

UHF Narrow Band Multi Channel Transceiver

STD-302 434MHz

The UHF FM narrow band semi-duplex radio module STD-302 434MHz is suitable for industrial remote control application and telemetry application operated in 434MHz ISM band. SAW filter and narrow band technique provides reliable data communication in industrial application where its interference rejection and practical distance range is required. Switching time and channel selecting time become remarkably faster than conventional transceiver. Suitable for feedback system.

Feature

- 10mW RF power, 3.0V @40mA
- Programmable RF channel
- TX/RX switching time: 5msec.
- Receiver sensitivity -119dBm
- High vibration & shock resistance / Mechanical durability
- EN 300 220 / EN 301 489 compliance

Application

- Industrial remote control system
- Telemetry system
- Data transmission



Common

Item	Specification
Frequency	433.050 to 434.775 MHz
Channel step	Programmable (PLL IC: Fujitsu MB15E03)
Frequency stability	+/- 4 ppm (-10 to +55 degree C) +/- 8 ppm (-20 to +65 degree C)
Data rate	9600 bps max. (Pulse width min. 104us, max. 5ms)
PLL reference frequency	21.25 MHz
Supply voltage	3.0 to 5.5 V
Supply current	40 mA (TX) 26 mA (RX)
Operating temp. range 1	-10 to +55 C
range 2	-20 to +65 C *See operation guide in detail
Dimension	30*50*9 mm

Transmitter part

RF output power	10 mW at 50ohm
Deviation (Digital In)	2.5 +/- 0.3 kHz (PN9, 9600 bps, LPF 20 kHz)
Dev. Frequency characteristics	+/- 3 dB (50 to 4800 Hz)
Total distortion and noise	30 dB (1 kHz, Dev = +/- 2.4 kHz, CCITT FILTER)
TX S/N	-30 dB (1 kHz, Dev = +/- 2.4 kHz, CCITT FILTER)
Spurious emission	-60 dBm (< 1 GHz) -43 dBm (1 GHz or higher)
Adjacent CH leakage power	-37 dBm (CH 25 kHz, BW = 16kHz, PN9, 9600bps)
Lock time	30 to 40 msec (Free run -> TX*2) 10 to 20 msec (25 kHz shift *3)
Switching time (RX->TX)	5 to 10 msec (RX -> TX*1)

Receiver part

Receiver sensitivity	-119 dBm (1kHz, Dev = +/- 2.4kHz, CCITT FILTER)
Output level	150 +/- 35 mVrms (fmod=+/- 2.4kHz, fm=1.2kHz, RF level -30dBm) 140 +/- 35 mVrms (fmod=+/- 2.4kHz, fm=2.4kHz, RF level -30dBm) 120 +/- 45 mVrms (fmod=+/- 2.4kHz, fm=4.8kHz, RF level -30dBm)
Receiver S/N	35 dB (1 kHz, Dev = +/- 2.4kHz, CCITT, RF level = -30dBm)
Distortion	-30 dB (1 kHz, Dev = +/- 2.4kHz, CCITT, RF level = -30dBm)
Spurious emission	-60 dBm
Spurious sensitivity	45 dB (2 signal method, Jamming signal = FM)
Intermodulation	45 dB (2 signal method)
Adjacent CH selectivity	45 dB (2 signal method, CH 25 kHz span, Jamming signal = FM)
Lock time	30 to 40 msec (Free run -> RX*2) 10 to 20 msec (25 kHz shift *3)
Switching time (TX->RX)	5 to 10 msec (TX -> RX*1)

*1: Time until TX frequency or 1st Local frequency reach a steady frequency +/- 1.5ppm

*2: Time until TX frequency or 1st Local frequency reach a steady frequency +/- 1.5ppm after PLL setting data is set.

*3: Time until TX frequency or 1st Local frequency reach a steady frequency +/- 1.5ppm after setting PLL setting data to change the frequency for 25kHz

Specifications are subject to change without prior notice

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