



Shenzhen FREEDIO electronic Technology Co., Limited

# IEEE802.11b/g/n WiFi Module

## Product Specifications

**Model: FR4020A2**

**Version: 1.0**

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ENGINEER	QC	PURCHASING

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## 1. Introduction

The 150M Wireless USB Module FR4020A2 is designed to provide a high-speed and unrivaled wireless performance for your devices, with a faster wireless connection, you can get a better WLAN/Internet experience. The FR4020A2 is 150M Wireless USB Module complies with IEEE 802.11b/g/n standards. It can perfectly interoperate with all of the 802.11b/g/n devices.

## 2. Features

- 150Mbps wireless transmission rate
- Supports WPS (Wi-Fi Protected Setup)
- Supports 64/128-bit WEP, complies with 128 bit WPA standard(TKIP/AES),
- Compatible with 11b/g/n equipments
- Onboard LED is optional
- Supports 3.3V power supply
- Supports Windows 2000/XP/Vista/7, Linux OS

## 3. Application

Supports wireless devices such as IP camera, DVR, netbook, GPS, PSP etc.



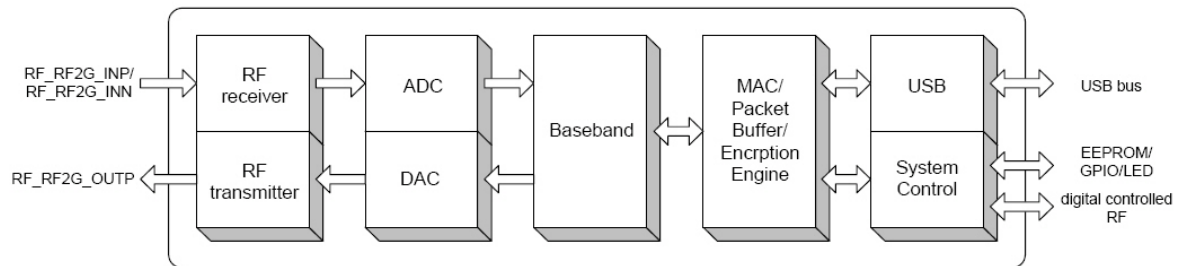
#### 4. Specification

Item	description
Standard	IEEE 802.11B/G/N CSMA/CA ACK
Interface	USB1.1 USB2.0
Frequency range	2.4-2.4835GHZ
Channel	11
Modulation	OFDM/DBPSK/DQPSK/CCK
Mode	Infrastructure/ Ad-Hoc
Rate	135/54/48/36/24/18/12/9/6 /1M
Spreading	DSSS
Receive sensitivity	54M/135M:-68dBm@10%PER 11M:-85dBm@8%PER 6M: -88dBm@10%PER 1M: -90dBm@8%PER
RF Power	135M: 15DBM, 54M:15DBM, 11M:19DBM
LED	Status indicators
Transmission distance	Indoor <100M, outdoor <300M
System platform	WIN2000/XP/VISTA/LINUX/WINCE/WIN7
Supply	DC 3.3V +-0.2V
Power dissipation	<300MA@5V
Environment	Operating: 0°C ~ 40°C; storage:-40°C ~ 70°C; Operating humidity:10%~90% RH; storage humidity::5%~90% RH
Chip	RT3070

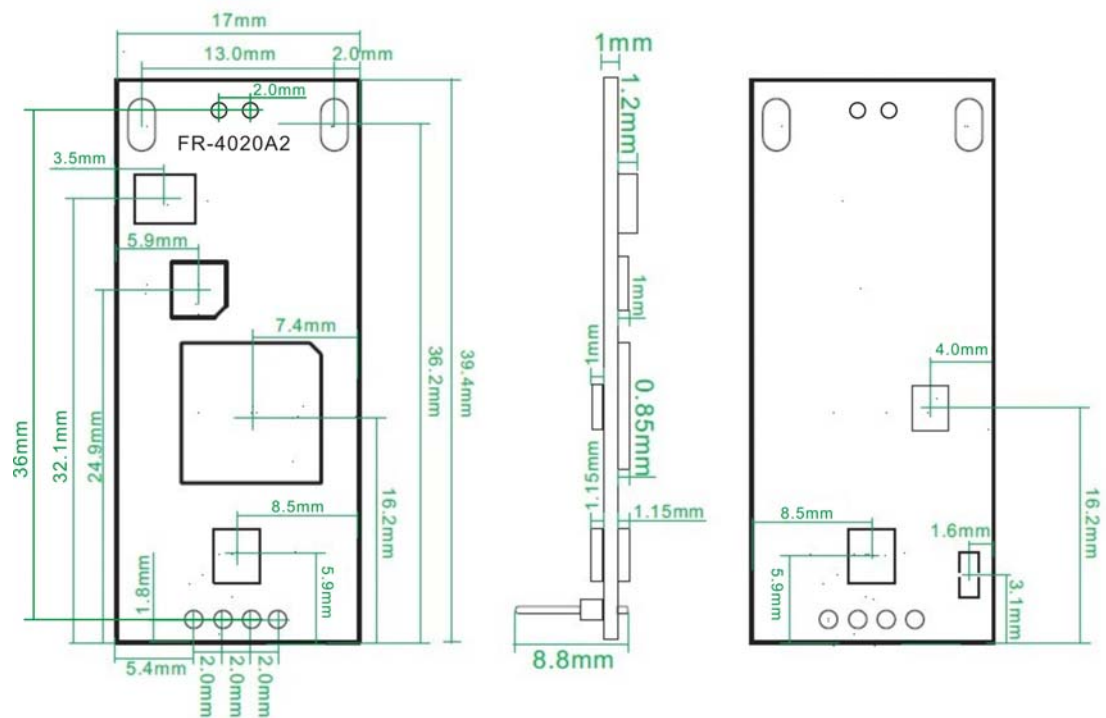
#### 5. System platform

System	CPU	drive
WIN2000/XP/WIN7/VISTA	X86 Platform	support
LINUX2.4/2.6	ARM, MIPSII	support
WINCE5.0/6.0	ARM ,MIPSII	support

## 6. Functional Block Diagram



## 7. PCB Dimension

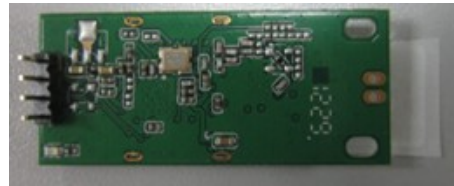


## 8. Product picture

**Top:**



**Bottom:**



## 9. Packing



## **FCC Certification Requirements**

Caution: Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the 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.

The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications 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.

**The above statement must be placed in the end-user's operating manual of finished products.**

## **FCC RF Radiation Exposure Statement**

To comply with FCC RF exposure compliance requirements, this grant is applicable to only mobile or fixed configurations. The antenna used with this module must be installed to provide a separation distance of at least 20cm from all persons, and must not transmit simultaneously with any other antenna or transmitter, except in accordance with FCC multi transmitter product procedures.

A mobile device is defined as a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 cm is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons. Transmitting devices designed to be used by consumers or workers that can be easily re-located, such as wireless devices associated with a personal computer,

are considered to be mobile devices if they meet the 20 cm separation requirement.

A fixed device is defined as a device is physically secured at one location and is not able to be easily moved to another location.

Note: If this module is intended for use in a portable device, Separate approval is required for all other operating configurations, including portable configurations with respect to 2.1093 and different antenna configurations.

**The above statement must be placed in the end-user's operating manual of finished products.**

#### **To OEM Installer**

**1. This module is limited to OEM Installation only.**

2. OEM Integrators may not provide instructions for end user to remove/install module.

3. FCC ID on the final system must be labeled with “**Contains FCC ID: Q8Y-FR4020A2**” and similar wording that expresses the same meaning may be used.

4. Transmitter module must be installed used in strict accordance with the Manufacturer's instructions as described in the user documentation that comes with the product.

The user manual of the final host system must contain the following statements:

This device complies with Part 15 of the FCC rules. Operation is subject to 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 this device.

The changes or modifications not expressly approved by the party responsible for Compliance could void the user's authority to operate the equipment.

To comply with the FCC RF exposure compliance requirements, this device and its antenna must not Be co-located or operating to conjunction with any other antenna or transmitter, except if installed In compliance with FCC Multi Transmitter procedures.

To inherit the modular approval, the antennas for this transmitter must be installed to provide a Separation distance of at least 20cm from all persons and must not be co-located or operating in Conjunction with any other antenna or transmitter.

#### **Manual Information To the End User**

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module. The end user manual shall include all required regulatory information/warning as show In this manual.

## **Host Manufacturer Statements**

To ensure compliance with all non-transmitter functions the host manufacturer is responsible for ensuring compliance with the module(s) installed and fully operational. For example, if a host was previously authorized as an unintentional radiator under the Declaration of Conformity procedure without a transmitter certified module and a module is added, the host manufacturer is responsible for ensuring that after the module is installed and operational the host continues to be compliant with the Part 15B unintentional radiator requirements. Since this may depend on the details of how the module is integrated with the host, Shenzhen FREEDIO electronic technology Co., Limited shall provide guidance to the host manufacturer for compliance with the Part 15B requirements.