



# RADIOWORLD OK2FJ

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## Home FRQ:

439.000 - OK0BH  
438925 - OK0BAB

## Scheme:

1024x768,  
IE, Mozilla

## Sellers TRX:

[Elix](#)  
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## Production QSL:

[OK1DRQ](#)  
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## A SIMPLE FIVE BAND VERTICAL HF

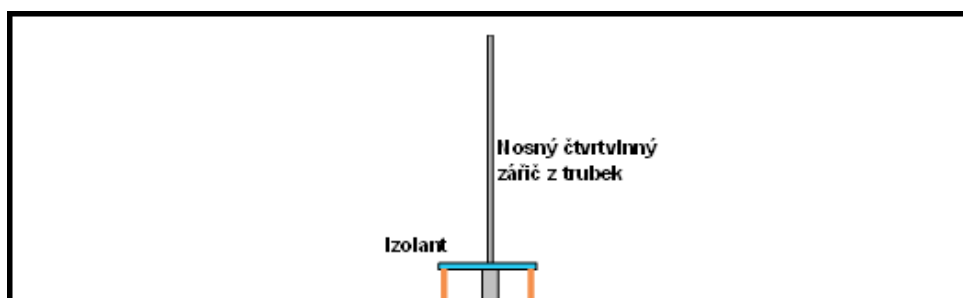
Author: Franta OK2FJ (Highlander Brno)

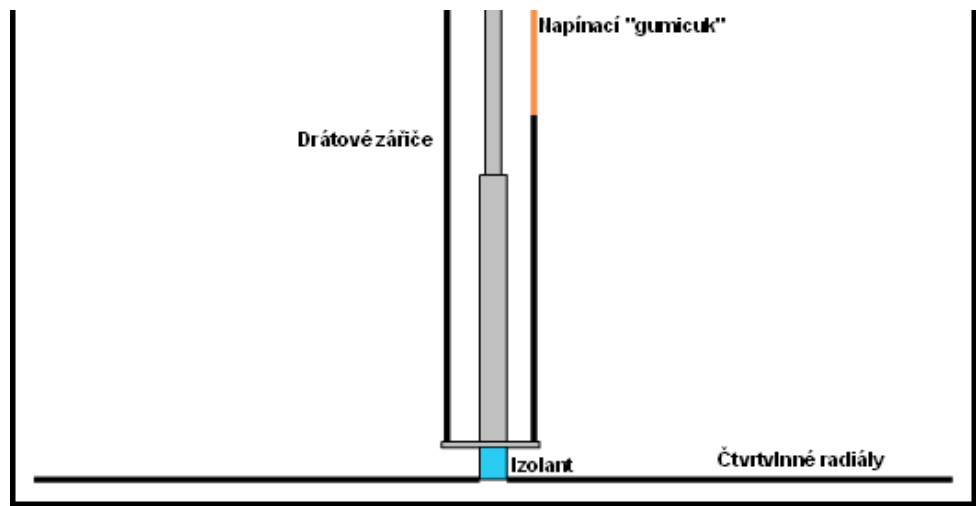
Since I longed for multiband HF vertical for portable, I started to think about GP  $\Lambda 1 / 4$  because it is a simple antenna that can be extended easily by other parallel reflectors that are linked toe. These verticals excel in simplicity, and can thus extend any single-band  $\Lambda 1 / 4$  verticals. In essence, a quarter wave vertical  $\Lambda 1 / 4$  built on land across the insulator base, and equipped with three-to four-wire radials drawn over the ground surface, which is accompanied by three other wire emitters drawn vertically along the major emitters. The solution I tried on 2m and 70cm bands with very good results.

Production consists of production of the main "carrier" emitters  $\Lambda 1 / 4$  to the lowest band (in our case to 7MHz), for example of aluminum tubes which is connected via an insulator placed on a circular metal plate with a diameter of about 15 cm. Since the plates are kept on the ground, three, or four radials from insulated wire (area of cable) of the section  $1.5 (2.5) \text{ mm}^2$ , again of  $\Lambda 1 / 4$  for 7MHz band. Above this plate are at a distance of 15 cm from the emitter installed four (in the square) brackets for the next four spotlights, this time wired. These are in the fifth electrically connected to the secondary radiator. From these handles we lead coaxially with the carrier emitter, ie along it vertically up four emitters consisting of insulated copper wire cross section  $1.5 (2.5) \text{ mm}^2$ .

These other sources are also of  $\Lambda 1 / 4$ , each to the next higher range. In our case, one band 20m, the other for the 17 m band, the third band 15 and the last 10m. According to the length of the longest radiator is placed on the supporting tube emitter insulated handle again with four holes on the circumference at a distance 10 cm from the central emitter. Of these holes will lead to either a string or instance modeller gum which hang emitters wired so that they are disabled and neprověšovaly. You then will be turned off because the center along the entire length of the radiator at a distance of 15 cm from him.

All reflectors leave comparison calculations rather long, and the antenna after assembly, each emitter tune by adjusting the length, separately for its frequency. First, we tune the longest tube heaters, and other wired emitter. Tuning each other affect mood, which is very good. The structure is seen in the accompanying figures. Power is handled as with any GP, a live wire of supply to the radiator, the shielding plate with radiálama.





**MY DESIGN**

The design of this antenna I used military telescopic radiator length 10m (construction similar to that of mechanical Magirus). The emitter has a thread in the heel, which I used to attach the connector patys made a cross for attaching an additional 4 wired emitters and radial.

Foot Cross (see photo) is made of novodur tube diameter 70 mm, which are tucked into four logs 6mm, which are soldered inside, and whose ends are cut threads M6. These logs are long enough to wire emitters with her newborn at the end bolted to the end of the rods were at a distance of 15 cm from the telescopic carrier emitter. Under tyčkama is in the pipe fixed UHF connector, which live pin is connected to four rods (wire handles emitters) and thread the center radiator, frame connector is attached to the bottom plate, which is přidělávaji radials. In this form I poured into the tube mixed Epoxy CHS1200 to a height of about 1.5 cm above the rod. After curing epoxy I put him in the middle of a cylindrical nut that bylúa screwed on the thread at the bottom of the telescopic radiators, soldered to the wire from the lively center of the connector and again washed epoxy to the top of the matrix. Thus the compact vertical tail, which is screwed into the telescopic spreader, the rods are screwed wing nuts M6 four wire leading emitters in parallel with a telescope. The aluminum plate is screwed down four wire radials.

Radials are the longest range, ie 10 meters long, and given that he was lying on the ground, and are part of the ground plane, it is not necessary to change the length depending on the zone. On both sides are provided with solder ears to 6mm. On one side are attached to the heel plate radiator, and on the other tent pegs follows conductively attached to the ground. The lamps are at the top end hanging on the cross of the insulator. On the cross, and the curtains anchor cables I used as a suitable material in the domestic needs of the purchased breadboard meat that is of material similar to nylon (see photo).

Wired emitters I made (as seen in the photos) four, namely:

- 5 m wire on 20m band
- 3.94 m wire for 17 meters band
- 3.36 m wire for 15 meters band
- 2.46 m wire for 10 meters band

so that is how five band antenna GP quarter to five bands.





Testing took place in Upper Deer weekend 21-22.4.2007 and it works as I expected. Vertical been tested and Ivan OK1MOW of radioclub Holice - OK1KHL. Some photos are [HERE](#).

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Texts and treatment: [František Javůrek](#) ©