# Electronic Zahori

(In order to detect water and to measure fields.)

For those that do not have a dictionary to hand, we will explain that a *zahori* is a person who tries to guess or discover hidden items, especially hidden below the earth. *[In other words a dowser.]* Mainly this refers to people who try to discover underground springs. The usual instrument is a pendulum or a hazel rod. An electronic version is presented here. But is this possible? A rod to detect detect springs and be 100% electronic? Although it may seem extraordinary, the device that is presented here can indeed detect the presence of underground water. And that is only one of its capabilities. It can also measure electronic fields, potential ions, and detect certain types of radiation. These are impressive features.

There has been a lot written about the influence of electrical and electromagnetic fields on the health of people subjected to them. There is nevertheless a point on which most people can agree, that there is a negative effect on life from the artificial fields generated by industry. However, there are no irrefutable tests.

We will describe how to assemble several components to construct an instrument that is able to detect the variations in the electrical field, and indicate the ionic potential in the immediate environment.

Due to the principle used, this device is also a detector of electric current. But its main feature is its ability to detect underground water. And not only that, but one can practice in finding the direction of underground water.

In order to understand, it is necessary to consider the concept of current and tulleric fields [ley lines]. We are surrounded by electrical and electromagnetic fields of all types, not forgetting the terrestrial magnetic field.

In a medical centre in New York it has been verified that the human body is affected by electromagnetic fields. There is also a Russian document that describes disorders of the nervous system of workers on high tension systems.

In summary, the minimum we can confirm is that a constant exposure to electromagnetic fields is not going to improve your health. Luckily the majority of us do not live in the shade of a 500KV line, but the experts think that a simple electric kitchen can also create an ominous electromagnetic field.

The capacity of the rod to detect an underground current is explained by the ionic interchange that takes place in all water obstacles of this type.

Being conversant with radiogoniometry *[measurement of the azimuth and elevation of received radio waves]* it is possible to define the direction of the current that is detected.

## Operation of the Rod

The ion detection (particularly loaded positively or negatively) is achieved with the aid of a telescopic antenna or a custom built metal plate. The input signal is buffered by IC1, and then amplified by a second op amp (IC2). The output of IC2 drives both a moving coil meter and a set of headphones. Thus providing an audiovisual indication.

In order to avoid circuit overload caused by an uninterrupted flows of ions, the antenna plate is periodically discharged. This is controlled by a timing circuit based on a 555 timer, which generates a square wave output. The commutation frequency (adjustable by P4) determines the sensitivity of the device. In particular it is the frequency of greater commutation that is the most sensitive. *[Later on you will discover that this means the lowest frequency has maximum sensitivity.]*

S1 switches the timer between two different frequency ranges.With this switch closed and P4 set to maximum resistance, the rod has maximum sensitivity. When the receiver is discharged it can detect a very small imbalance in the load. The potential divider formed by R6, R7 and P3 provides an offset voltage that charges the antenna plate.

In order to get a better idea of the nature and form of the detected fields, we have equipped the device with a means of storing the output of IC1 *[sample and hold]* until a moment before discharging the antenna plate. This is achieved by closing the S2 switch.

By means of ES2, ES1 is triggered by the timer output, and it closes and opens again very quickly. The output of IC1 is sampled by ES1 and stored in C9, which must have small value of capacitance. Before being able to detect the signal, we must provide some amplification. This is the task of IC2 (3130) which is a CMOS device. P1 allows the gain of IC2 to be adjusted and to provide sufficient audio output.

## Adjustment and Method of Use

P2 is an 50k potentiometer that allows adjustment of the meter reading. This pot must be adjusted to give a zero midpoint reading on the meter. The maximum gain is achieved by setting P1 to its lowest resistance and setting P3 to one of its extreme positions. *[This design can detect both positive and negative ions depending on the setting of P3.]*

The use of the rod and the interpretation of the measured values will require some experience. The construction details and the type of box is left to the builder, although the photograph is offered as a suggestion.

The rod must be used outdoors, since it is of little value if used in a building, due to the parasitic fields that exist inside. If it is wanted to use this device to detect electrical wiring. It is necessary to increase the frequency of the timing circuit by reducing the resistance of P4 and opening S1. As the antenna plate approaches the wall, the place

where the background noise reaches its maximum reading indicates the location of the electrical line. For this type of detection, the position of S2 is irrelevant.

When searching for underground water, this is a different issue, as in this instance there is no circulating current. The settings must be adjusted to put the rod into maximum sensitivity, and to choose a slow sampling speed. This is achieved by closing S1 and S2, and setting P4 to its maximum resistance.

The chosen search area should be divide into squares so that the 90 degree lines cut. If underground water is detected, the direction of the water is perpendicular to the position of the antenna when the deflection of the needle is at its maximum.

In conclusion, this device is also capable (at least theoretically) of measuring radioactivity (alpha, beta and gamma). In practice we have been unable to verify this, since no-one (at the time of writing) was willing to risk exposure in order to test this was true.