

EASY G5RV

K4AFN

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Use appropriate caution climbing towers and ladders.

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An antenna tuner is required for use of the G5RV.

The original design of this antenna comes from Louis Varney, G5RV, of West Sussex, UK. It will operate on all HF bands from 3.5 to 28 Mhz.

There is a huge amount of documentation on the G5RV on the internet.



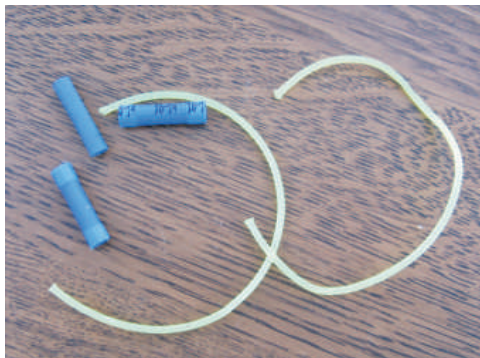
This antenna works well, is easy to build, easy to use, and easy on the pocket book.

It is a great 'spare' antenna to keep in your 'go kit' for emergency service.

Install as flat top or in inverted "V" configuration. For NVIS operation, install about 25 or 30 max above ground.

HARDWARE

Wire required: 103' #14 stranded wire for radiating elements and 31' ladder-line for matching element. 50 ohm coax (RG8, RG8X) for transmission line. Include enough coax for air core balun below matching section. Much of the hardware can be obtained from your junk box, recycled materials and harvested from electronic equipment slated for disposal..



WEED EATER STRING TRIMMER LINE .080" & CRIMP CONNECTORS

(Larger size weedeater string is very tough to tie in a knot)

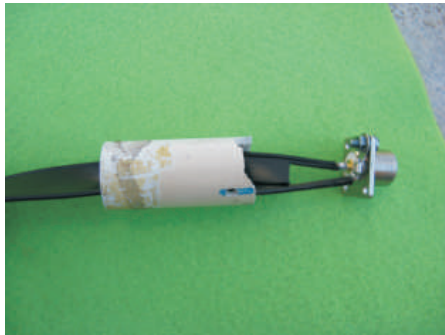


SO-239
Chassis Mount Connector

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LADDERLINE TO COAXIAL CABLE ADAPTER



PVC PIPE PROTECTIVE SLEEVE



TRIM PVC PIPE AS NECESSARY TO PROVIDE CLEARANCE FOR TERMINAL AND SCREW FASTEN CONNECTOR TO PROTECTIVE JACKET WITH WIRE.

(Wrap assembly with PVC electrical tape for weather protection. After testing, you may choose to fill with epoxy or silicon caulk).

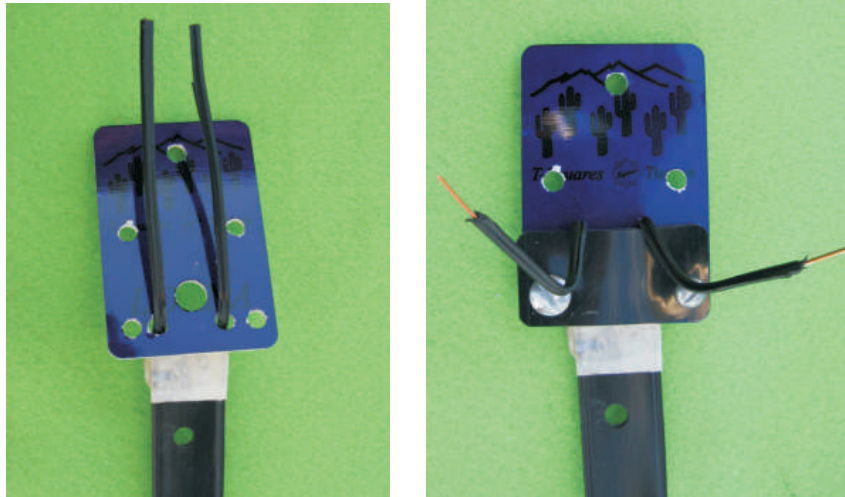
EASY G5RV K4AFN



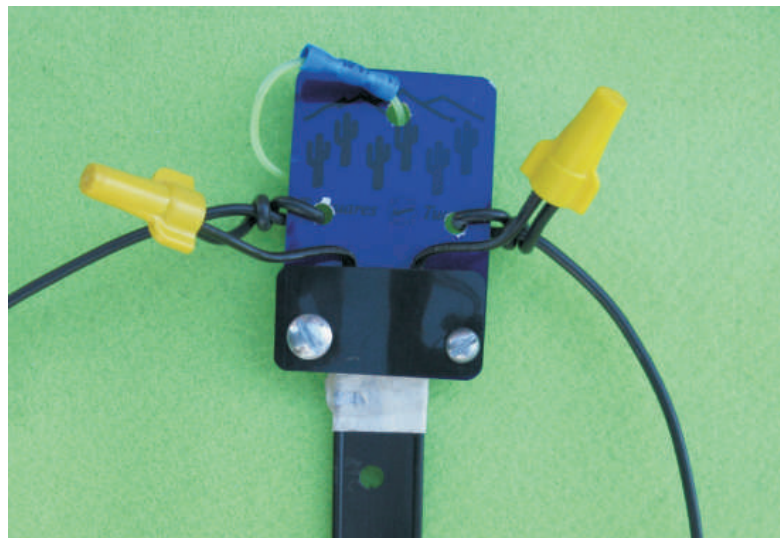
MATCHING SECTION

OPEN WIRE - 34"
450 OHM LADDER LINE - 30.6"
300 OHM TWINLEAD - 28"
[Open center (window style) twinlead is recommended]

PREPARE THE LADDER LINE



SECURE LADDER LINE



ADD THE RADIATOR ELEMENTS

WRAP TWIST LOCK CONNECTORS WITH PVC ELECTRICAL TAPE

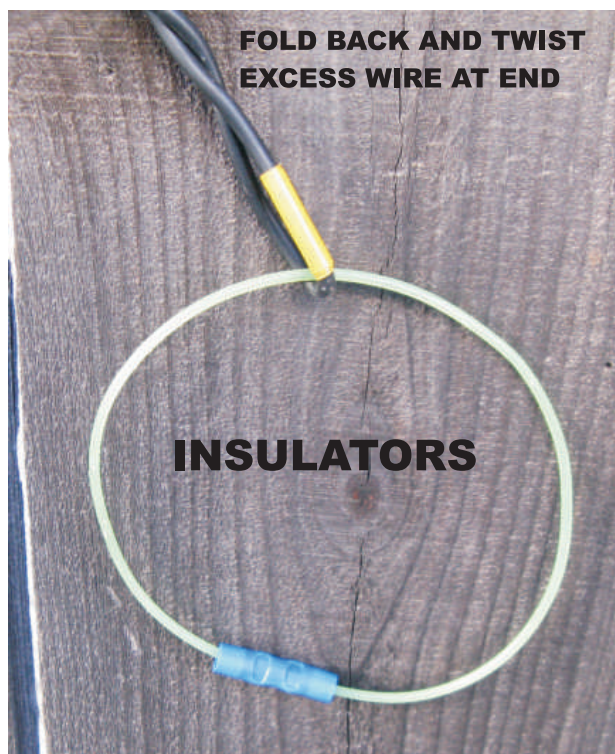
51' EACH SIDE

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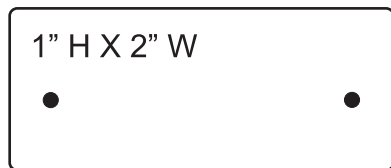
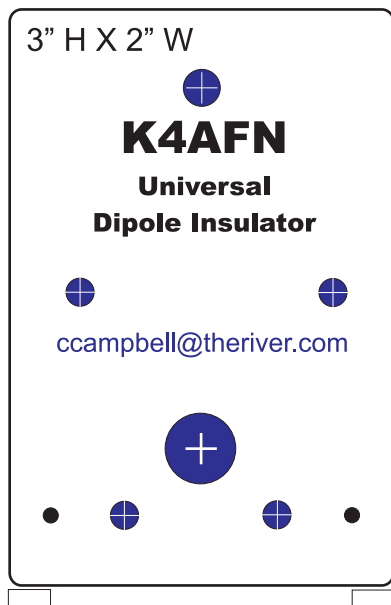


READY FOR RF - USE INSULATOR TO HANG THE DIPOLE ADAPTER

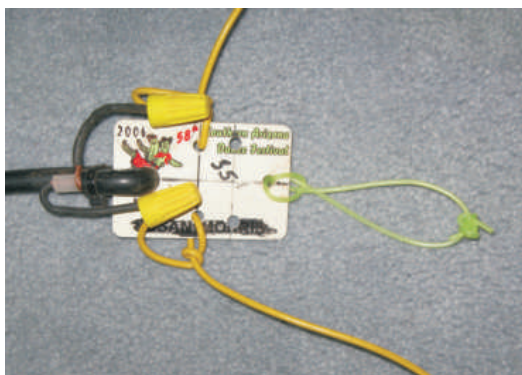


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Pattern to scale



Strap for twinlead or ladderline required for G5RV. For a dipole using just coax, pass coax through hole bend down and tie it to itself. See below.



Method of attaching coax for dipole.



Balun: 7 turns of coax tightly wrapped and taped. Directly below matching section.

I make mine from fiberglass reinforced plastic (FRP) that I salvage (mistakes...) from my name badge service. You can use phenolic or scrap plastic.

The G5RV antenna is a very popular all-band (3.5-30 MHz) 102 Ft. dipole. The 102 Ft. dipole with 31 Ft. feeder of 450 ohm transmission line. With the aid of a tuner, the G5RV will operate in resonance on all bands from 80 to 10 without the need for traps and coils. The impedance at the end of the 450 ohm feed line is 50-60 ohms.

This antenna was developed by Louis Varney, G5RV. Design details were published in an article titled "The G5RV Multiband Antenna ... Up-to-Date", in Radio Communications magazine, July 1984, pp 572-575.

The G5RV antenna, with its special feeder arrangement, is a multi-band center-fed antenna capable of efficient operation on all HF bands from 3.5 to 28 mhz. It's dimensions are specifically designed so it can be installed in areas of limited space. It can be installed as a flat-top or inverted V antenna. Up to 10- feet of the ends may be repositioned to accommodate a smaller space.

Mimimize SWR losses by using good quality transmission line up to about 70 feet in length. Use of a coaxial cable HF choke is recommended. Wind the coaxial cable feeder into a coil of 8 to 10 turns about 6 inches in diameter immediately below the point of connection of the coaxial cable to the matching section.

Some adaptations of this antenna design add a 4:1 balun at the lower end of the matching section.

It is important that the junction of the coaxial cable to the matching section be made thoroughly waterproof.

The UHF connectors (S0-239 and PL-259) connectors used in this construction are not waterproof. They must be protected by applying generous layers of plastic electrical tape or locating the connector inside a dry location.

To operate on 1.8 mhz, the station end of the transmission line conductors should be "strapped" and attached to one side of your "balanced line" tuner terminals. The other terminal should be connected to a good solid ground or counterpoise system.

These are very abbreviated instructions. For details on design or specific antenna construction and installation, see the original article by Louis Varney, G5RV and various Amateur Radio publications and handbooks widely available. Work carefully, stay safe!

On June 28, 2000, at 89, Louis Varney, alias G5RV, joined the large family of silent keys hams.)

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