RC-CC2340

Bluetooth Module 5.3 Low Energy

Radiocontrolli®
WIRELESS MODULES

Bluetooth 5.3 Low Energy Wireless Module
based on CC2340 Texas Instrument

RC-CC2340 is designed based on CC2340R52E0RKPR single-chip wireless microcontroller (MCU).
The SimpleLink™ CC2340R5 device is a 2.4 GHz wireless microcontroller (MCU) targeting Bluetooth® 5.3 Low Energy, Zigbee®, IEEE 802.15.4, and Proprietary 2.4 GHz applications.
The device is optimized for low-power wireless communication with on-chip dual image Over the Air Download (OAD) support in Building automation (wireless
sensors, lighting control, beacons), asset tracking, medical, retail EPOS (electronic point of sale), ESL (electronic shelf label), and Personal electronics (toys, HID, stylus pens) markets. The highlighted features of this device include:

- Support for Bluetooth ® 5 features: LE Coded PHYs (Long Range), LE 2-Mbit PHY (High Speed), Advertising Extensions, Multiple Advertisement Sets, CSA#2, Direction Finding, as well as backwards compatibility and support for key features from the Bluetooth ® 4.2 and earlier Low Energy specifications.
- Fully-qualified Bluetooth ® 5.3 software protocol stack included with the SimpleLink™ Cc23xx Software Development Kit (SDK).
- Support for Bluetooth® mesh (low power nodes).
- Zigbee® protocol stack support in the SimpleLink™ CC23x0Rx Software Development Kit (SDK).
- Ultra-low standby current of 0.7 µA with RTC operational and full RAM retention that enables significant battery life extension especially for applications with longer sleep intervals.
- Very low average radio currents for duty-cycled BLE use-cases. Average radio current ~6uA when operating in a Bluetooth®Low Energy connection with TX output power = 0dBm and 1s connection interval.
- Excellent radio sensitivity and robustness (selectivity and blocking) performance for Bluetooth ® Low Energy(-102 dBm for 125-Kbps .

CC2340R5 resources: https://www.ti.com/product/CC2340R5

Feature

Powerful 48MHz ARM Cortex MO+ processor
512KB of in-system programmable flash

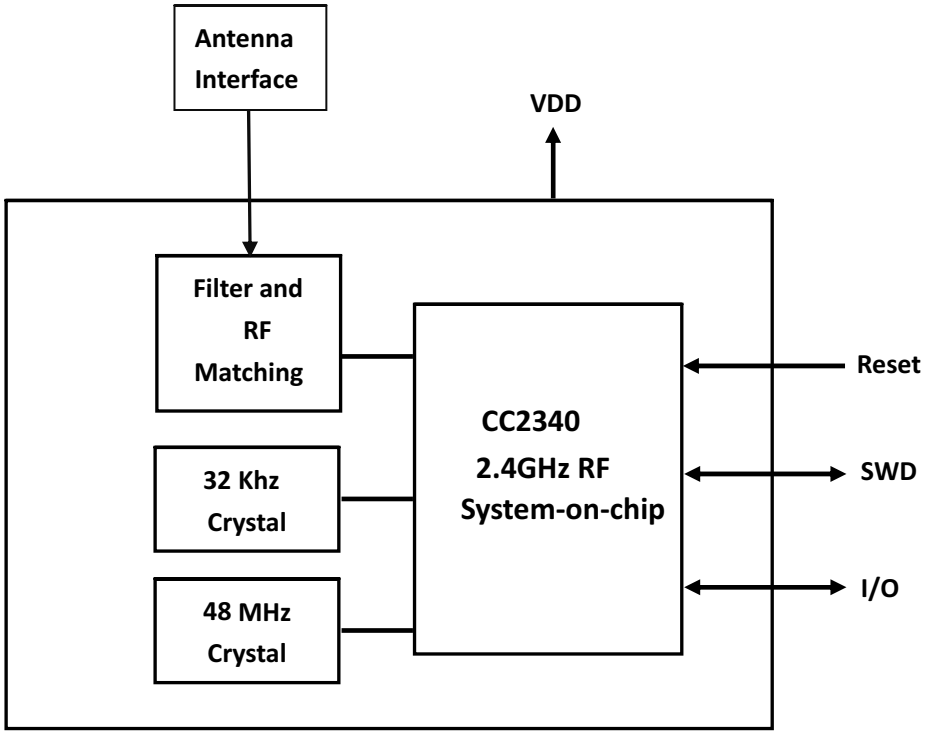
Wireless protocol support :
-Bluetooth 5.3 Low Energy
-Zigbee
-Simplelink TI 15.4-stack

Low power consumption : 5.3mA (RX) 5.1mA (TX at +0dbm) <11mA (TX at +8dBm)

High performance radio :
-102dBm for Bluetooth Low Energy 125-kbps
-96,5dBm for Bluetooth Low Energy 1 Mbps

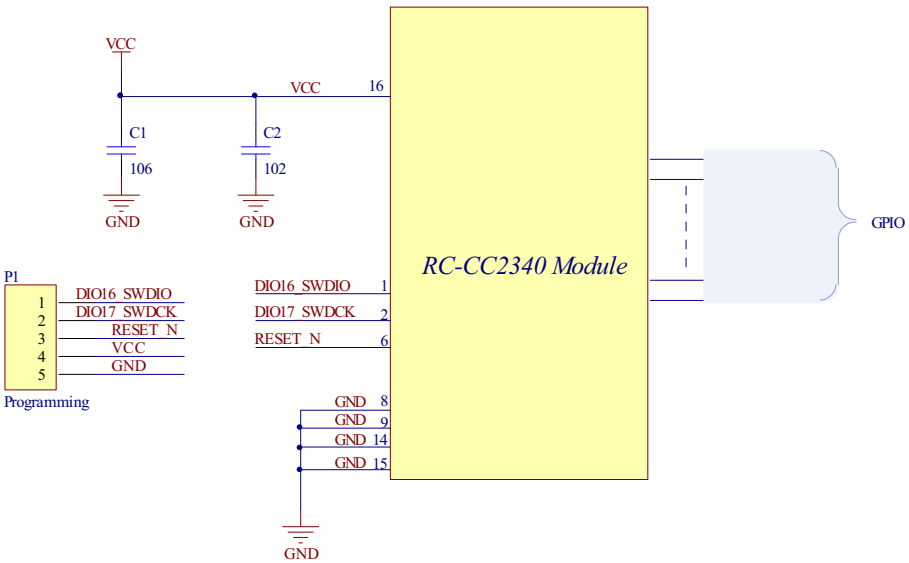
Package Dimensions : *22.13 x 12mm x 3mm*

1.0 Block Diagram



2.0 Reference schematics

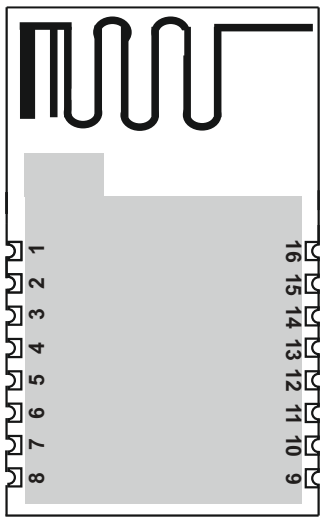
VCC Wide Supply Voltage Range:1.8 to 3.8V



3.0 Technical Specifications

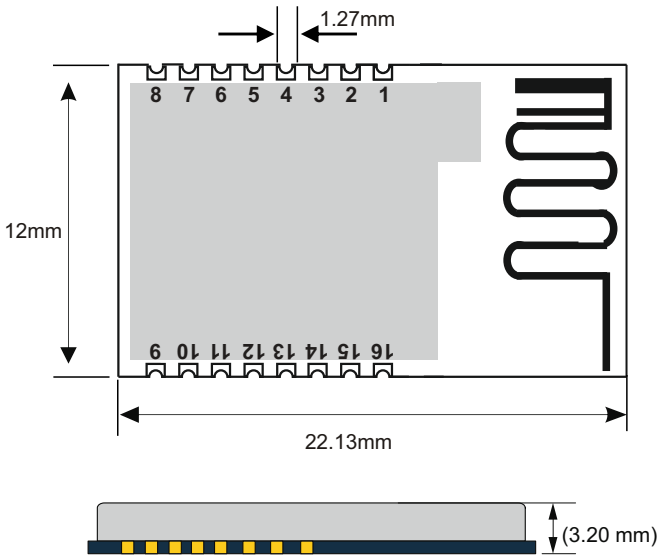
Characteristics		MIN	MAX	UNIT
Operation Voltage		1.8	3.8	VDC
Operating Temperature		-20	70	°C
Current Consumption	Sleep Mode		0.70	µA
Current Consumption	Receive Mode		5.3	mA
Current Consumption	Transmitter Mode		11.0	mA
TX Power			8	dBm
RX Sensitivity			-102	dBm

4.0 Terminal description

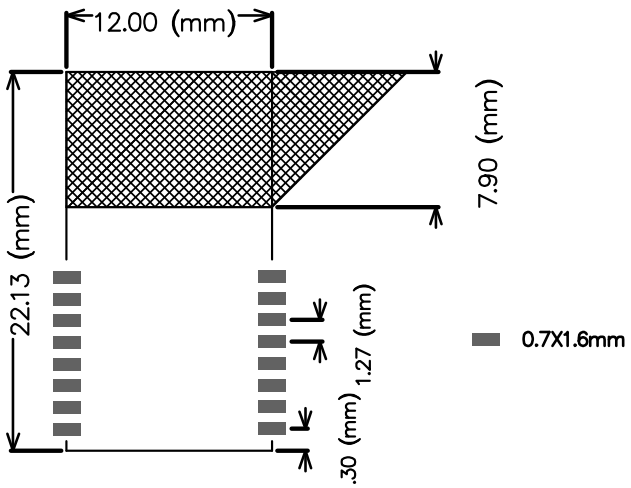


Pads	Name	Description
1	SWDIO-DIO16	GPIO, SWDIO, High drive capability
2	SWCLK-DIO17	GPIO, SCLK, High drive capability
3	DIO20	GPIO
4	DIO21	GPIO
5	DIO24	GPIO
6	RESET_N	Reset, active low, internal pullup
7	DIO 6	GPIO
8	GND	Ground
9	GND	Ground
10	DIO13	GPIO
11	DIO 12	GPIO
12	DIO 11	GPIO
13	DIO 8	GPIO
14	GND	Ground
15	GND	Ground
16	VDD	Power

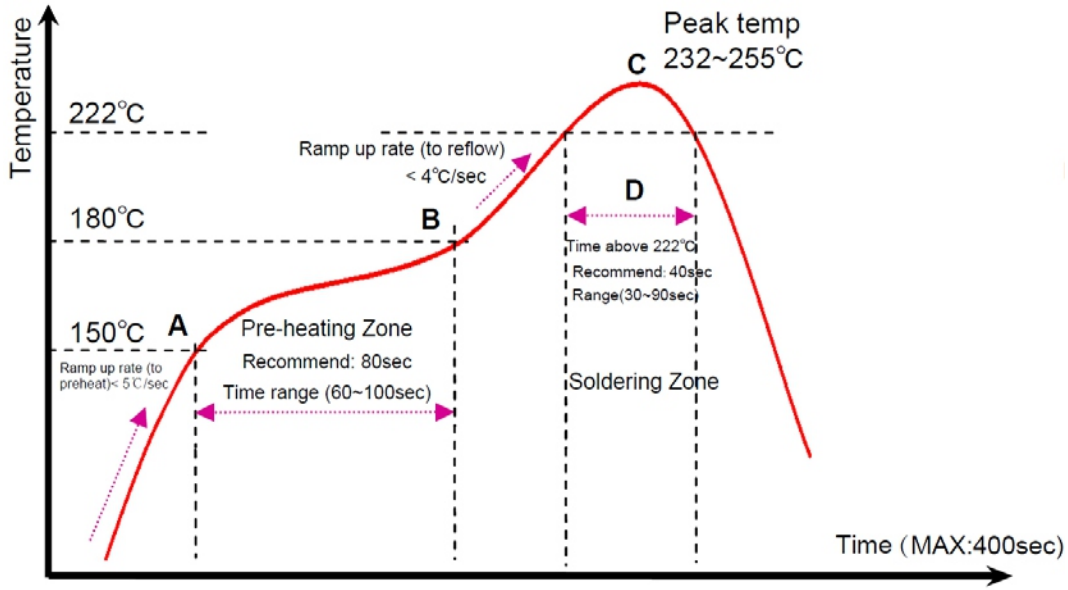
5.0 Mechanical Dimension



6.0 Reccomended PCB Layout



6.0 Reccomended Reflow Profile for Lead Free Solder



7.0 Reel and Tape dimensions