Radiocrafts
Embedded Wireless Solutions

RC1692HP-SIG

Ultra Narrow Band High Power RF Module at 902-928MHz with SIGFOX protocol

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

Product Description

The RC1692HP-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 FCC, Australia/New Zealand and most Latin American countries. Custom variants can be offered with custom functionalities. How to use the embedded SIG protocol is described in the RC16xxxx-SIG User Manual.

Applications

- Internet of Things
- Long range sensor applications
- Asset tracking and monitoring
- Telemetry stations
- Fleet management
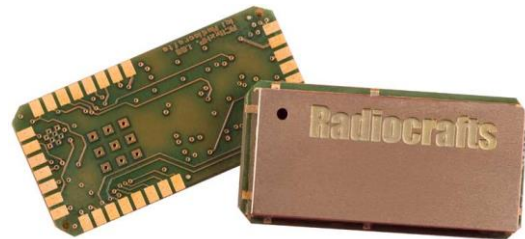
Note: The number of LGA pads differ from photo, see page 3 for details

Features

- SIGFOX compatibility (IOT)
- SIGFOX Class 0 category
- SIGFOX Zone 2 and Zone 4 domains
- Long range, high reliability
- Ultra narrowband, high-performance radio
- High sensitivity and high selectivity
- High blocking properties
- Completely shielded module
- Pin compatible with other RC16xxHP 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
- Certified for FCC, Australia/New Zealand
- Configurable for operation under FCC, Australian/New Zealand, most Latin American regulations

Part Name Overview

Part name	RF Frequency band	Max output power	VCC_PA/VCC
RC1692HP-SIG	902-928 MHz	+24 dBm	+3.3V

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Specifications (3.0V, 25°C)		Min	Typ	Max	Unit
RC1692HP:	Frequency Range	902		928	MHz
	Frequency tolerance			+/-1.5	ppm
	RF TX Data rate, DBPSK		600		bps
	RF RX Data rate, GFSK		600		bps
	UART baud rate	2400		230400	Baud
TX mode:	Output Power (programmable)		24	25	dBm
	2nd /3rd harmonic			-41	dBm
Rx Mode:	Sensitivity		-124		dBm
	Blocking, +/- 1 MHz		82		dB
	Blocking, +/- 2 MHz		83		dB
	Blocking, +/- 10 MHz		89		dB
	Adjacent Channel Rejection		64		dB
	Alternate Channel Selectivity		66		dB
Power Supply:	Supply Voltage (VCC)	2.8		3.6	V
	Supply Voltage (VCC_PA)	2.8		3.6	V
	Current Consumption, RX		31		mA
	Current Consumption, TX, 27 dBm		356		mA
	Current Consumption, TX, 24 dBm		292		mA
	Current Consumption, Power Down		1	3	μA
Temperature range:		-40		+85	°C

Application Circuit:
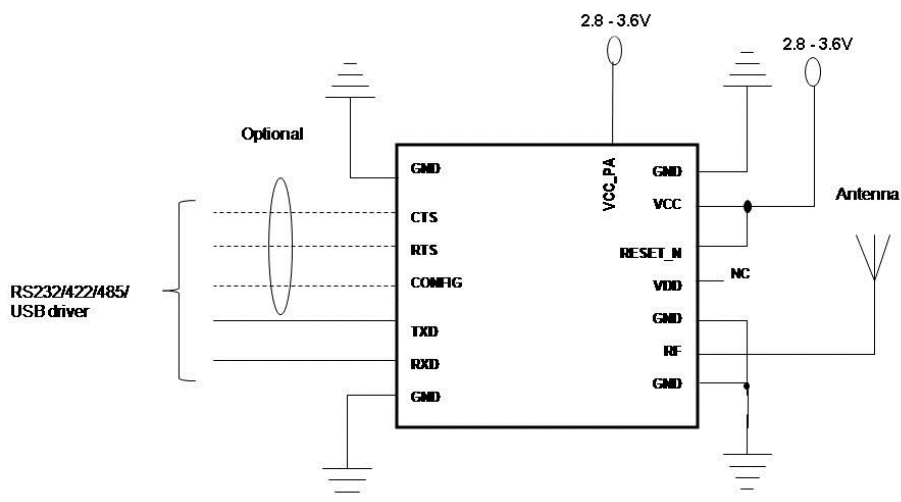
Note that the VCC_PA pin supply the internal power amplifier only, while the rest of the internal block runs on VCC. They can be connected together (max 3.6V) or separated using individual supply. If VCC_PA is connected together with VCC, the max output power is +24 dBm.
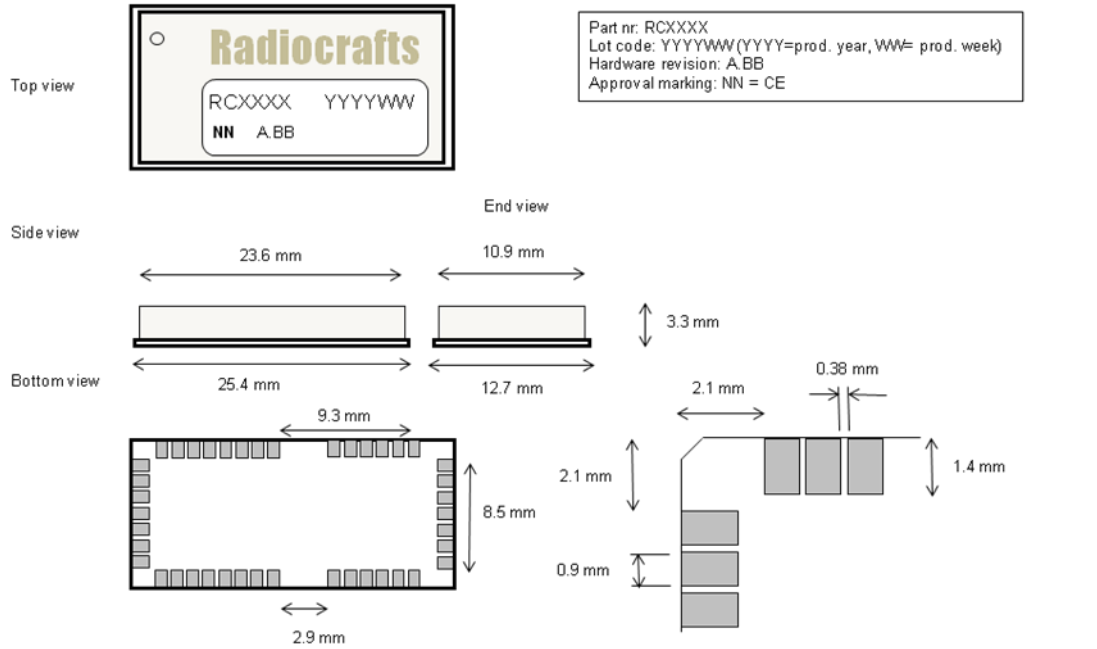
Pin Assignment
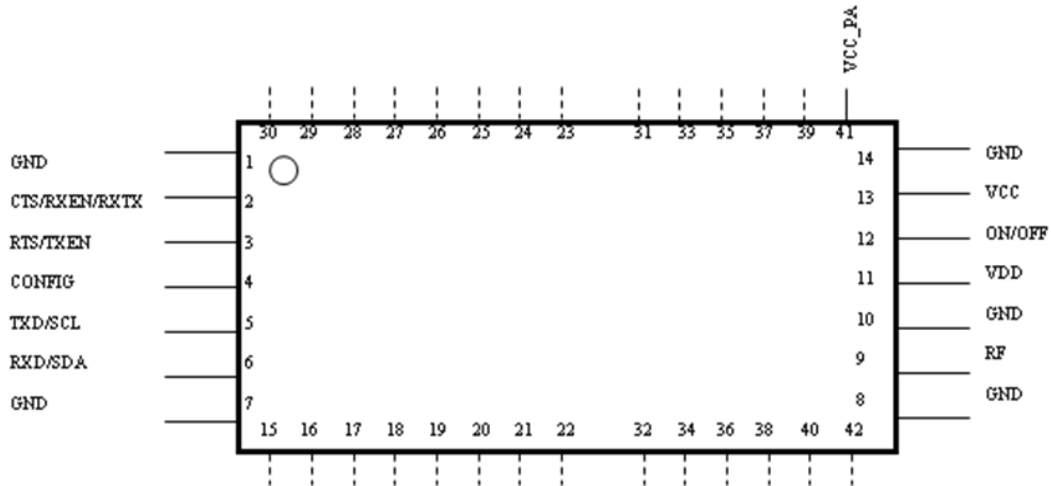
Pin Description

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	Supply voltage input for Power Amplifier stage. Connect to VCC for RC1692HP-SIG.
17-42	I/O	For future use and test status pin, Do not connect

Mechanical Drawing

Top view

Part nr: RCXXXX
Lot code: YYYYWW (YYYY=prod. year, WW= prod. week)
Hardware revision: A.BB
Approval marking: NN = CE

Side view

End view

23.6 mm   10.9 mm

3.3 mm

Bottom view

25.4 mm   12.7 mm

9.3 mm   0.38 mm

2.1 mm

2.1 mm   1.4 mm

8.5 mm

0.9 mm

2.9 mm

Drawings are not to scale

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

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