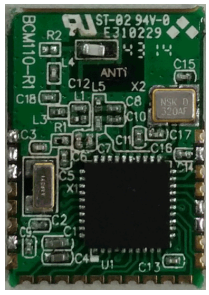
BCM110-A128/256

Bluetooth 4.0 Low Energy Module
2.4G RF Low Power Transceiver

DATA SHEET
Version B

JAN. 14. 2015

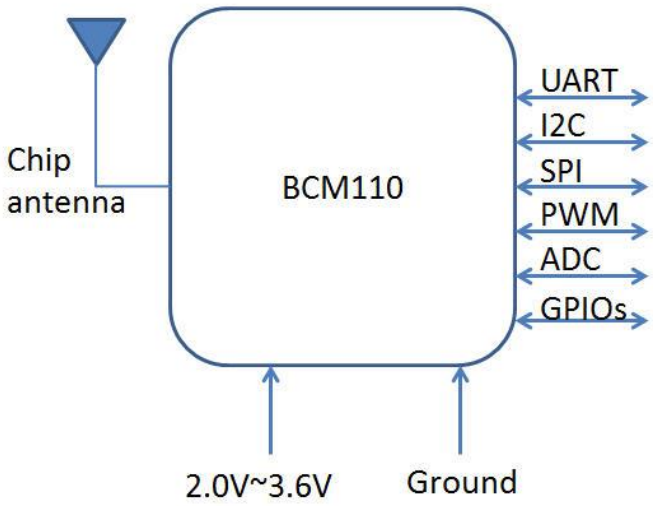


Quan International Co., Ltd.,

BCM110 Features

- Small form factor (14mmX19.5mm)
- Excellent RF performance.
- Flexible position. Not necessary to be placed in the edge of a PCB board.
- 2.4GHz Bluetooth low energy compliant module
- RF output power: 0 dBm.
- 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 chip antenna a on board
- “Ready to go” modules speeding up products development
- Providing application firmware customization service.

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

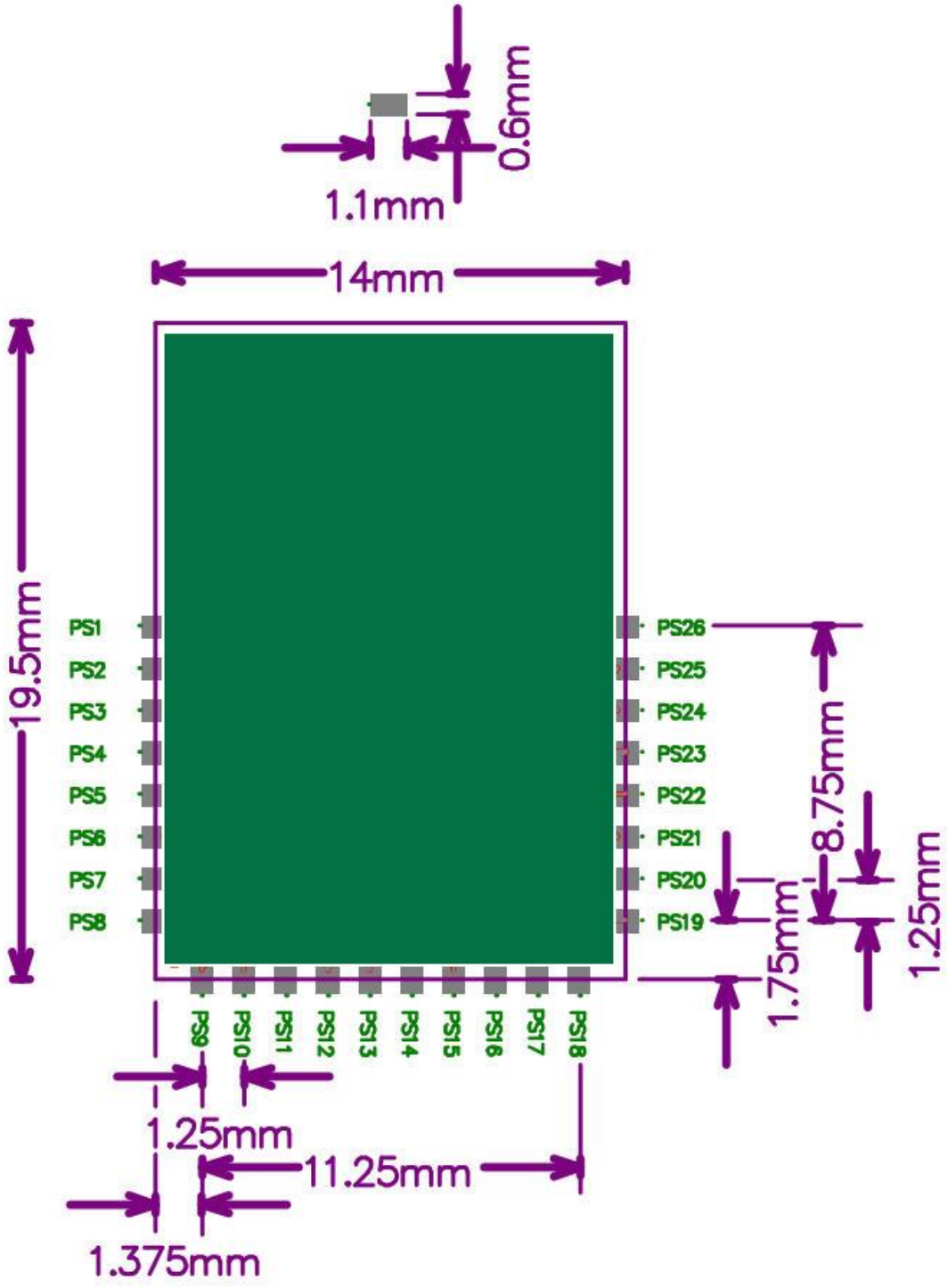
- Operating Condition

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

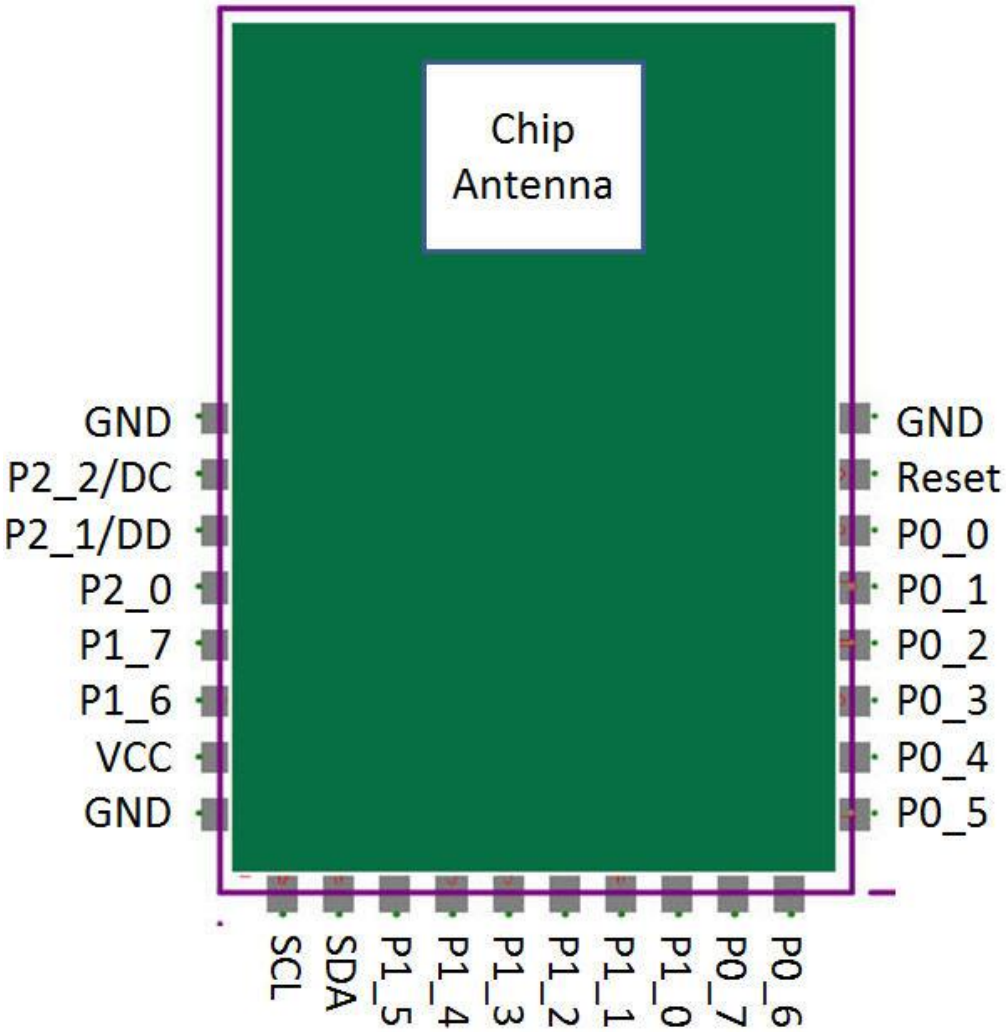
- RF Specifications:

Frequency Band	2400-2483.5 MHz
Data Rate	Up to 2Mbps
Channel	79 sub-channels
Transmission	FHSS (Frequency Hopping Spread Spectrum)
Modulation	GFSK@1Mbps, π/4 DQPSK@2Mbps, DPSK@3Mbps
Antenna Type	UF.L Antenna connector support
Output Power Class II	0 dBm
Receiver Sensitivity	-70 dBm @ BER<0.1%

Dimensions


0.6mm
1.1mm
14mm
19.5mm
PS1
PS2
PS3
PS4
PS5
PS6
PS7
PS8
PS26
PS25
PS24
PS23
PS22
PS21
PS20
PS19
PS9
PS10
PS11
PS12
PS13
PS14
PS15
PS16
PS17
PS18
8.75mm
1.75mm
1.25mm
1.25mm
11.25mm
1.375mm

Pin Diagram


Chip
Antenna
GND
P2_2/DC
P2_1/DD
P2_0
P1_7
P1_6
VCC
GND
GND
Reset
P0_0
P0_1
P0_2
P0_3
P0_4
P0_5
SCL
SDA
P1_5
P1_4
P1_3
P1_2
P1_1
P1_0
P0_7
P0_6

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