

The logo for AmTRAN, featuring the word "AmTRAN" in a blue, handwritten-style font, set against a light gray rectangular background.

PRODUCT SPECIFICATION

802.11n, 2.4G 1T1R Wireless LAN USB Module

WN4617R(M)

Version 1.0

** This document contains confidential proprietary information and is property of LTC. The contents of this document should not be disclosed to unauthorized persons without the written consent of LTC*



CONTENT

PRODUCT FEATURES3

PRODUCT SPECIFICATIONS.....4

FUNCTIONAL SPECIFICATIONS4

PIN ASSIGMENT.....5

USB CONNECTOR SPEC.....6

MECHANICAL9

METAL ANTENNA SPEC.....10

LABEL DRAWING..... 11

MODULE PHOTO 11

EEPROM INFORMATION 13

ENVIRONMENTAL 13

OPERATING 13

STORAGE..... 13

FCC WARNING STATEMENT 14



PRODUCT FEATURES

- Operate at ISM frequency Band (2.4GHz)
- Support 1 transmission and 1 receiving, transmission rate can up to 150Mbps (Physical Rate) in downstream and upstream
- 20MHz/40MHz Bandwidth Support
- USB 2.0 support for data rates up to 12Mbps full speed and 480Mbps high speed
- IEEE standards support: 802.11b, 802.11g and 802.11n
- Enterprise level security supporting: WPA, WPA2, TKIP, AES,
- Low power with advanced Power Management
- RoHS compliance
- Low Halogen compliance



PRODUCT SPECIFICATIONS

MAIN CHIPSET

MAC/ Baseband/ RF: Ralink RT5370

FUNCTIONAL SPECIFICATIONS

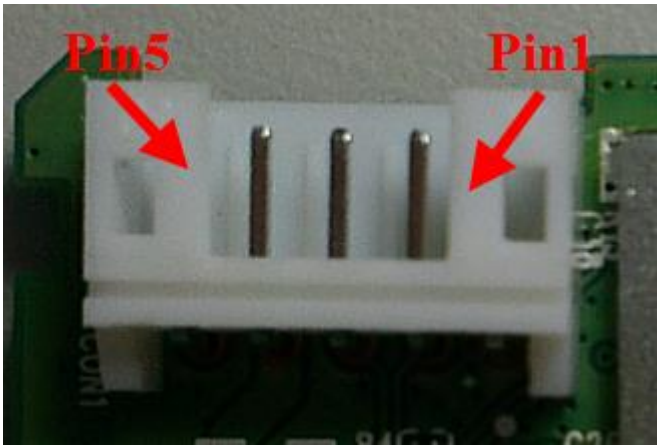
Wi-Fi Function	
Standard	IEEE802.11b; IEEE 802.11g; IEEE 802.11n
Bus Interface	
USB2.0	
Data Rate	802.11b: 11, 5.5, 2, 1 Mbps 802.11g: 54, 48, 36, 24, 18, 12, 9, 6 Mbps 802.11n: MCS 0 to 7 for HT20MHz MCS 0 to 7 for HT40MHz
Media Access Control	
CSMA/CA with ACK	
Modulation Techniques	802.11b: CCK, DQPSK, DBPSK 802.11g: 64QAM, 16QAM, QPSK, BPSK 802.11n: BPSK, QPSK, 16QAM, 64QAM
Network Architecture	
Ad-hoc mode (Peer-to-Peer) Infrastructure mode	
Operation Channel	
2.4GHz 11: (Ch. 1-11) – United States	
Frequency Range	
802.11b/g 2.412 ~ 2.4835 GHz	
Transmit Output Power – 1x1 (Tolerance: ± 1.5 dBm)	802.11b: 17 dBm@1Mbps 17 dBm@11Mbps 802.11g: 15 dBm@6Mbps 15 dBm@54Mbps 802.11n: 20MHz: 14 dBm@MCS0 14 dBm@MCS7 40MHz: 12 dBm@MCS7 12 dBm@MCS7
Receiver Sensitivity	
802.11b: -88 dBm@11Mbps 802.11g: -74 dBm@54Mbps	



	802.11n: 20MHz -73 dBm@MCS7 40MHz -69 dBm@MCS7
Security	WPA, WPA2, WPS, WEP 64b&128bit, IEEE 802.1X, IEEE 802.11i
Operating Voltage	3.3V ± 5% I/O supply voltage
OS Supported	Microsoft Windows XP/Vista/Win7/Win8; Linux based
Power Consumption	<i>TX Mode:</i> 235 mA
Test Condition:	<i>RX Mode:</i> 210 mA
<ul style="list-style-type: none">- Operate at HT40- File Transmission- Record MAX value	<i>Standby Mode:</i> 50 mA
Antenna Type	Metal Antenna

PIN ASSIGNMENT

Pin.	Pin Define	Status
1	GND	YES
2	USB_D+	YES
3	USB_D-	YES
4	+3.3V	YES
5	RESET	YES





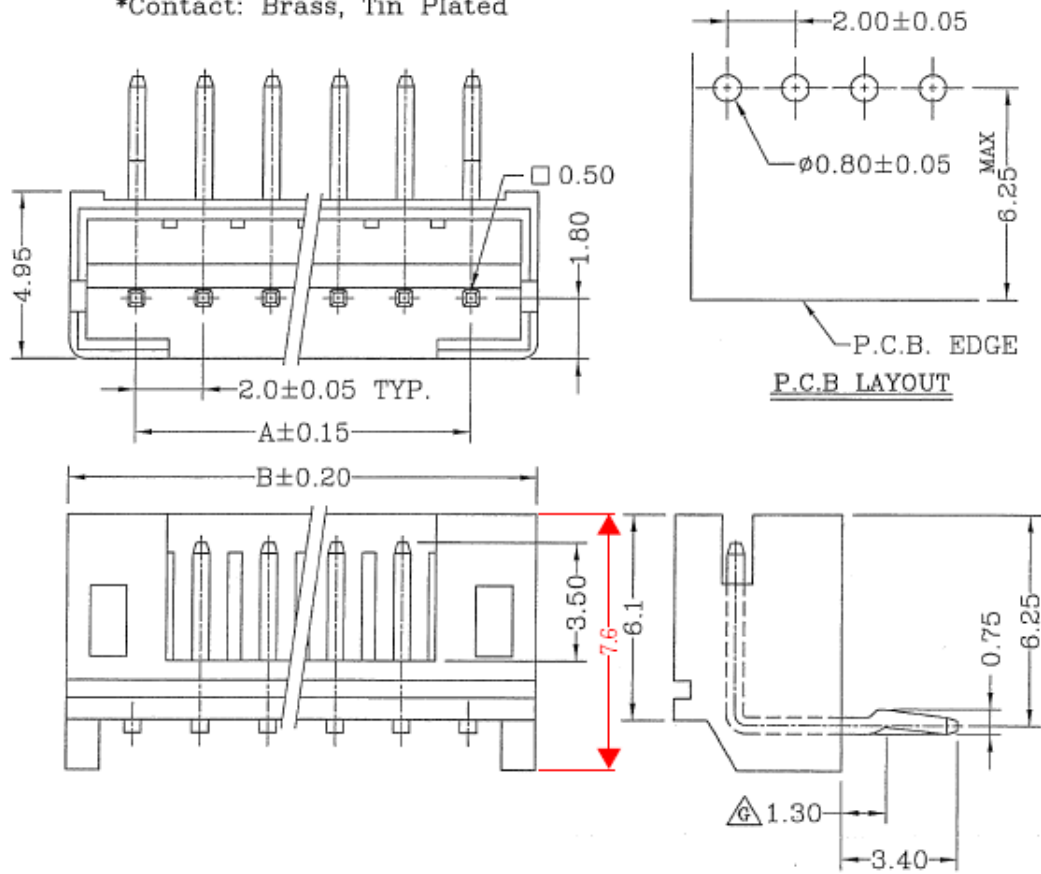
USB CONNECTOR SPEC

Manufacturer: 加焯

Approval Sheet: See Appendix A-1 (Page 31 ~46)

Material: *Insulator: Nylon 66 UL 94V-0(White)

*Contact: Brass, Tin Plated



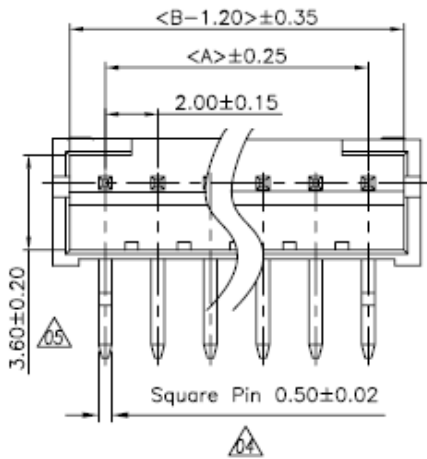
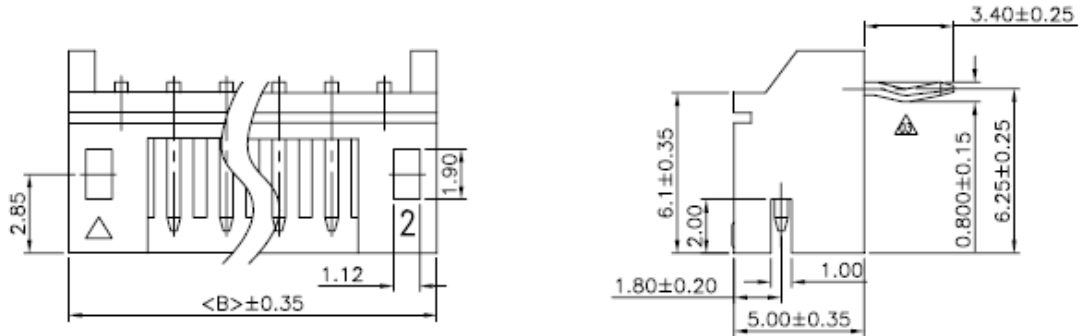


Dimensional & Ordering Information:

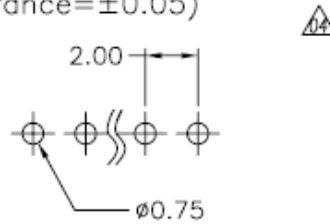
Circuits	Part No	Dimensions		PCS/BAG
		A	B	
2	A2001WR2-2P	2.00	6.00	1000
3	A2001WR2-3P	4.00	8.00	1000
4	A2001WR2-4P	6.00	10.00	1000
5	A2001WR2-5P	8.00	12.00	1000
6	A2001WR2-6P	10.00	14.00	1000
7	A2001WR2-7P	12.00	16.00	500
8	A2001WR2-8P	14.00	18.00	500
9	A2001WR2-9P	16.00	20.00	500
10	A2001WR2-10P	18.00	22.00	500
11	A2001WR2-11 P	20.00	24.00	500
12	A2001WR2-12P	22.00	26.00	500
13	A2001WR2-13P	24.00	28.00	500
14	A2001WR2-14P	26.00	30.00	500
15	A2001WR2-15 P	28.00	32.00	500
16	A2001WR2-16 P	30.00	34.00	500

Manufacturer: Greenconn

Approval Sheet: See Appendix A-2 (Page 47 ~56)



Recommended P.C.B Layout(Top Side)
P.C.B Thickness=(1.0~1.6)mm
(Tolerance=±0.05)



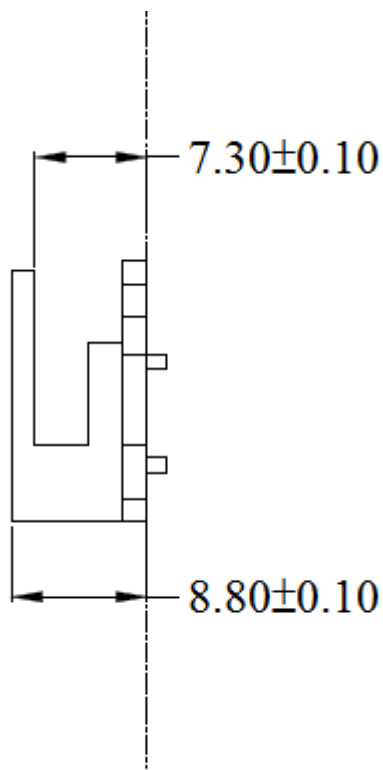
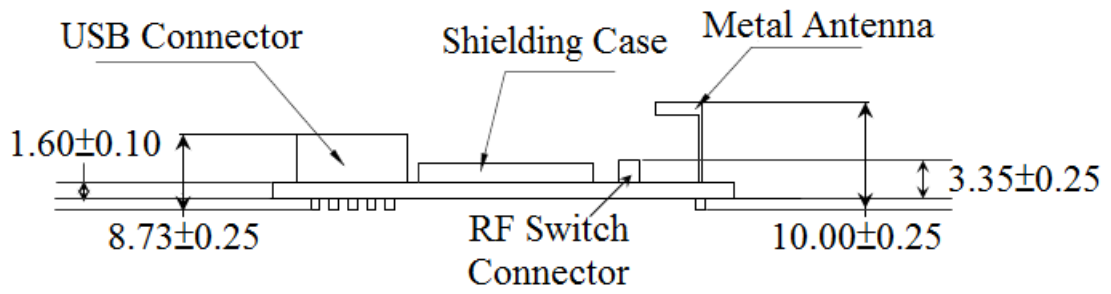
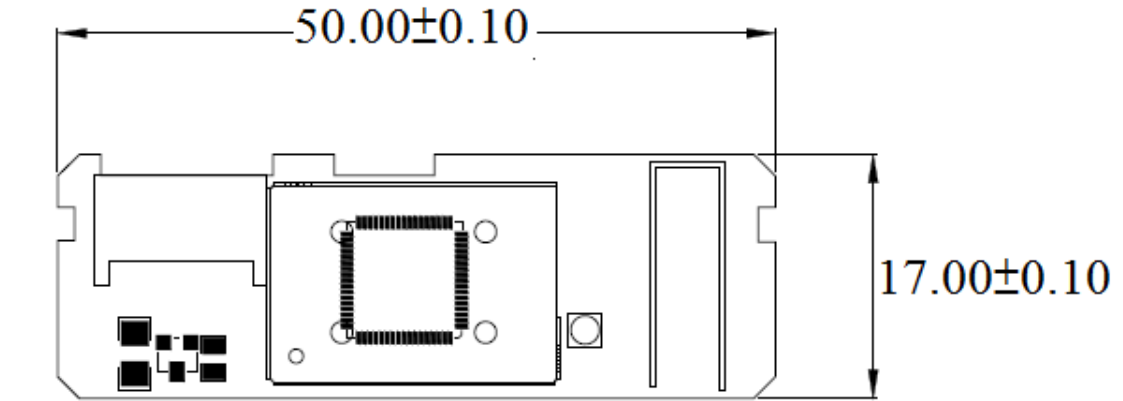
Specifications

- Current Rating:2A AC/DC
- Insulation Resistance:1000MΩMin.
- Dielectric Withstanding Voltage:800VAC
- Contact Resistance:20mΩMax.
- Operating Temperature:-25°C to +85°C
- Materials
- Contact Material:Brass
- Insulator Material:Polyester,UL 94V-0
Nylon 66(有齒或無齒)

All materials must meet Greenconn requirement for environment protection.

No. of PIN/ROW	Dimension Information	
	A	B
02	2.00	6.00
03	4.00	8.00
04	6.00	10.00
05	8.00	12.00
06	10.00	14.00
07	12.00	16.00
08	14.00	18.00
09	16.00	20.00
10	18.00	22.00
11	20.00	24.00
12	22.00	26.00
13	24.00	28.00
14	26.00	30.00
15	28.00	32.00
16	30.00	34.00

MECHANICAL



Unit: mm



METAL ANTENNA SPEC

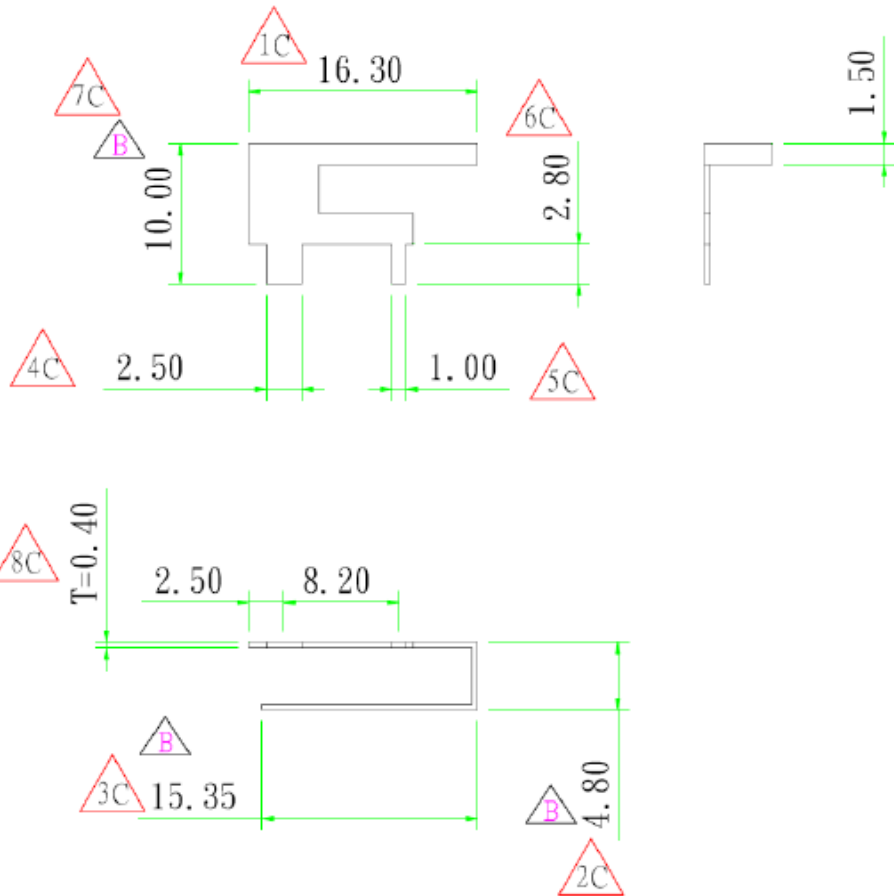
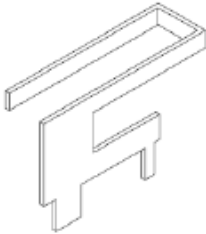
Manufacturer: Maglayers(美磊)

Approval Sheet: See Appendix D (Page72~82)

RoHS COMPLIANT

MECHANICAL
Body :SUS430(鍍鎳) T=0.4mm

ELECTRICAL
Frequency : 2.4GHz





LABEL DRAWING



备注:

1,条码使用一维条码Code128

显示内容为00199DXXXXXX(XXXXXX由业务提供)

2,SN条码使用一维条码Code128,显示内容为098001400630YWWXXX

编码原则为:

098001400630

Y

WW

XXX

固定码

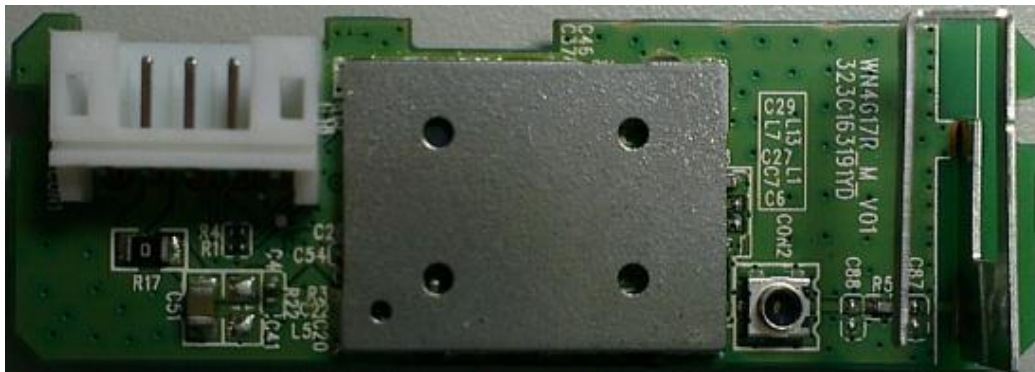
西元年
最后一码

周期
(01-52)

36进制流水号000-ZZZ
字母0和I不流

MODULE PHOTO

Top Side



Bottom Side

AmTRAN





EEPROM INFORMATION

Reg Domain	US Channel 1~11 Active Scan
	Offset 0x38 for 5G: 0x00 Offset 0x39 for 2.4G: 0x00
Antenna Diversity Control	Offset 0x37: 0x30
Vendor ID	0x148F
Product ID	0x5370

ENVIRONMENTAL

Operating

Operating Temperature: 0 to 60 °C (32 to 140 °F)
Relative Humidity: 5-90% (non-condensing)

Storage

Temperature: -20 to 70 °C (-4 to 158 °F)
Relative Humidity: 5-95% (non-condensing)



FCC WARNING STATEMENT

FCC Certification

The United States Federal Communication Commission (FCC) and the Canadian Department of Communications have established certain rules governing the use of electronic equipment.

Part15, Class B

This device complies with Part 15 of 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. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part15 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 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 transmitter module is authorized only for use in device where the antenna may be installed such that 20cm may be maintained between the antenna and users. The final end product must be labeled in a visible area with the following: "Contains FCC ID: MDZ-WN4517R-M"

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user authority to operate the equipment.



CAUTION

1. This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
2. For product available in the USA market, only channel 1~11 can be operated. Selection of other channels is not possible.

IMPORTANT NOTE:

This module is intended for OEM integrator. The OEM integrator is still responsible for the FCC compliance requirement of the end product, which integrates this module.

20cm minimum distance has to be able to be maintained between the antenna and the users for the host this module is integrated into. Under such configuration, the FCC radiation exposure limits set forth for an population/uncontrolled environment can be satisfied.

Any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment.

USERS MANUAL OF THE END PRODUCT:

In the users manual of the end product, the end user has to be informed to keep at least 20cm separation with the antenna while this end product is installed and operated. The end user has to be informed that the FCC radio-frequency exposure guidelines for an uncontrolled environment can be satisfied. The end user has to also be informed that any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment. If the size of the end product is smaller than 8x10cm, then additional FCC part 15.19 statement is required to be available in the user manual: This device complies with Part 15 of 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.

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B conforme á la norme NMB-003 du Canada.

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 device.

For product available in the USA/Canada market, only channel 1~11 can be operated. Selection of other channels is not possible.

This device and its antenna(s) must not be co-located or operation in conjunction with any other antenna or transmitter.

To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p) is not more than that permitted for successful communication.