

BCM014-C0

Bluetooth 4.0 Low Energy Module
2.4G RF Low Power Transceiver

DATA SHEET
Version A

Jul. 31st, 2013



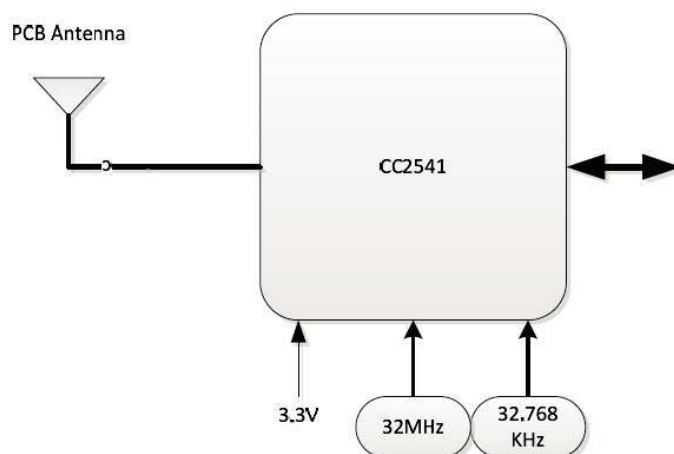
 **Quan**

Quan International Co., Ltd.,

BCM014 Features

- 2.4GHz Bluetooth low energy compliant module
- Very low power consumption. Aim to work for more than 1 year with CR2032 coin battery
- Supports 250-kbps, 500-kbps, 1-Mbps, 2-Mbps data rate
- High-performance and low-power 8051 Microcontroller core with code pre-fetch
- In-system-programmable flash, 128- or 256-KB
- 8-KB RAM with retention in all power modes
- Communicates with mobile phone with BT4.0 capability
- Bluetooth v4.0 compliant protocol stack for single-mode BLE solution
- Up to 21 I/O pins provide flexible interfaces
- Compact size with U.F.L Antenna connector on board (direct RF-out optional)
- “Ready to go” modules speeding up products development
- Customized application firmware inside the module is possible.

Block Diagram



General Specifications:

- Dimensions

	Minimum	Typical	Maximum	Unit
Length	14.85	15	15.15	Mm
Width	17.85	18	18.15	Mm
Height	2.52	2.6	2.62	Mm

- Antenna

On board PCB antenna and/or a UF.L antenna connector

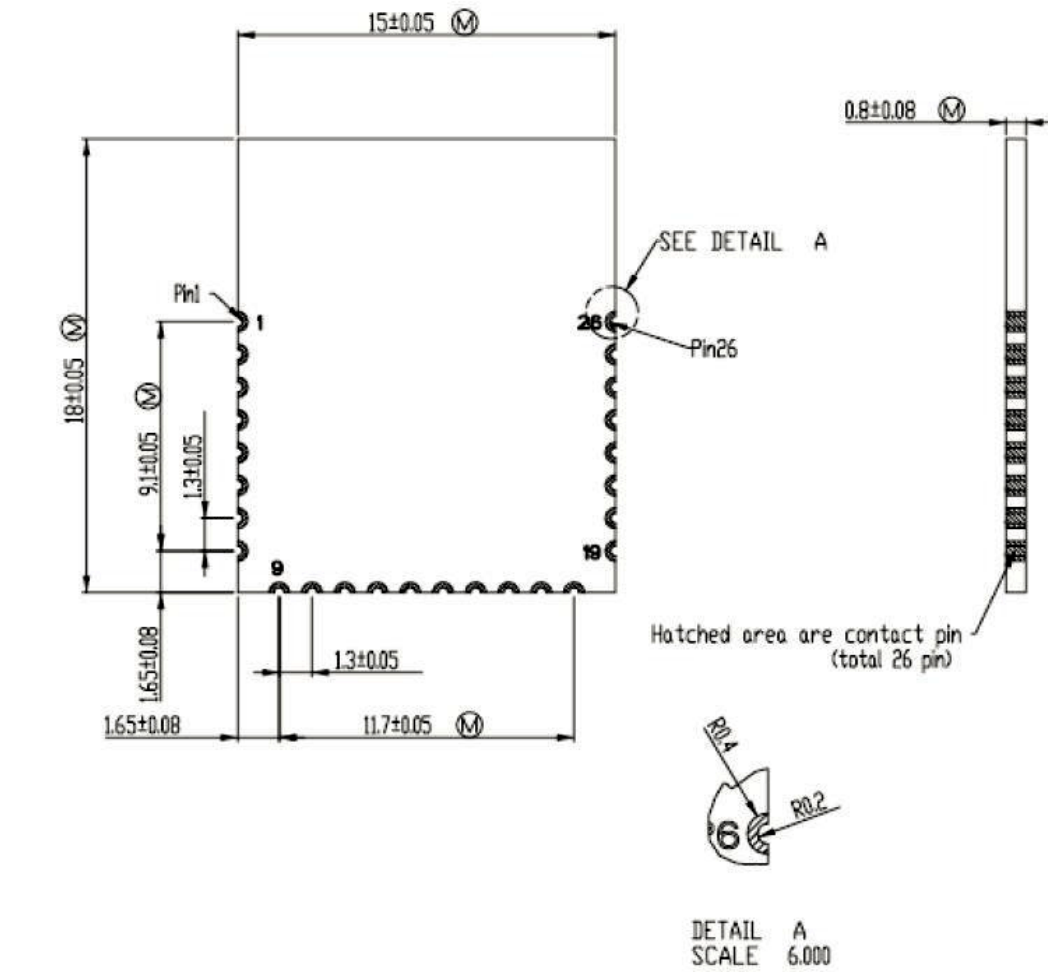
- Operating Condition

	Minimum	Typical	Maximum	Unit
Voltage	2	3.3	3.6	V
Temperature	-40	-	85	°C
Storage temperature	-40	-	125	°C
Storage Humidity	0		70	%

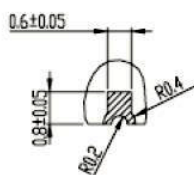
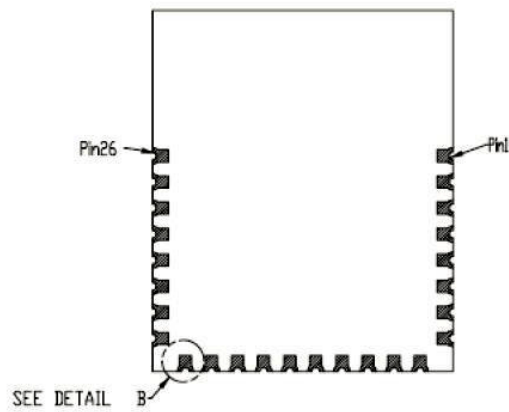
- RF Specifications:

Frequency Band	2400-2483.5 MHz
Data Rate	Up to 2Mbps
Channel	79 sub-channels
Transmission	FHSS (Frequency Hopping Spread Spectrum)
Modulation	GFSK@1Mbps, $\pi/4$ DQPSK@2Mbps, DPSK@3Mbps
Antenna Type	UF.L Antenna connector support
Output Power Class II	-6~+4dBm
Receiver Sensitivity	-70 dBm @ BER<0.1%

Dimensions

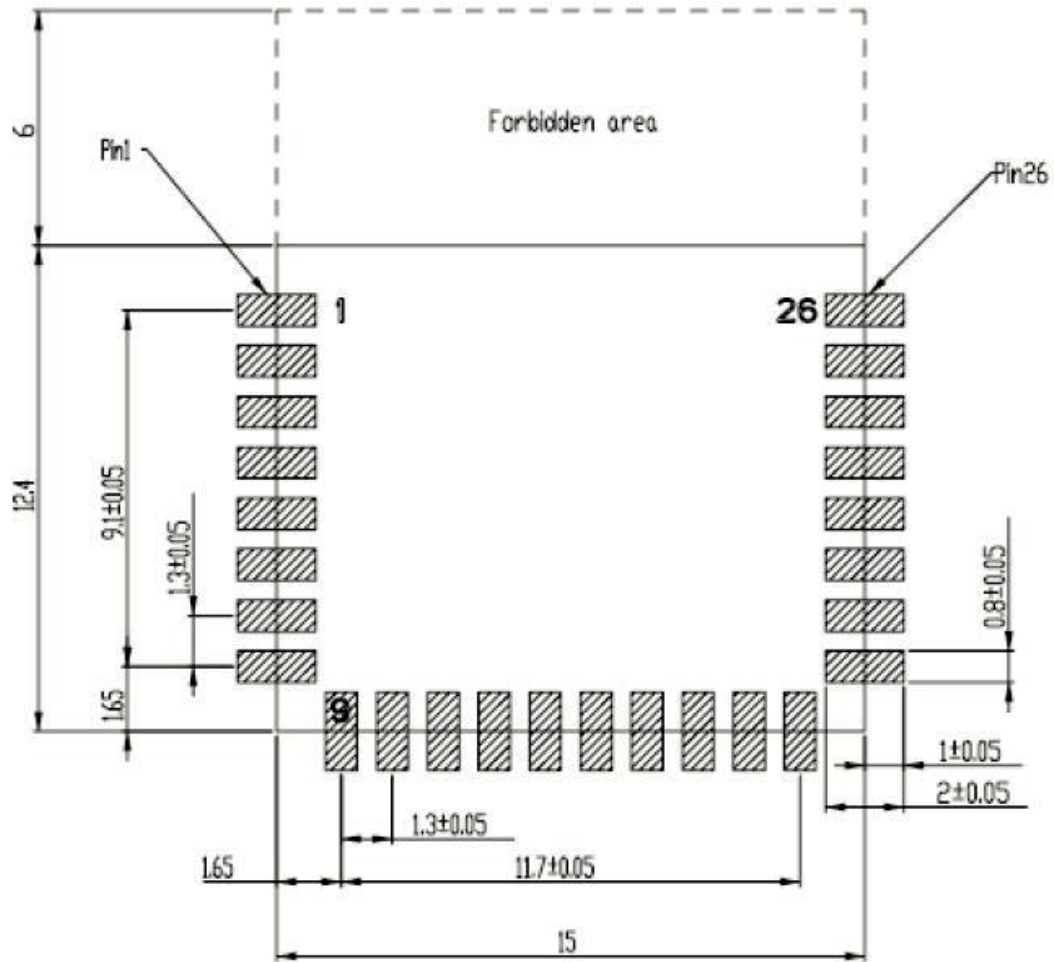


DETAIL A
SCALE 6.000



DETAIL B
SCALE 6.000

Recommended Footprint



Pin Definitions

Pin	Pin Name	Pin Type	Description
1	VDD	Power	3.3Vdc
2	P2_2	Digital I/O	Port 2.2/ debug clock
3	P2_1	Digital I/O	Port 2.1/ debug data
4	P2_0	Digital I/O	Port 2.0
5	P1_7	Digital I/O	Port 1.7
6	P1_6	Digital I/O	Port 1.6
7	SCL	I2C clock or digital I/O	Can be used as I2C clock pin or digital I/O. Leave floating if not used. If grounded disable pull up
8	SDA	I2C clock or digital I/O	Can be used as I2C data pin or digital I/O. Leave floating if not used. If grounded disable pull up
9	Ground	Ground Pin	Connect to GND
10	P1_5	Digital I/O	Port 1.5
11	P1_4	Digital I/O	Port 1.4
12	P1_3	Digital I/O	Port 1.3
13	P1_2	Digital I/O	Port 1.2
14	P1_1	Digital I/O	Port 1.1 – 20-mA drive capability
15	P1_0	Digital I/O	Port 1.0 – 20-mA drive capability
16	P0_7	Digital I/O	Port 0.7
17	P0_6	Digital I/O	Port 0.6
18	P0_5	Digital I/O	Port 0.5
19	VDD	Power	3.3Vdc
20	P0_4	Digital I/O	Port 0.4
21	P0_3	Digital I/O	Port 0.3
22	P0_2	Digital I/O	Port 0.2
23	P0_1	Digital I/O	Port 0.1
24	P0_0	Digital I/O	Port 0.0
25	RESET	Digital Input	Reset, active-low
26	Ground	Ground Pin	Connect to GND