

# Narrow band radio transceiver

## STD-601 400 MHz

The STD-601 400 MHz is a miniature transceiver designed for industrial applications. This module has selectable bands in a wide frequency range in the region of 400 MHz, conforming to the ISM bands in various countries.

The STD-601 400 MHz has a simple serial interface and allows own communication protocol to be used. The RF Power, Data rate and Channel can be set through the use of dedicated serial commands.

### Features

- Small 20 x 32 x 5 mm SMD
- Selectable bands possible within wide frequency range.
  - 429 / 434 / 447 / 458 MHz
- Maximum RF Power 50 mW
- Transparent interface for data input and output

### Applications

- Industrial remote control systems
- Telemetry systems



### General

| Parameter                        | Specification              | Remark |
|----------------------------------|----------------------------|--------|
| Communication form               | One Way, Half Duplex       |        |
| Emission class                   | F1D ( 2-GFSK )             |        |
| Supply voltage                   | 3.0 - 5.0 V                |        |
| Guaranteed operating temp. range | -20 C to +65 C             |        |
| Maximum operating temp. range    | -30 C to +75 C             |        |
| Frequency stability              | +/- 3 ppm (-20 C to +65 C) |        |
| Dimensions                       | 20 x 32 x 5 mm             |        |
| Weight                           | 4.5 g                      |        |

### RF

| Parameter                         | Specification  | Remark   |
|-----------------------------------|--|--|
| Frequency                         | (429 MHz band) 429.1750 - 429.7375 MHz<br>(434 MHz band) 433.0750 - 434.7750 MHz<br>(447 MHz band) 447.2750 - 447.9875 MHz<br>(458 MHz band) 458.5000 - 459.1750 MHz | (47 ch)<br>(137 ch)<br>(59 ch)<br>(28 ch)                          |
| Data rate                         | 1200 / 2400 / 4800 / 9600 / 19200 bps  |  |
| TX current consumption            | 35 mA typ.<br>58 mA typ.   | RF 10 mW<br>RF 50 mW   |
| RX current consumption            | 19 mA  |  |
| Transmission power                | 50 / 25 / 20 / 10 / 5 / 1 mW   |  |
| Spurious emission (TX)            | -54 dBm (47 M - 74 M, 87.5 M - 118 M,<br>174 M - 230 M, 470 M - 862 MHz)<br>-37 dBm ( Other frequencies below 1000 MHz )<br>-30 dBm ( Frequencies above 1000 MHz )   |  |
| Adjacent CH leakage power ( ACP ) | -37 dBm  | (PN9-9600 bps) Ch25 kHz BW:16 kHz                                  |
| Receiver sensitivity              | -9600 bps -113 dBm BER (1 % error)<br>-4800 bps -117 dBm BER (1 % error)   | PN9<br>PN9   |
| Adjacent channel selectivity      | 50 dB (+/-12.5 kHz) @ 4800 bps<br>50 dB (+/-25 kHz) @ 9600 bps   | 2 signal method, PN9, 1 % error<br>2 signal method, PN9, 1 % error |
| Spurious radiation (RX)           | -57 dBm ( < 1000 MHz )<br>-47 dBm ( > 1000 MHz )   |  |
| Blocking                          | 70 dB  | +/- 2 MHz, +/- 10 MHz  |

### Timing

| Parameter            | Specification | Remark |
|----------------------|---------------|--------|
| Power on to TX/RX    | 350 ms typ.   |        |
| TX/RX switching time | 10 ms typ.    |        |

### Interface

| Parameter                     | Specification   | Remark                |
|-------------------------------|---|-----------------------|
| Data Interface ( DI / DO )    | L=GND H=VCC, Asynchronous   | Transparent interface |
| Command interface (TXD / RXD) | UART 9600 / 19200 / 38400 bps, 8 data bit,<br>No parity, 1 stop bit |                       |

\* Unless otherwise specified, specifications are typical values obtained under 9600 bps, 10 mW, 25 C, 434 MHz, 3V  
\* Specifications are subject to change without prior notice