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**Product: MPRD0136 - AEMX**

**Transmitters SAW 4 buttons - gate opener use**

The transmitter MPRD0136 - AEMX is a remote control which use is intended for opening doors operations, that works in the frequency band 433.05-434.79 MHz.

The modulation is AM ON/OFF (OOK).

This device may send up to a maximum of 4 non-simultaneous commands in a single frequency (433.910 MHz).

The power supply of the equipment is supplied by a 12 Volt battery of 23A type.

The use of this transmitter is extremely simple: one just needs to press the button of the desired command.

The only maintenance required is the replacement of the 12V battery, whose duration depends on the more or less intensive use.

Frequency	433.910 MHz $\pm$ 100 kHz controlled by SAW
Type of modulation	AM ON/OFF (OOK)
Power supply	Battery 12V type 23A
Consumption	18 mA max. in transmission
Operating temperature	-5°C ... +55°C

**Tab. 1: Features**

It is possible to divide the electrical diagram into two main blocks: the encoder and the transmitting part.

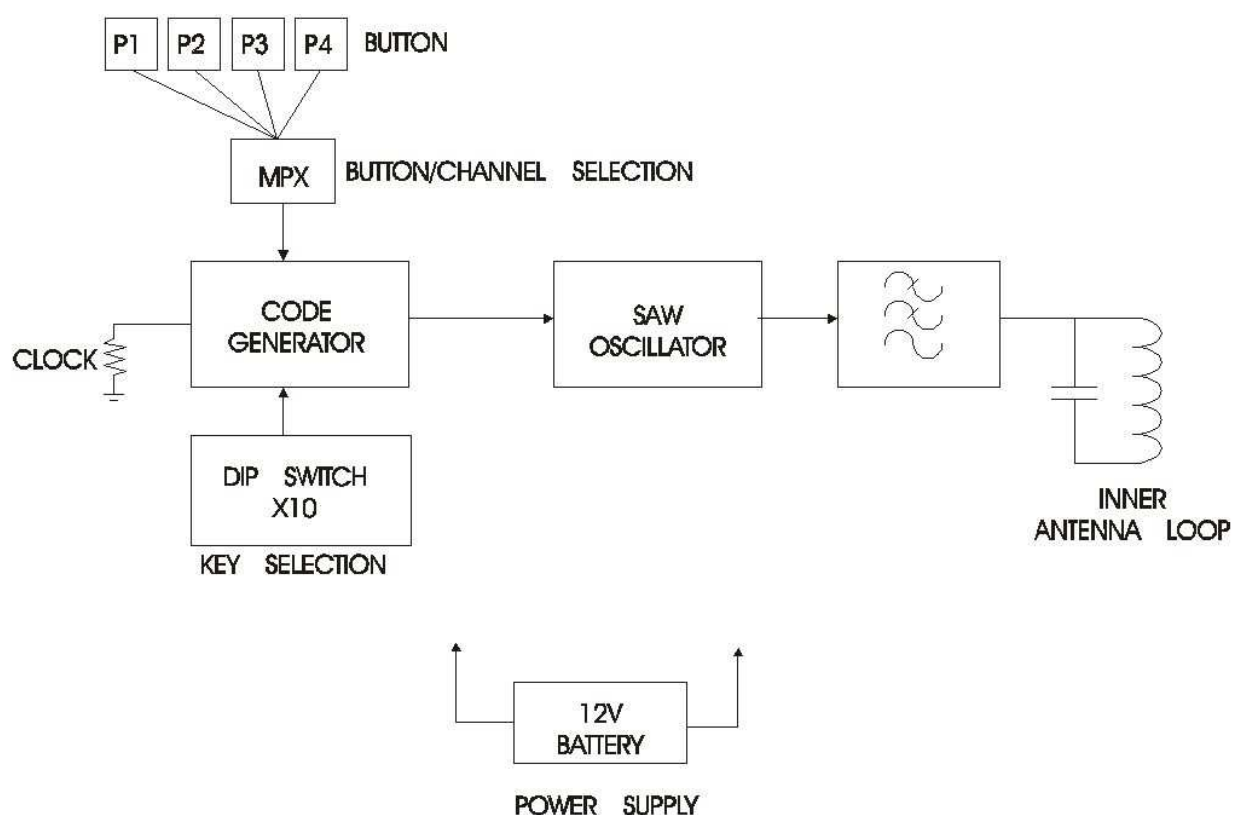
**1. Encoder**

The encoder is constituted by a digital integrated circuit Holtek HT12-E. This encoder is activated by an internal clock signal at about 90KHz, which makes it produce the code that will be subsequently transmitted.

## 2. Transmitting part

The frequency of the transmitter is controlled by a dielectric resonator (SAW resonator), with nominal frequency 433.910 MHz. The oscillator is a "Colpitts" modified, and this is connected to the loop antenna realized on the PCB. The oscillator uses a transistor BFS17P. To reduce the level of the radiated harmonics, this transistor has the collector circuit coupled to a filtering net of low-pass C-L-C. The antenna circuit is tuned to the operating frequency of 433.910 MHz.

The modulation is of the AM ON/OFF (OOK) type.



**Figure 1 Block Diagram**