Detector Circuit Metal Simple and Powerful

* [inShare](javascript:void(0);)
* [**187Uložit**](https://cz.pinterest.com/pin/create/button/?guid=q1LXTRAu2T6n-2&url=http%3A%2F%2Fblog.novaeletronica.com.br%2Fdetector-de-metal%2F&media=http%3A%2F%2Fblog.novaeletronica.com.br%2Fimg%2FDetector-de-metal-pirate-660x330.jpg&description=Metal%20Detector%20Simple%20and%20Powerful)

As you all know I am a enthusiast**detectorismo**, adoro esse hobby, it relaxes and leaves the mind free of the problems of day-to-day. Currently the [metal detectors](http://blog.novaeletronica.com.br/en/?s=detectores%20de%20metal)commercials are microprocessor, this facilitates the processing of information, making faster and more accurate identification and location of metals.

But there are several detectors unprocessed that are successful among those who want to build their own metal detectors, between him **Surfmaster PI** and the [**PI Polish**](http://blog.novaeletronica.com.br/en/pi-polones-construa-seu-detector-de-metal/), all IP technology (**Induction pulses**). Mas mesmo esses detectores são considerados por muitos difíceis de serem feitos, therefore decided to publish a version of**simple metal detector**, But with IP technology.

Although many technicians do not agree, a POI detector can discriminate well designed, a descriminação dos metais depende de uma taxa de amostragem mais rápida, it is enough to accurately detect, discriminating, or as some say, eliminação e não discriminação.

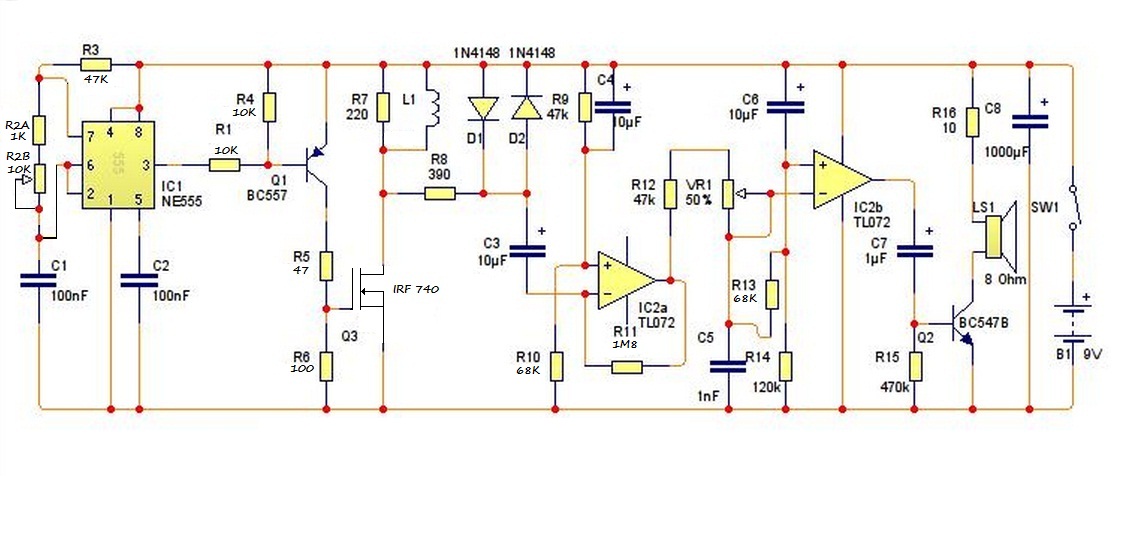
Só que aumento a taxa de amostragem o consumo também aumenta, but if microprocessar the PI detector that consumption can make it viable, isso ocorre em alguns detectores PI como a linha GPX da [Minelab](http://www.minelab.com/" \o "Minelab" \t "_blank).

Detector de Metal Pirate PI

Chamado de Detector de Metal Pirata ou Pirat, que é abreviação de **PI** (Induction pulses) and**RAT** de radioskot ( РАДИОСХЕМЫ nome de um site de eletrônica Russo) is easy to build, de ajustar, não contém componentes especiais e é de baixíssimo custo.

O detector de Metal consiste de duas unidades principais, uma transmissora que usa o gerador de pulso [**NE555**](http://blog.novaeletronica.com.br/en/noticias/555), que é levada a bobina através do transistor IRF740. A mesma bobina serve como receptor e seu componente principal é o TL072, a dual operational amplifier.

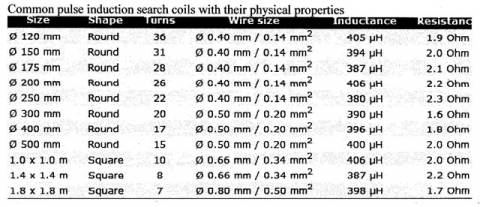
This detector was originally developed in Russia and later re-designed for western components. The result was a very similar --switch with the Surfmaster IP in its operating principle, only much simpler and “almost” the same efficiency.

Detector de metal pirate Russian

The electronic circuit as the metal detector longer talk is based on the integrated circuit **NE555** and **TL072**, but other circuits integrated operational amplifiers can be used, como o o TL082 TL062. O circuito integrado original é o **K157UD2** but the TL082 replaces smoothly.

A bobina do detector de metal

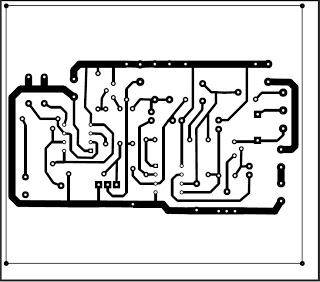
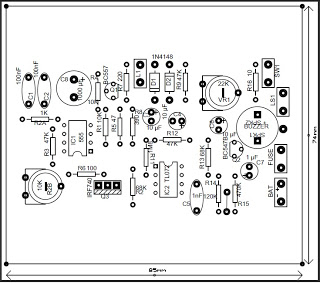
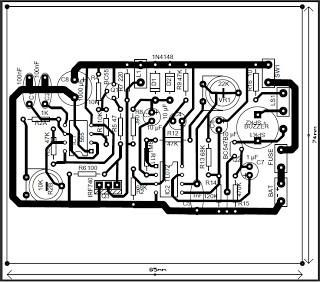
A construção da bobina do detector de metal é simples, the coil is made of 25 turns of wire 0,5 mm in a form of 19 cm. With this setting the sensitivity to a coin 25 mm is 20 inches. Other coil configurations can be made 12 cm circular to a square coil 180 x 180 cm .

Table of PI metal detector coils

Up a very useful table for construction of detectors coil PI metals, e abaixo a tradução dos itens.

Coil Size = Size  
Shape = coil Format – Round = redonda / Square = square  
Turns Turns = or turns of wire  
Wire size = diâmetro do fio em mm (Enamelled copper wire )  
Inductance = coil inductance  
Resistanc = Resistência da bobina

Printed circuit board metal detector

Detector de metal pirate RussianDetector de metal pirate RussianDetector de metal pirate Russian

Adjusting the metal detector

Caso tenha um osciloscópio você pode monitorar a duração do impulso de comando do gate de Q3 e a frequência do oscilador. O ideal é de 130-150 “mks” e a freqüência de pulso de 120 a 150 Hz. Como fonte de alimentação pode se usar uma bateria de 9 Volts a 12 Volts, and their average consumption is 40 mA.

But even without the oscilloscope, you can adjust trying to get a better result of range of the detector to pass a metal object near the coil.