Hochfrequenzbaugruppen
Fernsteuerkomponenten
Fernsteueranlagen
FUNKTECHNIK GMBH

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

UHF-FM Mini Power Transmitter 70TX-D2

The **70TX-D2** is a **professional narrow band FM single channel radio transmitter** according to **EN 300113**. It has been improved in many respects compared to its predecessor **70TX-D**. With a 25% reduction in height one of the smallest transmitters in the 500 mW class was created. The transmitter is therefore particularly suitable for portable and mobile applications where long ranges are required. At the same time, power consumption at full transmission power was reduced by 10%. Due to extensive protective measures, the RF power amplifier is largely immune to misadaptation at the output.

The innovative new concept combines the **advantages of the DDS with those of the synthesizer** in a unique way. The integrated processor handles all signal digitization routines in real time with **12Bit** resolution. Further signal processing is then completely digital. The result is an almost perfect RF signal with **excellent transmission characteristics** for both digital and analog input signals.

When changing the operating states (switching on and off), broadband interference (called **transients**) usually occurs, which hinders the **simultaneous use** of several radio links in local areas. With the **70TX-D2**, even the adjacent channels are not disturbed under these conditions. The module is therefore predestined for use in **TDMA applications**.

In addition, the short **settling time** makes the use of the standby function unnecessary for many applications. The two available **standby modes** reduce settling time and the number of externally required components to a minimum.

The combination with our receivers **70RX-M2** or **70RX-S2** offers the user a perfect radio system with a very long range for simplex or half-duplex operation. Together f.e. with our remote control module **FSM24**, the free field range is over **5000 meters**.

Features

- 500mW narrow band single channel transmitter
- very small size
- Low current consumption
- Data rate up to 9600 Bd
- licence required
- compliance to RED, EN 300220 and 300113
- FCC and Canada approvals in preparation

Applications

- Remote control systems
- Data communication
- Industrial applications
- Telemetry systems
- Alarm systems
- Security systems
-

Real size

Rev. 00

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Technische Daten:

Communication	Simplex	
Frequency range standard	433,0625 – 434,7875 MHz	12,5 kHz steps
Frequency range optional	250 – 550 MHz	raster on customer request
Number of channels	1 (fixed)	reprogrammable by service
Output power at 50 Ω	350 mW bei 5,0 V	500 mW bei 6,0 V
		Power adder voltage stabilized to 6 V
Output power reduced	1mW - 500mW	according to customer requirements
Output power standby mode	none	
Modulation	FM narrow band	
ACP unmodulated	typ. 65 dB	at 25 kHz channel spacing
Data rate	DC – 5 kHz (9600 Bd)	
Deviation	standard: ± 2,4 kHz (± 50 Hz)	at sine with 5 V_{pp}
Temperature range	– 40°C...+ 80°C (TCXO)	
Supply voltage	4,7 – 8,0 V	max. 4,5 – 12 V (only with duty cycle)
Supply current transmit	< 270 mA (± 30 mA) at 5 V	< 290 mA (± 30 mA) at 6 V
Supply current standby	< 250 uA (ower saving mode)	< 17 mA (Standby mode)
Settling time	< 25 ms (Voltage on)	
Settling time from standby	typ. 4 ms (Standby mode)	< 25 ms (Power saving mode)
Dimensions	49,2 x 24,9 x 9,7 mm	mit Laschen 60,0 x 24,9 x 9,7 mm
Weight	20 g	
Material	stainless steel	with M3 mounting lashes
Antenna input	SMA	optional SMB, MCX, MMCX or coax
Approvals	RED EN 300220 + 300113 FCC / CAN	433,0625 - 463,0625 MHz in preparation

HM-FUNKTECHNIK GMBH · Zum Handenberg 3 · D - 66620 Primstal
Tel.: 06875/9105-0 · Fax: 06875/9105-10 · E-mail: info@hmradio.de · Internet: http://www.hmradio.de

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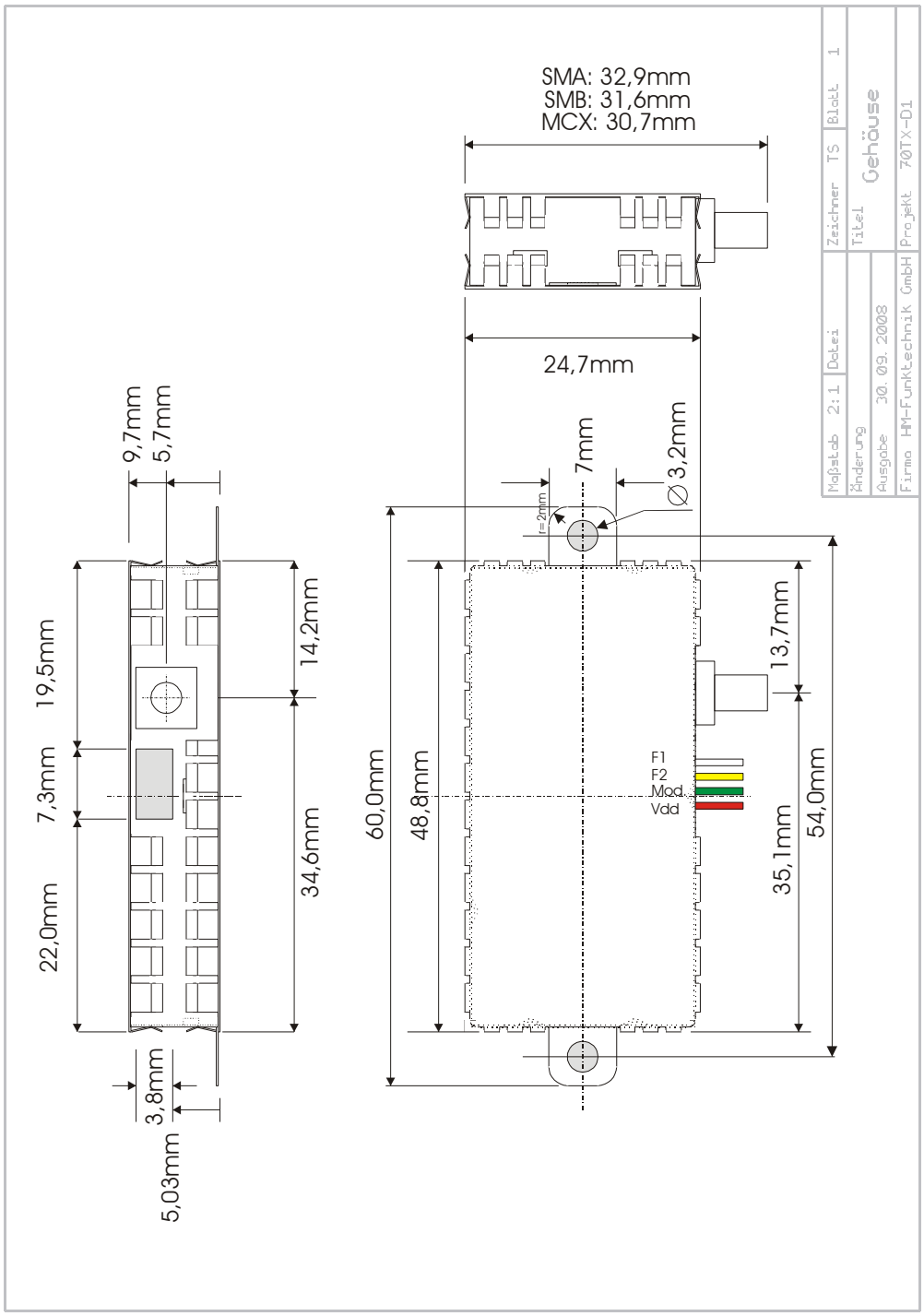
Installation dimensions and 4pin plug:



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Description of the interface:

Vdd **Red cable,**

Input: Power supply of the module

4,7 – 8,0 V DC stabilized, minimum voltage 4,5 V, maximum voltage 12,0 V, voltages above 8.0V are only permissible with low duty cycle (pay attention to the heating!), internal low drop and low noise voltage stabilization to 4.6 V and 6,0 V, **no reverse voltage protection**

Mod. **Green cable**

Input: Modulation (analog or digital)

TTL kompatibel 5 V_{pp} (with a DC Offset of 2.5 V or AC coupled)

The input is **DC capable**. Shifting of the DC-Offset therefore changes the transmission frequency. The unconnected input has a DC offset equal to half the nominal modulation voltage. Either the incoming modulation signal must have the same DC offset or be coupled via a capacitor (we recommend 1uF). However, a capacitor cuts off low frequencies of the spectrum.

The nominal deviation of 2.4 kHz is achieved at a modulation voltage of 5 V_{pp}. A lower modulation AC voltage reduces the available deviation.

F2 **Yellow cable**

Input: Power saving in standby mode

The input has an internal pullup resistor to 3.0 V

Pin open = power saving off (17mA, settling time 4 ms)
Pin to ground = power saving on (< 250uA, settling time 25 ms)

F1 **White cable**

Input: standby mode

The input has an internal pullup resistor to 3.0 V

Pin to ground = standby mode, RF power off (17mA or < 250uA)
Pin open = transmit mode (TX), RF power on (290mA at 6 V)

No timing needs to be considered. The module generally avoids the occurrence of transients when changing the operating states. Only before switching off the supply voltage, the module **must** first be put into standby mode.

Case **Ground of the module**

connected to the PCB ground