



Product Name: Bluetooth module
Model No.:BPS_MODULE

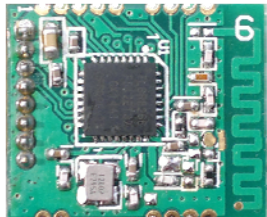
OEM/Integrators Installations User Manual

(Note: The module is limited to OEM installation ONLY; The OEM integrator is responsible for ensuring that the end-user has no manual instructions to remove or install module)



1. General

1.1 Introduction

	Product Name	Bluetooth module
	Model No:	BPS_MODULE
	Function:	Bluetooth low energy BLE module supporting mesh networking
	Control Method:	APP control、 remote control

1.2 Module support diversities based on connectors used as shown in Table 1-1

Table 1-1

Part No. of System-on-Chip	Protocol Supported	Module Functions	Remarks
TL8R8266	Bluetooth Low Energy V4.0	BLE with 8-pin 1.27mm pitch connector for smart lighting	BLE supports 40 channels.
TL8R8266	Bluetooth Low Energy V4.0	BLE with 13-pin PCB edge connector	BLE supports 40 channels.

1.3 Features

- ◆ Bluetooth specification V4.0 with mesh networking supported
- ◆ Embed 32-bit high performance RISC MCU with clock up to 48MHZ
- ◆ Compact package size (18x15x2.8mm)
- ◆ Host Controller interface(HCI) over UART,I2C and USE in full speed
- ◆ Class I supported with 8dBm maximum TX power
- ◆ Built-in Flash up to 512Kbytes, system clock
- ◆ Built-in 16KB SRAM
- ◆ Module Size 18 x 15 x 2.8mm
- ◆ Receiving Sensitivity -92dBm, Maximum transmit power up to +8dBm, Data transfer rate up to 2Mbps
- ◆ Conform to FCC, CE, ROHS and other certification

1.4 Applications

- ◆ Set Top Box
- ◆ Consumer Electronics: TV, home theatre system, blue-ray player/Recorder
- ◆ Human-interface Devices: Remote Control, Mouse, Keyboard
- ◆ LED Lighting
- ◆ Smart AC switch
- ◆ Health Care
- ◆ Sports and leisure Equipment
- ◆ Mobile Phone Accessories
- ◆ Smart Metering
- ◆ USB Dongle
- ◆ Wearable devices
- ◆ Other Hands-Free Devices



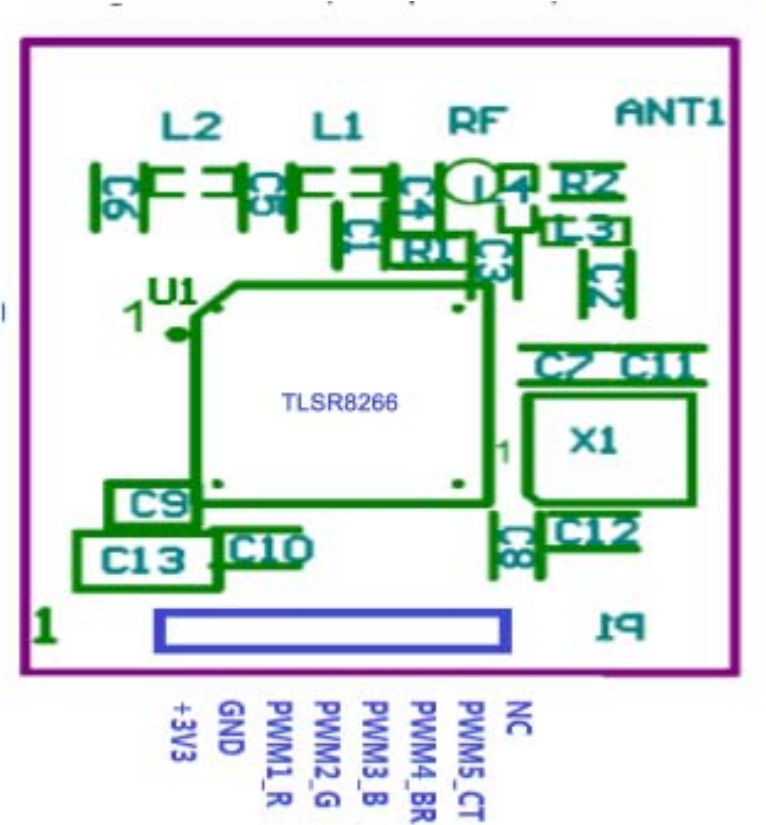
2. Characteristics

2.1 Electrical characteristics

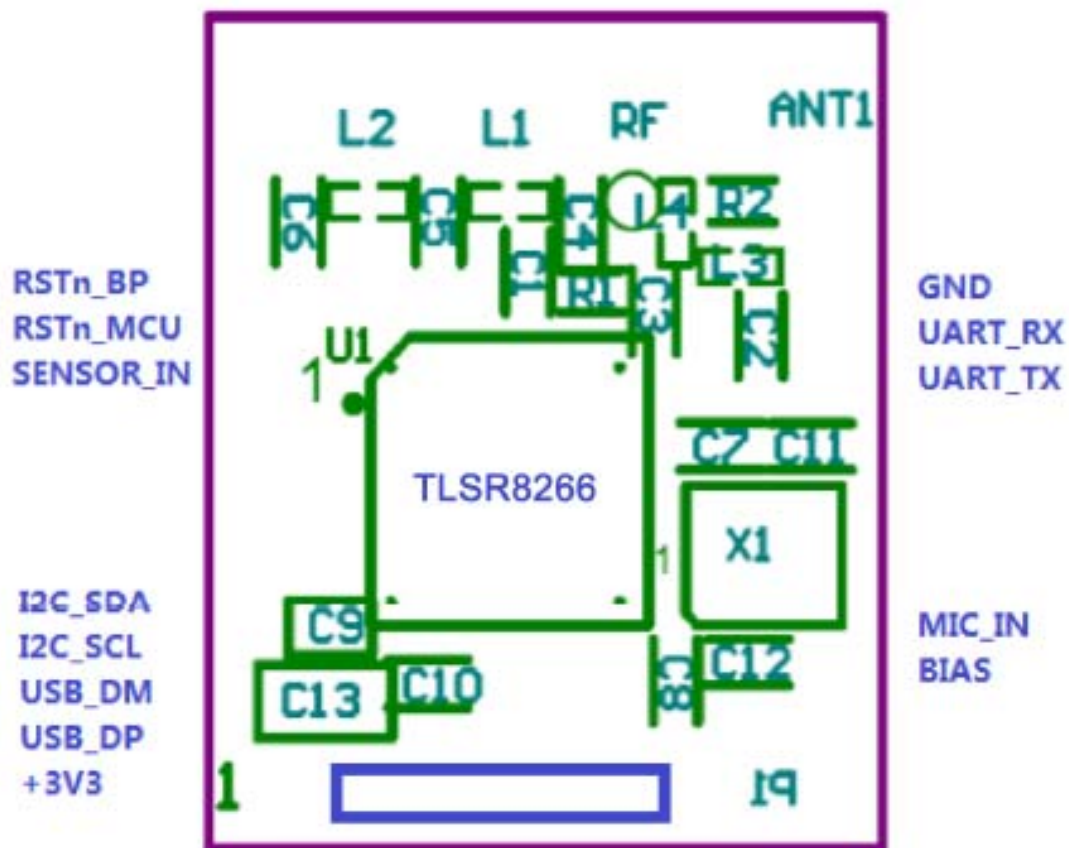
Module size	18 x 15 x 2.8mm
RF Transmitting power level	In-system-programmable flash 512k bytes
RAM	16Kbytes x 32 bits
Date Rate	250kbps,500kbps,1Mbps,2Mbps
Antenna	PCB Printed Antenna: Gain 0dBi
Operational RF distance	30m in the open field without RF interference
Physical connector	(1) 1x8 1.27mm pitch through terminal (2) 13-pin PCB board edge connetcor
Operational Voltage	1.9V to 3.6V
Operating ambient temperature range TA	-40℃—+55℃
Reference oscillator for timer	Built in
Security:	128-bit AES encryption
Serial date interfance	UART /I2C/ USB
EMC	Europe: ETSI EN 300 328 and EN 300 440 Class 2 USA: FCC CFR47 Part 15 Japan: ARIB STD-T66



2.2 Module outline specifications



Pin No	Pin Name	Pin Type	Description
1	3V3	Power supply	1.9V to 3.6V
2	GND	Ground	
3	PWM1_R	I/O(PWM output can be supported to control Red color LED)	Configurable I/O Port(Or PWM output port)
4	PWM2_G	I/O(PWM output can be supported to control Green color LED)	Configurable I/O Port(Or PWM output port)
5	PWM3_B	I/O(PWM output can be supported to control Blue color LED)	Configurable I/O Port(Or PWM output port)
6	PWM4_BR	I/O(PWM output can be supported to control brightness of white LED)	Configurable I/O Port(Or PWM output port)
7	PWM5_CT	I/O(PWM output can be supported to control color temperature of warm white color LED)	Configurable I/O Port(Or PWM output port)
8	GPIO 2/NC	I/O	Configurable I/O Port



Pin No	Pin Name	Pin Type	Description
1	RSTn_BP	Digital I/O	Reset BLE module by host MCU,active low
2	RSTn_MCU	Digital I/O	Reset host MCU by BLE module, active low
3	Sensor_in	Digital I/O	External sensor signal input
4	I2C_SDA	Digital I/O	I2C date
5	I2C_SCL	Digital I/O	I2C clock
6	USB_DM	Digital I/O	USC N for module
7	USB_DP	Digital I/O	USB P for module
8	+3V3	Power supply	
9	BIAS	Microphone bias	
10	MIC_IN	Microphone input signal	
11	UART_TX	Digital I/O	UART_TXD
12	UART_RX	Digital I/O	UART_TXD
13	GND	Ground	



3. Module flash memory programming(in circuit)

Test point No for programming	Signal name of test point	Description of test point	Diameter of test point
TP1	3V3	+3.3V power supply	1.0mm
TP2	GND	Ground	1.0mm
TP3	SMS	SMS	1.0mm

Programming Points





FCC Warning:

If the FCC identification number is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording such as the following:

“Contains Transmitter Module FCC ID: 2AH7Z-MYBLE ”

when the module is installed inside another device, the user manual of this device must contain below warning statements;

1. 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.

(2) This device must accept any interference received, including interference that may cause undesired operation.

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

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.

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.

That separate approval is required for all other operating configurations, including portable configurations with respect to Part 2.1093 and different antenna configurations.

This product is mounted inside of the end product only by professional installers OEM. They use this module with changing the power and control signal setting by software of end product within the scope of this application. End user can not change this setting.

The equipment complies with RF exposure limits. This module is limited to installation in mobile or fixed applications. The antenna used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

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