Radiocontrolli
Wireless Modules

Dual band sub 1GHz and 2.4GHz Multichannels Radio Transceiver



The **RC-CC1352-XXX** module is based on Texas Instruments CC1352R component.

The CC1352R device is a multiprotocol Sub-1 and 2.4-GHz wireless MCU targeting Wireless M-Bus, IEEE 802.15.4g, IPv6-enabled smart objects (6LoWPAN), Thread, Zigbee®, KNX RF, Wi-SUN®, Bluetooth® 5 low energy, and proprietary systems.

The CC1352R device is a member of the CC26xx and CC13xx family of cost-effective, ultra-low power, 2.4-GHz and Sub-1 GHz RF devices. Very low active RF and microcontroller (MCU) current, in addition to sub-µA sleep current with up to 80KB of RAM retention, provide excellent battery lifetime and allow operation on small coin-cell batteries and in energy-harvesting applications.
The CC1352R device combines a flexible, very low-power RF transceiver with a powerful 48-MHz Arm® Cortex®-M4F CPU in a platform supporting multiple physical layers and RF standards. A dedicated Radio Controller (Arm® Cortex®-M0) handles low-level RF protocol commands that are stored in ROM or RAM, thus ensuring ultra-low power and great flexibility. The low power consumption of the CC1352R device does not come at the expense of RF performance; the CC1352R device has excellent sensitivity and robustness (selectivity and blocking performance).

Module Information (examples and more details on page 3) :

RC-CC1352 - XXX - XX(*)

Sub 1GHz Frequency
434=434MHz
868=868MHz
915=915MHz

2.4GHz Antenna Type
UA = UFL Connector
= PCB Streap Antenna

(*) If not specified, the default version is with PCB streap antenna

Applications :

- Low-Power Wireless Systems
- Smart Grid and Automatic Meter Reading
- Home and Building Automation
- Wireless Sensor Network
- 6LoWPAN systems

Feature :

- IEEE 802.15.4g mode switch support
- Ultra Low consumption technology
- Powerful ARM Cortex
- Supported by the open platform Contiki 6LoWPAN.
- Very Small size

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Technical Characteristics

Sub 1 GHz parameters	MIN	TYP	MAX	UNIT
Supply Voltage	1.8	3	3.8	VDC
Supply Current RX mode		8.1		mA
Supply Current TX mode ---> +10dBm		13.4		mA
Supply Current TX mode ---> +14dBm		24		mA
Supply Current Standby Mode		0.1		µA
RF Power Output 50ohm (*)			+14	dBm
Operative Frequency		434/868/915		MHz
RF Sensitivity 50kbps		- 110		dBm
RF Sensitivity long range mode 2.5Kbps		- 122		dBm
Data Rate (*)	0,01		4	Mbit/s
Operative Temperature	-30		+75	°C

(*) Programmable parameter.

MICROCONTROLLER:

- Power ARM Cortex - M4F processor
- Up to 48MHz Clock Speed
- 352Kb of On-System Programming Flash
- 256KB of ROM for Protocol and Firmware
- 8KB of SRAM for Cache (or as General-Purpose RAM)
- 80KB of Ultralow Leakege SRAM
- Support Over-the-Air Upgrade (OTA)

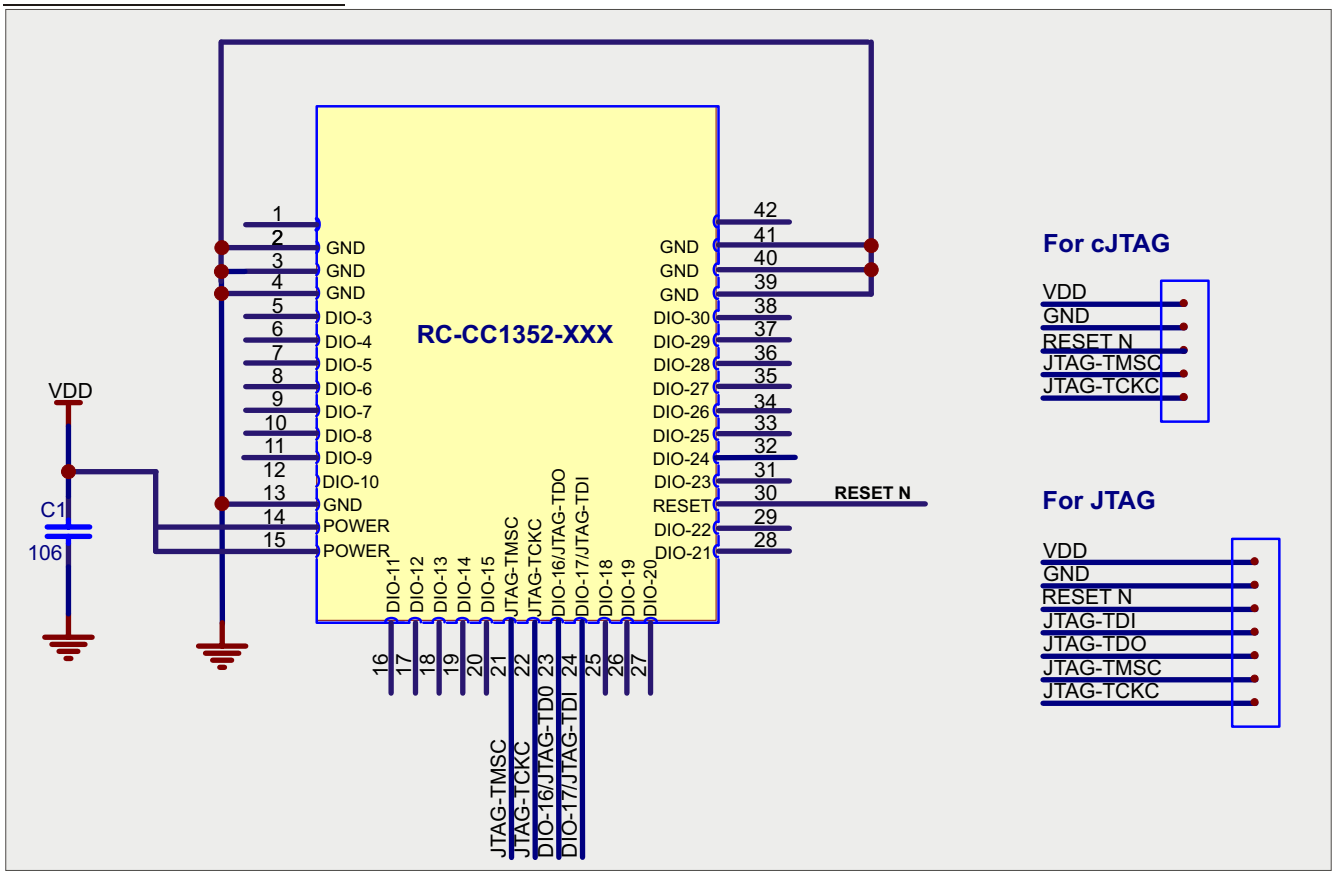
Technical Characteristics

2.4 Ghz parameters	MIN	TYP	MAX	UNIT
Supply Voltage	1.8	3	3.8	VDC
Supply Current RX mode		8.0		mA
Supply Current TX mode		10		mA
Supply Current Standby Mode		0.1		µA
TX Power			5	dBm

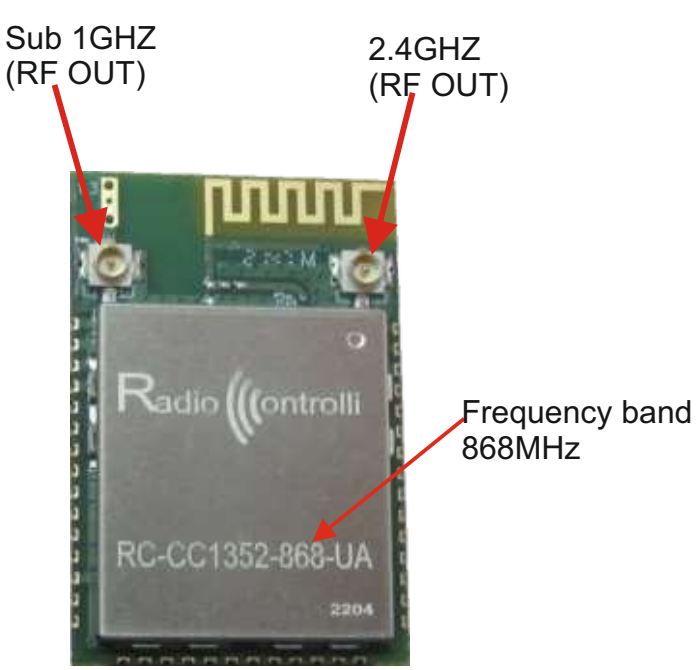
For more information and details, please refer to the CC1352R Texas Instruments datasheet.

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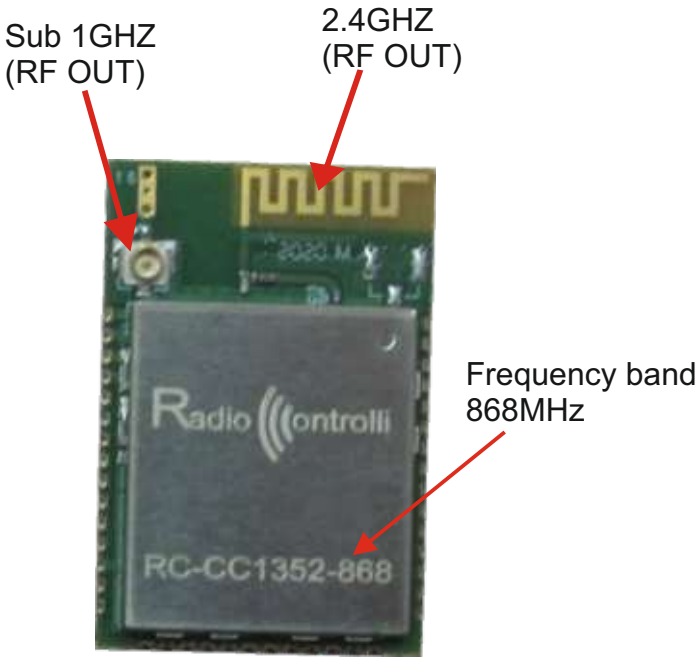
Reference Schematics



Examples of Versions



Version **RC-CC1352-868-UA**
- 2.4GHz (RF OUT) on UFL Connector
- Sub 1GHz Frequency band = 868MHz



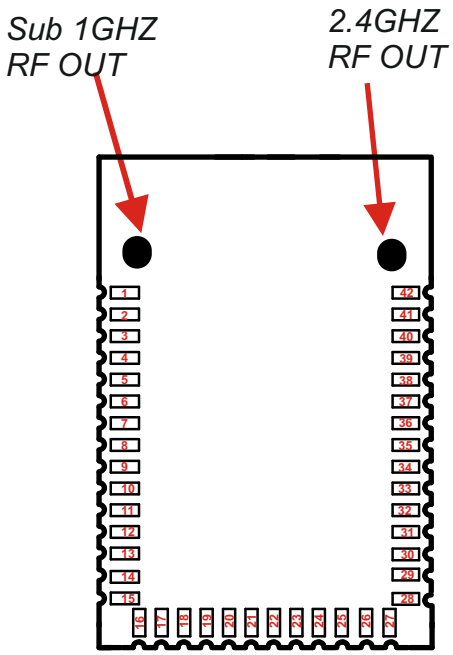
Version **RC-CC1352-868**
- 2.4GHz (RF OUT) on PCB Antenna
- Sub 1GHz Frequency band = 868MHz

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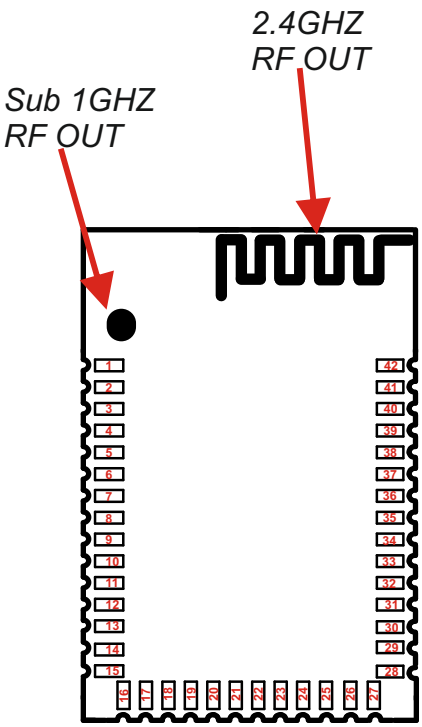
Terminal description RC-CC1352-XXX

Pads	Name	Description
1	NC	Not Connected
2	GND	Ground
3	GND	Ground
4	GND	Ground
5	DIO-3	GPIO, Sensor Controller
6	DIO-4	GPIO, Sensor Controller
7	DIO-5	GPIO, Sensor Controller, High drive capability
8	DIO-6	GPIO, Sensor Controller, High drive capability
9	DIO-7	GPIO, Sensor Controller, High drive capability
10	DIO-8	GPIO Digital
11	DIO-9	GPIO Digital
12	DIO-10	GPIO Digital
13	GND	Ground
14	VDD	Power
15	VDD	Power
16	DIO-11	GPIO Digital
17	DIO-12	GPIO Digital
18	DIO-13	GPIO Digital
19	DIO-14	GPIO Digital
20	DIO-15	GPIO Digital
21	JTAG-TMSC	JTAG TMSC, High drive capability
22	JTAG-TCKC	JTAG TCKC
23	DIO-16	GPIO,JTAG -TDO, High drive capability
24	DIO-17	GPIO,JTAG-TDI, High drive capability
25	DIO-18	GPIO Digital
26	DIO-19	GPIO Digital
27	DIO-20	GPIO Digital
28	DIO-21	GPIO Digital
29	DIO-22	GPIO Digital
30	RESET-N	RESET, (Active low ,No internal pull up)
31	DIO-23	GPIO Digital
32	DIO-24	GPIO, Sensor Controller, Analog
33	DIO-25	GPIO, Sensor Controller, Analog
34	DIO-26	GPIO, Sensor Controller, Analog
35	DIO-27	GPIO, Sensor Controller, Analog
36	DIO-28	GPIO, Sensor Controller, Analog
37	DIO-29	GPIO, Sensor Controller, Analog
38	DIO-30	GPIO, Sensor Controller, Analog
39	GND	Ground
40	GND	Ground
41	GND	Ground
42	NC	Not Connected

Pin Out Device



RC-CC1352-XXX-UA version



RC-CC1352-XXX version

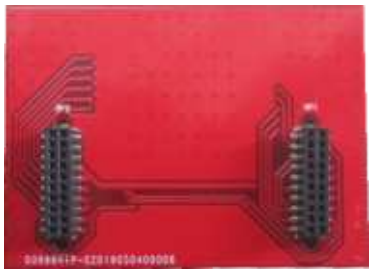
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RC-CC1352-XXX Adapter board

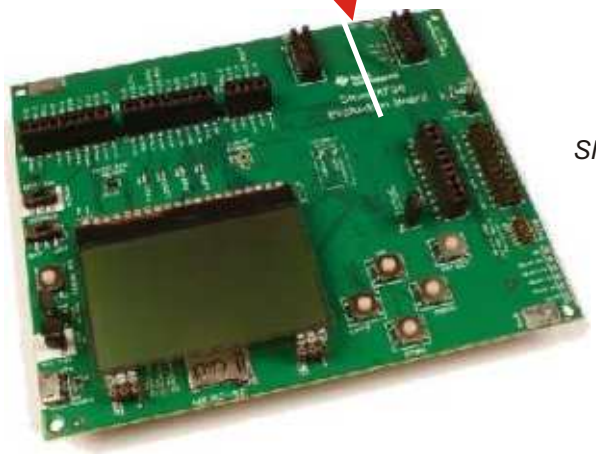
To make immediate usable the RC-CC1352-XXX module with TI development systems has been realized the following board adapter.



Adapter board front

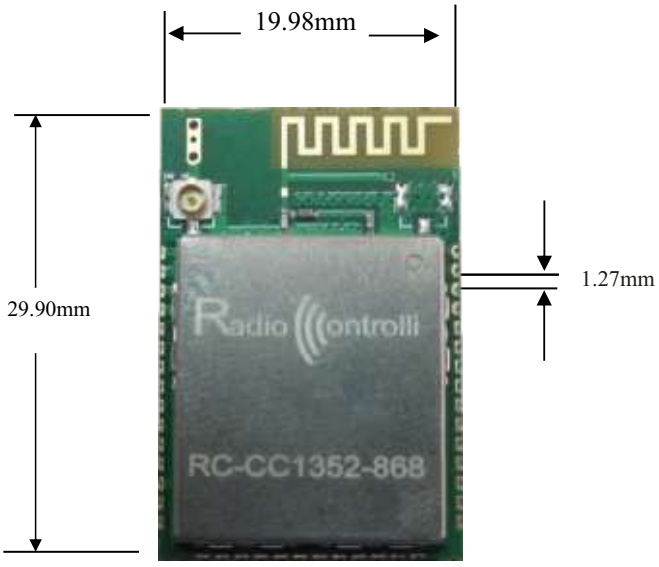


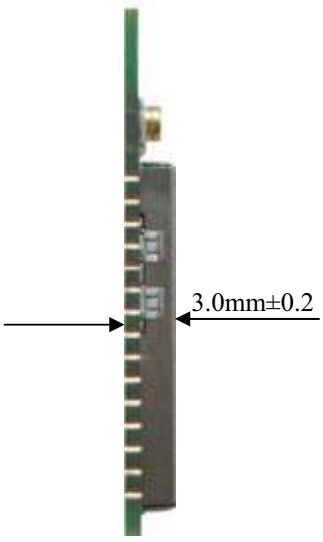
Adapter board rear



SMART RF06 Evaluation board (TI)

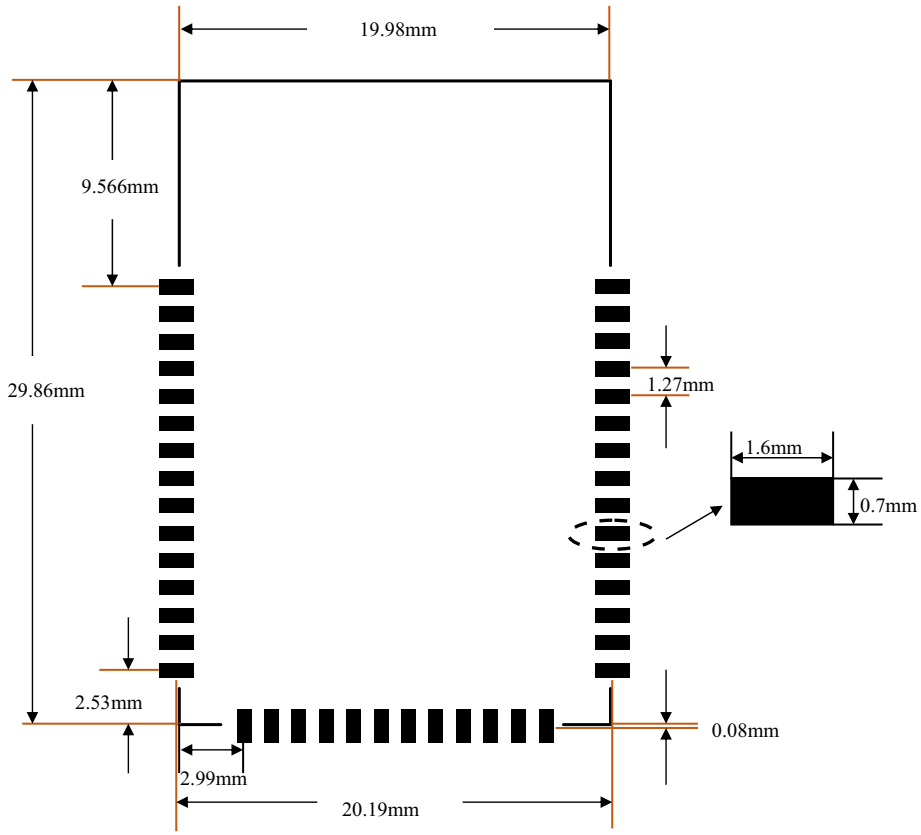
Mechanical dimensions



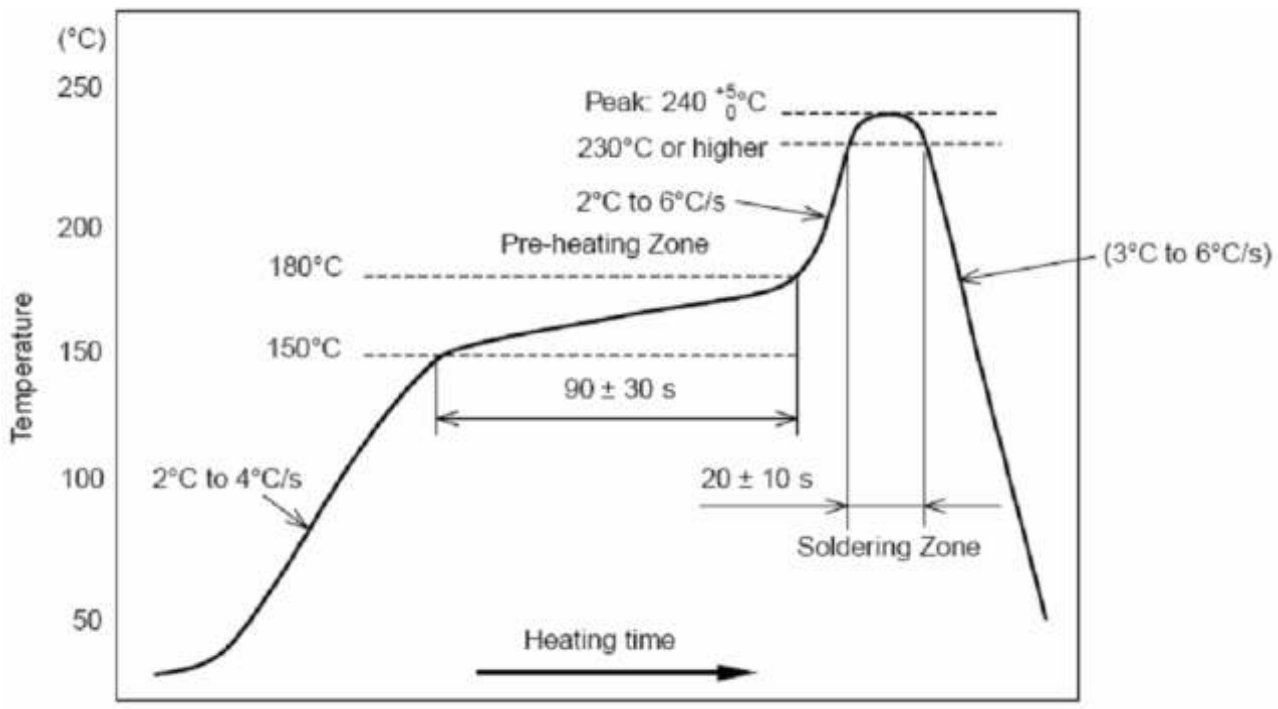


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Recommended PCB Layout



Recommended Reflow Profile for Lead Free Solder



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