

UHF Narrow Band Multi Channel Transceiver

Preliminary

STD-302 869MHz

The UHF FM narrow band semi-duplex radio module STD-302 869MHz is suitable for industrial remote control application and telemetry application operated in 869MHz European harmonized band. Custom made 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 -116dBm / 200m operaton range
- 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	868 to 870 MHz
Channel step	Programmable (PLL IC: Fujitsu MB15E03)
Frequency stability	+/- 3.4 ppm (-10 to +55 degree C)
	+/- 5 ppm (-20 to +65 degree C)
Data rate	9600 bps max.
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 (Frequency Drift : 3 kHz or less)
range 2	-20 to +65 C (Frequency Drift : 4.5 kHz or less)
Dimension	30*50*9 mm

Transmitter part

RF output power	4.0 +/- 1 mW at 50ohm
Deviation (Digital In)	2.2 +/- 0.2 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 = +/- 2.2 kHz, CCITT FILTER)
TX S/N	-30 dB (1 kHz, Dev = +/- 2.2 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 = 16 kHz, PN9, 9600 bps)
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	-116 dBm (1kHz, Dev = +/- 2.2kHz, CCITT FILTER)
Output level	170 +/- 35 mVrms (fmod=+/-2.2kHz, fm=1.2kHz, RF level -30dBm)
	160 +/- 35 mVrms (fmod=+/-2.2kHz, fm=2.4kHz, RF level -30dBm)
	140 +/- 45 mVrms (fmod=+/-2.2kHz, fm=4.8kHz, RF level -30dBm)
Receiver S/N	35 dB (1 kHz, Dev = +/- 2.2 kHz, CCITT, RF level = -30dBm)
Distortion	-30 dB (1 kHz, Dev = +/- 2.2 kHz, CCITT, RF level = -30dBm)
Spurious emission	-60 dBm
Spurious sensitivity	45 dB (2 signal method, Jumpping signal = FM)
Intermodulation	45 dB (2 signal method)
Adjacent CH selectivity	45 dB (2 signal method, CH 25kHz span, Jumpping 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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