

PRODUCT SPECIFICATION



MW0100R

Low Power Wi-Fi Module

Version 1.1

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Project Leader: **Approved by:**

Change History

Revision	Date	Author	Change List
1.0	May 5 th , 2015	Rocky CC Chen	Draft
1.1	May 25 th , 2015	Rocky CC Chen	Update Tx, Rx and power consumption

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1. Product Overview

1.1 Description

MW0100R is Low Power Wi-Fi Module uses IEEE 802.11 b/g/n standard to network the low-power mobile application on Apple HomeKit platform. It also integrates ARM-Cortex M3 MCU, WLAN MAC, 1T1R capable WLAN baseband, internal memories and PCB Antenna. Developers can be benefit from the quick-installed module without RF expertise to enter HomeKit application market.

1.2 Features

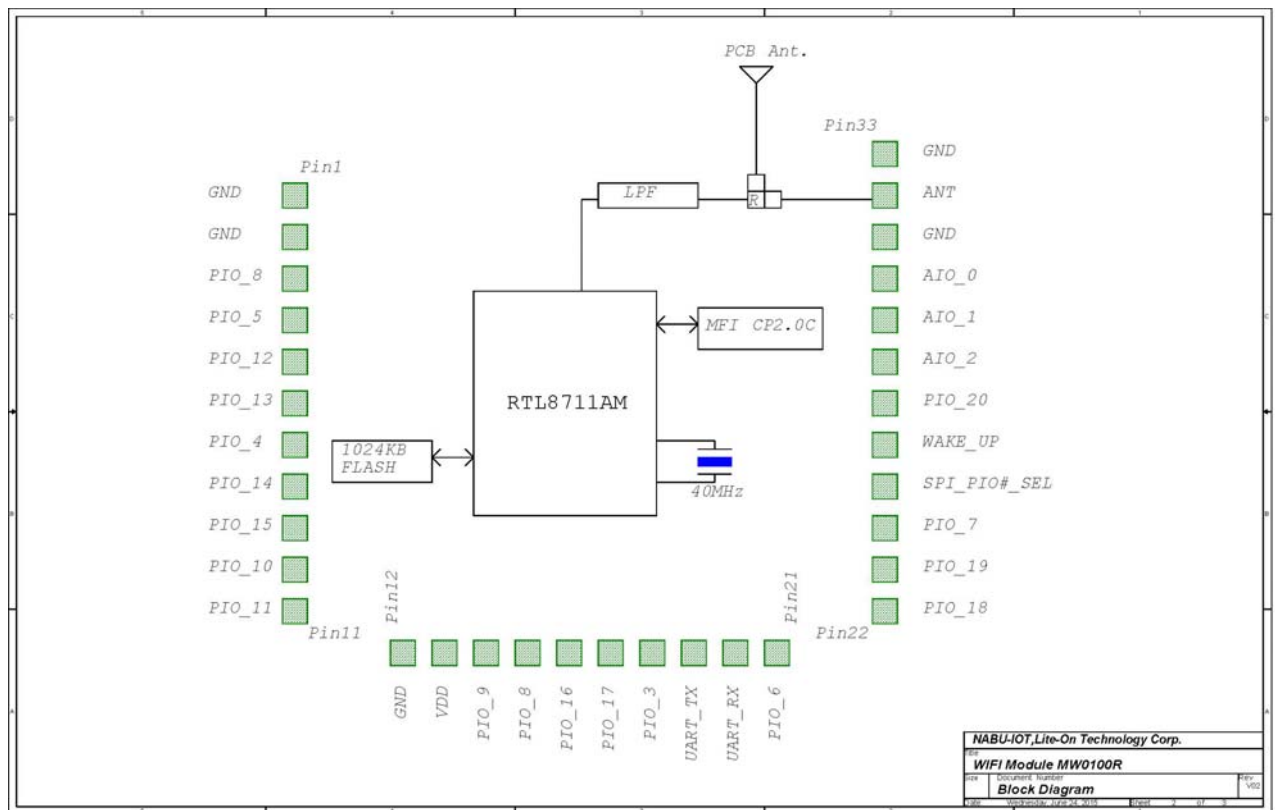
- Apple HomeKit Compatible
- IEEE 802.11 b/g/n (1x1) for up to 150Mbps
- SoC with MCU and WLAN IC
- Lower power consumption
- On-board printed antenna
- RF feed point, optional external antenna
- u.fl connector, optional external antenna
- Operating temp: 0~70 °C
- Total 33-pin Stamp Holes, SMT
- Type A form factor: 24x17mm

1.3 General Specifications

WLAN SoC	Realtek RTL8711AM
CPU	ARM Cortex M3 (166MHz)
RAM/Flash	64KB+448KB/1MB (external)
Frequency Range	2.412GHz ~ 2.4835GHz, ISM band
Frequency Band	IEEE 802.11 b/g/n, Wi-Fi compliant 11 for North America, 13 for CE, 14 for Japan
Data Rate	802.11 b:1, 2, 5.5, 11Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54Mbps 802.11 n(20MHz, normal GI, 800ns):6.5, 13, 19.5, 26, 39, 52, 58.5, 65MHz 802.11 n(20MHz, short GI, 400ns):7.2, 14.4, 21.7, 28.9, 43.3, 57.8, 65, 72.2 MHz
Power Amplify	Internal
Transmit Power	802.11b /11Mbps: 17dBm ± 1dB 802.11g /54Mbps: 15dBm ± 1dB 802.11n /65Mbps: 14dBm ± 1dB
Receiver Sensitivity	802.11n

	• MCS=7 PER @ -85dBm $\pm$ 1dB 802.11g • 54Mbps PER @ -75dBm $\pm$ 1dB 802.11b • 11Mbps PER @ -70dBm $\pm$ 1dB
Power Consumption	Deep Sleep: 0.04mW Idle: 8.2mW Rn in Active Clock: 56mW 11n RX Mode: 237mW 11n TX Mode: 690mW
Network features	TCP, UDP, DHCP, ARP, HTTP, SSL, and DNS
Encryption	Supports IEEE 802.11 WEP, WPA, WPA2 Security
Serial Data Interface	I2C ,UART,SPI
Antenna	Printing ANT or EXT ANT
Operating Temperature	0°C ~70°C
Dimensions	24mm x17mm
Power Requirements	3.3V
Certification & Environmental Requirements	HomeKit FCC/IC/CE Wi-Fi RoHS

1.4 Block Diagram

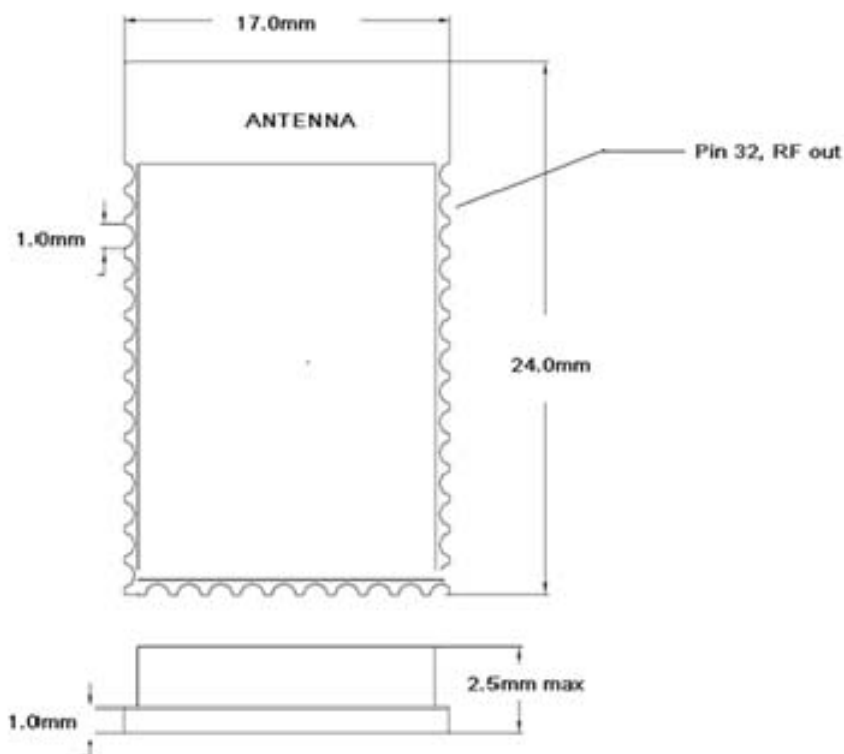


2. Pin Assignment and Description

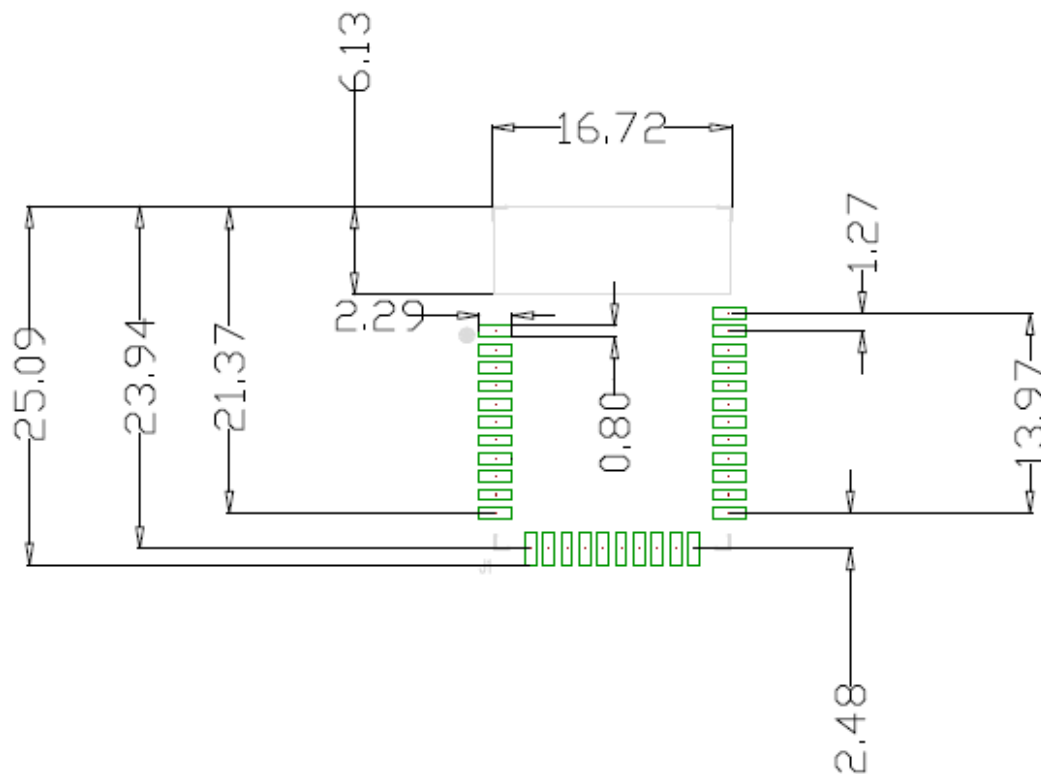
Pin Number	Pin Name	Pin Description	I/O
1	GND	Ground	P
2	GND	Ground	P
3	PIO_8_MISO	SPI_MISO when pin25 is H. GPIO8 when pin25 is L.	I/O
4	PIO_5_CLK	SPI_CLK when pin25 is H. GPIO5 when pin25 is L.	I/O
5	NC	NC	--
6	NC	NC	--
7	PIO_4	GPIO4	I/O
8	NC	NC	--
9	NC	NC	--
10	PIO_10	GPIO10	I/O
11	PIO_11	GPIO11	I/O
12	GND	Ground	P
13	VDD	Power Source for Module	P
14	PIO_9	GPIO9	I/O

15	PIO_8_MISO	SPI_MISO when pin25 is H. GPIO8 when pin25 is L.	I/O
16	NC	NC	--
17	NC	NC	--
18	PIO_3	GPIO3	I/O
19	PIO_0/UART_TX	GPIO0 or UART_Tx	I/O
20	PIO_1/UART_RX	GPIO1 or UART_Rx	I/O
21	PIO_6_CS	SPI_CS when pin25 is H. GPIO6 when pin25 is L.	I/O
22	NC	NC	--
23	NC	NC	--
24	PIO_7_MOSI	SPI_MOSI when pin25 is H. GPIO7 when pin25 is L.	I/O
25	SPI_PIO#_SEL	H to select GPIO5~8 for SPI(Debug use) L to select programmable GPIO	I/O
26	WAKEUP	L to wake module from hibernate or dormant	I/O
27	NC	NC	--
28	AIO_2	AIO_2(Voltage not exceed to 1.35V)	I/O
29	AIO_1	AIO_1(Voltage not exceed to 1.35V)	I/O
30	AIO_0	AIO_0(Voltage not exceed to 1.35V)	I/O
31	GND	Ground	P
32	RF	RF feed point. Connect to Antenna	O
33	GND	Ground	P

Liteon Type A module



3. Recommended FootPrint



FCC

FEDERAL COMMUNICATIONS COMMISSION (FCC) STATEMENT

15.21

You are cautioned that changes or modifications not expressly approved by the part responsible for compliance could void the user's authority to operate the equipment.

15.105(b)

Federal Communications Commission (FCC) Statement

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.

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 of the device.

FCC RF Radiation Exposure Statement:

1. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
2. This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

End Product Labeling:

The final end product must be labeled in a visible area with the following: "Contains FCC ID:PPQ-MW0100R"

Canada, Industrie Canada (IC)

This Class B digital apparatus complies with Canadian ICES-003

Cet appareil numérique de classe B est conforme à la norme NMB-003.

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the

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.*

End Product Labeling:

The final end product must be labeled in a visible area with the following: "Contains IC ID:4491A-MW0100R"

Note:

This radio transmitter has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Antenna Type: PCB PIFA Antenna

Peak Gain: 2.55dBi