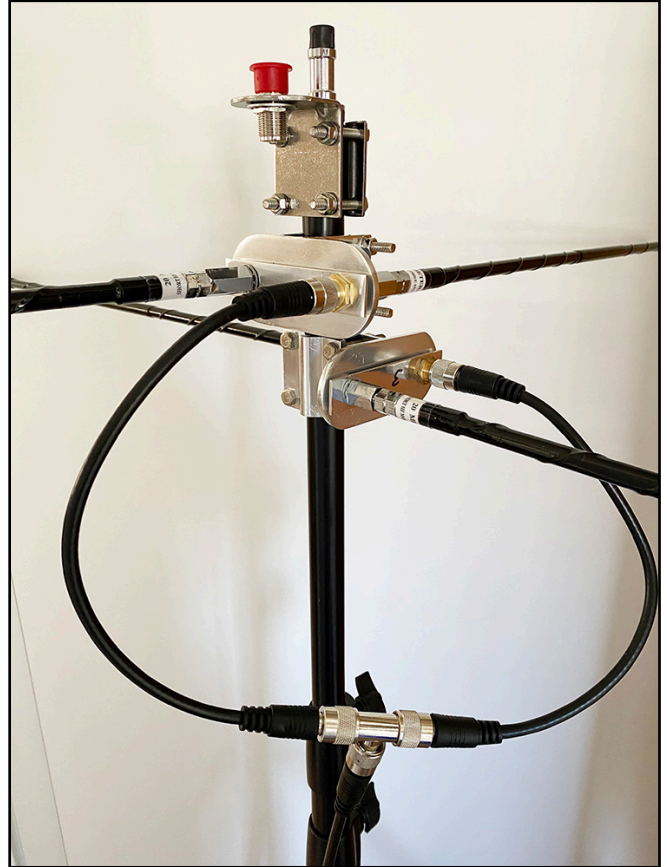
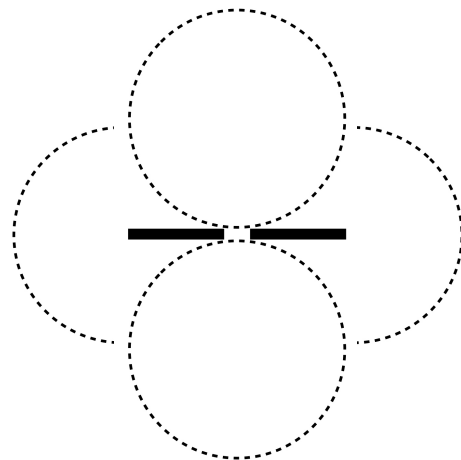


Five Pole Antenna System

Dr. John A. Allocca, WB2LUA
www.WB2LUA.com
3/7/23



Dipole Radiation Pattern



**Double Dipole Radiation Pattern?
(Theorized, not measured)**

Discussion

This project is called the “five pole antenna system” because it uses four horizontal poles for omnidirectional HF and one vertical pole for UHF/VHF or HF bands. The connector mechanism on the very top is intended for a vertical UHF/VHF antenna. It could also be used for an HF mobile antenna or a hamstick with a UHF to 3/8-24 adapter. Two MFJ dipole mounts are mounted perpendicular to each other and above and below each other. This particular setup was used on a 10 foot light stand or it could be mounted permanently on a high mast. This is a bolt on configuration that only requires a wrench to assemble.

Four 20 meter hamstick antennas were used for the test. Each hamstick was tuned separately to approximately 14.150 MHz plus or minus 150 KHz. The mini hamsticks were easier to tune than the full-size hamsticks. Other band hamsticks may be substituted. One disadvantage to this configuration is that it is a mono band configuration. If it were mixed with two dipoles of another band, it would become a multi band, directional antenna and would defeat the omnidirectional purpose of this configuration.

For permanent mounting, the full size hamsticks may be best with something like an X50A UHF/VHF antenna on top of the mast. For field use, the mini hamsticks with a mobile antenna on top may be best.

SWR Readings

SWR readings were taken with the antennas mounted the tripod elevated 10 feet above the ground with a Comet CAA-500 MARKII antenna analyzer.

<u>Antenna</u>	<u>Frequency</u>	<u>SWR</u>
Double Hamstick	14.150 MHz +/- 150 KHz	2.1
Quad Hamstick	14.150 MHz +/- 150 KHz	3.1
Double Mini Hamstick	14.150 MHz +/- 150 KHz	2.5
Quad Mini Hamstick	14.150 MHz +/- 150 KHz	3.1

WWV Readings

<u>Antenna</u>	<u>Frequency</u>	<u>S-Meter</u>
Double Hamstick	15 MHz	7
Quad Hamstick	15 MHz	9
Double Mini Hamstick	15 MHz	6.5
Quad Mini Hamstick	15 MHz	7



Parts List

MFJ-1620T, HF Stick, 20M, 3/8-24, Whip, Mobile Antenna - \$35 x 4 at MFJ

Or MFJ-1610T, HF Stick, 10M, 3/8-24, Whip, Mobile Antenna - \$35 x 4 at MFJ

Or MFJ-1640T, HF Stick, 40M, 3/8-24, Whip, Mobile Antenna - \$35 x 4 at MFJ

Or MFJ-1680T, HF Stick, 80M, 3/8-24, Whip, Mobile Antenna - \$35 x 4 at MFJ

Or MFJ-2320T, HF MINI STICK, 20M, 3/8-24, W/WHIP - - \$35 x 4 at MFJ

Or MFJ-2310T, HF MINI STICK, 10M, 3/8-24, W/WHIP - - \$35 x 4 at MFJ

Or MFJ-2340T, HF MINI STICK, 40M, 3/8-24, W/WHIP - - \$35 x 4 at MFJ

Or MFJ-2380T, HF MINI STICK, 80M, 3/8-24, W/WHIP - - \$35 x 4 at MFJ

Tram Stainless Steel So-239 to So-239 Antenna Mirror Mount (3270) for top
\$30 at Amazon

PL-259 Bulkhead Connector
\$11.99 for 2 at Amazon

MFJ-347 Aluminum Dipole Mount
\$35 x 2 at MFJ

Dual Cable T Connector - SO-239 to SO-239
\$6 at Amazon

PL259 Jumper Cable, RG8x Jumper Cable 1ft
\$14.99 or 2 at Amazon

CB Antenna Connector Adapter 3/8 x 24 Threaded Antenna Mount to UHF PL-259 (SO239
Mount)
\$19.80 at Amazon

Neewer Heavy Duty Light Stand 10 Feet/3 Meters Adjustable Spring Cushioned Metal
Photography Tripod Stand for Photo Studio Softbox, Flash Monolight, Ring Light and Other
Photographic Equipment(Black)
\$70 at Amazon

TORIBIO 50" Tripod Case Bag With Deluxe Padded Waterproof Heavy-Duty Multi-Function
Tripod Carrying Case with Strap,Suit for Lights, Speakers, Cameras, Booms, Microphone
Stands
\$50 at Amazon

ABCCANOPY Heavy Duty Water Saddlebag Design 4 Water Weight Bags for Photo Video
Studio Stand, Backyard, Outdoor Patio, Sports (Black) - \$23 at Amazon