8762-01

(MESH8762-01/8762-01N)

Specification

MESH Bluetooth Low Energy (BLE) 5.0 Module

Module No.: MESH8762-01/8762-01N

Version: V1.0

Date: 2020-05-11

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Content

1. Introduction

The 8762-01/8762-01N module with internal PCB printing antenna is MESH Bluetooth Low Energy (BLE) solution which is fully Bluetooth 5.0 standard compliant and allows easy connectivity with Bluetooth Smart Ready devices. 8762-01/8762-01N supports BLE slave and master mode operation, including broadcast, encryption, connection updates, and channel map updates. It is RoHS-compliant and 100% lead (Pb)-free. With internal 512KBytes Flash are programmable for more applications, 12bits/400bps ADC with PGA, 5 channels PWM, provides 12 GPIOs.

18 pins are easy installation with removable to be an SMT and DIP module (PCB stamp holes linking) in the mean time.

2. Features

- RTL87xx system on chip
- Built-in Flash 512KBytes
- Compact size 21.1 x 16 x 3.5mm
- Up to 5 channels PWM
- Embedded Hardware AES
- Host Controller Interface (HCI) over UART, I2C
- Class 1 supported with 8.0dBm maximum TX power
- Operation Temperature: -40 to 85 ℃,
- Bluetooth 5.0 1Mbps, Boost Mode: 2Mbps
- RX Sensitivity : -97.0dBm@1Mbps
- RSSI Monitoring
- Battery monitoring
- Low power consumption
- Supports SIG MESH and Tmall Genie Speech control protocols

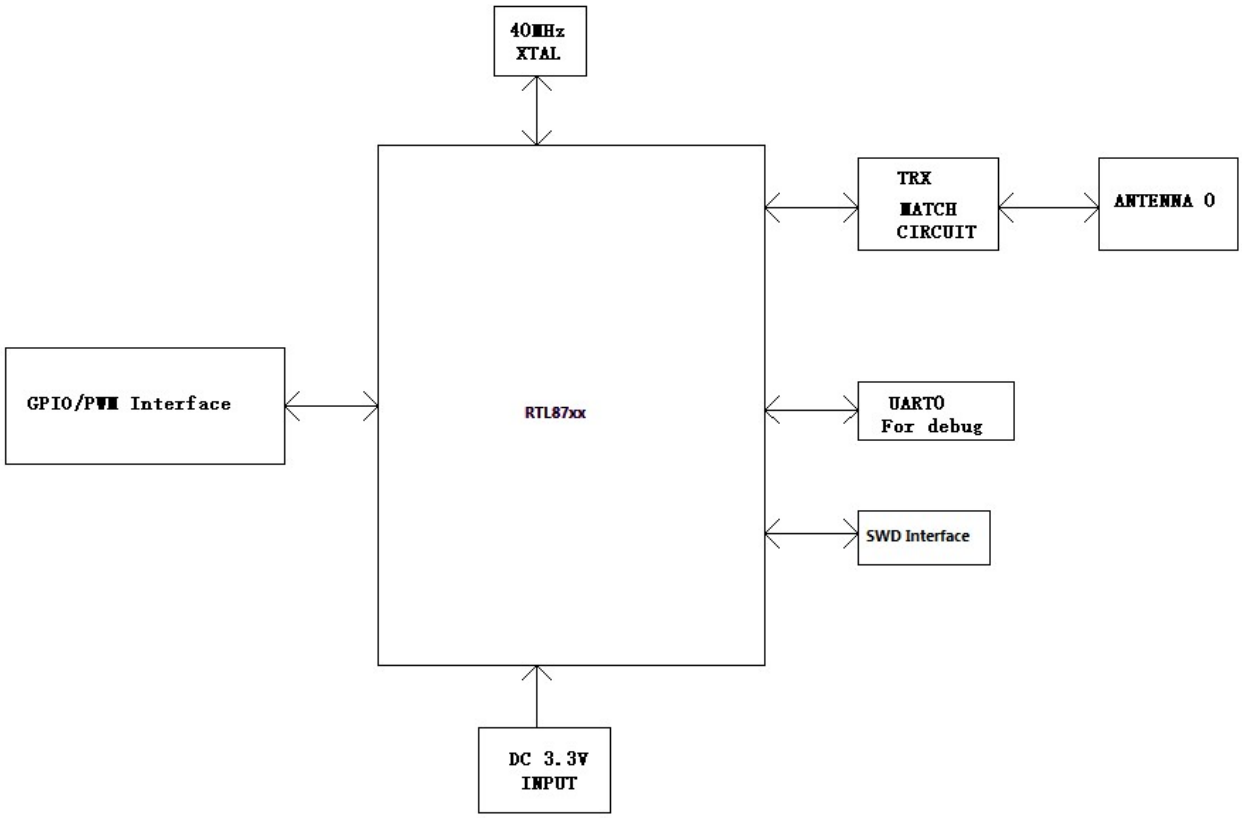
3. Applications

- Smart Devices Switch, Remote Control and 3D glasses
- Smartphone accessories
- Wireless Microphone
- Health monitoring

- Sports and fitness tracking
- Wearable devices
- PC and tablet peripherals, including Mouse / Keyboard

4. Module Diagram

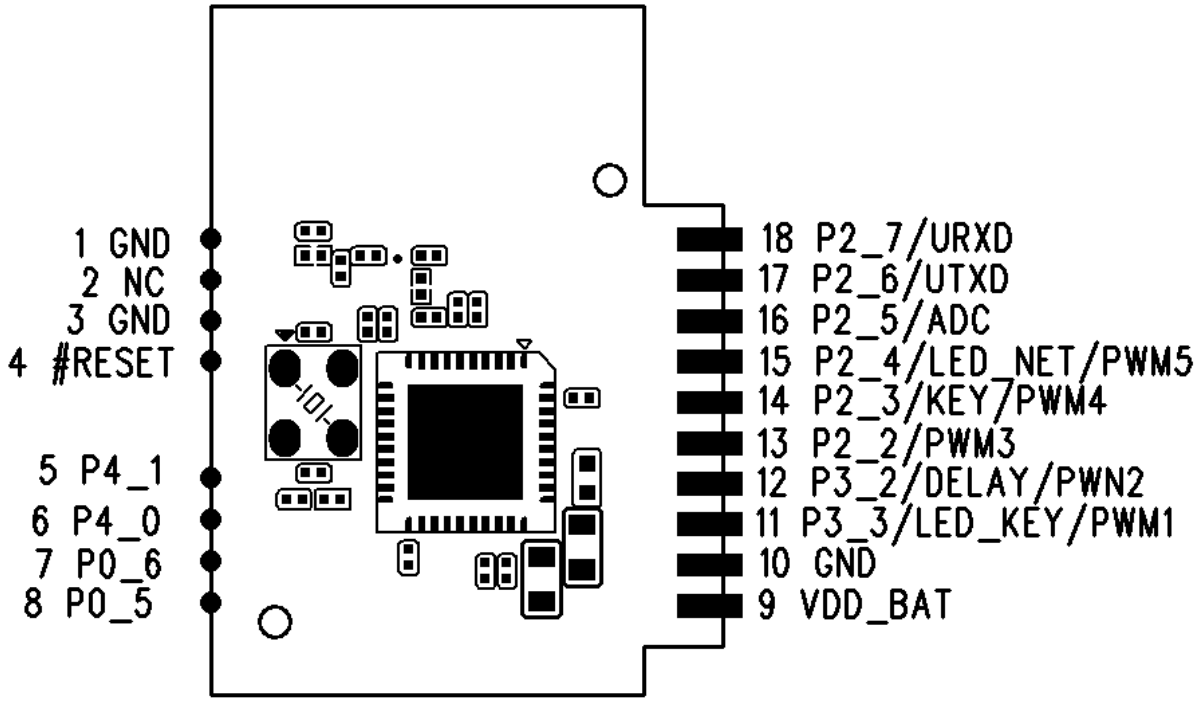
BLE Module block Diagram



PCBA view diagram

Dimension unit: mm

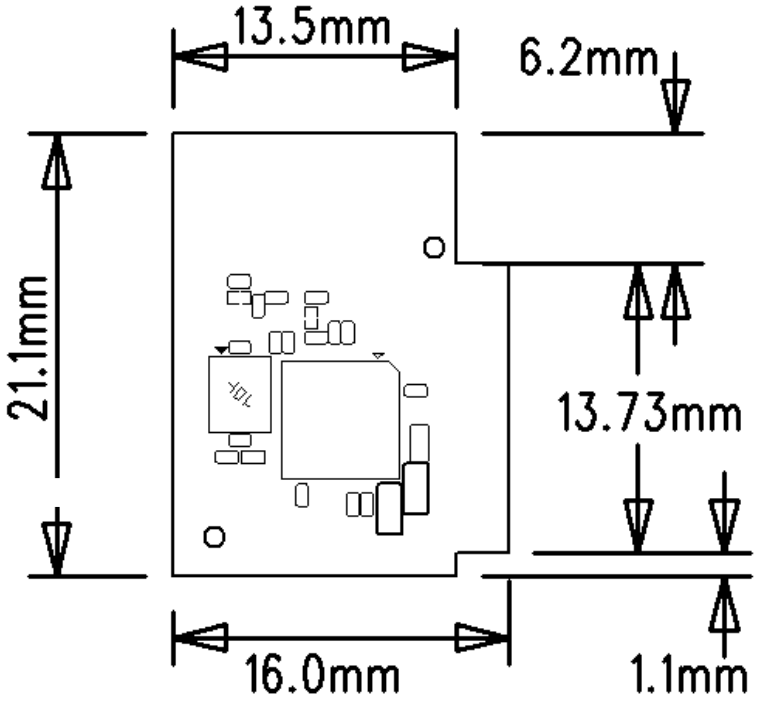
Top View



Dimension Diagram

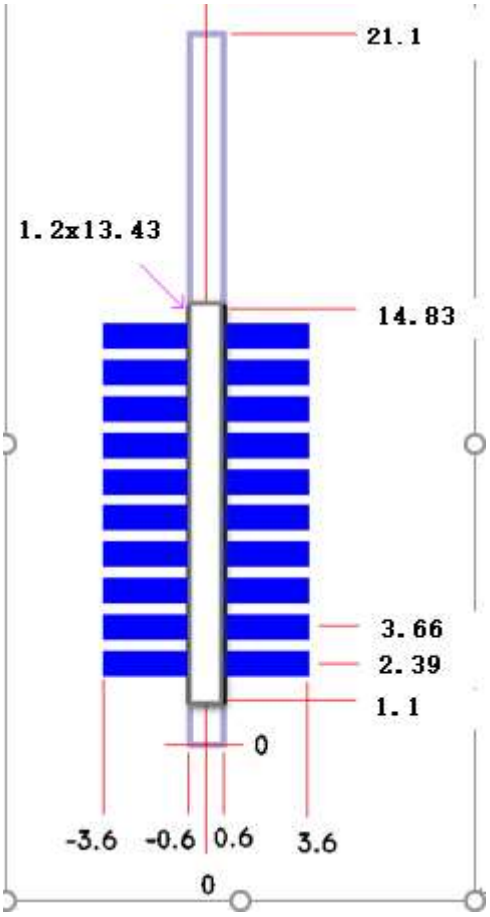
Dimension unit: mm

Top View



PCB Thickness: 0.8±0.1mm

Side View



5. Module Schematic

Please further contact if needed.

6. Pins Description

Pin	NAME	I/O	Description
1,3	GND	P	RF GND
2	NC	O	NC
4	#RESET	I	NC, For External Reset
5	P4_1	I/O	GPIO interface, Function extend pin
6	P4_0	I/O	GPIO interface, Function extend pin
7	P0_6	I/O	GPIO interface, Function extend pin
8	P0_5	I/O	GPIO interface，Function extend pin
9	VDD_BAT	P	VDD，3.3V
10	GND	P	GND
11	P3_3	I/O	GPIO/ PWM interface，Function extend pin
12	P3_2	I/O	GPIO/ PWM interface，Function extend pin
13	P2_2	I/O	GPIO/ PWM interface，Function extend pin
14	P2_3	I/O	GPIO/ PWM interface，Function extend pin
15	P2_4	I/O	GPIO/ PWM interface，Function extend pin
16	P2_5	I/O	GPIO/ PWM interface，Function extend pin
17	P2_6	I/O	GPIO interface，UART TX pin
18	P2_7	I/O	GPIO interface，UART RX pin

7. Electronic Specification

Item	Specification
RF Transmitting Power Level	8 dBm Max
RF Receiver Sensitivity	-97 dBm at 1Mbps Min
Antenna	Printed PCB Antenna 0 dBi Gain
Data Rate	250 kbps, 500 kbps, 1 Mbps, 2 Mbps
Physical Connectors	1 x 10 pins 1.27mm pitch through terminal 18 holes PCB board edge stamp holes
Operation Voltage	1.8V to 3.6V
Operation Temperature	-40 to +85 ℃

8. Power Consumption

Operation Mode	Consumption
Operation (TX/RX) 0dBm	<10mA
Standby (Deep Sleep) depend on firmware	0.7uA (optional by firmware)

9. Antenna Specification

ITEM	UNIT	MIN	TYP	MAX
Frequency	MHz	2400		2500
V.S.W.R				2.0
Gain(AVG)	dBi	0		
Maximum input power	W			1
Characteristics TYPE	Meander IFA			
Polarization	Vertical			
Radiated Pattern	Omni-directional			
Impendence	50			
SIZE	---			

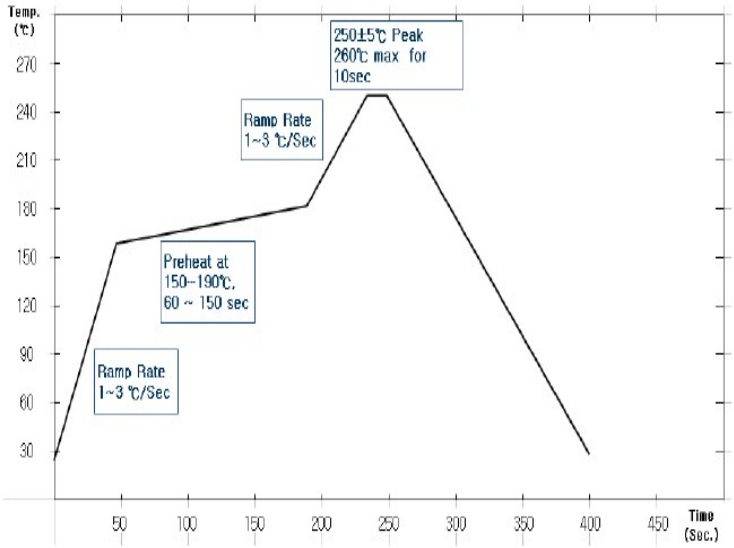
10. Ordering Information

Part Number	Description
8762-01	Internal Printing PCB Antenna, SMT mounted form
8762-01N	Internal Printing PCB Antenna, No shield case,SMT mounted form

11. Package

Tray plate:

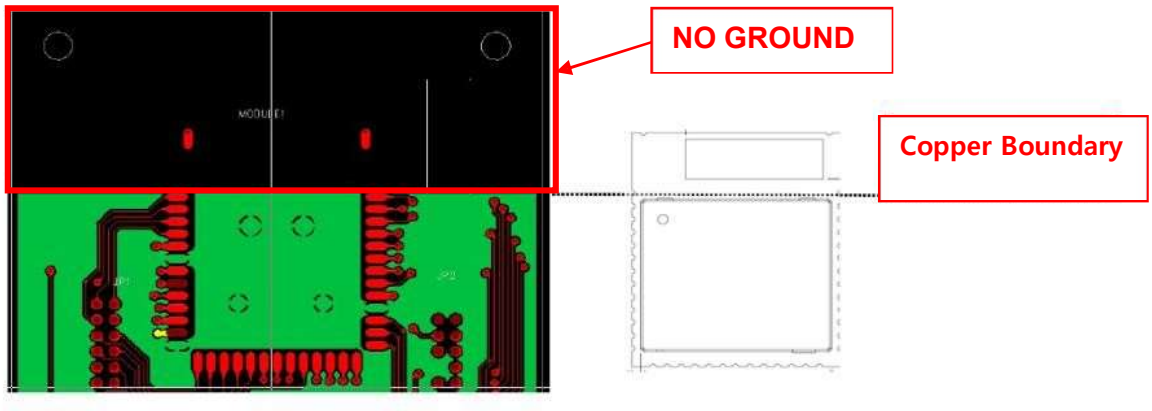
12. Reflow Profile



13. Application Design Note

To Be Discussed

14. Antenna Design



Influence of GND on Antenna
a) The GND interrupts the emission of antenna but isessential.
) RF vertical GND is important in antennadesign.
c) Normally, the emission rate is improved as more GND is secured and edged GND of antenna is cut.

15. Critical Materials

Please further contact if needed.

16. FCC Warning

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.Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. 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.The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.

FCC RF exposure statement:

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

Labels

Host Device must contain the following label on the outside of the unit:

Contains FCC ID：2AWEE-8762-01

Installation Guidance

The final host / module combination may also need to be evaluated against the FCC Part 15B criteria for unintentional radiators in order to be properly authorized for operation as a Part 15 digital device.

The user’ s manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. In cases where the manual is provided only in a form other than paper, such as on a computer disk or over the Internet, the information required by this section may be included in the manual in that alternative form, provided the user can reasonably be expected to have the capability to access information in that form.

To ensure compliance with all non-transmitter functions the host manufacturer is responsible for ensuring compliance with the module(s) installed and fully operational. For example, if a host was previously authorized as an unintentional radiator under the Declaration of Conformity procedure without a transmitter certified module and a module is added, the host manufacturer is responsible for ensuring that the after the module is installed and operational the host continues to be compliant with the Part 15B unintentional radiator requirements.