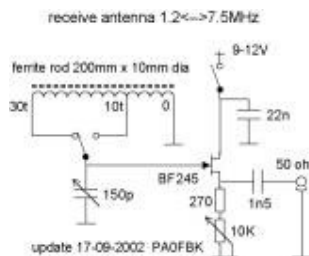


PA0FBK ferrite receive antenna



Sometimes it happens that really no place is available for any antenna. Even then it is possible to 'keep in touch' when using this ferrite antenna. In combination with the FT817 you have a very compact receive system and you will be surprised when you hear what still can be received with this very small antenna. During the latest 'balloon fox hunt' here in the Netherlands it was possible to hear the 80m beacon during all the time. The ferrite antenna and the FT817 were simply placed on a table next to me on the ground floor. Just a few minutes before the landing the signal disappeared (the distance was about 100km then). Of course the antenna will work with any other receiver or transceiver. I used a ferrite rod of 10mm dia and about 20cm length, if you have a thicker or longer rod, then this is still better, also you can use more rods together to make a thicker one. Adapt the amount of turns to get the right tuning range.



The inductor was made of 0.5mm dia enameled copper wire, it has 30 turns with a shunt at 10 turns. The inductor is placed exactly in the middle of the rod.

I used a defect small medium wave radio, all parts were removed except the tuning capacitor, the potentiometer and both switches. The old circuit board had place enough to install the BF245 FET buffer. This circuit works very good, first I did some experiments with a couple winding at the

ferrite rod to match to the 50ohm input impedance of the FT817. This works, but very much signal loss is the result. Therefore I tried a circuit with a FET buffer and a direct coupling to the high ohmic point of the tuned circuit. Now the complete signal is available for the receiver because the high-ohmic FET input nearly charges the tuned circuit.

The ferrite rod is placed in a piece of plastic electric tube. At the place of the original (too small) ferrite rod I filed out the plastic case to make room for the plastic tube. On the picture it seems that the circuit board is rather complex, but in fact only the tuning capacitor, the potmeter, the two switches and the BF245 circuit are mounted (at the other side, not visible on the picture). One switch is used to chose between 10 turns or 30 turns for switching between 3.4MHz to 7.5MHz or 1.2MHz to 4.5MHz. Of course is the tuning range also dependent on the used tuning capacitor, the amount of turns and the type of ferrite rod, some experimenting is recommended. Above 8MHz were the results worse, in that case you can better use a small piece of wire as antenna. The other switch is used for power on-off.

Here an 'action picture' of the antenna in combination with the FT817, be awared that the microphone is not connected, probably the BF245 FET will not survive if the PTT is activated. The antenna is supplied here by means of a 9V battery, maximum current is about 8mA, but this is not always necessary, by means of the original potentiometer it is possible to decrease the current (and of course the gain) till about 0.3mA to save battery power. It is also possible to supply the ferrite antenna via the ACC connector of the FT817.

receive antenna 1.2<-->7.5MHz

