

General description of the RF transmitter E60

The RF remote control system E60 consists 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 the trunk of the car

Power supply

The transmitter is provided with 1 Lithium accumulator (VL 2020) that gives a power supply of +3V.

Buttons

There are three buttons which enable to lock and unlock the doors and to unlock the trunk.

During activation, the button is forced to the ground via a "pull-up" within the microcontroller.

Typical usage pattern (for Europe only)

10 lock/unlock operations in 24 hours with a transmission duration of 0.28 seconds

4 lock/unlock operations in 24 hours with a transmission duration of 6 seconds

→ total transmission duration of 8.8 seconds within 24 hours

Transmitter ON	0.366	seconds / hour
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Transmitter OFF	3599.634	seconds / hour
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Duty Cycle: $T_{ON} / T_{(ON+OFF)} \times 100\% = 0.366 / 3,600 \times 100\% = \underline{0.01\%}$