Hochfrequenzbaugruppen
Fernsteuerkomponenten
Fernsteueranlagen
FUNKTECHNIK GMBH

Sales office/Beratung & Vertrieb · Design & Production/Entwicklung & Produktion

UHF-FM Synthesized Transmitter 70TX-LS

The UHF transmitter **70TX-LS** is a universal multi-channel radio data transmitter for use in demanding applications of data transmission. Unlike other wireless modules from our production the modulation is intended exclusively for digital data. The module is implemented as synthesizer and allows operation in the European ISM band from 433.0625 to 434,7875 MHz to a total of 139 channels at 12.5 kHz raster.

The frequency setting is only possible via an SPI interface. The internal microcontroller calculates from the transmitted command a serial data protocol for the synthesizer that adjusts to the proper frequency. On request, we can program the module with up to 1000 frequencies and any raster. The **70TX-LS** transmitter covers in principle the frequency range of **430 to 440 MHz** and can therefore be used for the **Scandinavian** frequency bands starting at 438MHz.

The combination with our receiver modules **70RX-S2** or 70RX-M2 offers a perfect radio system with long range communication at simplex or half-duplex. Together with our remote control unit **FSM24** the free-field range is about 1400 m.

Features

- narrow band multi channel transmitter
- super small size
- low current consumption
- data rate up to 9600 Bd
- no registration and free of charge
- conform to RED (2014/53/EU), EN 300 220

Applications

- Remote control systems
- Data communication
- Telemetriesysteme
- Telemetry systems
- Security systems

Pictures sized up

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Specifications:

Communication	Simplex	
Frequency range	433.0625 – 434.7875 MHz	12.5 kHz raster
Optional frequency range	430 – 440 MHz	raster on request
Number of channels	139	up to 1000 on request
Output power	10 dBm	at 50 Ω
Modulation	FM narrow band	
Modulation voltage	0.7*Vdd...Vdd	digital only
Deviation	± 2.4 kHz (± 50 Hz)	optional 1.5...4.8 kHz
Data rate	100 – 4800 Bd	9600 Bd planned
Settling time	10 ms (Voltage on)	
Hopping time	10 ms	70TX-LME only
ACP unmodulated	Typ. 55 dB	at 25 kHz raster
Temperature range	- 25°C....+ 75°C	
Supply voltage	2.3 V - 5.3 V	2.2 V - 5.5 V max
Current consumption	21 mA	
Dimensions	22.0 x 13.8 x 6.0 mm	
Weight	<5 g	
Material	stainless steel	with 4pin (7pin) header
Antenna connector	on pin header	
Approvals	RED (EN 300 220)	Europe
	FCC / CAN planned	USA and Canada

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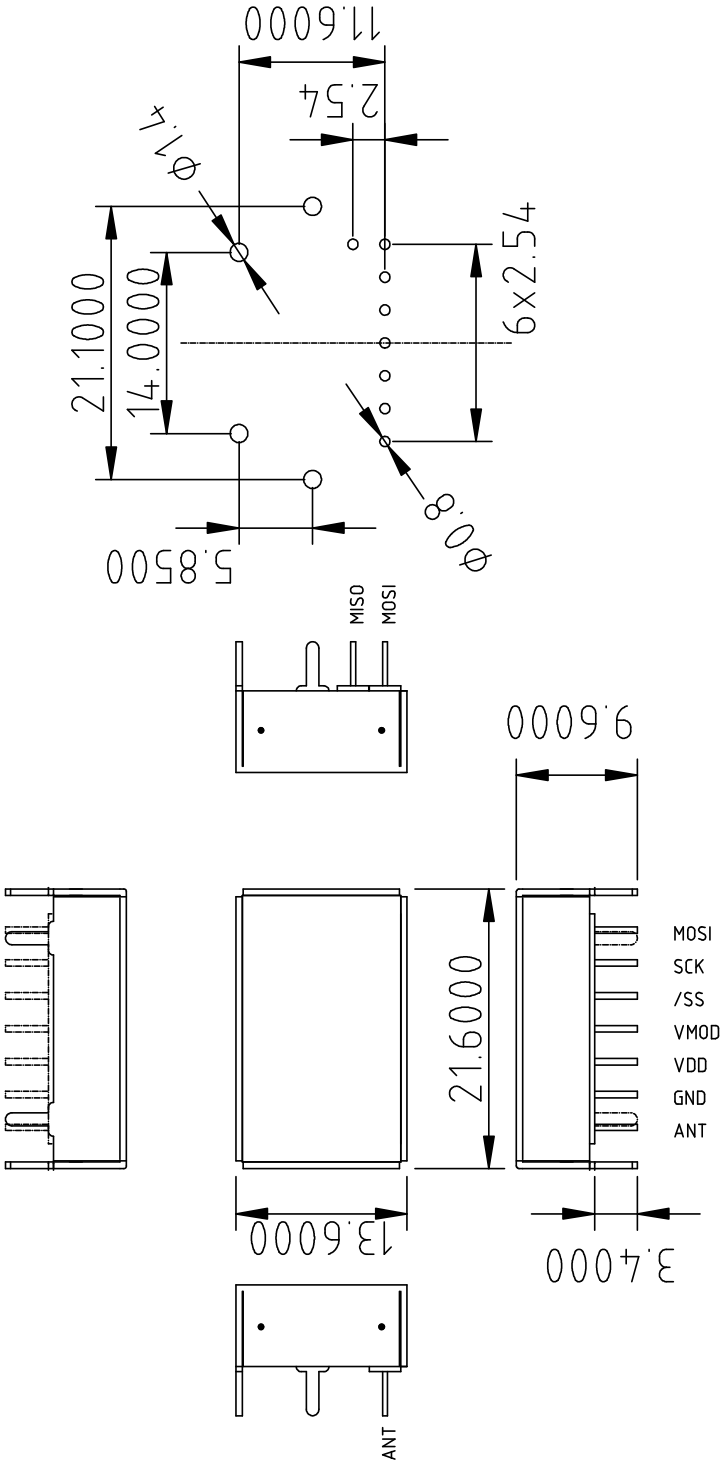
Dimensions and interface:



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Interface description:

ANT **Antenna output of the module**, ESD protected

GND **Ground of the module** (also connected to the metal case)

Vdd **Input: Power supply of the module**

2.3 – 5.3 V DC stabilized, minimum voltage 2.2 V, absolute maximum voltage 5.5 V, internal low noise and low drop voltage stabilization to 2.2 V, **no reverse voltage protection**

VMOD **Input: Modulation (digital signal only)**

TTL compatible 5 Vpp when using 5V (else max. Vdd)

The minimum voltage for detecting the high level is **0.8*Vdd**. If the operating voltage is missing, the modulation voltage should also be switched off (otherwise the module can be externally supplied by the modulation due to the low current consumption and cannot be switched off).

The magnitude of the modulation AC voltage has no influence on the deviation of digital radio modules due to its principle.

SPI **Frequency setting of the module**

The frequency selection is done via the 4-pin SPI interface. It consists of the standard signals MOSI, MISO, /SCK and SS. Please refer to the separate manual. The frequency can be set to all 139 channels of the ISM band in a 12.5 kHz raster. Please refer to our separate operating instructions.

Customer-specific programming with up to 1000 channels in the frequency range 430 - 440 MHz is possible. This means that the module can also be used for applications in the **Czech Republic** from 430 MHz and **Scandinavia (Sweden, Norway, Finland, Denmark)** in the 438 - 443 MHz range.