

User Manual

SC-33R01B

Bluetooth Low Energy (BLE) Module

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1. Product Description

The SC-33R01B module is a solution based on the ultra-low energy Bluetooth application system chip BK3633. The chip is designed with an advanced process and integrates a switching DCDC regulator with ultra-low power consumption. Embedded high interference suppression filter and fast automatic gain control logic make it work well in high interference environment.

The BK3633 chip is a highly integrated wireless chip system that supports Bluetooth 5.2 dual mode and proprietary 2.4GHz protocol. It integrates high-performance RF transceivers, baseband, low-power processors, feature-rich peripheral units, programmable protocols and configurations files to support a wide range of applications. Flash program memory makes it suitable for custom applications.

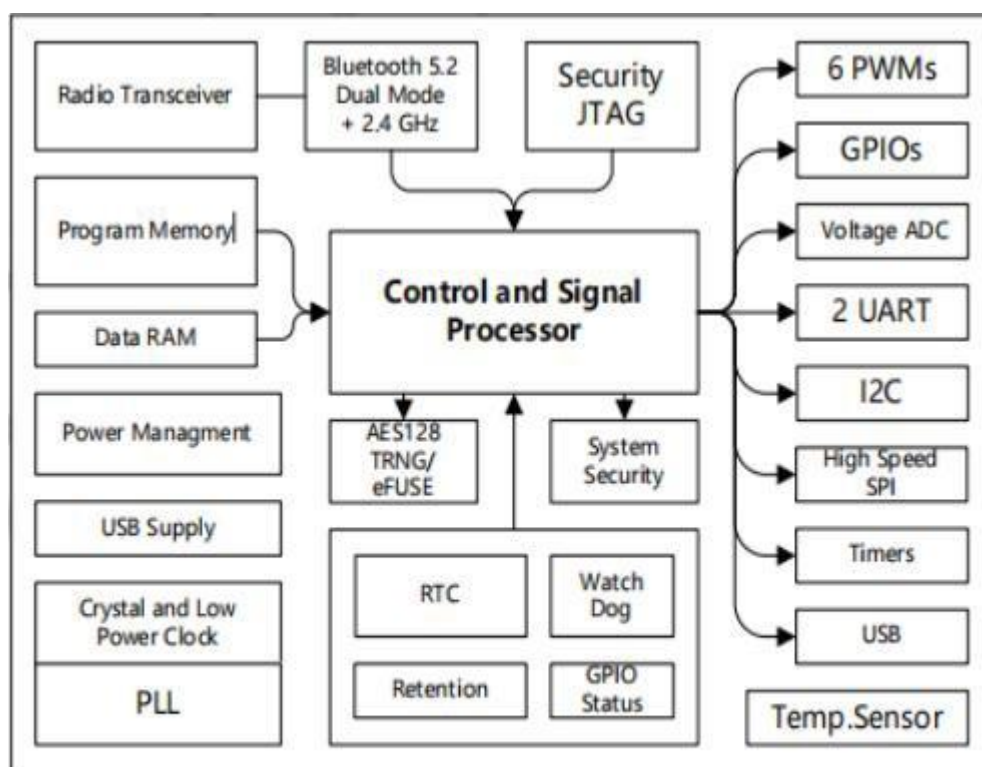


Figure 1 BK3633 Block Diagram

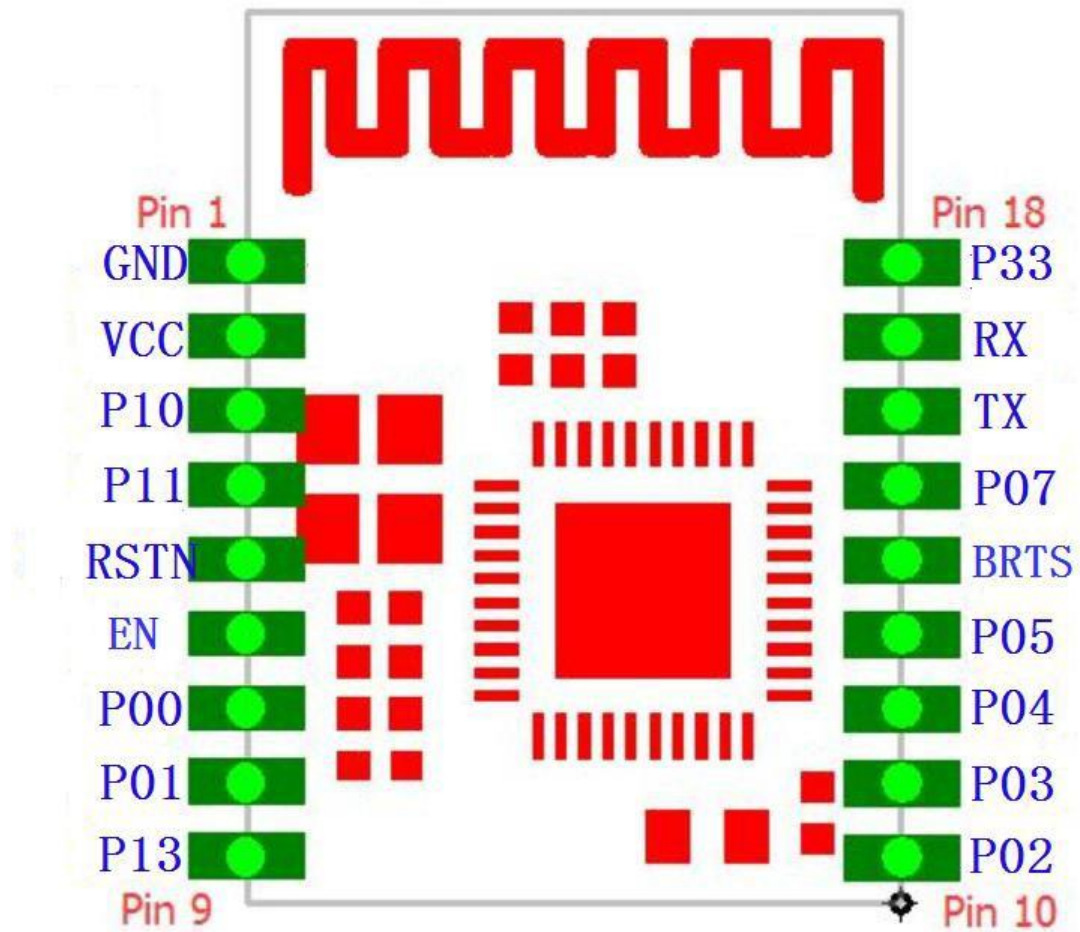
1.1 Certification Information

- SRRC
- CE、FCC
- ROHS

Version update record

Version	Date	Revision and Changes	Confirmation
1.0	2021- 12-11	first edition release	Zzq
2.0	2022- 02-13	Add silk screen logo, increase RF parameters	Zzq

2. Pin Definition



pin number	pin name	Chip pin name	input /Output	illust rate
Pin1	GND	GND	-	Module ground wire GND
Pin2	VCC	VCC	-	Module Power 2.0 ~ 3.6V
Pin3	IO10	P10	I/O	Common IO port
Pin4	IO11	P11	O	Connection status indication 0: bluetooth connected 1: bluetooth not connected
Pin5	RES	RES	I	Reset input pin, active low, no internal pull-up
Pin6	EN	P12	I/O	Module enable control line (active low) 0: The module starts broadcasting until connected to the mobile device 1: Immediately enter a full sleep state regardless of the current state of the module
Pin7	SWC	SWC	-	Module firmware download TX
Pin8	SWD	SWD	-	Module firmware download RX
Pin9	IO13	P13	I/O	Common IO port
Pin10	IO02	P02	I/O	Common IO port
Pin11	IO03	P03	I/O	Common IO port
Pin12	IO04	P04	I/O	Common IO port
Pin13	IO05	P05	I/O	Common IO port

Pin14	BRTS	P06	I	<p>Send request as data (used to wake up the module)</p> <p>0: The host has data to send, the module will wait to receive data from the host</p> <p>According to the data, the module does not sleep at this time</p> <p>1: The host has no data to send, or after the host data is sent, it should Set this signal line to 1</p>
Pin15	IO07	P07	I/O	Common IO port
Pin16	TX	P16	O	Module serial port sender
Pin17	RX	P17	I	Module serial port sender

FCC Statement

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help important announcement

Important Note:

Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Country Code selection feature to be disabled for products marketed to the US/Canada.

This device is intended only for OEM integrators under the following conditions:

1. The antenna must be installed such that 20 cm is maintained between the antenna and users, and
2. The transmitter module may not be co-located with any other transmitter or antenna,

As long as the three conditions above are met, further transmitter testing will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed.

Important Note:

In the event that these conditions cannot be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID cannot be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

End Product Labeling

The final end product must be labeled in a visible area with the following "Contains **FCC ID: 2A4NI-33R01B**"

Manual Information to the End User

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module.

The end user manual shall include all required regulatory information/warning as shown in this manual.

Integration instructions for host product manufacturers according to KDB 996369 D03 OEM Manual v01

2.2 List of applicable FCC rules

CFR 47 FCC PART 15 SUBPART C has been investigated. It is applicable to the modular transmitter

2.3 Specific operational use conditions

This module is stand-alone modular. If the end product will involve the Multiple simultaneously transmitting condition or different operational conditions for a stand-alone modular transmitter in a host, host manufacturer have to consult with module manufacturer for the installation method in end system.

2.4 Limited module procedures

Not applicable

2.5 Trace antenna designs

Not applicable

2.6 RF exposure considerations

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

2.7 Antennas

This radio transmitter **FCC ID:2A4NI-33R01B** has been approved by Federal Communications Commission to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Antenna No.	Model No. of antenna:	Type of antenna:	Gain of the antenna (Max.)	Frequency range:
BT	/	PCB Antenna	0dBi for 2402-2480MHz;	

2.8 Label and compliance information

The final end product must be labeled in a visible area with the following" Contains **FCC ID: 2A4NI-33R01B**".

2.9 Information on test modes and additional testing requirements

Host manufacturer is strongly recommended to confirm compliance with FCC requirements for the transmitter when the module is installed in the host.

2.10 Additional testing, Part 15 Subpart B disclaimer

Host manufacturer is responsible for compliance of the host system with module installed with all other applicable requirements for the system such as Part 15 B.