

General description of the RF transmitter

The 315 MHz RF remote control system consisting of a RF transmitter and a RF receiver mounted within the control unit. The RF transmitter is mechanically integrated in the head of the key. This transmitter is used to transmit an information for locking or unlocking the vehicle by an unidirectional RF transmission line for normal remote operation by pressing a button.

In general the following functions are provided:

- Lock the car
- Unlock the car
- Unlock trunc

Power supply

The transmitter is provided with 1 Lithium battery (CR2032) that gives a tension of feeding of +3V.

The battery inversion is protected mechanically.

Buttons

There are three buttons which enable to lock, unlock the doors and unlock the trunk. During activation, the button is forced to the ground via a “pull-up” within the microcontroller.

LED

The LED is turned on between transmission blocks.

Oscillator

The oscillator is of PLL type. The operating frequency is about $315 \text{ MHz} \pm 75 \text{ kHz}$.

Mechanical design

The mechanical of the transmitter is composed of four parts:

the superior shell
the inferior shell
metal insert
battery support (mechanical protection to afford battery inversion)

The battery placement is integrated in the inferior shell.

Technical data

Carrier frequency	315 MHz \pm 75 kHz
Output Power	< -18 dBm (carrier frequency)
Type of modulation	ASK
Method of frequency generation	Crystal
Number of channels	1
Baudrate	2 k Baud
Power supply	3 Volt
Type of battery	Lithium
Transmission range	typical 10 meters