SPECIFICATION
技术规格书

型号:

MODEL NO.:   K-AW7603M1

规格:

SPECIFICATION: K-AW7603M1(2T2R)WIFI Module

文件编号

DOCUMENT NO: TS21B004

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修订履历
Revision History

版本/次 Revision	修改项次 (Description)	修改日期 (Date)
V3.0	初版发行(First issued)	2021.1.27
V3.1	变更参数	2021.8.4

目录

1.General Introduction

1.1 Introduction

▶K-AW7603M1 is to specify the product requirements for 802.11b/g/n USB Module. This Card is based on MT7603U chipset that complied with IEEE 802.11n,and it is also backward complied with IEEE 802.11b/g standard from 2.4~2.5GHz.It can be used to provide up to 54Mbps for IEEE 802.11g, 11Mbps for IEEE 802.11b and 300Mbps for IEEE 802.11n to connect your wireless LAN.

   With seamless roaming, fully interoperability and advanced security with WEP standard, 802.11b/g/n USB Module offers absolute interoperability with different vendors 802.11b/g/n Access Points through the wireless LAN.

The module complies with FCC Part 15.247 and apply for Single module approval.

1.2 Appearance

Note：

  ●The Picture is for a reference only, the actual is the standard

2.Features

a) Compatible with IEEE 802.11b standard to provide wireless 11Mbps data rate.
b) Compatible with IEEE 802.11g standard to provide wireless 54Mbps data rate.
c) Compatible with IEEE 802.11n standard to provide wireless 300Mbps data rate.
d) Operation at 2.4~2.5GHz frequency band to meet worldwide regulations
e) Security support for WFA WPA/WPA2 personal, WPS2.0, WAPI
f) Friendly user configuration and diagnostic utilities
g) Drivers support Windows XP,Win7
h) High speed USB 2.0 interface
i) ROHS compliant

3.Application Diagrams

3.1 Functional Block Diagram
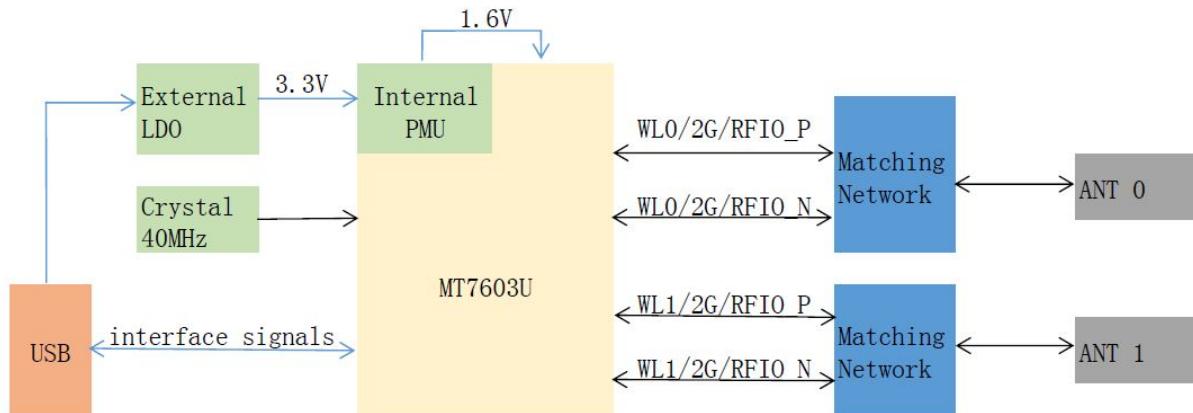
3.2 WiFi RF Specifications

3.2.1 2.4G WiFi RF Specification

Feature	Detailed Description
Standard	● IEEE 802.11b/g/n CSMA/CA
Frequency Range	● 2.4~2.4835GHz (2.4GHz ISM Band)
Channels	● Ch1~Ch11 (For 20MHz Channels)
Modulation	● 802.11b (DSSS): DBPSK, DQPSK, CCK; ● 802.11g (OFDM): BPSK, QPSK, 16QAM, 64QAM; ● 802.11n (OFDM): BPSK, QPSK, 16QAM, 64QAM;
Date Rate	● 802.11b: 1, 2, 5.5, 11Mbps; ● 802.11g: 6, 9, 12, 18, 24, 36, 48, 54Mbps; ● 802.11n(HT20):MCS0~MCS7(1T1R_SISO)6.5~72.2Mbps; ● 802.11n (HT20): MCS8~MCS15(2T2R_MIMO) 13~144.4Mbps; ● 802.11n (HT40): MCS0~MCS7(1T1R_SISO) 13.5~150Mbps; ● 802.11n (HT40): MCS8~MCS15(2T2R_MIMO) 27~300Mbps;
Frequency Tolerance	● ≦±20ppm

3.2.2 2.4G Transmitter Specifications

TX Rate	TX Power	TX Power Tolerance	EVM
802.11b@1~11Mbps	15dBm	±2dBm	≦-10dB
802.11g@6Mbps	14dBm	±2dBm	≦-10dB
802.11g@54Mbps	14dBm	±2dBm	≦-25dB
802.11n@HT20_MCS0	12dBm	±2dBm	≦-10dB
802.11n@HT20_MCS7	12dBm	±2dBm	≦-28dB
802.11n@HT40_MCS0	10dBm	±2dBm	≦-10dB
802.11n@HT40_MCS7	10dBm	±2dBm	≦-28dB

3.2.3 2.4G Receiver Specifications

RX Rate	Min Input Level(Typ)	Max InputLevel(Typ	PER
802.11b@1Mbps	-96dBm	-10dBm	< 8%

802.11b@11Mbps	−86dBm	−10dBm	＜8%
802.11g@6Mbps	−90dBm	−10dBm	＜10%
802.11g@54Mbps	−76dBm	−10dBm	＜10%
802.11n@HT20_MCS0	−89dBm	−10dBm	＜10%
802.11n@HT20_MCS7	−71dBm	−10dBm	＜10%
802.11n@HT40_MCS0	−88dBm	−10dBm	＜10%
802.11n@HT40_MCS7	−68dBm	−10dBm	＜10%

4.Electrical and Thermal Characteristics

4.1 Temperature Limit Ratings

Parameter	Minimum	Maximum	Units
Storage Temperature	−40	+80	℃
Ambient Operating Temperature	−10	70	℃
Junction Temperature	0	125	℃

4.2 General Section

	Feature	Detailed Description
4.2.1	Antenna Type	● Integrated antenna
4.2.2	Operating Voltage	● 5V±10%
4.2.3	Current Consumption	● ＜300mA@RX ● ＜1000mA@TX
4.2.4	USB	● High Speed USB2.0 Interface

4.3Software Requirements

The Configuration Software supports Microsoft Windows xp32/64-bit and Win7**. This configuration software includes the following functions:**

● Information allows you to moniter network status.
● Configuration allows you to configure parameters for wireless networking.
● Encryption Security support for WFA WPA/WPA2 personal, WPS2.0, WAPI.
● Diagnosis allows you to display all channel status and search neighboring access points

4.3.1 Information

	Feature	Detailed Description
4.3.1.1	General Information	● General Information shows the name of Wireless Adapter,Adapter MAC Address,Regulatory Domain,Firmware Version,and Utility Version.
4.3.1.2	Current Link Information	● Gurrent Link Information shows the C
4.3.1.3	Site survey	● To search the neighboring access points and display the information of allaccess points.

4.3.2 Mechanical Requirements

	Feature	Detailed Description
4.3.2.1	Length	45mm(PCB)
4.3.2.2	Width	25mm(PCB)
4.3.2.3	Height	1.0mm(PCB)

5.INTERFACE DEFINTION

Pin No.	Name	Description	Pin No.	Name	Description
1	NC	No connection	5	GND	Ground
2	GND	Ground	6	D+	D+
3	Host_Wake up	Wake on wireless LAN(WOWLAN)	7	D-	D-
4	Power_EN	Power_EN	8	VCC	5v

6.Environmental requirements

◆Relative humidity: ＜=80%。

◆Keep the board away form conductor and water

◆In order to avoid damage from PCB,please do not push or pull the board.

7.CRITICAL MATERIALS

NAME	TYPE	BRAND	BACKUP	BACKUP
Chip	MT7603UN	MTK	/	/

Note:
  The table is for reference only.Please regard the actuality.

8．MECHANICAL DIMENSION
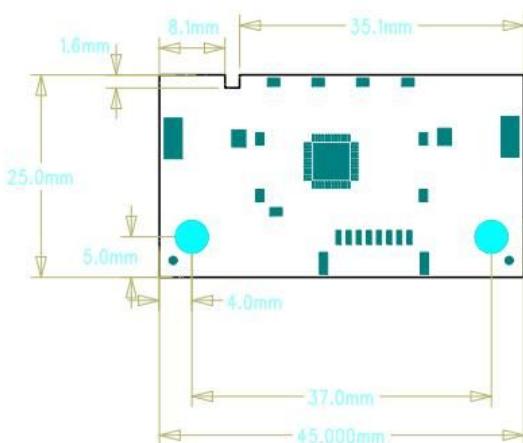
9. Antenna

Product Name: ANT 1/ANT 2
Product drawings
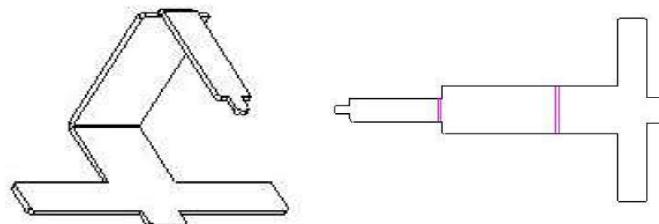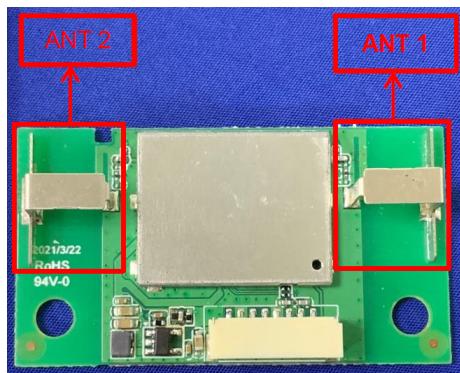
Antenna expansion diagram, pink line is turning point.

①14.00±0.15

⑤7.30±0.15

②0.30±0.08

④8.40±0.20

③8.00±0.15
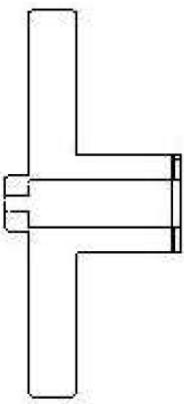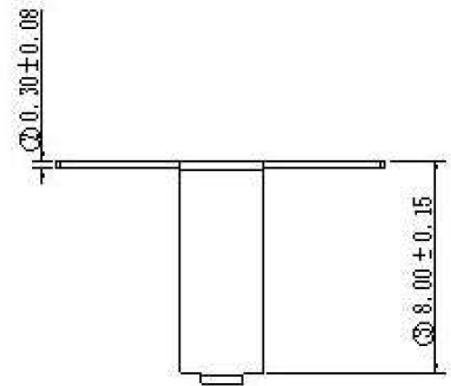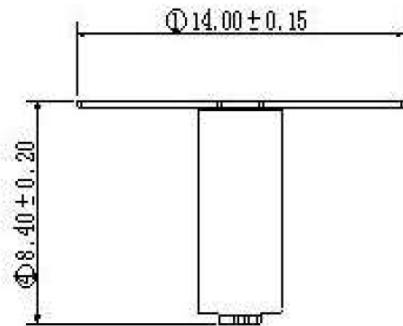
FCC Statement

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.

RF warning

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Transmitter Module Approval Conditions

Antennas must be installed to provide 20 cm separation distance from the transmitting antenna to the body of the user during normal operating condition. This device must not be co-located or operating in conjunction with any other antenna or transmitter.

Only those antennas filed under FCC ID: 2A3MNK-AW7603M1 can be used with this device.

When the module is installed in the final system where the antenna location is less than 20 cm separation distance to the body of user, additional equipment authorization must be applied.

FCC ID label on the final system must be labeled with "Contains FCC ID: 2A3MNK-AW7603M1 " or "Contains transmitter module FCC ID: 2A3MNK-AW7603M1 ".

In the user guide, final system integrator must be ensure that there is no instruction provided in the user guide to install or remove the transmitter module.

The transmitter module must be installed and used in strict accordance with the manufacturer's instructions as described in the user documentation that comes with the product. This device complies with the following radio frequency and safety standards.

The host product manufacturer is responsible for compliance to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification. The final host product still requires Part 15 Subpart B compliance testing with the modular transmitter installed.

The end user manual shall include all required regulatory information/warning as shown in this manual, include:

This product must be installed and operated with a minimum distance of 20 cm between the radiator and user body.