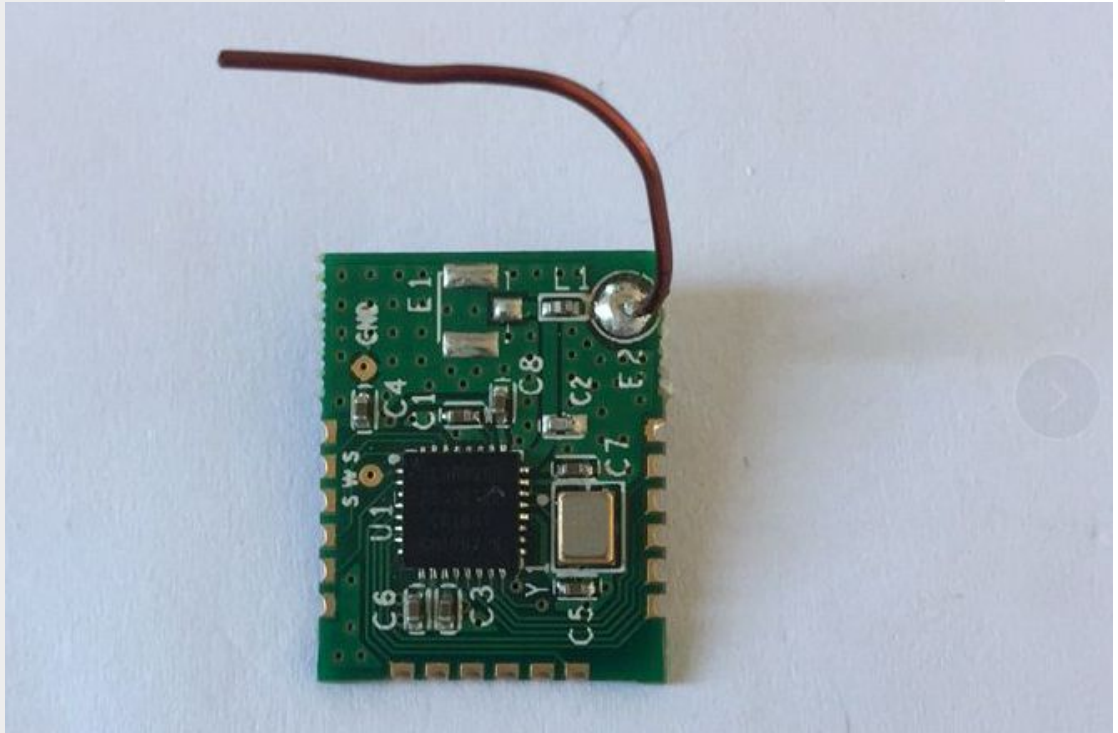


# Bluetooth module specification

## 一 : Module picture



## 二: Module parameters:

- Working temperature: - 40 °C ~ + 85 °C
- Working voltage: 2.7 V~ 3.6 V
- Module size: 18.5\*15.1\*0.8mm
- Material : meet RoHS certification standards

## 三 : General Description

TLSR8266F512 is Telink-developed BLE SoC solution which is fully standard compliant and allows easy connectivity with Bluetooth Smart Ready mobile phones, tablets, laptops. The TLSR8266F512 supports BLE slave and master mode operation, including broadcast, encryption, connection updates, and channel map updates.

TLSR8266F512 is designed to offer high integration, ultra-low power application capabilities. It integrates strong 32-bit MCU, BLE/2.4G Radio, 16KB SRAM, 512KB internal FLASH , 14bit ADC with PGA, 6-channel PWM, three quadrature decoders, a hardware keyboard scanner (Keyscan), abundant GPIO interfaces, multi-stage power management module and nearly all the peripherals needed for Bluetooth Low Energy applications development.

## 四 : Key Features:

### 1. TLSR8266F512 General features

- 32bit high performance MCU, up to 48MHz
- Program memory: external 512KB FLASH
- Data memory: 16KB on-chip SRAM
- 12M Crystal and 32KHz/32MHz embedded RC oscillator
- A rich set of I/Os:
  - ◇ SPI;
  - ◇ I2C;

- ◇ USB;
- ◇ Debug Interface.
- ◇ DMIC (Digital Mic);
- ◇ AMIC (Analog Mic)
- ◇ Mono-channel Audio output
- ◇ UART with hardware flow control;
- ◇ Up to 35 GPIOs depending on package option;
- Up to 6 channels of PWM
- Sensor: ◇ 14bit ADC with PGA ◇ Temperature sensor
- Three quadrature decoders
- operating temperature: ◇ ET versions: -40°C~+85°C temperature range
- Package : ◇32-pin QFN 5×5mm

## 2.RF features

- BLE/2.4GHz RF transceiver embedded.
- Bluetooth 4.0 Compliant, 1Mbps and 2.4GHz 2Mbps Boost Mode.
- -92dBm BT4.0 Rx Sensitivity.
- RF link data rate up to 2Mbps.
- Single-pin antenna interface.
- RSSI monitoring.

## 3.Features of power management module

- Embedded LDO.
- Battery monitor: Supports low battery detection.
- Chip power supply: 2.7V~3.6V (with internal flash).
- Multiple stage power management to minimize power consumption
- ◇ Receiver mode current: 13mA
- ◇ Transmitter mode current: 13mA @ 0dBm power, 19mA @ max power
- ◇ Suspend mode current: 22uA (Timer wakeup)
- ◇ Deep sleep mode current: 0.7Ua

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

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.

This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

15.105 Information to the user.

(b) For a Class B digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

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.

**Radiation Exposure Statement:**

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. The module should not be installed and operated simultaneously with other radios except additional RF exposure was evaluated for simultaneously transmission.

The availability of some specific channels and/or operational frequency bands are country dependent and are firmware programmed at the factory to match the intended destination.

The firmware setting is not accessible by the end user.

The final end product must be labelled in a visible area with the following:

“Contains Transmitter Module **2AOTXBLE-M1**”

