CIRCUIT DESIGN, INC.

UHF Narrowband Multi Channel Transceiver

STD-302Z 419 MHz

The UHF FM narrowband semi-duplex radio module STD-302Z 419 MHz is suitable for industrial remote control and telemetry applications operating in the 419 MHz ISM band. The SAW filter and narrowband technique provides reliable data communication in industrial applications where interference rejection and practical distance range is required. Suitable for feedback systems.

Features

- 10 mW RF power
- Programmable RF channel
- Receiver sensitivity -118 dBm
- Excellent vibration and shock resistance / Mechanical durability
- FSK narrowband
- 429 MHz (Japan) / 434 MHz (EU) / 447 MHz (Korea) / 458 MHz (UK) / 869 MHz (EU) available

Applications

- Industrial remote control system
- Telemetry system
- Data transmission

Narrow ISM Band FSK

General

Parameter	Specification
Communication method	Simplex, Half duplex
Emission type	F1D (FSK narrow)
Frequency	418.725 to 419.425 MHz
Channel step	25 kHz (Programmable)
Frequency stability	+/-4 ppm or less (-20 to +60 C)
RF bit rate	9,600 bps max. (pulse width min. 100 us, max. 15 ms)
PLL reference frequency	21.25 MHz
PLL response	30 ms typ. (from PLL setting to LD out)
Supply voltage	3.0 to 5.5 V
Supply current	44 mA (TX), 28 mA (RX)
Operating temperature	-20 to +60 C
TX / RX switching time	15 ms typ. (DI vs valid DO at the same frequency)
Dimensions	30 x 50 x 9 mm
Weight	25 g

Transmitter part

Parameter	Specification
Oscillation system	PLL controlled VCO
RF output power	10 mW at 50 ohm
Deviation	+/-2.75 kHz (PN9 9,600 bps)
Data input	Digital L = GND, H = 3 V to Vcc
Spurious emission	< -40 dBm
Adjacent channel leakage power	< -37 dBm (CH 25 kHz, BW = 16 kHz, PN9 9,600 bps)

Receiver part

Parameter	Specification
Receiver type	Double superheterodyne
IF frequency	21.7 MHz (1st), 450 kHz (2nd)
Maximum input level	+10 dBm
Sensitivity (12 dB SINAD)	-118 dBm
Sensitivity (BER 1%)	-115 dBm (PN9 9,600 bps)
Spurious response rejection	> -44 dBm (1st mix, 2nd mix)
Spurious radiation	< -57 dBm (below 1000 MHz) < -47 dBm (above 1000 MHz)
Data output	Digital L = GND, H = 2.8 V
Adjacent channel selectivity	> -50 dBm (+/-25 kHz)

Specifications are subject to change without prior notice

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