

User Manual

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

WN4519R

MT7600U

Version 1.0

LiteOn P/N: AAZ100364D0

TPV P/N: 317GAA WF646LON

Change History

Revision	Date	Author	Change List
Version 1.0	2016/09/01	Ben J Chen	Preliminary

** 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*

PRODUCT SPECIFICATION

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

WN4519R

MT7600U

Version 1.0

Networking B.U.
Lite-on Technology Corporation
Bldg. C, No. 90, Chien 1 Rd.,
Chung Ho, New Taipei City 235, Taiwan, R.O.C.



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

PRODUCT FEATURES	4
PRODUCT SPECIFICATIONS.....	5
MAIN CHIPSET	5
FUNCTIONAL SPECIFICATIONS.....	5
RECOMMENDED OPERATION CONDITIONS.....	7
DC CHARACTERISTICS.....	7
RESET TIMING SPEC.....	7
PIN ASSIGMENT.....	8
USB CONNECTOR SPEC.....	8
MECHANICAL	9
BLOCK DIAGRAM.....	9
ANTENNA SPEC	10
EEPROM INFORMATION	11
ENVIRONMENTAL	11
OPERATING	11
STORAGE.....	11
PACKING DRAWING	12

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, WPS2.0, WAPI
- Two-stream IEEE 802.11n support for 20MHz and 40MHz bandwidth channels provides PHY layer rates up to 300Mbps
- Integrated LNA, PA and T/R switch
- RoHS compliance
- Low Halogen compliance

PRODUCT SPECIFICATIONS

MAIN CHIPSET

MAC/ Baseband/ RF: MediaTek MT7600U

FUNCTIONAL SPECIFICATIONS

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

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				
	40MHz				
	-83 dBm@MCS0				
	-65 dBm@MCS7				
Security	WPA, WPA2, WPS, WEP 64b&128bit, IEEE 802.1X, IEEE 802.11i				
Operating Voltage	5V ± 10% I/O supply voltage				
OS Supported	Linux based				
Power Consumption	Mode	Average		Peak	
		2.4G	5G	2.4G	5G
	TX	620mA	680mA	860mA	1A
	RX	230mA	560mA		
	Radio Off	25mA			
Standby	1.7mA				
Antenna Type	Metal antenna				

RECOMMENDED OPERATION CONDITIONS

For Module

Symbol	Rating	Min	Typ	Max	Units
VCC	5V Supply Voltage	4.5	5	5.5	V

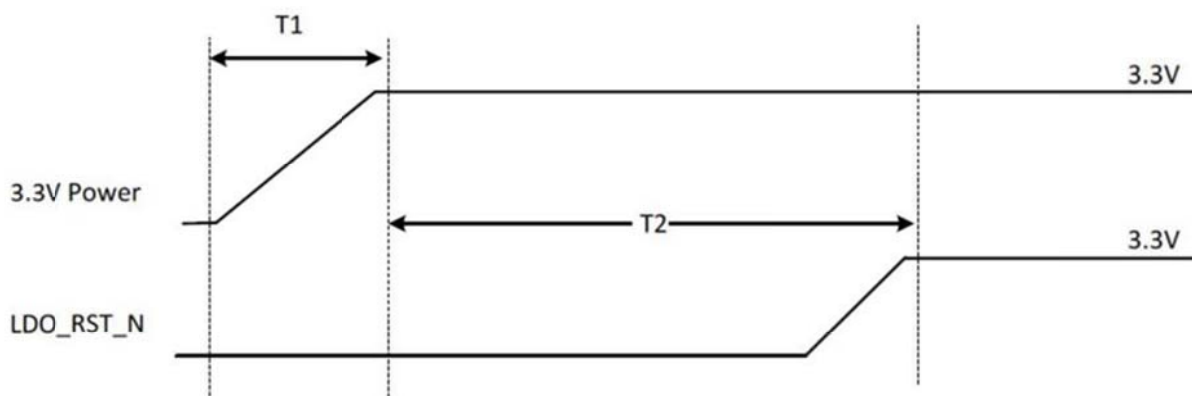
For MT7600U IC

Symbol	Rating	Min	Typ	Max	Units
VDD33	3.3V Supply Voltage	2.97	3.3	3.63	V
VDD12	1.2V Supply Voltage	1.14	1.2	1.26	V
VDD15	1.5V Supply Voltage	1.425	1.5	1.575	V

DC CHARACTERISTICS

Symbol	Parameter	Min	Typ	Max	Units
V _{IL}	Input Low Voltage	-0.28	-	0.6	V
V _{IH}	Input High Voltage	2.0	-	3.63	V
V _{OL}	Output Low Voltage	-0.28	-	0.4	
V _{OH}	Output High Voltage	2.4	-	3.63	V

RESET TIMING SPEC



T1: max. 3.5ms

T2 > 0 (LDO_RST_N must be asserted after 3.3V ready)

PIN ASSIGMENT

Pin.	Pin Define	Description	Status
1	+5VCC	5V source	YES
2	+5VCC	5V source	YES
3	USB_D-	USB Data-	YES
4	USB_D+	USB Data+	YES
5	GND	Ground	YES
6	RESET#	System reset MT7600U, low active	YES
7	WoWLAN#	Wake up system via wifi, low active	YES
8	GND	Ground	YES

USB CONNECTOR SPEC

Manufacture P/N: S1315-08SVB-SB3-RH

Thickness of gold flash printed: $\geq 1\mu$

S800S1C1S							版本 REV.	日期 DATE	ECN NO.	变更内容 DESCRIPTION	制图 DRAWN
DIN 9130 4P/8P 4P/8P 4P/8P 4P/8P							B				

No. of Contacts	A	B	C	D	E	F
2	1.25	7.45	3.81	2.83	2.43	3.50
3	2.50	8.70	5.06	4.08	3.68	3.50
4	3.75	9.95	6.31	5.33	4.93	3.50
5	5.00	11.20	7.56	6.58	6.18	3.50
6	6.25	12.45	8.81	7.83	7.43	3.50
7	7.50	13.70	10.06	9.08	8.68	3.50
8	8.75	14.95	11.31	10.33	9.93	3.50
9	10.00	16.20	12.56	11.58	11.18	3.50
10	11.25	17.45	13.81	12.83	12.43	3.50
11	12.50	18.70	15.06	14.08	13.68	5.00
12	13.75	19.95	16.31	15.33	14.93	5.00
13	15.00	21.20	17.56	16.58	16.18	5.00
14	16.25	22.45	18.81	17.83	17.43	5.00
15	17.50	23.70	20.06	19.08	18.68	5.00
20	23.75	29.95	26.31	25.33	24.93	5.00
25	30.00	36.20	32.56	31.58	31.18	6.00
30	36.25	42.45	38.81	37.83	37.43	6.00

Ordering Code: S1315 - XX S XX - SB3- R H
 ① ② ③ ④ ⑤ ⑥ ⑦

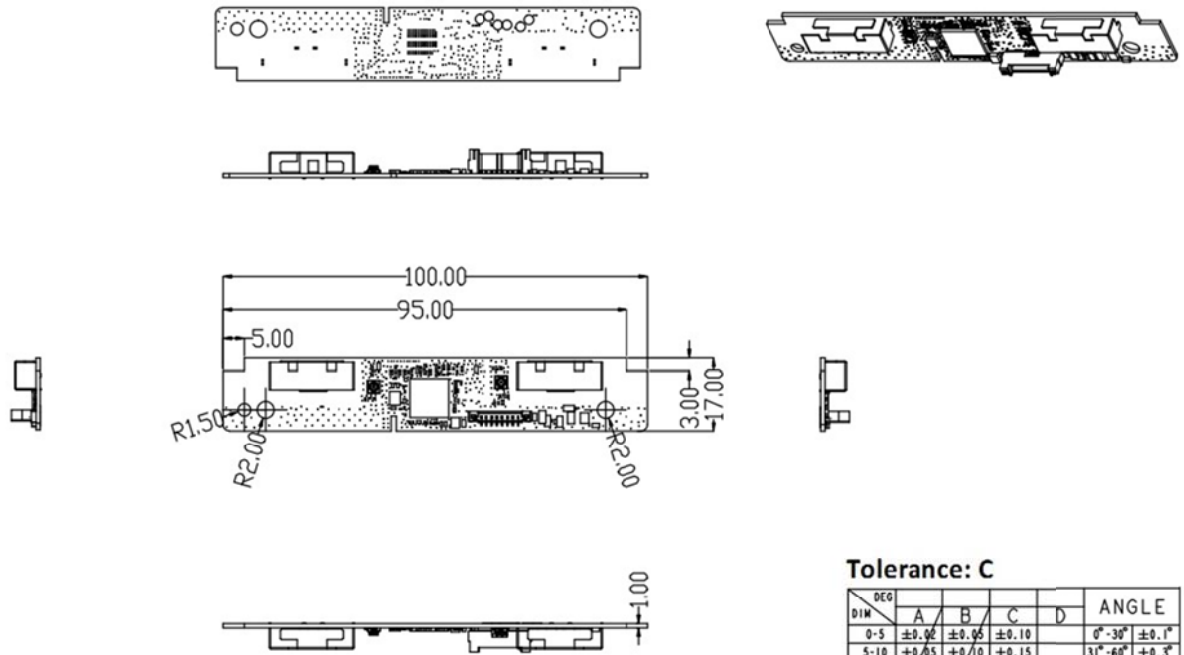
① Series NO.
 ② Circuits number
 ③ S: Straight Angle
 ④ Plating Code:
 ⑤ B: Color Black
 ⑥ Packing:
 Null: Tube
 R: Cap+Tape&Reel
 ⑦ H: Halogen Free

Definition	Code
④ Matte Tin:	WA
④ Gold plated:	
flash (1 μ min)	B 15 μ F
10 μ "	E 30 μ J
④ Duplex plating:	
flash	K 15 P
10 μ "	N 30 μ U
④ Standards:	
Prefix "Y" "W" Means	
Lead Free Plating	

NOTES: (UNLESS OTHERWISE SPECIFIED)
 1. Temperature range: -35°C~+85°C
 2. Voltage rating: 150VAC,DC
 3. Current rating: 1A
 4. Contact resistance: 20m Ω Max.
 5. Insulation resistance: 1000M Ω Min.
 6. Withstand voltage: 500VAC/minute
 7. Material:
 Housing: High Temperature Thermoplastic, UL 94V-0,Black
 Contact: Phosphor Bronze, Gold Or tin plated
 Clip: Brass, Gold Or tin plated

GENERAL TOLERANCE	料号 (DR.)	武颖	料号 PART NO.	S1315-XXSXX-SB3-RH	版本 REV.	A
X \pm 0.30	X' \pm 2'	(CHK.)	品名 TITLE	1.25P SMD WAFER	张次 SHEET	1/1
.X \pm 0.25	.X' \pm 1'	(APPD.)	客户料号 OUT.MANO.			
.XX \pm 0.20	.XX' \pm 0.5'	(OR.D.)	日期 DATE	2012.06.16	客户名称	苏州新亚电通有限公司
.XXX \pm 0.15	.XXX' \pm 0.5'	(UNITS)	比例尺 SCALE	1:1	公司 SUZHOU XINTA ELECTRONIC COMMUNICATION CO. LTD.	

MECHANICAL



Tolerance: C

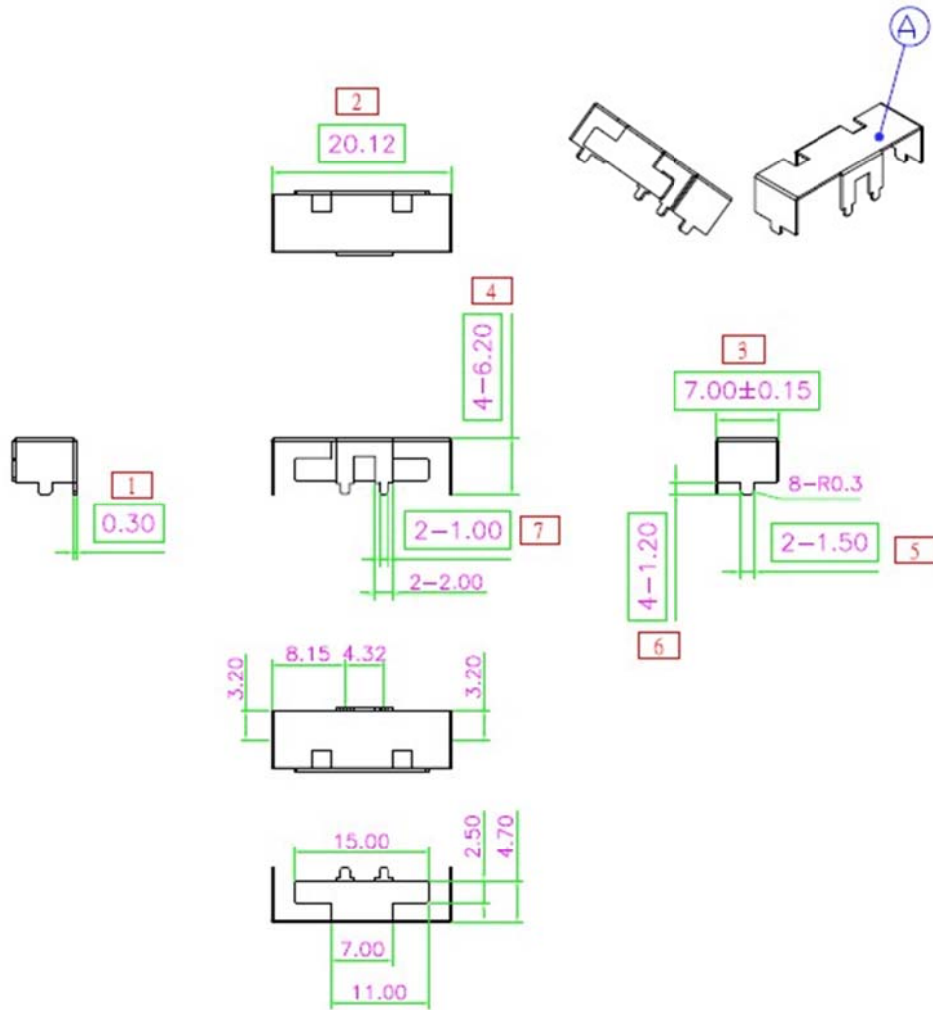
DIM	DEG				ANGLE
	A	B	C	D	
0-5	±0.02	±0.05	±0.10		0°-30° ±0.1°
5-10	±0.05	±0.10	±0.15		31°-60° ±0.3°
10-50	±0.10	±0.15	±0.20		61°-90° ±0.5°
50-100	±0.15	±0.20	±0.25		
100-	±0.15	±0.20	±0.25		

Unit: mm

ANTENNA SPEC

On Board Antenna for WiFi (Q'ty:2pcs)

<u>ELECTRICAL</u>	No.	DESCRIPTION	MAT' L	Finish	Q' TY
Frequency : 2.4/5. x GHz	A	Antenna	SUS430 T=0.3mm	先鍍後沖	1



※標記□記號者，為重點檢驗尺寸

			設計 DR.	HWCHAN	2015.02.06	品名	版本 REV.
			核准			ARTICLE	B
變更說明(由先沖後鍍改為先鍍後沖)			2016.05.18	HWCHAN		RFMTA200700NNLB002	
LTR	DESCRIPTION	DATE	RED. BY	容許公差	TOLERANCE	單位 UNIT	比例 SCALE
				0-5	±0.05	mm	****
				5-10	±0.10		
				10-50	±0.15	張數 SHEET	1
				50-100	±0.20		

PSA 華新科技股份有限公司
Walsin Technology Corporation

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	0x7600

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

