

Bluetooth low energy (LE) Module **BT03-1** is a TI Bluetooth low energy controller **CC2640R2F**. This module is ideal for low power wireless sensing device applications including mobile phone accessories, sports, consumer electronics, HID and etc. The module is integrated with PCB antenna and crystal to reduce the external BOM Cost.

### FEATURES:

- Bluetooth version 4.2 & 5.0 low energy (LE, single mode) compliant.
- Powerful ARM® Cortex®-M3 microcontroller and up to 48-MHz clock speed.
- 128KB In-System-Programmable flash and up to 28KB of system SRAM
- With supply voltage range (1.8 to 3.8V) and with lowest power.
- Powerful Peripherals
- Excellent receiver sensitivity
- Programmable output power
- On board PCB Antenna and crystal
- Excellent receiver sensitivity
- Dimension: 14.8mm x 10mm FR4 PCB
- Moduel Thickness : 2.0mm

### Absolute Maximum Ratings

Description	Condition	Min.	Typ.	Max.	Unit
Supply Voltage (VDD5)		- 0.3		3.9	V
Voltage on any digital/ analog IO		- 0.3		VDD5 + 0.3, Max 4.1	V
Voltage on X32K_Q1, X32K_Q2		- 0.3		2.25	V
Input RF level		-		5	dBm
Storage temperature range		-40		125	oC

### Recommended Operating Conditions

	Min.	Typ.	Max.	Unit
Operating supply voltage (VDD5)	1.8	-	3.8	V
Operating ambient temperature range, TA	- 25	25	75	oC

### DC Characteristics TA=25°C, VDD5 = 3V

DC Characteristics		Min.	Typ.	Max.	Unit
VIH	Lowest GPIO input voltage reliably interpreted as a <High>	-	-	0.8	V
VIL	Highest GPIO input voltage reliably interpreted as a <Low>	0.2	-	-	V
GPIO VOH at 8 mA load	IOCURR = 2 High-drive GPIOs only	-	2.68	-	V
GPIO VOL at 8 mA load	IOCURR = 2 High-drive GPIOs only	-	0.33	-	V
GPIO VOH at 4 mA load	IOCURR = 1	-	2.72	-	V
GPIO VOL at 4 mA load	IOCURR = 1	-	0.28	-	V

### Typical Current Consumption TA=25°C, VDD5 = 3V

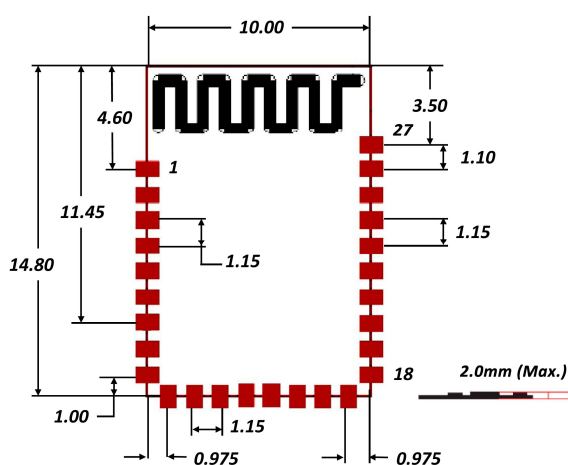
Description	Condition	Min.	Typ.	Max.	Unit
Core Current Consumption	RX mode, standard mode, no peripherals active, low MCU activity	-	6.1	-	mA
	TX mode, 0 dBm output power, no peripherals active, low MCU activity	-	6.1	-	mA
	TX mode, 5 dBm output power, no peripherals active, low MCU activity	-	9.1	-	mA
	Active, Core running CoreMark	-	1.45 mA + 32μA/Mhz	-	-
	Idle, Supply Systems and RAM powered	-	550	-	μA
	Standby, with Cache, RTC, CPU, RAM and (partial) register retention, XOSC_LF	-	3	-	μA
	Standby, with RTC, CPU, RAM and (partial) register retention, XOSC_LF	-	1.3	-	μA
	Standby, with RTC, CPU, RAM and (partial) register retention, RCOSC_LF	-	1.1	-	μA

### RF Character TA=25°C, VCC = 3V

Description	Condition	Min.	Typ.	Max.	Unit
Frequency Range		2402	-	2480	MHz
Channel Spacing		-	2	-	MHz
Output Power		-23	-	5	dBm
Receiver Sensitivity		-	-97	-	dBm
Receiver Saturation		-	4	-	dBm
Frequency Error Tolerance		-350		350	kHz

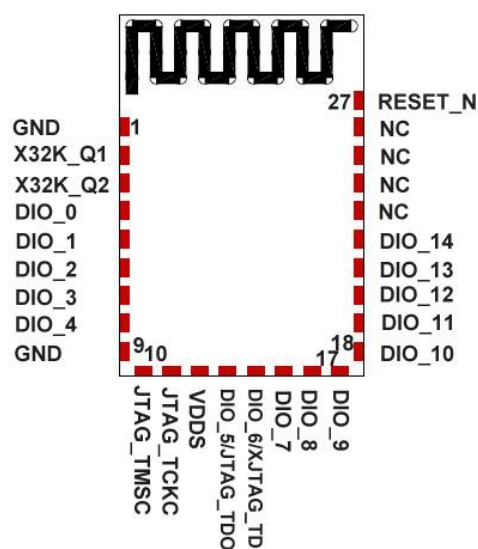
### Outline Dimension of PCBA

TOP VIEW



Thickness	2.0mm (Max.)
PCB Thickness	0.8mm (+/- 0.1mm)
Dimension	14.8mm x 10mm (+/-0.5mm)

BOTTOM VIEW



\* Features and specification are subject to change without notice.



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