



Technical Description Transmitter 898894

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Theory of operation transmitter 898894:

The RF-part of the transmitter consists mainly of a SAW (surface acoustic wave) - stabilized oscillator working on the frequency 418 Mhz.
 The output of the oscillator is connected to a passive filter stage , that is used to suppress the harmonics of the oscillator.
 The antenna of the transmitter is a printed loop on the transmitter PCB.

To transmit the code , the oscillator is AM - modulated.
 AM-modulation is done in a easy way , by switching the power supply of the RF-oscillator on and off.
 Because of the very high quality faktor of the SAW-resonator , the RF-oscillator needs a start-up-time of 200 μ S until it's output level has reached the maximum.
 This is a adantage for this application , because the bandwith of the RF-Signal is limited to about 2,5 kHz.

However , the start-up-time is short enough to transmit the hole transmitter code in a short time.
 The coding is done with a microcontroller and consists of a standart code and a rolling code.
 Both codes are stored in a EEPROM-IC.

The transmitter has two keys , one for the lock/unlock and one for the panic-function.

If a key is pressed for a time longer than 20 s , the microcontroller switches off the Oscillator.

After the user has released the transmitter key (when he has pressed it longer than 20 s) , he have to wait for 2 minutes until he can use the transmitter again.

The hole transmitter works with two lithium batteries (2 x 3 V) that have a lifetime of 2-5 years , depending on how often the transmitter is used.

The transmitter is specified for the temperature range -10°C to 70°C (14°F to 158°F).

Stefan Walz

Signature - Stefan Walz - Diplom Ingenieur (FH)