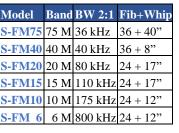
Ham 130 - Hamstick Dipole

Dr. Marc & Rosemary © 231030

- 1. HF (75M 10M) antennas have long wavelength, so most HF are some configuration of horizontal.
- 2. Our objective is an HF antenna system which is apartment usable, neighborhood HOA friendly, minimal lightning exposure, and anyone can install.
- 3. A previous article (129) demonstrated making a small vertical radiator with two short counterpoises, using the Shark Hamstick antenna.
 - a. Interestingly, it had a broad bandwidth.
 - b. Its slightly elevated SWR is easily matched by the transceiver's internal tuner.
- 4. Other brands may not operate the same because of different construction dimensions.
- 5. Another take-off from this design is a simple dipole made with two Hamsticks.
 - a. The dimension is twice the length plus 2" for mounting. It is incredibly small.
 - b. A dipole 20M or higher frequency is only 84" or less. That slim length is easily hidden.
- 6. MFJ-347 is a commercial product which isolates two mini antennas.
 - a. Note the radiator and the return mounts are both insulated from the bracket.
 - b. Then their ground sides bond together with a bar. This is to isolate RF to the coax shield, not tower.
 - c. If desired, remove the shorting bar and replace with a balun to manage current and matching.
- 7. Alternately, make your own mount by turning an L-bracket sideways.
 - a. One connector is 3/8"x24 to SO239. Drill a 1/2" hole for the insulated mount.
 - b. The other connector is 3/8"x24 to insulated stud. Drill a 1/2" hole for the insulated mount.
 - c. Insulate both connectors from the bracket with insulating washers.
- 8. The dipole can be mounted vertically or horizontally.
 - a. Vertical antennas see an 18 dB drop when talking to a horizontal with surface wave.
 - b. Reflected waves during DX rotate polarization, so do not have the signal drop.
 - c. Verticals are omni-directional with little gain and low take-off about 11 degrees.
 - d. Horizontal are directional with about 6 dB gain and 33 degree takeoff.
 - e. Horizontal must be rotatable because of the gain.
- 9. This dipole does not have counterpoises to adjust impedance, so its bandwidth is narrow like the table.
 - a. One foot below the SO-239 connection, snap on 3 to 5 ferrite beads of Type 31 mix by Palomar.
 - b. The ferrite is critical to tune the antenna. Without the beads, the coax shield is a counterpoise.
 - c. Mount feed-point 'preferably' higher than 0.16λ above earth, outside the reactive field interference.
- 10. Use an antenna analyzer to tune the antenna. Lengthen the whip to lower frequency.
 - a. Adjust for minimum SWR at 28.400 MHz, the middle of Technician SSB.
 - b. The transceiver should be able to adjust for SWR variations.
- 11. Life is good. Enjoy!







My Hamsticks

