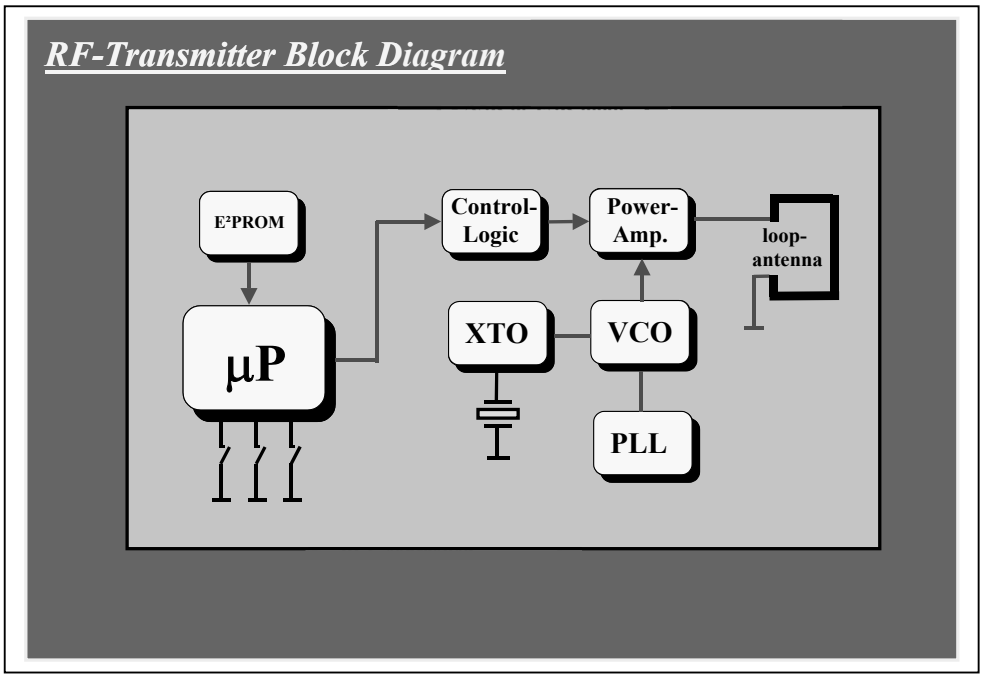
Description

Transmitter 315 MHz

Conti TEMIC p/n: 00006898, 00008728, 00008731, 00001961, 00001962, 00001963

- Transmitter for keyless entry systems (for automobiles)
- Transmitter frequency 315 MHz
- OOK amplitude modulation
- Data rate 1.8 kBaud in Manchester Code
- Three and four button case types



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This RF transmitter works with a battery voltage of 3 V, a single lithium battery will be used. The key identification number and the counter value are stored in a non-volatile memory (EEPROM). The µC monitors the keys and generates the data word when the keys are pressed. To meet the high security requirements, the data word is also encoded using a 64 bit code algorithm. The data are send to the final transmitter stage in a serial pulse form, Manchester coded. The Manchester coded pulse train switches the RF power amplifier on and off, which leads to a rf emission (Manchester coded ASK modulation) with a duty cycle of about 0.5 during the pulse trains without considering the breaks between two subsequently pulse trains of one actuation. The transmission frequency of 315 MHz is generated by a quartz-stable PLL oscillator. The following key functions are possible:

- Open door
- Lock door
- Panic (alarm)
- Liftgate (four button types only)

Description of the transmission:
After a keyfob button has been pressed, one telegram, containing two subsequent data pulse trains are emitted. The complete duration of the emission is less than 5 sec. During pulse trains, half the time there is no emission, in the other half, there is full field strength.
During breaks, between pulse trains, is sero emission too.
One complete emission (telegram) contains only two equal data words emitted subsequently.

Sequence:

1. Keyfob button pressed
2. Encryption and generation of coded data word for one telegram
3. First emission of recognition data code in form of one Manchester coded pulse train with duty cycle of 0.5 and 1.8kbit/s data rate. Duration of one pulse train is 148 ms.
4. No emission during break of 150 ms.
5. Second repetition of first data emission as Manchaster coded pulse train with duty cycle of 0.5 and 1.8kbit/s data rate. The duration of the second pulse train is 148 ms.
6. End of transmission.
7. Emission (telegram) completed after 446 ms.

Calculation of average field strength:

Because one pulse train is longer than 100ms of Manchester coded ASK data and the calculation window acc. §15.35 is 100 ms, the duty cycle of the 148 ms lasting pulse train is about 0.5.

Thus the calculated average field strength value would be about 6 dB lower as the measured quasi peak field strength.

Transmitter Types

The printed circuit board 287519.02 (P/N 287519, Index: 02) is used in all transmitter types, mentioned herewith, unchanged with the same assembly of mounted electronic parts as described in the part list of the main transmitter type “Keyfob 1”, 00006898A6 (P/N 00006898, Index: A6).

The printed circuit board has four interdigital resistive structures for the implementation of the button functionality together with the silicon switch mat. The three button transmitter types only use three of these structures. The fourth structure is always ready to be activated, because the microcontroller software is the same in all types. So the transmitter types only vary in form and functionality of the housings.

Transmitter types for GM platform vehicles GMT 360

These types are three button transmitters:

Conti TEMIC p/n: 00006898 (Keyfob 1), 00008728 (Keyfob 2), 00008731 (Keyfob 0)

Transmitter types for GM platform vehicles GMT 305

These types are four button transmitters:

Conti TEMIC p/n: 00001961 (Keyfob 1), 00001962 (Keyfob 2), 00001963 (Keyfob 0)