

Product Specification

CT4GMD-B27P Module

Product Description	Bluetooth 4.2 Module
Module Model	CT4GMD-B27P
Document Verison	V1.0
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Office Address: Room 1302, Block A, Building 4, Tianan Cyber Park, Huang ge Road,
Longgang District, Shen zhen, China

General Description

CT4GMD-B27P Module is a Bluetooth module based on Qualcomm CSR102x . It is fully compliant with the Bluetooth Radio Specification 4.2. The Module has been designed to provide low power, low cost, and robust communication for application in the globally available 2.4GHz unlicensed ISM band.

The module includes Flash, crystal, and RF-Connector. You can use an external antenna

Feature

- Bluetooth 4.2 compliant.
- 4 dBm RF transmit power
- Use supply voltages up to 3.6V.
- Ultra-low power consumption.
- Support PC and TV applications without external memory.
- I²S port for PCM I/O
- G.722 Codec

Applications

- HID: keyboards, mice, touch-pads, advanced remote controls with voice activation
- Health sensors: blood pressure, thermometer and glucose meters
- Smart home: heating/lighting control
- Mobile accessories: watches, proximity tags alert tags and camera controls
- Sports and fitness sensors: heart rate, runner/cycle speed and cadence

Revision History

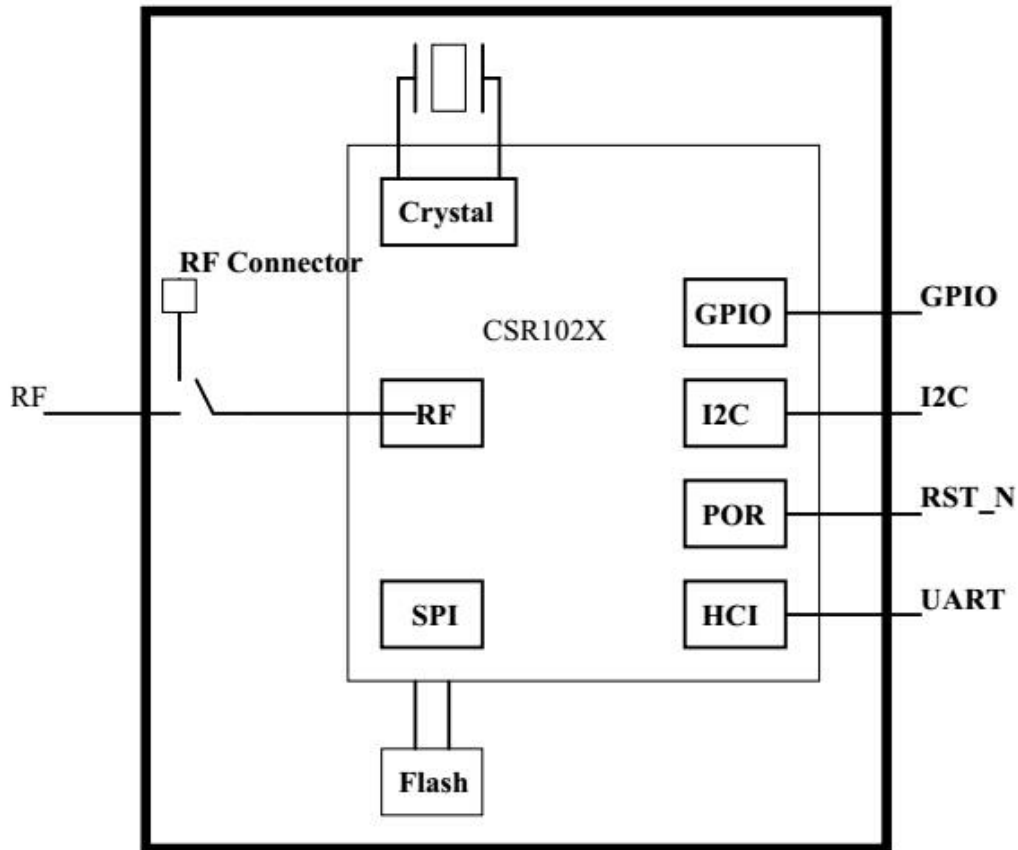
Date	Document revision	Change Description
2017/6/17	V1.0	Initial release

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1 Module Description

Figure 1. Functional Block Diagram



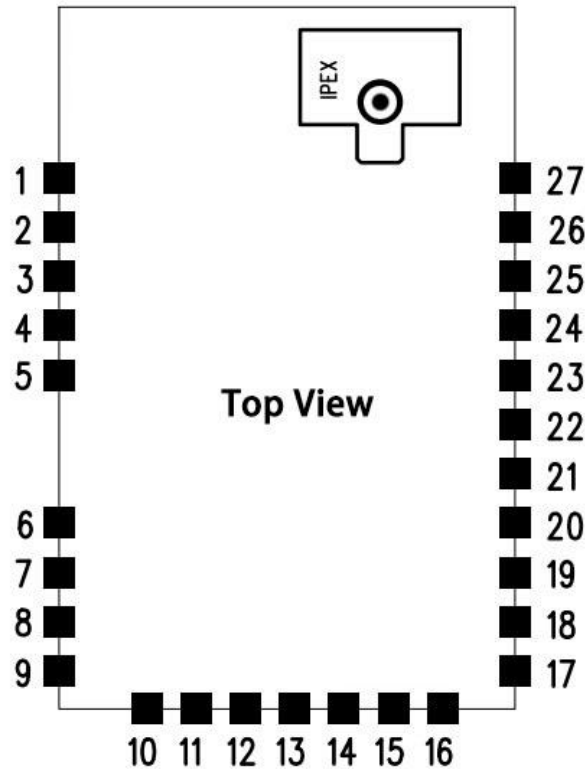
The CT4GMD-B27P Module is a Bluetooth module based on the Qualcomm CSR102x. Its physical interfaces include: 15 digital flexible PIOs, 1 analogue AIO, UART, SPI master interface, I²C master controller, 4 x quadrature decoders, PWM 3D shutter control, 5 x LED PWMs, Keyboard scanner, LCD glass drive, 10-bit Aux ADC, IR encoder etc.

The module auxiliary features: Battery monitor, 6 power modes, Power management features include software shutdown and hardware wake_up, wake_up power management from any PIO, AES_128. It is fully compliant with the Bluetooth Radio Specification 4.2. The Module has been designed to provide low power, low cost, and robust communication for application in the globally available 2.4GHz unlicensed ISM band.

The module includes Flash, crystal, and IPEX RF-Connector .

2 Pin Definition & Description

Figure 2. Pin Out



The CT4GMD-B27P has 27 pads located around the perimeter.

Table 1. Pin Function Description

Pin NO.	Pin Name	Function description
1,2,5,14,25,27	GND	Ground
4	VBAT	Positive supply from the battery
6	VDD_MEM	SMPS output for the memory rail.
7	PIO[14]	General programmable I/O line
8	SPI_PIO#	Selects Debug SPI on PIO[3:0].
9	PIO[0]	General programmable I/O line 0
10	PIO[1]	General programmable I/O line 1
11	PIO[2]	General programmable I/O line 2
12	PIO[3]	General programmable I/O line 3
13	VDD_PADS	Positive supply for digital I/O ports PIO[14:0] and SPI_PIO#.
15	PIO[5]	General programmable I/O line 5
16	PIO[7]	General programmable I/O line 7
17	PIO[4]	General programmable I/O line 4

18	PIO[6]	General programmable I/O line 6
19	PIO[8]	General programmable I/O line 8
20	PIO[9]	General programmable I/O line 9
21	PIO[10]	General programmable I/O line 10
22	PIO[11]	General programmable I/O line 11.
23	PIO[12]	General programmable I/O line 12
24	PIO[13]	General programmable I/O line 13
26	RF	Antenna port for Bluetooth transmitter / receiver

3 Electrical Specification

3.1 Absolute Maximum Rating

Note Exceeding absolute maximum ratings causes permanent damage to the module..
Exposure to any absolute maximum rating for extended periods of time affects reliability.

Table 2. Absolute Maximum Rating

Rating	Min	Type	Max	Unit
Storage temperature	-40	-	85	°C
Operating temperature	-30	-	85	°C
VBAT	0	-	3.6	V
VDD_PADS	0	-	3.6	V
I/O supply voltage	0	-	3.6	V
AIO	0	-	1.26	V

3.2 Recommended Operating Conditions

Table 3. Electrical Characteristics

Rating	Min	Typ	Max	Unit
VBAT	0.9	3.0	3.6	V
I/O supply voltage(VDD_PADS)	1.2	3.0	3.6	V

3.3 RF Characteristics

Table 4. RF Characteristics

Item	Min	Typ	Max	Unit
Frequency range	2402	-	2480	MHz
RX sensitivity	-	-82	-	dBm

Output power	-	-	4	dBm
RF output impedance	-	50		Ω
Receive current	-	5	-	mA
Transmit current	-	5	-	mA

3.4 ESD Characteristics

Table 5. ESD Handling Ratings

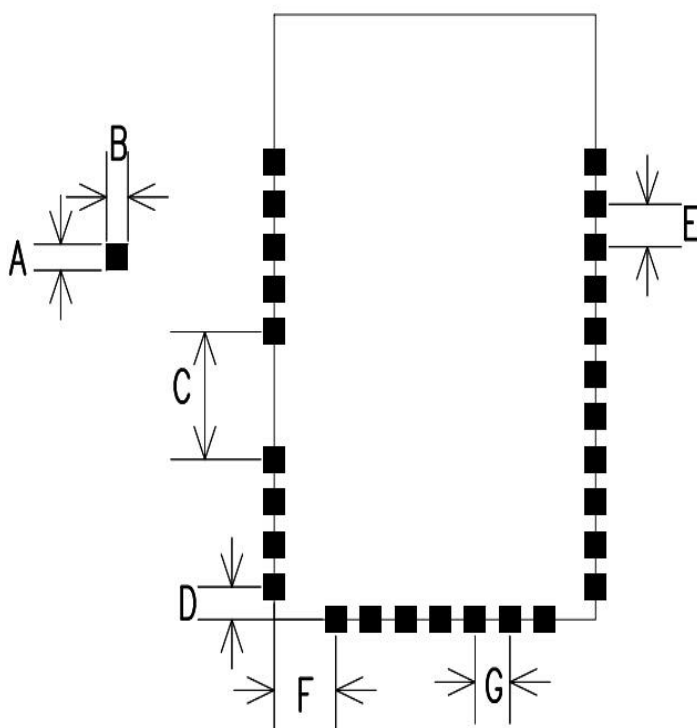
Condition	Class	Max Rating
Human Body Model Contact Discharge per JEDEC EIA /JS-001-2014	1C	2 kV (all pins except RF rated at 1 kV)
Charged Device Model Contact Discharge per JEDEC EIA /JS002-2014	C1	500 V (all pins)

4 Physical Specification

Module Demension(W×L×H):12*18*2.8mm.

Weight: 5g

Figure 3. Recommender Pad Layout



Symbol	Size(mm)
A	0.8
B	1.4
C	3.9
D	1
E,G	1.3
F	2.3