

BL-R8822BU1-A

IEEE 802.11a/b/g/n/ac 2T2R USB WiFi Module and Bluetooth

SPEC

Shenzhen Bilian Electronic Co., Ltd

1. 1Features:

- Operating Frequencies : 2.4~2.4835GHz and 5.15~5.85GHz

1.2 Reserving System

IEEE Std. 802.11a

IEEE Std. 802.11b

IEEE Std. 802.11g

IEEE Std. 802.11n

IEEE Std. 802.11ac

Bluetooth 2.1/3.0/4.0/4.2

1. 3Chip Solution

Realtek: RealtekRTL8822BU

2. 结构大小Size

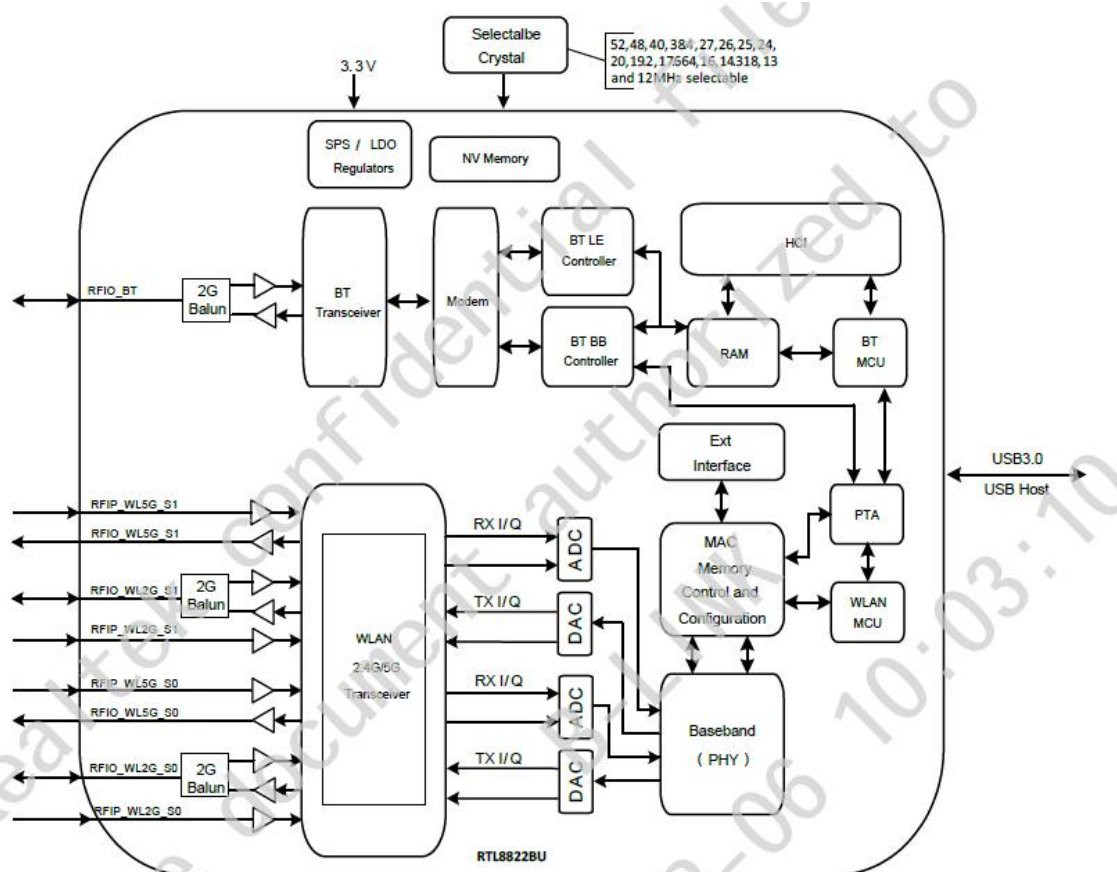
3. 17.8mm x27.0mm x 2.4mm

4. Introduction

BL-R8822BU1 module design is based on Realtek RTL8822BU solution, The RTL8822BU is a highly integrated single chip which has built in a 2x2 dual-band wireless LAN radio and Bluetooth radio. It includes Bluetooth EDR and LE radio which complies with Bluetooth v2.1+EDR, v3.0, v4.0+BLE and V4.2. The Module is a highly integrated MAC/BBP and 2.4/5GHz PA/LNA single chip which supports a 866.7Mbps PHY rate. The Module is designed to support standard-based features in the areas of security, quality of service, and international regulations, giving end users the greatest performance anytime and in any circumstance. This documentation describes the engineering requirements specification.

4.1 Overview

The general HW architecture for the module is shown in Figure 1.
Figure



BL-M8822BU1 block diagram

4.2 Product Technical Specifications

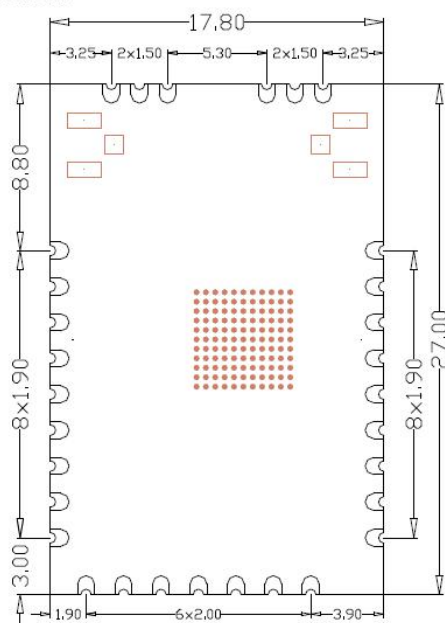
Main Chipset	Realtek RTL8822BU
Operating Frequency	2.4G/5G
WiFi Standard	802.11a/b/g/n/ac (2x2)
Bluetooth	2.1/3.0/4.0/4.2
Modulation	WiFi: 11b: DBPSK, DQPSK and CCK and DSSS 11a/g: BPSK, QPSK, 16QAM, 64QAM and OFDM 11n: BPSK, QPSK, 16QAM, 64QAM and OFDM 11ac: BPSK, QPSK, 16QAM, 64QAM, 256QAM and OFDM BT: FHSS, GFSK, DPSK, DQPSK
Data rates	11b: 1, 2, 5.5 and 11Mbps 11a/g: 6, 9, 12, 18, 24, 36, 48 and 54 Mbps 11n: MCS0~15, up to 300Mbps 11ac: MCS0~9, Nss=2, up to 866.7Mbps
Form factor	31pins
Host Interface	USB 2.0
PCB Stack	4-layers design
Dimension	Typical, 17.8mm x 27.0mm x 2.4mm
Antenna	External Antennas Design
Operation Temperature	0℃ to +60℃
Storage Temperature	-25℃ to +85℃
Operation Voltage	3.3V +/-10%

5. Mechanical Specification

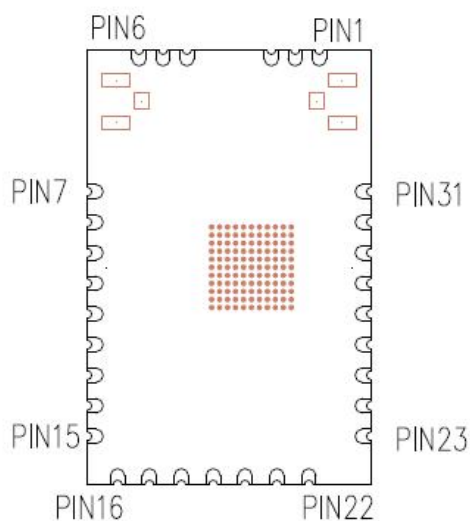
5.1 Mechanical Outline Drawing

Typical Dimension (W x L): 17.8mmx 27.0mm x 2.4mm

General tolerance: $\pm 0.20\text{mm}$



5.2 Pin Assignments



引脚	定义	备注
PIN1	GND	
PIN2	WL_ANT_B	WIFI RF OUT B
PIN3	GND	
PIN4	GND	
PIN5	WL_ANT_A	WIFI RF OUT A
PIN6	GND	
PIN7	GND	
PIN8	OPT_A	NC
PIN9	OPT_B	NC
PIN10	GND	
PIN11	RSV	NC
PIN12	WL_WAKE_HOST	WL WAKE HOST
PIN13	GND	
PIN14	HSOP	NC/USB3.0 TX-
PIN15	HSOP	NC/USB3.0 TX+
PIN16	HSIN	NC/USB3.0 RX-
PIN17	HSIP	NC/USB3.0 RX+
PIN18	GND	
PIN19	DP	USB2.0 D+
PIN20	DM	USB2.0 D-
PIN21	VD33	+3.3V
PIN22	RESET	PDN
PIN23	BT_WAKE_HOST	BT WAKE HOST/RTL8822BU only
PIN24	HOST_WAKE-WL	HOST WAKE WL
PIN25	HOST_WAKE-BT	HOST WAKE BT/RTL8822BU only
PIN26	SUSCLK	NC
PIN27	WL_DIS	THIS PIN CAN SHUT DOWN THE RTL8822BU WIFI function when BT_DIS# is pull down
PIN28	BT_DIS	THIS PIN CAN SHUT DOWN THE RTL8822BU BT function when BT_DIS# is pull down
PIN29	GND	
PIN30	BT_ANT	BT RF OUT
PIN31	GND	

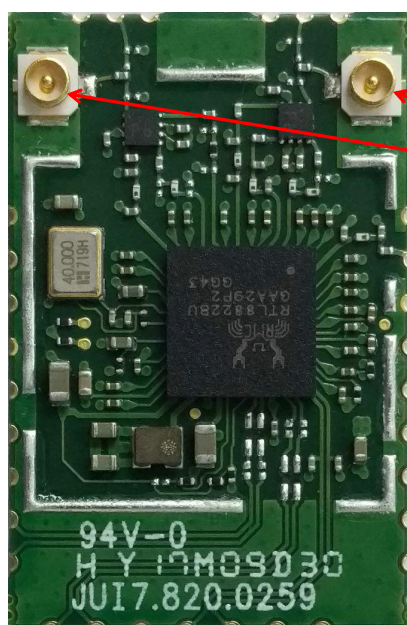
6 Antenna

WIFI: Connect to external antenna through the connector, The gain of the external antenna is 2dBi, the length of the antenna is 200mm, the internal structure is copper tube structure.

Antenna manufacturer: Shenzhen Bilian Electronic Co., Ltd.

External antenna model: Black knife antenna

Antenna gain: 2dBi



WIFI Antenna

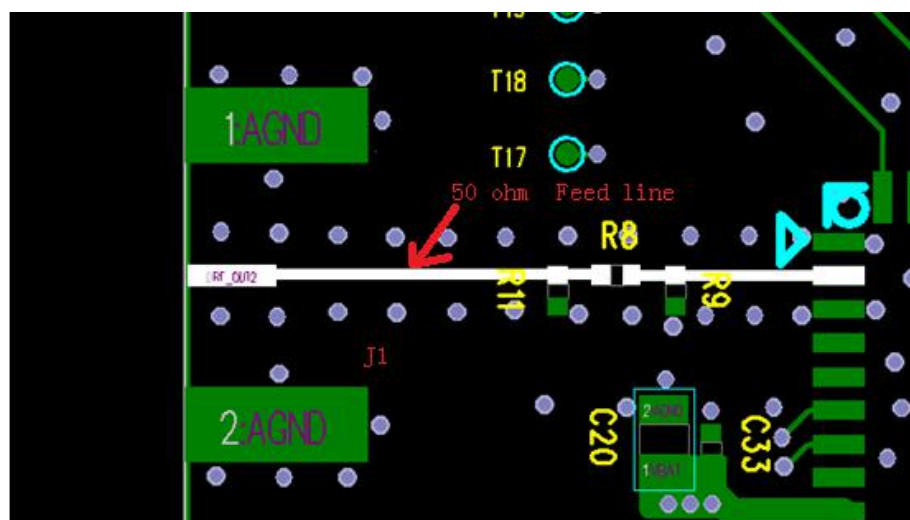
BT Antenna

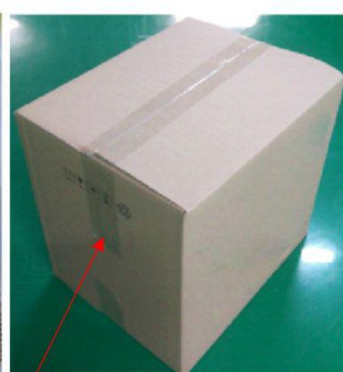
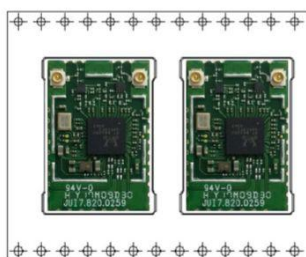
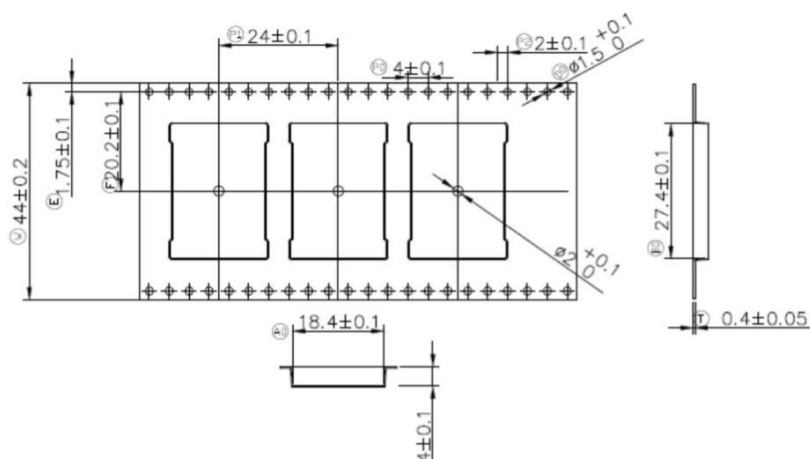
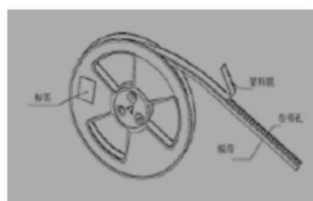
BT: The module needs to be attached to the PCB board and connected to the external antenna through the PIN 30 solder joint of the circuit on the PCB. The gain of the external antenna is 2dBi, the length of the antenna is 200mm, the internal structure is copper tube structure. A resistance of 0R is added between the module and the antenna at R8 to ensure that the impedance of the connection between the module and the antenna reaches 50R. J1 position on PCB is the position of external antenna.

Antenna manufacturer: Shenzhen Bilian Electronic Co., Ltd. External

antenna model: Black knife antenna

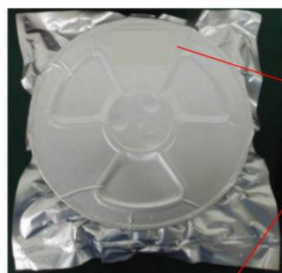
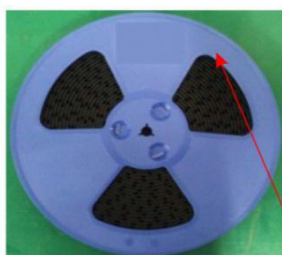
Antenna gain: 2dBi





小箱标签粘贴位置及示意图

外箱标签粘贴位置及示意图



物料标签	
供方名称:	四川爱联科技有限公司
物料名称:	
物料编码:	
数量:	
RoHS	

Qualification certificate	
Code Number:	*****
Description:	WIFI Model
Model:	WIFI-2-*****
Quantity:	***
Produce date:	***-**-**-**
Check:	*****
Quality:	Passed Acceptance
Batch:	*****
Remark:	Size: *****
[38260] Sichuan Link Technology Co., Ltd	

⇐ 供方物料条形码

⇐ 物料数量条形码

外包装标签粘贴方式

Qualification certificate	
Code Number:	*****
Description:	WIFI Model
Model:	WIFI-2-*****
Quantity:	***
Produce date:	***-**-**-**
Check:	*****
Quality:	Passed Acceptance
Batch:	*****
Remark:	Size: *****
[38260] Sichuan Link Technology Co., Ltd	

⇐ 外箱标签

↑ 月别标签 环保标签

包装说明:

- 1.每卷放600只产品, 每小箱放1卷, 大箱共5装个小箱, 产品数量共3000只/箱;
- 2.外箱尺寸: 375mm*300mm*370mm, 小箱尺寸: 355mm*355mm*50mm;
- 3.最小包装、外箱、尾箱用同款标签纸打印;
- 4.真空包内放置2g干燥剂2袋, 6色湿度卡1张。

8. introduction

Indoor use only

FCC Statement

FCC standards: FCC CFR Title 47 Part 15 Subpart C Section 15.247 ,15.407

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.

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.

We will retain control over the final installation of the modular such that compliance of the end product is assured. In such cases, an operating condition on the limit modular approval for the module must be only approved for use when installed in devices

produced by a specific manufacturer. If any hardware modify or RF control software modify will be made by host manufacturer, C2PC or new certificate should be apply to get approval, if those change and modification made by host manufacturer not

expressly approved by the party responsible for compliance ,then it is illegal.

FCC Radiation Exposure Statement

The modular can be installed or integrated in mobile or fix devices only. This modular cannot be installed in any portable device. This modular complies with FCC RF 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. This modular must be installed and operated with a minimum distance of 20 cm between the radiator and user body.

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: 2AL6K-R8822BU1-A Or

Contains FCC ID: 2AL6K-R8822BU1-A”

When the module is installed inside another device, the user manual of the host 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.

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.

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

The devices must be installed and used in strict accordance with the manufacturer's instructions as described in the user documentation that comes with the product.

Any company of the host device which install this modular with modular approval should perform the test of radiated & conducted emission and spurious emission,etc. according to FCC part 15C : 15.247 and 15.407 and 15.209 & 15.207 ,15B Class B

requirement, Only if the test result comply with FCC part 15C : 15.247 and 15.407 and 15.209 & 15.207 ,15B Class B requirement, then the host can be sold legally.