

DSSS low power radio transceiver STD-503 2.4GHz

Preliminary

The STD-503 is a 2.4 GHz transceiver enclosed in a small compact shield casing designed for industrial applications. The transceiver uses Direct Sequence Spread Spectrum (DSSS) modulation and true diversity circuit, enabling reliable communications even in the congested 2.4 GHz band.

The STD-503 complies with the European EN300 440, U.S FCC Part 15.247 and Japanese ARIB STD-T66 standard, making it ready for the global market.

Low power consumption and battery operation give the STD-503 the performance demanded for applications where long range and reliability are required.

The transceiver uses a transparent data interface to enable users to communicate using their own protocols.

The module's configuration can be set easily via the UART interface using dedicated commands.

*Circuit Design developed an onboard ASIC containing SS correlator (a key part of spread spectrum communication). This ensures long term supply for industrial applications.

Features

- CE, FCC and ARIB conformity certification
- Uses direct sequence spread spectrum (DSSS) modulation
- Channel stepping option controlled via CHC pin
- A true diversity receiver (two built-in receiver circuits)
- Module settings using dedicated commands
- Data communication uses a transparent interface
- Low power operation
- 77 channels
- Range 300m LOS
- Onboard temperature sensor

Application

- Industrial telecontrol
- Telemetry Systems



Specification

Parameter	Specification	Remark
Frequency range	2402.5 ~ 2478.5 MHz	
Number of RF channels	77	
Channel spacing	1 MHz	
RF chip rate	288kcps	
Modulation System	FSK	
Supply voltage	3.3 ~ 5.5 V	
Supply current	TX:65mA RX:65mA	
RF output power	10mW	EIRP
Receiver sensitivity	-93 dBm	
Operating temp. range	-20 ~ +65C (storage -30 ~ +80C)	No dew condensation
Dimension	40 x 29 x 5 mm	Power/signal pin connectors excluded
Weight	10g	
RF connectors	MHF x 2	

Interface

Parameter	Specification	Remark
Data Interface (DI/DO)	19.2 kbps	Sync: CLK terminal
Command Interface (TXD / RXD)	UART communication (RS-232C)	
- Communication method	Asynchronous	
- UART bit rate	19200, 38400, 57600 bps	
- Flow Control	None	
- Other parameters	Data Length: 8 bits, Parity (None), Stop Bits 2	