

Description of the Blocks

1. The unit is powered with two “AAA” common alkaline battery type.
2. The microcontroller is the heart of the unit and controls the behavior of all functionalities as well as reports any changes in the state of the unit i.e.: Low battery, detection of intrusion, etc. Its internal clock frequency is 4MHz
3. The reed switch, external switch connector and tamper switch are the security features of the units: there is one reed switch, one connection for an external reed switch or any other dry contact (one independent serial number is assigned to each of them) and there is a tamper switch that sends an alarm in case of an attempt to open the casing of the unit.
4. The transmitter is a RF modulator that is modulating its amplitude by succeeding on and off state of its RF energy (OOK, On and Off keying), the baud rate is about 2.5kbaud/s
5. The transmitter uses a PLL (phase locked loop) which use a divider by 32 for the sampling of its main frequency VCO (voltage controlled oscillator) and is compared against a crystal of the same divided frequency. So the output of the transmitter is 32 times the frequency of the crystal it uses. We have two model of transmitter for this unit, one for the output frequency of 433.92MHz and one for 868.35 MHz which lead to a crystal frequency of 13.56MHz for the 433.92MHz IC and 27.13594MHz for the 868.35MHz transmitter.
6. There is a filtering and matching circuit for the maximum transfer of energy to the antenna which consists of capacitors and inductors.
7. The output is hooked to helicoids antennas with an appropriate length according to the frequency it have to transmit.