

Ham 130 – Hamstick Dipole
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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!

Model	Band	BW 2:1	Fib+Whip
S-FM75	75 M	36 kHz	36 + 40"
S-FM40	40 M	40 kHz	36 + 8"
S-FM20	20 M	80 kHz	24 + 17"
S-FM15	15 M	110 kHz	24 + 17"
S-FM10	10 M	175 kHz	24 + 12"
S-FM 6	6 M	800 kHz	24 + 12"



My Hamsticks

