TON9108 – Low Power iBeacon

Charateristics

- Contains ultra low power BLE4.0 IC
- Wide power supply range (2.35V ~ 3.3V)
- Ultra low iBeacon mode average power consumption (< 32uA @ 3 Broadcasts/Sec)
- Integrated 2Mbit flash for data and program storage
- Integrated real-time clock for time keeping
- Fully compatible with any BLE enabled smart phones (IOS, Android, WP)
- Companion iBeacon configuration smart phone application available for free
- Water resistant
- FCC, CE certified.

Applications

- O2O E-commerce
- Indoor location service
- Advertising
- Context-aware computing

Dimensions & Weight

Size: 50x50x10 （mm）
Weight: 13.7 (g)

Descriptions

TON9108 is a fully integrated, ready-to-assemble, iBeacon PCBA module for any Bluetooth low energy (BLE) technology based wireless beacon or iBeacon application. TON9108 features one of the world's lowest powered BLE integrated circuit (DA14580), with 2Mbit of program and data flash memory. With the companion configuration applications software, a user can configure the iBeacon module remotely via any smart phone that is equipped with BLE technology. A user could easily set UUID, major and minor ID, broadcast interval, broadcast transmit power and other useful parameters etc. Once configured, the iBeacon hardware will broadcast its ID periodically according to the user configuration, this periodically emitted signal allow smart phone nearby to sense the iBeacon location and enable a rich interactive shopping experience for the consumers and businesses alike.

Case

Material: ABS

Power Supply

Battery powered: 220mA.Hr CR2032 coin cell battery

Internal Functional Diagram

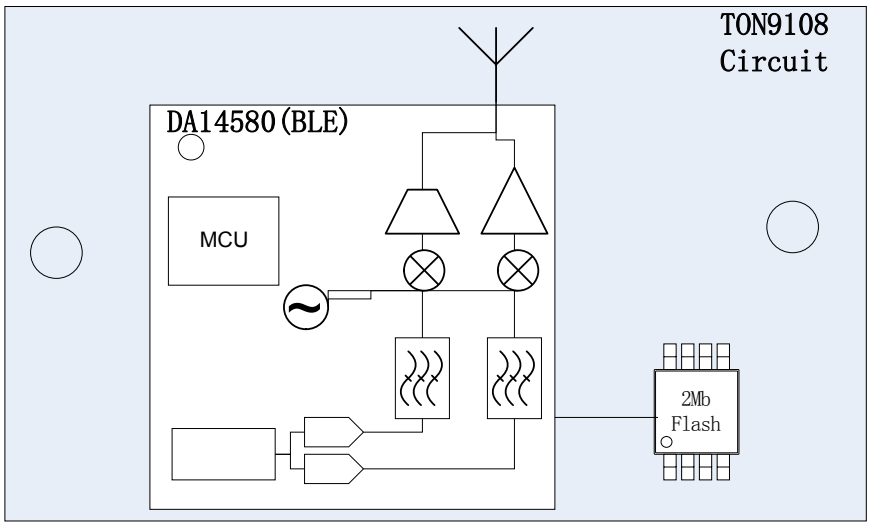

Table of Contents

1. Absolute Maximum Rating

Absolute Maximum Rating(Ta = 27˚C)

Name	Notation	Value	Unit
Supply Voltage	Vdd	-0.5 to 3.6	V
Voltage to any IC pin	Vin	-0.5 to Vdd + 0.5	V
Storage temperature	T_{STG}	-40 to125	˚C

Note:

Module could be damaged if its use conditions exceed above listed conditions, when working under normal conditions, the working conditions should be controlled below the maximum rating.

Normal working conditions

Condition	Min	Typical	Max	Unit	Note
General					
Supply Voltage	2.35	3.0	3.3	V	
Working temperature	-40	25	85	˚C	

2. Electrical Characteristics

Unless specially noted, the working conditions of the module shall be within the specified range as listed below. (VCC=3.0V)

Characteristics	Min	Typ	Max	Unit	Note
Work Current					
Rx Active		6.1	7.5	mA	
Tx Active		5.8	7.2	mA	
Deep Sleep		1.5		uA	
Power Management					
Start-up Time		1		mS	
RTC crystal startup time		0.4		S	
RF characteristics					
RX sensitivity		-93		dBm	
Max Tx Power	-20	0	0	dBm	
Frequency Band		2400~2480		MHz	
Broadcast characteristics					
Broadcast frequency		3		Times/Sec	
Transmit duration		500		uS	

3. Function Description

3.1. Configuration

TON9108's parameters such as UUID, major and minor number, transmit interval, etc. can be configured via our smart phone application software "BeaconFlyer".

3.1.1. Initialization

TON9108's is powered up as soon as the battery is attached to the internal PCB module and will continue to run until the battery is drained.

Pairing:

TON9108 is conformed to Bluetooth 4.0 standard, and can be detected and paired up with any Bluetooth 4.0 compliant host device.

3.2. Running

Once Powered, TON9108 will transmit beacon signal with specified transmit power level at the specified frequency.

4. Package Descriptions

Min Package:45pcs/Box
Size:32x21.5x7.5cm
G.W.:0.9kg

Package:67x44x50cm
G.W.:24pkgs/Carton

Contact Information:

Fast Precision Technologies Co. Ltd.
Rm. 701 Zhengtailai Commercial Bldg.
Xixiang Road, Bao An District, Shenzhen
ZIP: 518102
Tel: (755) 8622-7153 Fax: (755) 8622-7139

Printed in Shenzhen, China Date of release: 2015 October Document order number: 2015 0010 0001