

T70-USA Rx Description

The receiver T70-USA Rx is part of the system "Telestart T70-USA". This system works with radio frequencies, was designed for remote control of heating units for cars and consist of an hand-held transmitter T70-USA Tx and the receiver T70-USA Rx.

Components:

The receiver consists essentially of:

- RF-part
 - o RF-receiver-IC, quarz stabilized PLL, VCO= 905,8MHz, IF=10,7MHz
 - o front end filter, low noise amplifier
 - o coaxial jack for connection of an antenna
- Microcontroller with peripherals
 - o voltage monitoring
 - o output for switching the heating unit,
 - o heating, ventilation shift output
 - o watch controlled input,
 - o 1-wire-bus
- Power supply
- protection circuit
- shielding
- 6 pole connector
- plastic housing polyamide

Main parameters of receiver T70-USA Rx

- receiving frequency: 916,5MHz
- IIP3: better -30dBm
- demodulation: 2FSK, deviation= ± 20 KHz
- data rate: 4800Baud
- protection of RF-telegram: CRC (cyclic redundancy check), FEC (forward error correction)
- identification: yes, three transmitters can be programed simultaneously
- commands: heating, ventilation, automatic on or off; operating time 10,20,30,40,50,60 min
- sensitivity on coaxial jack for Z=50 Ohm: better -106dBm,
- temperature range: -40°C...+85°C
- operating voltage: 12V nominal., 10,5...16V (min/max cont.) DC
- average current consumption: <1mA
- under voltage switch off: <7,5V DC operating voltage

Functional description:

The HF receiver is switched on by the microcontroller cyclically and guarantees the average current consumption with that.

In this turn-on phase the microcontroller evaluates one to the RF input power proportional electrical signal and then decides on a possible date reception.

If this voltage exceeds a reference value, then the telegram expected in the RF-channel is read and evaluated.

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The received telegram leads to a switching command then if:

- the RF transmission was fault-free and
- the given identification in the RF telegram of the transmitter corresponds with one of three identifications stored in the receiver.

Besides the identification the operating mode and operating time will be submitted.

If these criteria are fulfilled, then the receiver will initiate the corresponding switching procedure at his periphery (e.g. heating, 30 min).

After completion of the operating time the microcontroller turns the periphery off automatically (e.g. ventilation on inactive).