



## WIFI+BLE module Manual

Model: GRJWB05-J2

FCC ID: 2ADAP-GRJWB05J2

IC: 12478A-GRJWB05J2

### Gree Electric Appliances, Inc. of Zhuhai

- Please read this manual carefully before operation and keep it well for future reference.
- Due to product improvement, Gree reserves the right to change contents of this manual without prior notice.
- Gree Electric Appliances, Inc. of Zhuhai reserves the final right to interpret this manual.

## 1、General Functions

The wireless module complies with IEEE 802.11 a/b/g/n standard and it can achieve up to a speed of 65Mbps with single stream in 802.11n , 54Mbps as specified in IEEE 802.11a/g, or 11Mbps for IEEE 802.11b to connect to the wireless LAN. This compact module is a total solution for a combination of Wi-Fi 802.11 a/b/g/n technologies with Microcontroller Processor. The main control chip of this module is highly integrated with Bluetooth low-power controller, with UART interface. It combines Bluetooth protocol, BLE baseband, MODEM and BLE RF-IN chips. It also supports GATT-based applications and MESH device applications based on BLE users, and supports Bluetooth 5.0 low power consumption.

This compact module is a total solution for a combination of Wi-Fi 802.11a/b/g/n technologies with Microcontroller Processor. The module is specifically developed for embedded system devices. Detailed Instruction of WiFi Module.

## 2、Technique Parameters

Table1. Module Parameters

Categories	Feature	parameters
Wireless specification	Operating Bands	2.4G: FCC:2412 MHz to 2462 MHz for 802.11 b/g/n(HT40) RED:2412MHz to 2472 MHz for 802.11b/g/n(HT40) 2402MHz to 2480 MHz for BLE  5G: 5810 MHz to 5825 MHz for 802.11 a/g/n(HT40)
	Protocol	IEEE 802.11 a/b/g/n
	frequency modulation mode	CCK、OFDM、GFSK
	Receive Sensitivity	802.11b<-90.5dBm@11Mbps 802.11a/g<-77.5dBm@54Mbps 802.11n<-72dBm@MCS7
	Data Rate	WIFI: 802.11b: 1/2/5.5/11 Mbps 802.11a/g: 6/9/12/18/24/36/48/54 Mbps 802.11n(HT20):6.5/13/19.5/26/39/52/58.5/65 Mbps 802.11n(HT40):13.5/27/40.5/54/81/108/121.5/135Mbps BLE rate: 1 Mbps
	Antenna gain max	1.5 dBi

	Impedance	50-Ohm
electrical specification	Supply Voltage	+3.3V
	Connect	Internal Antenna
physical	Dimensions	37mm×17.7mm±0.2mm
Operating Temperature	--	-20-85 deg C.

### 3、Circuit Description

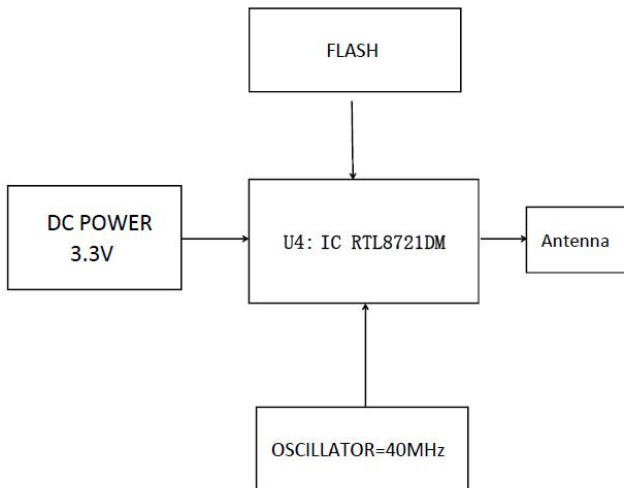


Figure1. Circuit Diagram

WiFi module has an independent power management system, and the system provides a high quality of power supply for the whole module. The Excellent matching circuit in RF-Front ensures that the

signal has minimal signal loss and radiation. Oscillator Y1 provides the IC U4 with the required oscillation frequency to enable the IC U4 to work normally. Flash U2 is used for the external expansion memory. The duplexer isolates the transmitting and receiving signals to ensure that the receiving and transmitting can work normally at the same time. The IC U4 provides the interfaces for a variety of peripherals (Timer, PWM, Interrupt, AD, the Debug) from the module to the baseboard. Each peripheral that connects to the MCU I/O pins can choose between two different I/O pin locations with the provided flexibility in various applications

Hereby, [Name of manufacturer], declares that this [type of equipment] is in compliance with the essential requirements and other relevant provisions of RE Directive 2014/53/EU. A copy of the full DoC is attached.

Transmit frequency of EU:

WIFI: 2412-2472MHz / 5180-5825MHz

BLE: 2402-2480MHz

Maximum transmit power: <20dBm

## 4、 Pin Definition

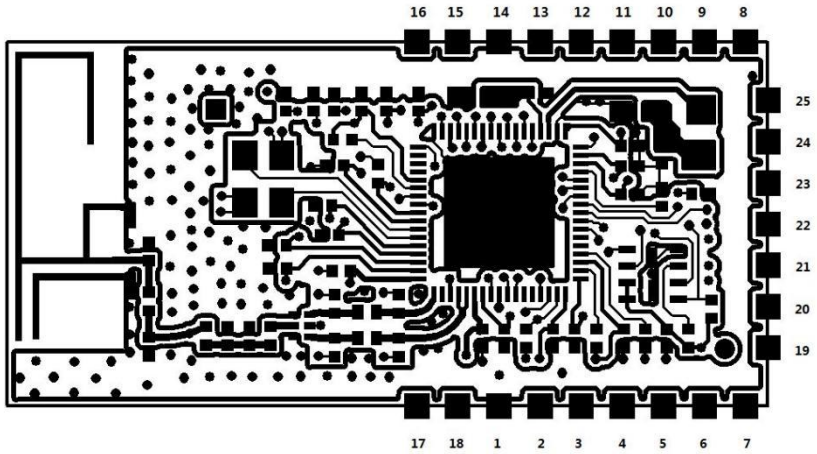


Figure2. Pin Definition

Table2. Pin Definition

PIN	Name	Mode
2,13	VCC	+3.3V
4	TX	UART_TX
5	RX	UART_RX
1,14	GND	Ground
9	RX	LOG_RX
8	TX	LOG_TX
11	I2C_SCL	I2C_SCL
10	I2C_SDA	I2C_SDA
12	I2S_TXD	I2S_TXD
15	I2S_CLK	I2S_CLK
16	I2S_WS	I2S_WS
3	ADC	ADC
17	SPI_MOSI	SPI_MOSI

18	SPI_CLK	SPI_CLK
6	SPI_CS	SPI_CS
7	SPI_MISO	SPI_MISO
19	SWD_DATA	SWD_DATA
20	HS_URXD	HS_URXD
21	HS_UTXD	HS_UTXD
22	LP_PWM	LP_PWM
23	I2S_MCLK	I2S_MCLK
24	I2S_SD_RX	I2S_SD_RX
25	SWD_CLK	SWD_CLK

Caution: The user is cautioned that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Second label must be placed on the outside of the final device that contains the following text:

“Contains FCC ID: 2ADAP-GRJWB05J2”

“Contains IC: 12478A-GRJWB05J2”

The FCC ID/IC ID can be used only when all FCC/IC compliance requirements are met.

This device complies with Part 15 of the FCC Rules and it contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). 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.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

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.

**FCC& IC Radiation Exposure Statement:**

This equipment complies with FCC and Canada 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 your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

**Déclaration d'IC sur l'exposition aux radiations:**

Cet équipement est conforme aux limites d'exposition aux radiations définies par le Canada pour des environnements non contrôlés. Cet équipement doit



être installé et utilisé à une distance minimum de 20 cm entre l'antenne et votre corps.

Cet émetteur ne doit pas être installé au même endroit ni utilisé avec une autre antenne ou un autre émetteur.

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