RC1682-SIG High Performance RF Module at 868 MHz

> **ADVANCE INFORMATION**
> **This document contains information on a new product. Specifications and information herein are subject to change without notice.**

Product Description

The RC1682-SIG module is a compact surface-mounted product that measures only 12.7 x 25.4 x 3.3 mm. The module contains a communication controller with embedded SIGFOX protocol software and is pre-certified for operation under the European regulations. Custom variants can be offered with custom functionalities. How to use the embedded SIG protocol is described in the RC1682-SIG User Manual.

Applications

- Internet of Things
- Long range sensor applications
- Asset tracking and monitoring
- Telemetry stations
- Fleet management

Note: The number of LGA pads differ from photo, see page 3 for details

Features

- SIGFOX compatibility (IOT)
- Long range, high reliability
- Ultra narrowband, high-performance radio
- High sensitivity and high selectivity
- High blocking properties
- Completely shielded module
- Pin compatible with other products from Radiocrafts
- 12.7 x 25.4 x 3.3 mm compact module for SMD mounting
- 2.8 – 3.6 V supply voltage
- Ultra low power modes
- Conforms with EU R&TTE directive (EN 300 220, EN 301 489, EN 60950)

Part Name Overview

Part name	RF Frequency band	Max output power	VCC
RC1682-SIG	868 MHz	+14 dBm	+3.3V

Radiocrafts
Embedded Wireless Solutions

RC1682-SIG

Specifications (3.0V, 25°C)		Min	Typ	Max	Unit
RC1682:	Frequency Range		868		MHz
	Frequency tolerance			+/-1.5	ppm
	RF TX Data rate, DBPSK		100		bps
	RF RX Data rate, GFSK		600		bps
	UART baud rate	2400		230400	Baud
TX mode:	Output Power (programmable)		14		dBm
	2nd /3rd harmonic			-54	dBm
Rx Mode:	Sensitivity		-126		dBm
	Blocking, +/- 1 MHz	30	83		dB
	Blocking, +/- 2 MHz	35	87		dB
	Blocking, +/- 10 MHz	60	91		dB
	Adjacent Channel Rejection		62		dB
	Alternate Channel Selectivity		63		dB
Power Supply:	Supply Voltage (VCC)		2.8	3.6	V
	Current Consumption, RX		33		mA
	Current Consumption, TX, 14 dBm		58		mA
	Current Consumption, Power Down		1	2	µA
Temperature range:		-40		+85	°C

Pin Assignment
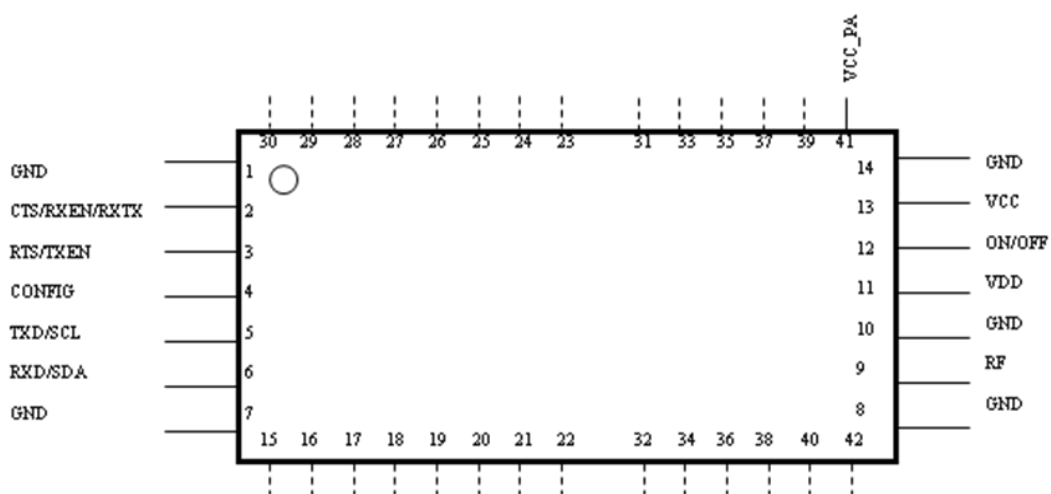
Pin Description

Pin no	Pin name	Description
1	GND	System ground
2	CTS/RXTX	UART Clear to Send / RXTX control (RS485)
3	RTS/SLEEP	UART Request to Send
4	CONFIG	Configuration Enable. Active low.
5	TXD	UART TX Data
6	RXD	UART RX Data
7	GND	System ground
8	GND	System ground
9	RF	RF I/O connection to antenna
10	GND	System ground
11	VDD	Not Connected, Internal Regulator Output
12	Reset	RESET_N. Active Low
13	VCC	Supply voltage input. Internally regulated.
14	GND	System ground
41	VCC_PA	Do not connect.
17-42	I/O	For future use and test status pin, Do not connect

Mechanical Drawing
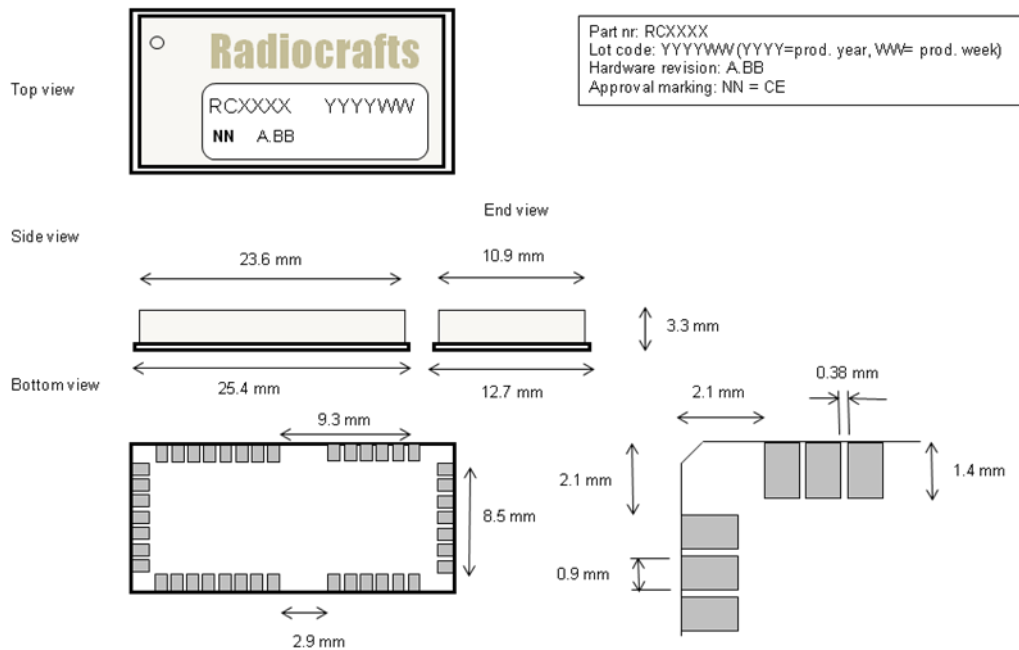
Mechanical Dimensions
The module size is 12.7 x 25.4 x 3.3 mm