PRODUCT SPECIFICATION

802.11a/b/g/n 2T2R Wireless LAN USB Module

WN4508R(LA)

RT5572

Version 1.0

User Manual

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Networking B.U.
Lite-on Technology Corporation
4F, No. 90, Chien I Rd.,
Chung Ho, New Taipei City 235, Taiwan, R.O.C.

Phone: +886-2-2222-6181
Fax: +886-2-2221-5288
Contact: Product Marketing
Mr. ML Wu #8266
E-mail: ml.wu@liteon.com

Customer Approval: _____ (Signature)

_____ (Title)

_____ (Company)

_____ (Date)

(Please Sign Back by FAX.   For Confirming the Spec Only, not an Official Agreement for OEM/ODM Business)

CONTENT

FCC WARING STATEMENT

FEDERAL COMMUNICATIONS COMMISSION INTERFERENCE 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.

CAUTION:

Any changes or modifications 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.

RF exposure warning

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment must be installed and operated in accordance with provided instructions and must not be co-located or operating in conjunction with any other antenna or transmitter. End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

End Product Labeling

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: PPQ-WN4508R "

Information for the OEMs and Integrators
The following statement must be included with all versions of this document supplied to an

OEM or integrator, but should not be distributed to the end user.
1) This device is intended for OEM integrators only.
 2) Please see the full Grant of Equipment document for other restrictions.

This device is operation in 5.15 – 5.25GHz frequency range, then restricted in indoor use only, Outdoor operations in the 5150~5250MHz is prohibit.

This device is slave equipment, the device is not radar detection and not ad-hoc operation in the DFS band.

PRODUCT FEATURES

- Operate at ISM frequency Band (2.4 / 5GHz)
- IEEE Standards Support, 802.11a , 802.11b, 802.11g and 802.11n
- Support USB 2.0 host interface
- Enterprise level security supporting: WPA, WPA2, TKIP, AES, WAPI
- Two-stream IEEE 802.11n support for 20MHz and 40MHz bandwidth channels provides PHY layer rates up to 300Mbps
- RoHS compliance
- Low Halogen compliance

PRODUCT SPECIFICATIONS

MAIN CHIPSET

MAC/ Baseband/ RF: Ralink RT5572

FUNCTIONAL SPECIFICATIONS

Wi-Fi Function	
Standard	IEEE802.11a;IEEE802.11b; IEEE 802.11g; IEEE 802.11n
Bus Interface	USB2.0
Data Rate	*802.11a:* 54, 48, 36, 24, 18, 12, 9, 6 Mbps *802.11b:* 11, 5.5, 2, 1 Mbps *802.11g:* 54, 48, 36, 24, 18, 12, 9, 6 Mbps *802.11n:* MCS 0 to 15 for HT20MHz MCS 0 to 15 for HT40MHz
Media Access Control	CSMA/CA with ACK
Modulation Techniques	*802.11a*: 64QAM, 16QAM, QPSK, BPSK *802.11b*: CCK, DQPSK, DBPSK *802.11g*: 64QAM, 16QAM, QPSK, BPSK *802.11n*: 64QAM, 16QAM, QPSK, BPSK
Network Architecture	Ad-hoc mode (Peer-to-Peer) Infrastructure mode
Operation Channel	*2.4GHz* 11: (Ch. 1-11) – United States 13: (Ch. 1-13) – Europe 14: (Ch. 1-14) – Japan *5GHz* 21: USA 19: EU 8: Japan
Frequency Range	*802.11bg* 2.400 ~ 2.4835 GHz *802.11a* 5.15 ~ 5.85 GHz
Transmit Output Power – 2x2 **MAX: 17.5dBm** **(Tolerance: ±1.5dBm)**	*802.11a:* 12 dBm@6Mbps 12 dBm@54Mbps *802.11b:* 16 dBm@1Mbps 16 dBm@11Mbps *802.11g:* 14 dBm@6Mbps

	14 dBm@54Mbps
	802.11n:
	2.4G
	20MHz:
	13 dBm@MCS0
	13 dBm@MCS7
	13 dBm@MCS15
	40MHz:
	13 dBm@MCS0
	13 dBm@MCS7
	13 dBm@MCS15
	5G
	20MHz:
	12 dBm@MCS0
	11 dBm@MCS7
	11 dBm@MCS15
	40MHz:
	11 dBm@MCS0
	11 dBm@MCS7
	11 dBm@MCS15

Receiver Sensitivity	*802.11a:*
	  -86 dBm@6Mbps
	  -70 dBm@54Mbps
	802.11b:
	  -88 dBm@1Mbps
	  -82 dBm@11Mbps
	802.11g:
	  -86 dBm@6Mbps
	  -71 dBm@54Mbps
	802.11n:
	  2.4G/5G
	    20MHz
	    -86 dBm@MCS0
	    -68 dBm@MCS7
	    -68 dBm@MCS15
	    40MHz
	    -83 dBm@MCS0
	    -65 dBm@MCS7
	    -65 dBm@MCS15

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/Win7/Win8; Linux based

Power Consumption	*TX Mode:*
	  TBD *mA*
	RX Mode:
	  TBD *mA*
	Standby Mode:
	  TBD *mA*
	Radio Off:
	  TBD *mA*

Antenna Type	Metal antenna

PIN ASSIGMENT

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

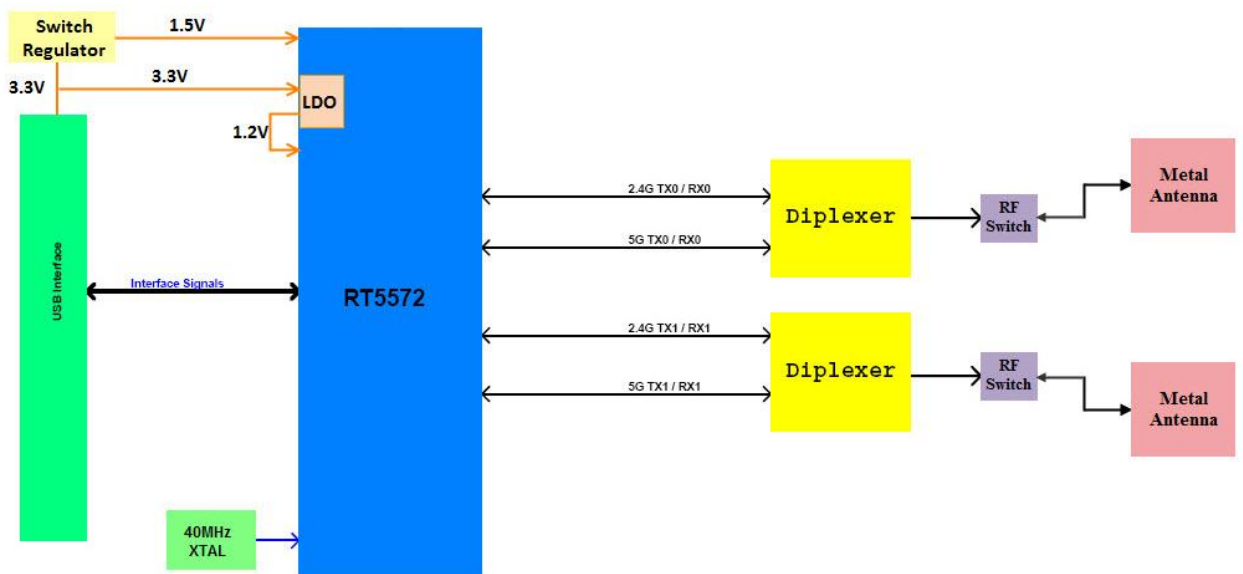## USB CONNECTOR SPEC

SPECIFICATIONS
Current Rating: 1A AC,DC
Voltage Rating: 150V AC,DC
Temperature Range: −25'C ~ +85'C
Contact Resistance: 30mΩ Max.
Insulation Resistance: 500MΩ Min.
Withstanding Voltage: 500V AC/minute
Pin Material: Brass/Tin−plated
Solder Tabs: Brass/Tin−plated
Material: Nylon 6T,UL94V−0
Color: Natural(Beige)
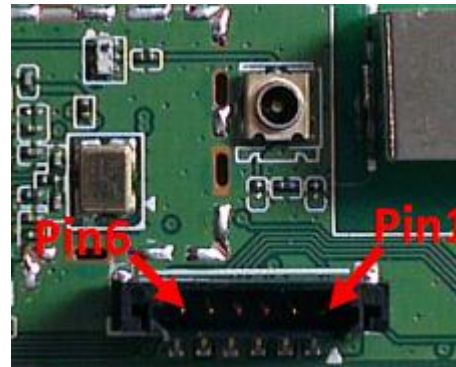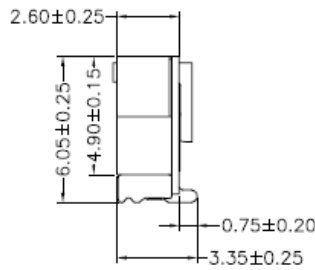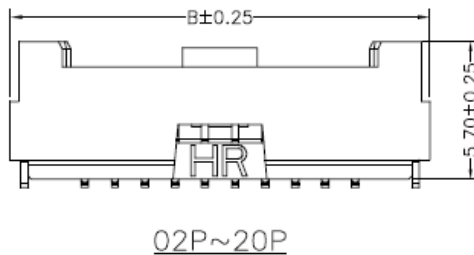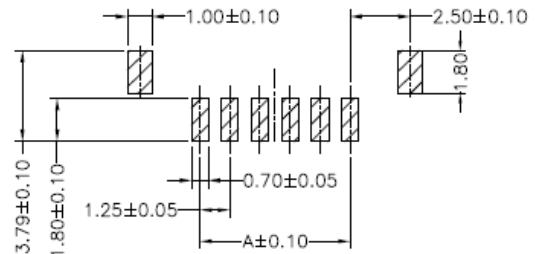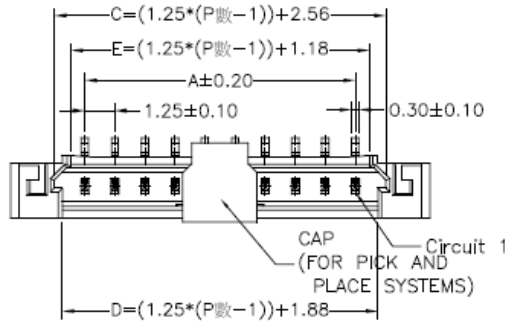
Ordering Information & Dimensions
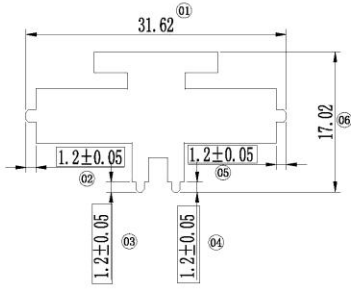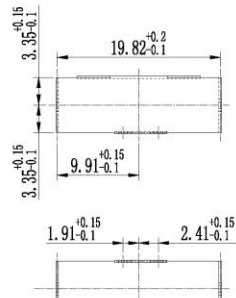
PART NO.	Dimensions A	Dimensions B
A1253WVA−S−02P	1.25	7.45
A1253WVA−S−03P	2.50	8.70
A1253WVA−S−04P	3.75	9.95
A1253WVA−S−05P	5.00	11.20
A1253WVA−S−06P	6.25	12.45
A1253WVA−S−07P	7.50	13.70
A1253WVA−S−08P	8.75	14.95
A1253WVA−S−09P	10.00	16.20
A1253WVA−S−10P	11.25	17.45
A1253WVA−S−11P	12.50	18.70
A1253WVA−S−12P	13.75	19.95
A1253WVA−S−13P	15.00	21.20
A1253WVA−S−14P	16.25	22.45
A1253WVA−S−15P	17.50	23.70
A1253WVA−S−20P	23.75	29.95
A1253WVA−S−25P	30.00	36.20
A1253WVA−S−30P	36.25	42.45

MECHANICAL

Unit:mm

BLOCK DIAGRAM

ANTENNA SPEC

試作部品図
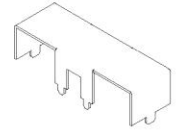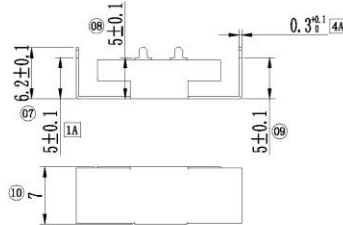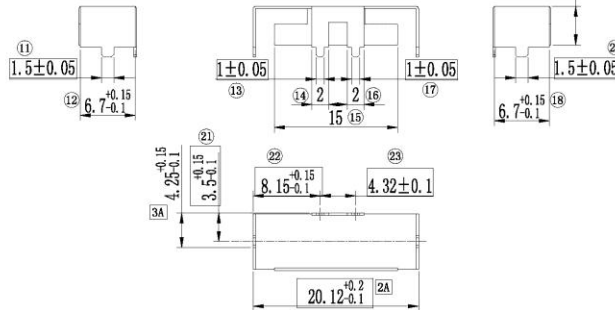
展開圖

中心線尺寸圖

成品圖

技術要求:
1、未注尺寸見3D;
2、未注公差見公差列表;
3、鐵件材質:SUS301鍍鎳 厚度:T=0.3MM公差+0.1/-0mm;
4、外觀需符合耀登檢驗規範;
5、產品正面不可有毛刺,反面毛刺不大于0.05mm;
6、彈片展平要求:
　1)厚度在0.2MM以下時,依中心線計算展平
　2)展平后尺寸公差在±0.15MM以內;
7、帶"A"尺寸為進料必檢尺寸;
8、尺寸框選起來為重點尺寸(共12個),開模需特別注意

環境物質要求:
1.鎘及其化合物＜5PPM
2.鉛及其化合物＜100PPM
3.汞及其化合物＜5PPM
4.六价鉻及其化合物＜2PPM
5.多溴聯苯及多溴二苯醚
6.溴Br≤900ppm,氯Cl≤900ppm、總溴和總氯≤1500ppm
PBB And PBDE:N/D

附:產品需符合耀登外觀檢驗標准及可靠度測試要求

DIMENSION TOLERANCE
6以下........±0.05
6以上—30.......±0.1
30以上—120......±0.15
120以上—315.....±0.20
315以上—1000.....±0.3
1000以上—2000....±0.5

注:標注1A,2A,3A—等為重點尺寸,總計4A,全尺寸共計23(不含重點尺寸)

工程變更單號	版次	AREA 区域	DATE 日期	CONTENT OF CHANGE 變更事項
	A		2013/04/15	新圖繪製
	B		2013/05/22	Pattern修改繪製
	C		2013/05/30	定位角增加倒角

表面加工

圖 名	圖 號	料 號	表面處理	適用機種	開發單号
鐵件	TPV-WIFI-1-2 20130530 (承插座)	151727-20		TPV-Star One	
材質 SUS301鍍鎳	投影				
單位 MM 比例 1:1					
文件編号/版本					

auden
耀登電通科技(昆山)有限公司
AUDEN TECHNO(KUNSHAN)CO.LTD
作成　檢圖　確認

EEPROM INFORMATION

Reg Domain	World Wide **2.4G/5G** Read from registry; Control by driver
	Offset 0x38 for 5G: 0xFF Offset 0x39 for 2.4G: 0xFF
Vendor ID	0x0471
Product ID	0x2126

ENVIRONMENTAL

Operating

Operating Temperature: 0 to 70 °C (32 to 158 °F)
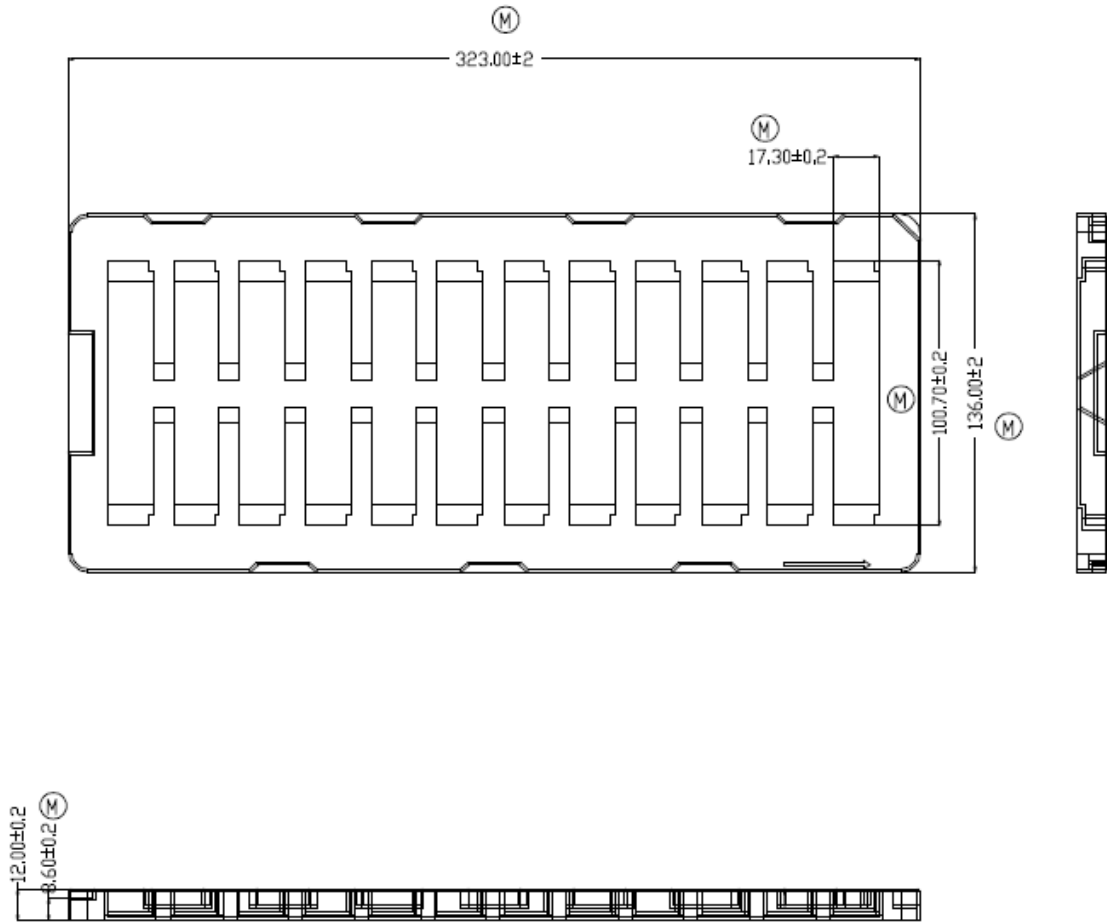
Relative Humidity: 5-90% (non-condensing)

Storage

Temperature: -20 to 70 °C (-4 to 158 °F)

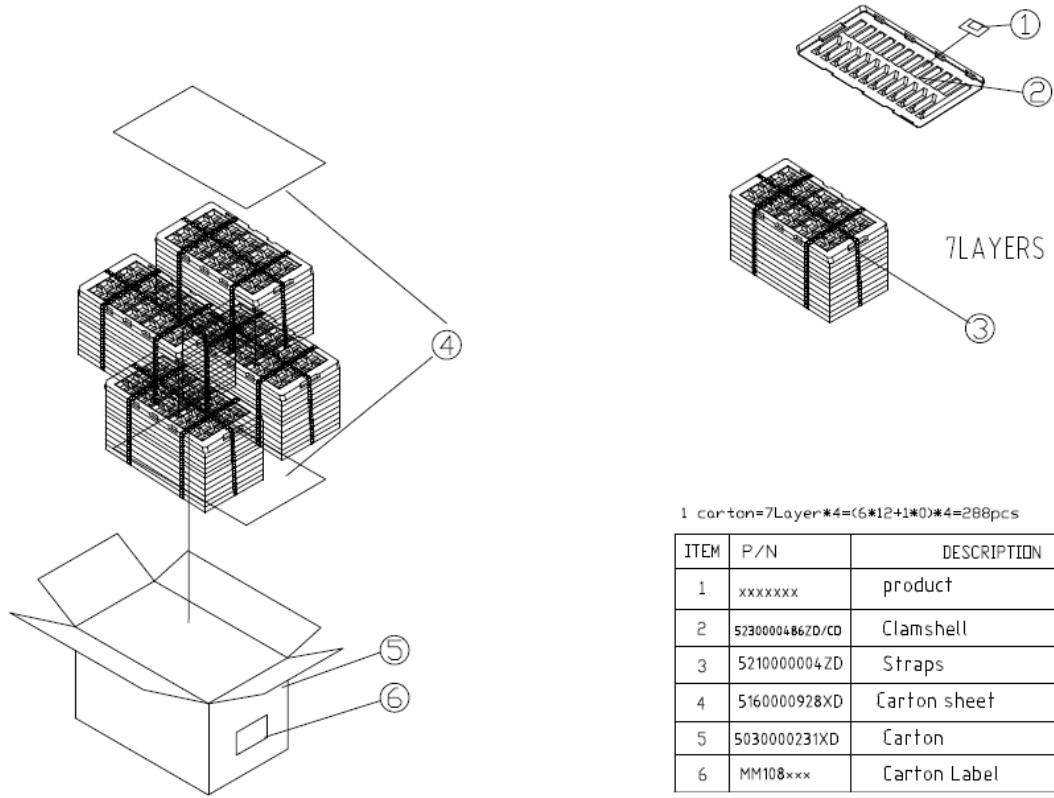Relative Humidity: 5-95% (non-condensing)

PACKING DRAWING

Tray

Ⓜ
323.00±2

Ⓜ
17.30±0.2

100.70±0.2
136.00±2 Ⓜ

12.00±0.2 Ⓜ
8.60±0.2 Ⓜ

Note:
1.材質：黑色 PS 1.2㎜
2.未注拔模角度為3度
3.產品放進去不可以左右移動
4.靜電阻值$1 \times 10^4 \sim 1 \times 10^9 \Omega$
5.錶面摩擦電壓100V 以下
6.Marked Ⓜ IS THE CRITICAL DIMENSION

⚠
不得含有
WI-CQES-002
要求禁用之有毒,有害物質

1 carton=7Layer*4=(6*12+1*0)*4=288pcs

ITEM	P/N	DESCRIPTION	QTY
1	xxxxxxx	product	1
2	5230000486ZD/CD	Clamshell	7/72
3	5210000004ZD	Straps	1.73m/72
4	5160000928XD	Carton sheet	2/288
5	5030000231XD	Carton	1/288
6	MM108xxx	Carton Label	1/288

7LAYERS