

## **VLF natural radio receiver**

### **Description:**

Small, custom-made unit in metal housing for listening to, and recording both natural and man-made ELF and VLF audio-frequency (between 20 Hz and 10 kHz) radio emissions. Tested in remote locations with good results during (very) distant thunderstorms, and in constructed environments for EM emissions. The unit has two mini-jack (3.5mm) plugs for both headphones and amplifier or recording device and a BNC socket for antenna connection (only). A suitable telescopic antenna can easily be found online or a metal rod can also be used.

The receiver design is based on the NASA INSPIRE VLF-3 schematic which can be found online at:

<http://image.gsfc.nasa.gov/poetry/inspire/2007/VLF3RadioReceiver.htm>

### **Further references:**

<http://www.naturalradiolab.com>

<http://istp.gsfc.nasa.gov>

<http://image.gsfc.nasa.gov/poetry/inspire>

<http://www.vlf.it>

<http://baudline.blogspot.com>

### **Instructions:**

A telescopic antenna (1 to 3m), or 2m metal rod is to be connected to the front BNC plug. Standard 50 Ohm antenna materials should not be used as the device has a very high input impedance. Power is switched on (forward) and off (back) with the small switch and the rear 3.5mm stereo mini-jack is provided for connection to recording apparatus (mono signal in left or right channel). The other mini-jack is for direct connection to headphones and volume can be adjusted with the rear knob. Any recording device should be located as far as possible from the receiver to avoid noise or interference. The device is also best operated at a good distance from overhead power cables and electrical apparatus. The antenna input is of very high impedance and the unit can thus easily be grounded through the body - holding the metal case. In the case of feedback, a metal stake can be inserted into the ground and clipped to the body of the receiver.

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<http://pickledfeet.com/electronic%20kits.php>