CIRCUIT DESIGN, INC.

Narrowband 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 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 MHz (Japan) / 434 MHz (EU)
  - 447 MHz (Korea) / 458 MHz (UK)
- Maximum RF power 50 mW
- Transparent interface for data input and output

Applications

- Industrial remote control systems
- Telemetry systems

Narrow MULTI Band GFSK

General

Parameter	Specification
Communication method	Simplex, Half duplex
Emission type	F1D (2-GFSK)
Frequency	429.1750 to 429.7375 MHz (429 MHz band 47 ch) 433.0750 to 434.7750 MHz (434 MHz band 137 ch) 447.2750 to 447.9875 MHz (447 MHz band 59 ch) 458.5000 to 459.1750 MHz (458 MHz band 28 ch)
Number of RF channels	137 ch
Frequency stability	+/-3 ppm or less
RF bit rate	1,200 / 2,400 / 4,800 / 9,600 / 19,200 bps
Supply voltage	3.0 to 5.0 V
Supply current	35 mA typ. (TX 10 mW), 58 mA typ. (TX 50 mW), 19 mA typ. (RX)
Operating temperature	-20 to +65 C
Dimensions	20 x 32 x 5 mm
Weight	4.5 g

Transmitter part

Parameter	Specification
RF output power	50 / 25 / 20 / 10 / 5 / 1 mW at 50 ohm
Spurious emission	< -54 dBm (47 to 74, 87.5 to 118, 174 to 230, 470 to 862 MHz) < -37 dBm (Other frequencies below 1000 MHz) < -30 dBm (Frequencies above 1000 MHz)
Adjacent channel leakage power	< -37 dBm (CH 25 kHz / BW 16 kHz / PN9 9,600 bps)

Receiver part

Parameter	Specification
Sensitivity (BER 1%)	-113 dBm (PN9 9,600 bps) -117 dBm (PN9 4,800 bps)
Adjacent channel selectivity	> 50 dB (+/-12.5 kHz 4,800 bps) > 50 dB (+/-25 kHz 9,600 bps)
Blocking	> 70 dB (+/-2 MHz, +/-10 MHz)

Timing

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

Interface

Parameter	Specification
Data interface (DI / DO)	Digital L = GND, H = Vcc (Asynchronous)
Command interface (TXD / RXD)	UART 9,600 / 19,200 / 38,400 bps Data length: 8 bit, Parity: None, Stop bit: 1

* Unless otherwise specified, specifications are typical values obtained under 9,600 bps, 10 mW, 25 C, 434 MHz, 3 V

Specifications are subject to change without prior notice

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