

# Stealth HF Antennas

## Lots of Options



**Jerry Spring VE6TL**  
**December 2025**

# What is a Stealth Antenna?

**A specially designed antenna that is hidden or disguised to overcome antenna restrictions, power limitations, or space constraints**

## Examples:

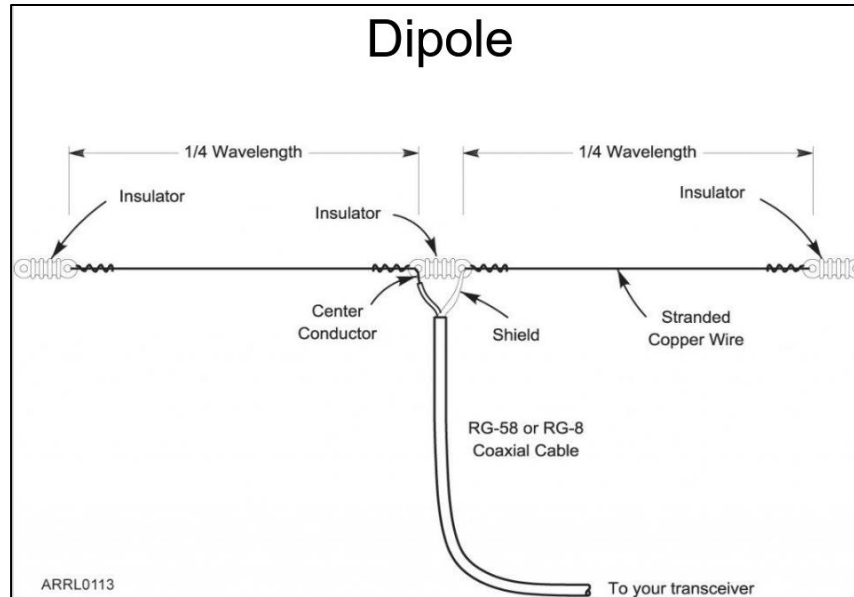
- Attic antennas
- Apartment antennas
- Balcony antennas
- Magnetic loop antennas
- Flagpole antenna
- Rain Gutter Mount antenna
- Roofspace antennas
- And many more

# **Important Safety Considerations**

**In the process of hiding an antenna, it will often be operating in close proximity to people or conductive surfaces. Always perform an RF Exposure Evaluation (including Safety Code 6) and take the necessary steps to prevent any excessive RF exposure.**

**Consider QRP or at least lower power use.**

# The Dipole: The Most Basic Antenna



## Variables:

- Wire thickness
- Wire insulation material
- Height above ground
- Angle of wires if Inverted Vee
- Sag of wires
- Proximity to conductive objects
- Coax length – if not used with effective balun

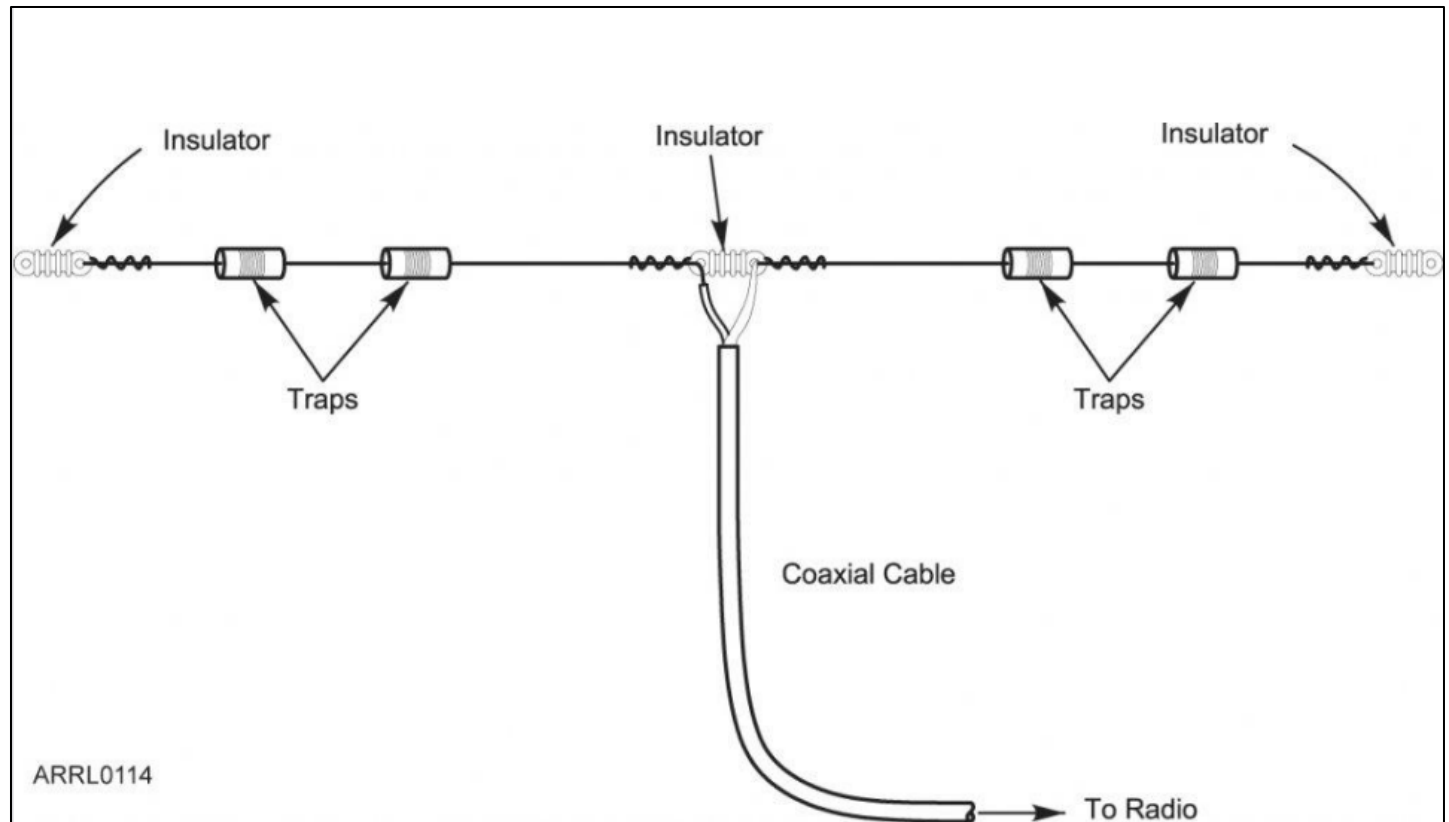
Band	MHz	$\lambda$	$\lambda/2$	$\lambda/4$
160 meter	1,81 MHz	165,75 Meter	82,87 Meter	41,44 Meter
80 meter	3,6 MHz	83,33 Meter	41,66 Meter	20,83 Meter
60 meter	5,35 MHz	56,07 Meter	28,04 Meter	14,02 Meter
40 meter	7,1 MHz	42,25 Meter	21,13 Meter	10,56 Meter
30 meter	10,1 MHz	29,70 Meter	14,85 Meter	7,43 Meter
20 meter	14,15 MHz	21,20 Meter	10,60 Meter	5,30 Meter
17 meter	18,1 MHz	16,57 Meter	8,29 Meter	4,14 Meter
15 meter	21,2 MHz	14,15 Meter	7,08 Meter	3,54 Meter
12 meter	24,95 MHz	12,02 Meter	6,01 meter	3,00 Meter
10 meter	28,4 MHz	10,56 Meter	5,28 Meter	2,64 Meter

Note that the shortening factor of the wire is not included in the table. So the antenna will be about 5% shorter

Single band Dipole Antenna

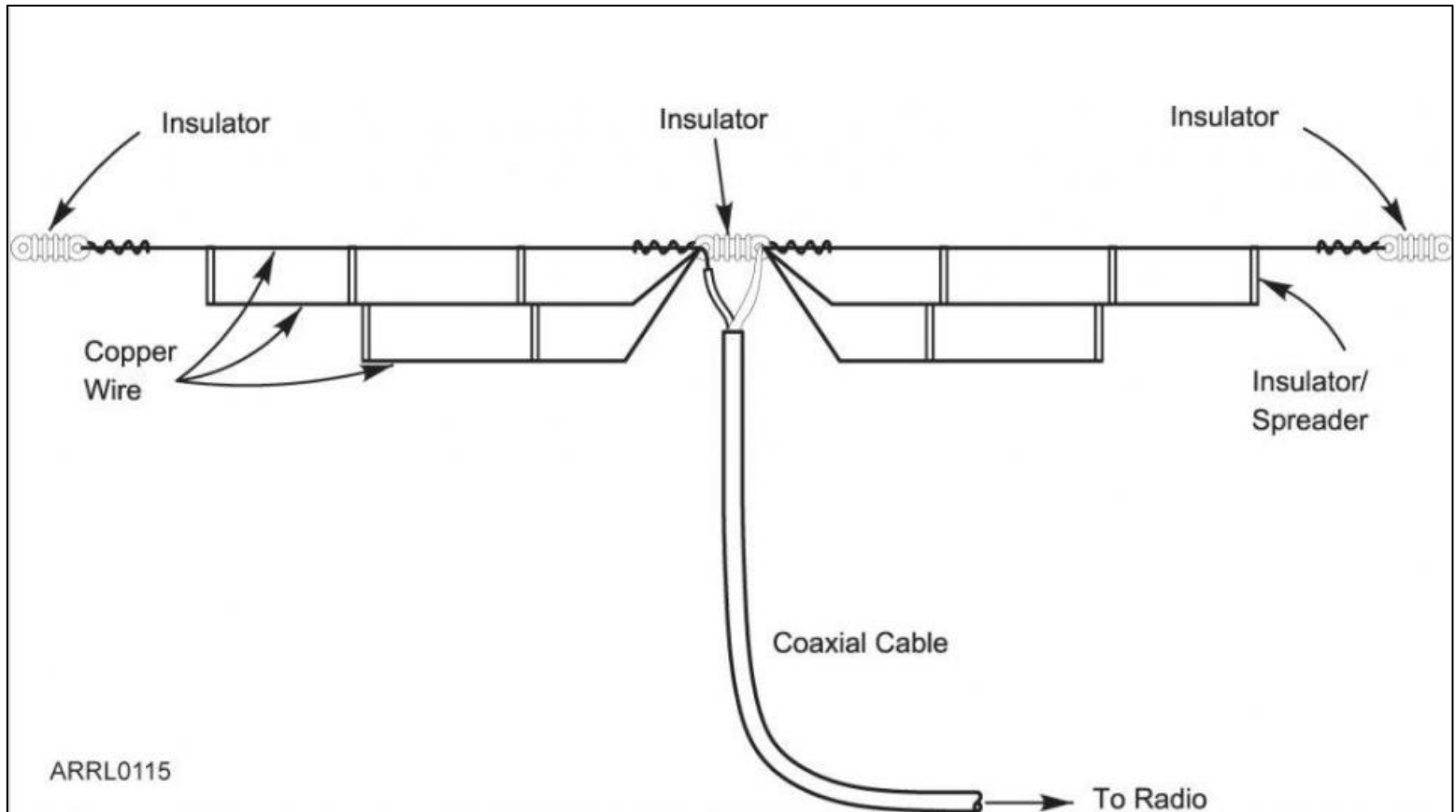
The schematic shows a horizontal line representing the antenna. It is divided into three parts: a left segment labeled  $\lambda/4$ , a central square box labeled '1:1' representing a balun, and a right segment labeled  $\lambda/4$ .

# Multiband Trap Dipoles



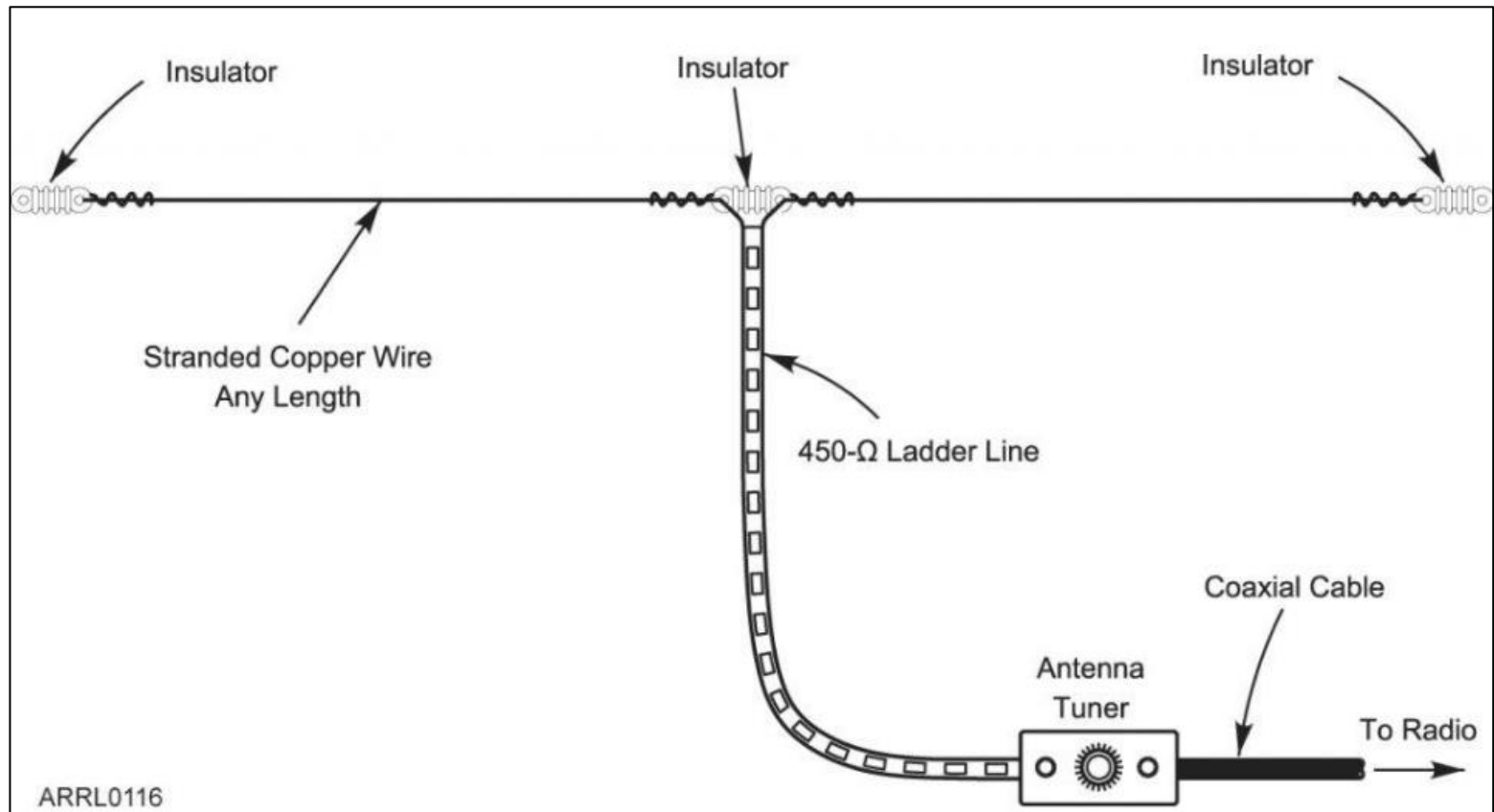
Advantage is you can electrically lengthen the antenna by using traps

# Multiband Parallel Dipoles



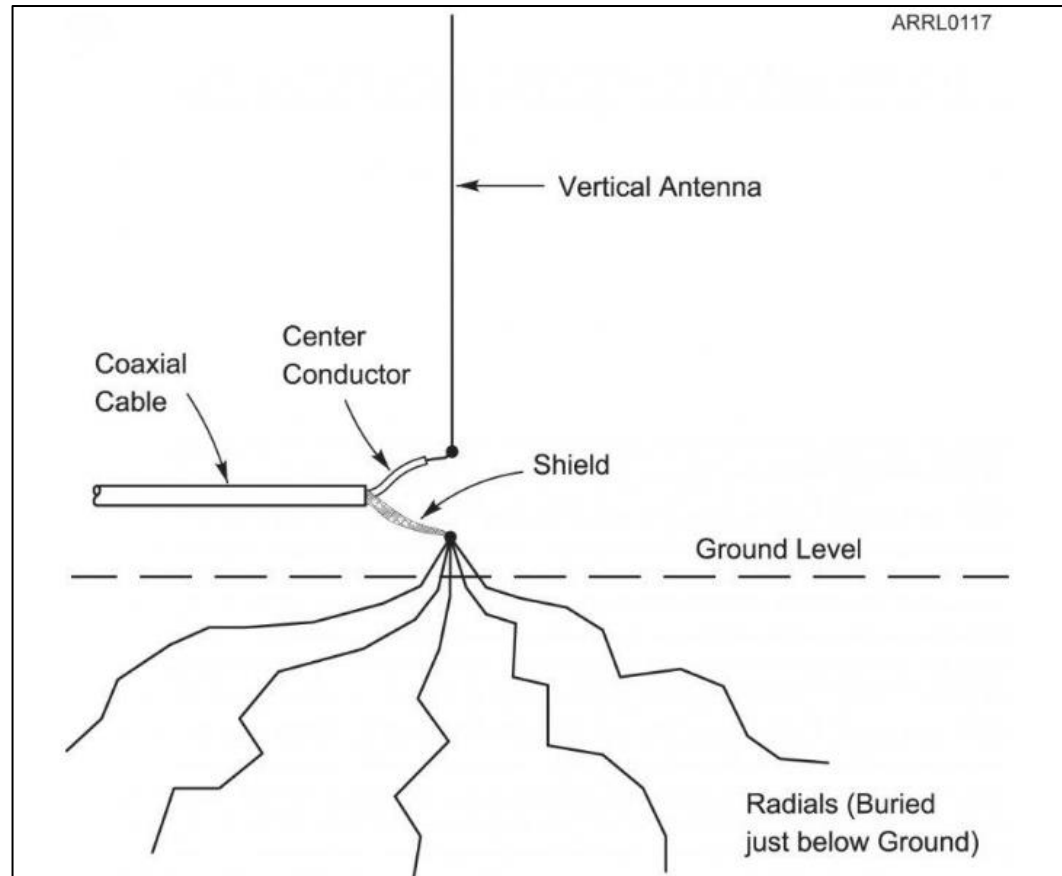
Advantage is you can add more bands without using traps

# Random Length Multiband (Doublet)



Requires an antenna tuner. May be difficult to position ladder line, depending on location of antenna. Ladder line considered part of antenna.

# Verticals



End-fed verticals (usually at the base) require radials (usually buried)



# Commercial Flagpole Verticals

The #1 Stealth Flagpole Antenna for HOA Communities. Real DX, Zero Complaints | Featured on Ham Radio Crash Course! See the stealth antenna that's changing the game for HOA hams.

**GREYLINE**

Shop Antennas | 160-6M ∨ Why Greyline? ∨  
Results & Community ∨ Resources & Support ∨



## The Ultimate HOA-Approved Stealth Ham Radio Antenna | HF Verticals and DX Flagpoles covering 160-6M

High-Performance HF Vertical Solutions for Every Mission and QTH. Smart,  
Robust, and Engineered for Reliability.

### Why Choose Greyline Performance Antennas?

**Exceptional DX Performance:** Our highly efficient VDA design ensures unparalleled signal clarity and efficiency; if you can hear it, you can work it —delivering consistent results across all HF bands.

**Radial-Free Deployment:** Achieve top-tier performance without the need for cumbersome radial fields, simplifying both installation and long-term maintenance.

**HOA & XYL Approved:** Our DX Flagpole Antenna is a federally compliant structure, merging **elegant** aesthetics with stealth functionality to satisfy the strictest deed-restricted communities.

**28' HF Vertical | High-Performance No-Radial Antenna 160-6M**  
Regular price \$1,650.00

# Attic Antennas

**Many attics offer sufficient space to hang a wire from one end to the other. This can be center or end-fed. A fan dipole can be added if sufficient space so that more than one band can be accessed.**

## **Considerations:**

- Consider using a remote tuner (at/near the antenna)
- Due to proximity to people in the house, do not exceed 100W output
- Try to avoid running coax parallel to house wiring or near lights
- Keep antenna away from metal objects (heaters, heating ducts, vents, etc.)
- You can bend the wire (e.g. “L”-shape) to increase length but do not fold back on itself
- May require loading coils for longer wavelengths
- Experiment and use your NanoVNA or SWR meter to fine-tune lengths
- May not work with metal roof
- Will probably not be very directional and may have high takeoff angle
- No need to worry about the elements (VWX)

## Attic Antennas - Photos



Dipole with Ladder Line



## Attic Antennas - Photos



Fan Dipole with Coaxial Cable Feedline

# Attic Antennas - Commercial

[Home](#)[Compact EFHW](#)[Ground Mounted Matchbox](#)[Contact Us](#)

## Compact EFHW 20M-6M

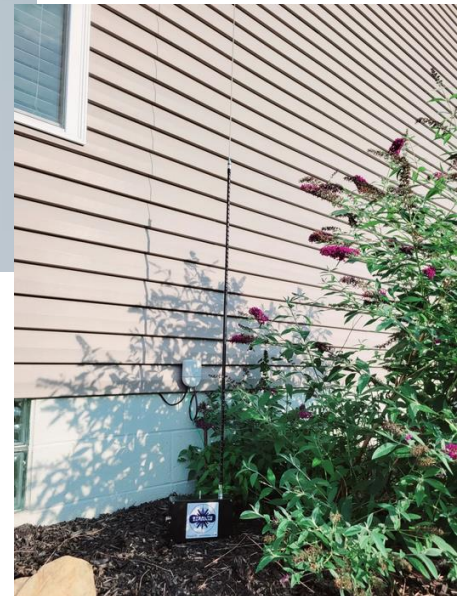
The Compact 20M-6M EFHW was designed for the Ham Radio operator who has limited space. Especially due to HOA Regulations. The antenna is only 14ft long. The internals of the matchbox is configured for the antenna to be resonate at these frequencies.

### Compact EFHW 20M-6M

Free Shipping (US 48)

Unfortunately, we can not ship internationally at this time.

**\$68.99**



# Attic Antennas - Commercial



NI4L

Portable End-Fed /  
80-6 Meters/ Dipole  
Antenna/ 300 watts

\$79.98

[SHARE PRODUCT](#)

PEF WIRE LENGTH \*

- ☒ 41 FEET
- ☐ 71 FEET
- ☐ 119 FEET





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# Apartment Antennas



MFJ-1622 Window Mount 40M-2M (3.7/4 Stars)



# Apartment Antennas



MFJ-1786 Mag Loop 30M-10M

# Apartment Antennas



Vertical antennas mounted on balcony

# Commercial Exterior Stealth Antenna



80/40 & 20/15/10

MSRP \$60-\$180

## *The Isotron Antenna*

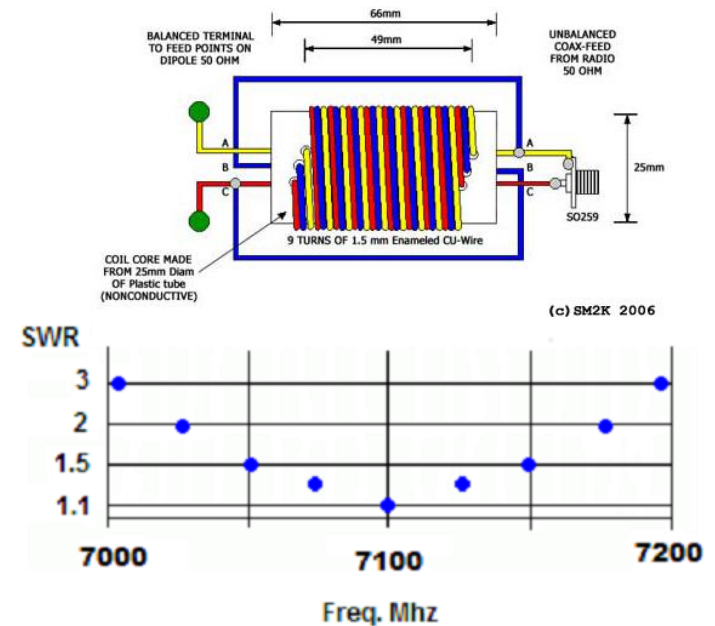
- Solve Virtually Any Restricted Space Problem - 40 Meter Isotron only 22 inches x 16 inches x 15 inches!
- Easy, Quick, and Simple Installation
- Tunes & Performs Without Radials or Antenna Tuners
- Handles Up to 1000 Watts PEP
- Durable Construction, Can be Used in Extreme Weather Conditions
- Excellent For Portable Operation - Emergencies, RV's, Field Day, Motels, Etc.
- Multi-Band Operation on One Feedline with Back-to-Back Mounting & NO Loss of Performance>
- Can be mounted in ANY Position Without Loss of Performance
- Maritime Operation - Uncluttered Setup, with Stainless-Steel Fasteners & Not Dependent Upon Grounding for Performance
- SO-239 Connector on All Models
- One Year Warranty on Material & Workmanship

82 Reviews on eHam.net – 4/4 Stars  
Did not find anyone running > 100 W

# Multiband Spiral HF Antenna



- Simple  $\lambda/2$  dipole wrapped in spirals
- Recommended for limited spaces
- With antenna tuner can work 10m – 40m
- 4 pieces PVC pipe each 80cm long
- 1" spacing between spirals
- Uses 1:1 balun



<https://rfnews.gr/hf-spiral-multiband-antenna/>

# Novel Antennas – Foil Tape



Premium Adhesive Copper Foil Tape - Double-Sided Conductive - 0.5 inch (12.7 mm) - EMI and RF Shielding, Paper Circuits, Electrical Repairs, Grounding, Arts and Crafts, Home Interior

[Visit the Eco-Fused Store](#)

4.2 ★★★★★ 5,014 ratings

Amazon's Choice

\$10<sup>49</sup>

Size: 1 Roll: 0.5" X 21.8 Yards

1 Roll: 0.25" X 21.8 Yards

1 Roll: 0.25" X 27 Yard

- Inexpensive
- Can be painted over
- Can adhere to window or window frame so as to be unnoticeable
- Can be wound around plastic pipe and hidden under the eaves



# Novel Antennas – Foil Tape



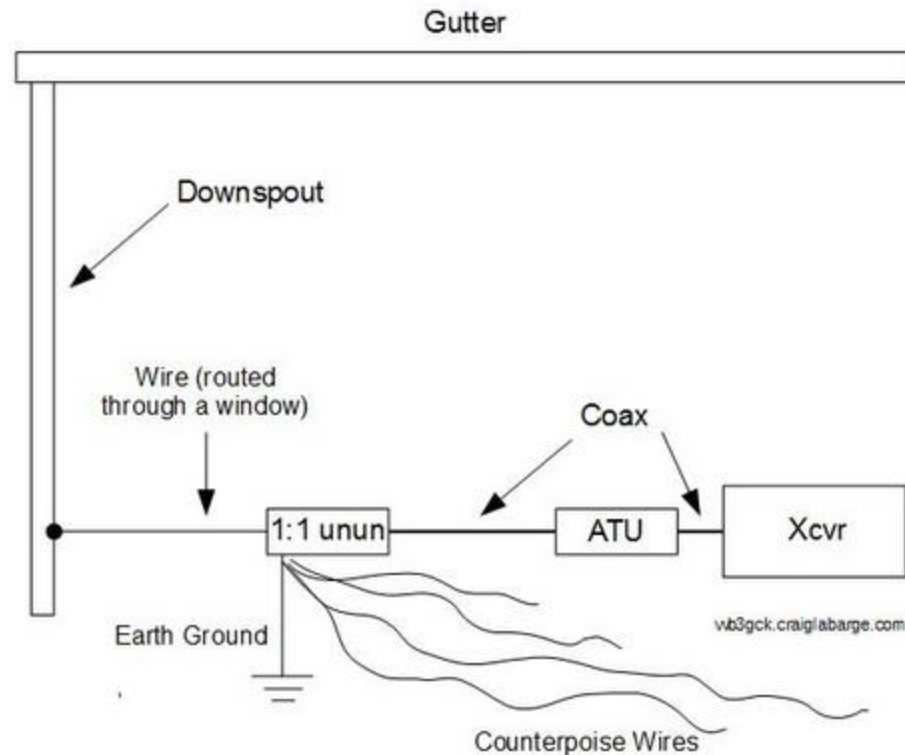
- 2m Vertical Dipole from PVC pipe
- At 18" - only 40% as tall as a J-pole
- Uses 1" wide adhesive-backed copper foil tape
- Wrapped on 3' length of 1.25" PVC pipe
- See John Portune, W6NBC for details

# Purple Martin Birdhouse Antenna



- Bought real birdhouse but attached isolated EFHW wires for different bands
- Balun mounted at base of birdhouse
- See W5FCX, Sept 27, 2021

# Eavestrough (Rain Gutter) Antenna



*WB3GCK Downspout Antenna*

- Can use either downspout or eavestrough/gutter as random wire antenna
- You can lay an insulated wire in the eaves or directly attach a wire to it with sheet metal screws
- Make sure wires/gutter/downspout are insulated from ground
- See WB3GCK Downspout Antenna



# Last Resort – Going Mobile?



# Resources:

- Radio4All, “Top 6 Best Stealth HF Antenna 2025”, February, 20, 2025: <https://www.radio4all.org/best-stealth-hf-antenna/>
- Stealth Antennas: <https://stealth-antennas.com/>
- DX Zone – Stealth Antennas: <https://www.dxzone.com/catalog/Antennas/Stealth/>
- Land, Dave, KD5FX, “HF Antennas Especially stealth models for those in an HOA”: [https://www.bvarc.org/pdf/HF\\_Antennas\\_by\\_KD5FX.pdf](https://www.bvarc.org/pdf/HF_Antennas_by_KD5FX.pdf)
- KD7OKK, May 2, 2025, “Apartment Ham Radio: How to Get on the Air Without a Backyard”: <https://www.thehamshack.blog/apartment-ham-radio-how-to-get-on-the-air-without-a-backyard/>
- Allred, Marty, AG3EK, “Stealth Antennas”, The Columbia ARC, <https://w4cae.com/wp-content/uploads/2016/07/stealth-antennas.pdf>

**What is your favourite  
stealth antenna?**



**(Discussion Time)**