



Wild Planet Toys Inc.

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Technical Description of Metal Detector (#10167):

When Switch VRI is on, current flows from the 9V batt. along R18 to the LED2 (red), then it will light up. Positive voltage will then applied to IC1 & IC2, and the transistor Q1, Q2, Q3 & Q4 will be activated. Together with the detecting coil L1, an oscillating circuit is formed and an oscillating signal of 13 to 15KHz will then transmitted to IC1. In this moment, IC2 is not activated and no voltage is applied to transistor Q5. So both LED1 and speaker will not be turned on.

During the moment of turning on the switch, there is a pulse flowing through Q4 and IC1, which will activate IC2. Then a positive voltage will be applied to Q5, thus turning on LED1 (green) and speaker for a short moment. It explains why the green LED light up for a short period time and a short "B" sound emitted when the switch is turned on. After that, the unit will remain steady.

When there is any metallic object placing close to the detecting coil L1, frequency of the oscillating signal will be changed. And this signal will go to Q4 and IC1, this will activate IC2. Then a positive voltage will come from IC2 to Q5. Once Q5 is on, current will flow through LED1 and the speaker. This will indicate the present of metallic object close by. This process will be repeated when metallic objects is close to the detecting coil L1.

Attached pls find the schematic block diagram for reference.