



晶讯软件
JINGXUNSOFT

Shenzhen Jingxun Software Telecommunication Technology Co.,Ltd

IPBM-04

(MESH8267-04,MESH8269-04)

Datasheet

MESH Bluetooth Low Energy (BLE) 4.0 Module

Module No.: IPBM-04/MESH8267-04/MESH8269-04

Version: V2.0

Date: 2018-5-8

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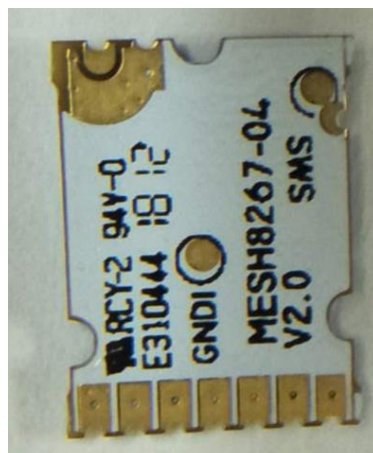
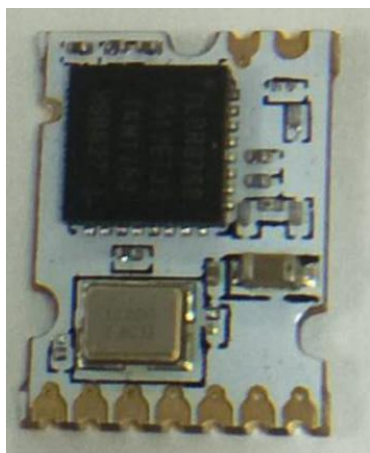
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1. Introduction

The MESH8269-04 featured with small form factor is MESH Bluetooth Low Energy (BLE) solution which is fully Bluetooth 4.0 standard compliant and allows easy connectivity with Bluetooth Smart Ready devices. MESH8269-04 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 and 32KB SDRAM are programmable for more applications, 5 channels PWM.

Total 9 pins are easy installation with removable to be an SMT module (PCB stamp holes linking) in the mean time.

2. Features

TLSR8267/TLSR8269F512 system on chip

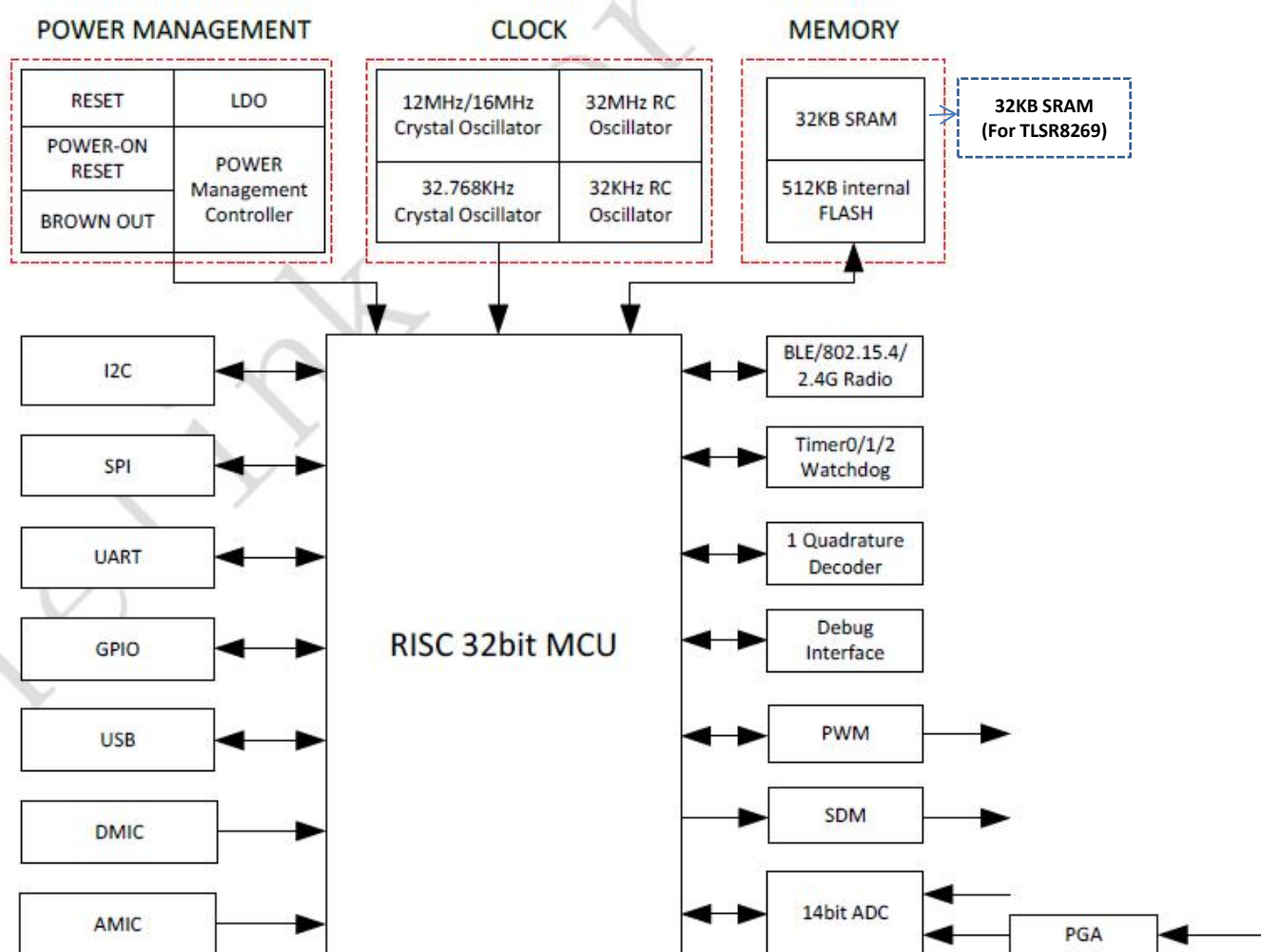
- Built-in Flash 512KBytes
- Built-in 16KB SDRAM(TLSR8267),32KB SDRAM(TLSR8269)
- Compact size 12.5 x 9 x 2.5mm
- Up to 5 channels PWM
- Embedded Hardware AES
- Host Controller Interface (HCI) over UART, I2C and USB 2.0 in full speed
- Class 1 supported with 7dBm maximum TX power
- Operation Temperature: ET Version:-40 to 85 °C, AT version: -40°C~+125°C
- Bluetooth 4.0 1Mbps, Boost Mode: 2Mbps
- TX RF Power: +7dBm
- RX :-92dBm BT4.0 Sensitivity
- RSSI Monitoring
- Embedded LDO
- Battery monitoring
- Low power consumption
- 100k program/erase, 20 years data retention

3. Applications

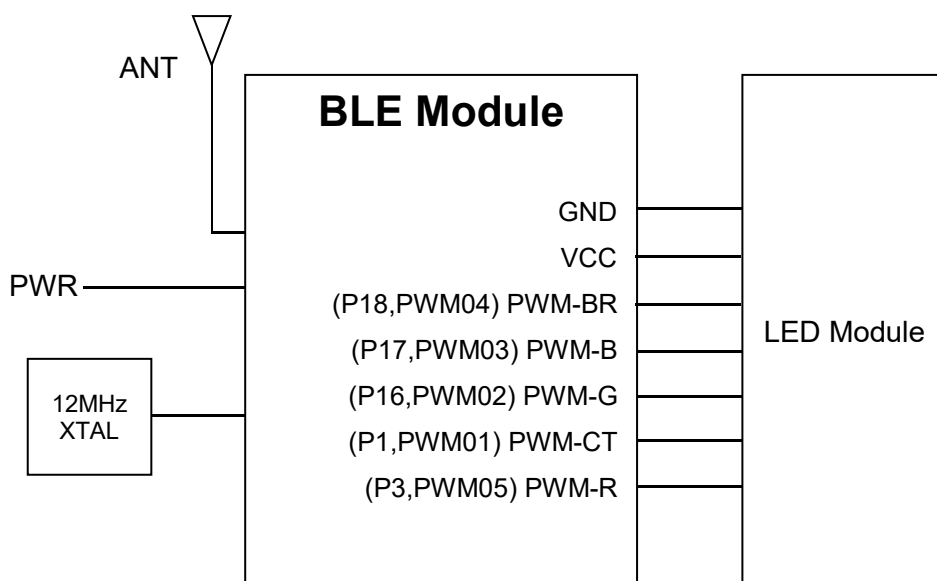
- LED Lighting Brightness Control
- LED Lighting Color Temperature Control
- LED RGB Scene control

4. Module Diagram

TLS8267/TLS8269 SoC diagram

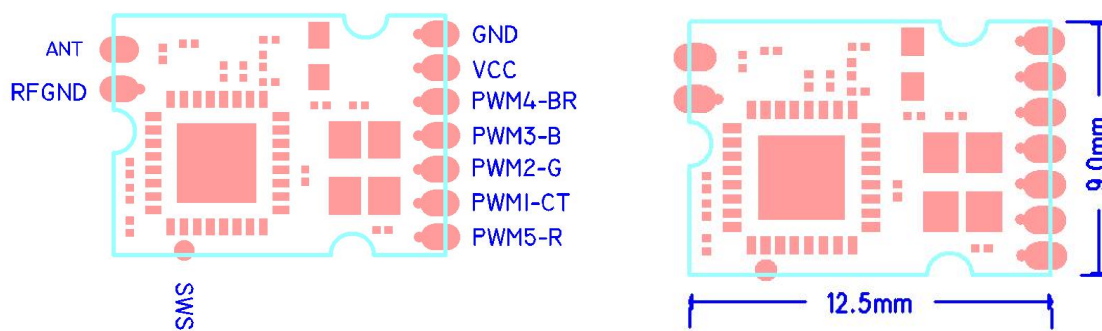


BLE Module 8 pins diagram



PCBA top view diagram

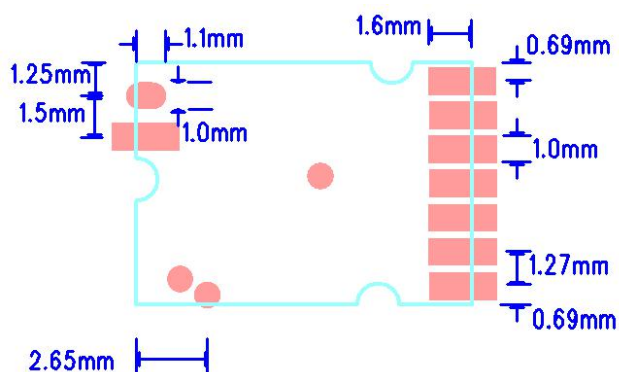
Pin Assignments Dimension (unit: mm)



Dimension Diagram

Dimension unit: mm

Bottom View





5. Module Schematic

Please further contact if needed.

6. Pins Description

Pin	NAME	Inter face	I/O	Description
1	ANT	Analog	-	Antenna port
2	RFGND	Power	-	RF Grounding
3	PWM5-R	Analog	I/O	SoC TLR8269F512 P3 PWM05 Red (R)
4	PWM1-CT	Analog	I/O	SoC TLR8269F512 P1 PWM01 Control (CT)
5	PWM2-G	Analog	I/O	SoC TLR8269F512 P16 PWM02 Green (G)
6	PWM3-B	Analog	I/O	SoC TLR8269F512 P17 PWM03 Blue (B)
7	PWM4-BR	Analog	I/O	SoC TLR8269F512 P18 PWM04 Bright (BR)
8	VCC	Power	-	DC 3.3V input, Max 3.6V, Min 3.0V
9	GND	Ground	-	Ground

7. Electronic Specification

Item	Specification
RF Transmitting Power Level	7 dBm Max
RF Receiver Sensitivity	-91 dBm at 1Mbps
Flash	512kb
Antenna	No Antenna
Linking Distance	30 M Out of Sight
RAM	16 KB x 32 bits
Data Rate	250 kbps, 500 kbps, 1 Mbps, 2 Mbps
Physical Connectors	9 holes PCB board edge stamp holes
Operation Voltage	2.9V to 3.6V
Operation Temperature	-40 to 85 °C
Security	128 Bit AES encryption
Interface	PWM, UART, GPIO
EMC/BQB approval	SRRC approved, BQB approved

8. Power Consumption

Operation Mode	Consumption
Operation (TX/RX) 0dBm	30mA
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	-0.15		
Maximum input power	W			1
Characteristics TYPE	Meander IFA, PIFA,			
Polarization	---			
Radiated Pattern	Omni-directional			
Impedence	50			

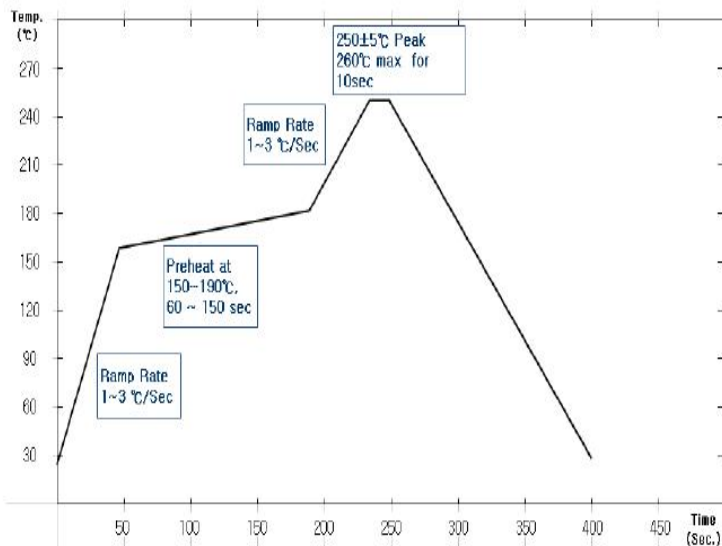
10. Ordering Information

Part Number	Description
MESH8267-04 V2.0	BT MESH Module MESH8269-04 V2.0 SMD09 12.5*9MM
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11. Package

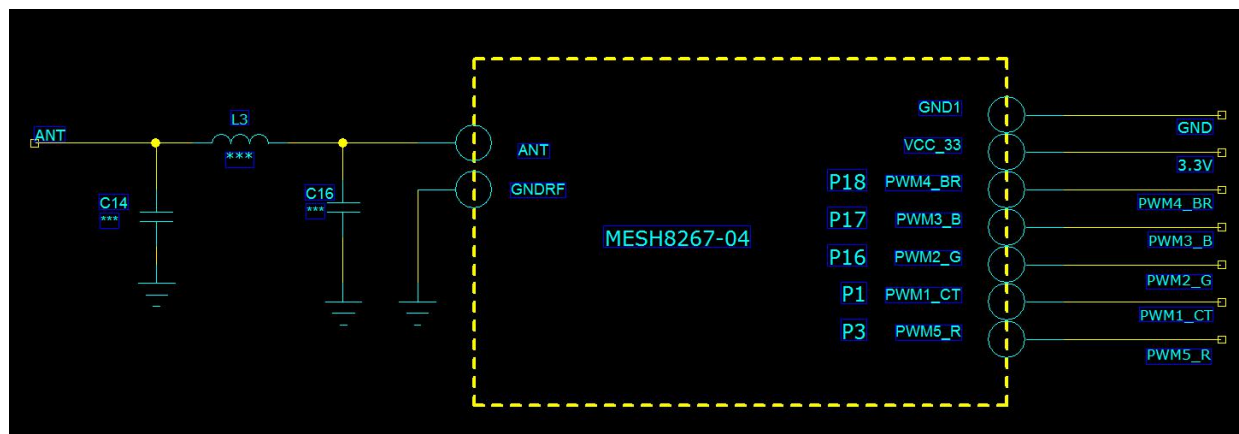
Tray plate: To Be Discussed

12. Reflow Profile



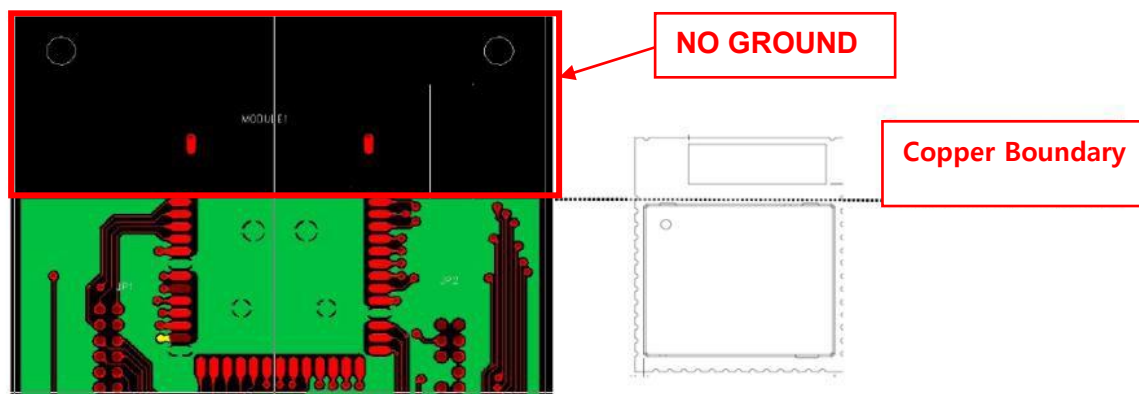
13. Application Design Note

A π -type RF matching network should be in series between antenna and ANT interface of BT module to fine tune the antenna matching.



14. Antenna Design

If a printed PCB antenna is used, the below design rules should be followed.



Influence of GND on Antenna

- The GND interrupts the emission of antenna but is essential.
- RF vertical GND is important in antenna design.
- 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.