■**NEW**

□**UPDATE**

PRODUCT SPECIFICATION

Brand Name：	LITE-ON
Product name：	WIFI module
Model name：	**WIFI module\WCBN4521R18\ROH**
Model number:	1187665

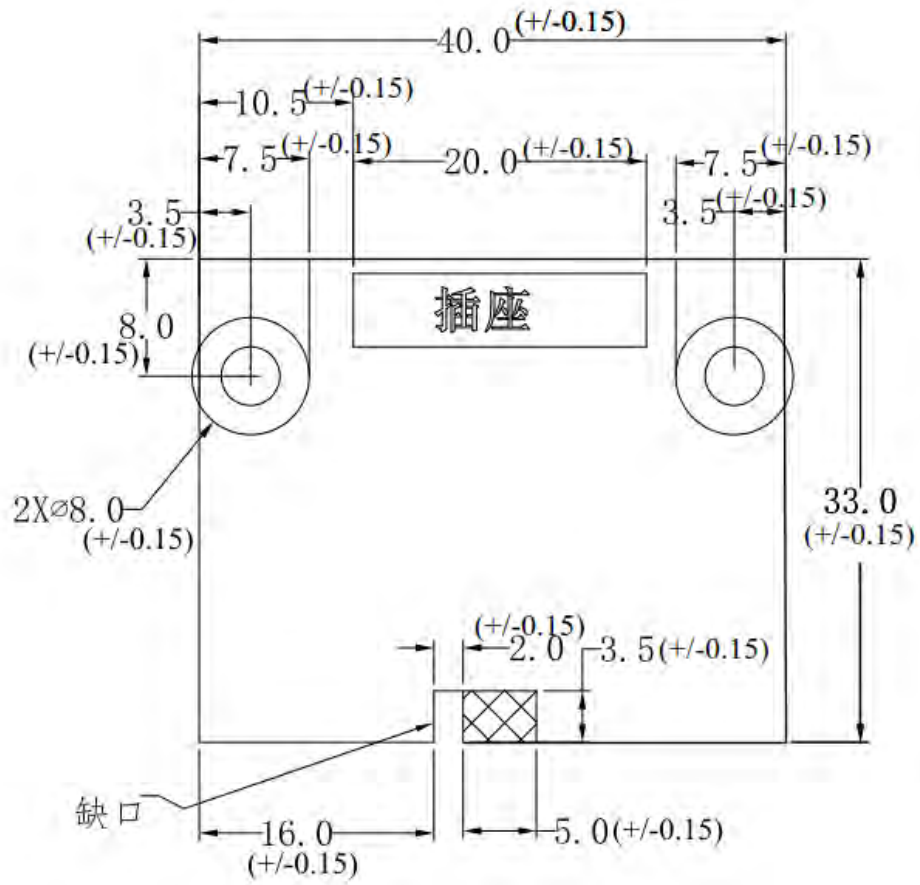
DRAW.	EDAM.	APPD.	Date
王海涛	崔亚楠	崔亚楠	2017-11-20

CONTENTS

Change History

Revision	Change List	Author	Date
1.0	Preliminary	Ken Chang	2017.10.17
1.1	Update model number and photo	Ken Chang	2017.11.20

1. Dimension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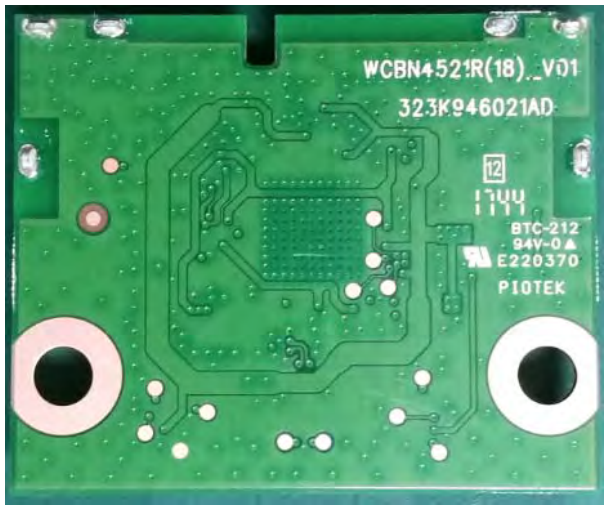
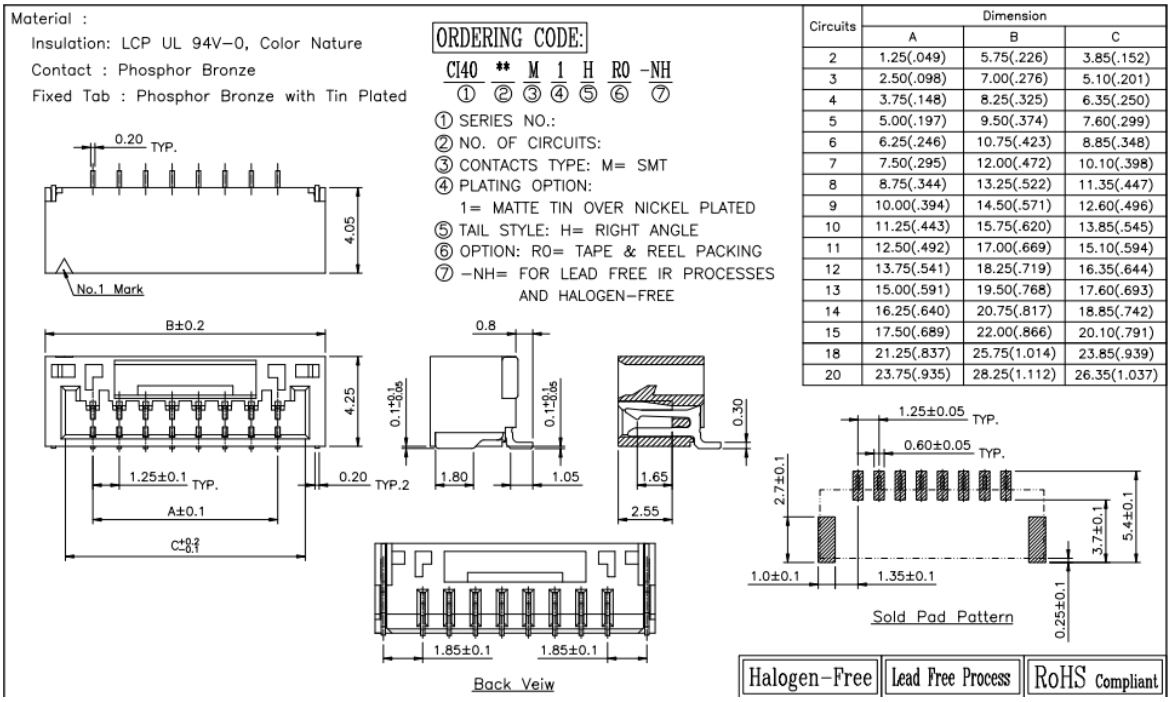
10.5 (+/-0.15)
7.5 (+/-0.15)
20.0 (+/-0.15)
7.5 (+/-0.15)
3.5 (+/-0.15)
3.5 (+/-0.15)
插座
8.0 (+/-0.15)
2X⌀8.0 (+/-0.15)
33.0 (+/-0.15)
(+/-0.15)
2.0
3.5 (+/-0.15)
缺口
16.0 (+/-0.15)
5.0 (+/-0.15)


Model:WCBN4521R18
FCC ID PPQ-WCBN4521R18
IC:4491A-WCBN4521R18
Customer P/N:1187665
MAC:9822EF396478
Made in China
Rev:V00
R-NZ


WCBN4521R(18)_V01
323K946021AD
BTC-212
94V-0
E220370
PIOTEK

2. The key structure and Components

2.1 Connector spec



Circuits	Dimension		
	A	B	C
2	1.25(.049)	5.75(.226)	3.85(.152)
3	2.50(.098)	7.00(.276)	5.10(.201)
4	3.75(.148)	8.25(.325)	6.35(.250)
5	5.00(.197)	9.50(.374)	7.60(.299)
6	6.25(.246)	10.75(.423)	8.85(.348)
7	7.50(.295)	12.00(.472)	10.10(.398)
8	8.75(.344)	13.25(.522)	11.35(.447)
9	10.00(.394)	14.50(.571)	12.60(.496)
10	11.25(.443)	15.75(.620)	13.85(.545)
11	12.50(.492)	17.00(.669)	15.10(.594)
12	13.75(.541)	18.25(.719)	16.35(.644)
13	15.00(.591)	19.50(.768)	17.60(.693)
14	16.25(.640)	20.75(.817)	18.85(.742)
15	17.50(.689)	22.00(.866)	20.10(.791)
18	21.25(.837)	25.75(1.014)	23.85(.939)
20	23.75(.935)	28.25(1.112)	26.35(1.037)

3. Functions and Test

3.1 Functions

PRODUCT FEATURES

- Operate at 2.4GHz/5GHz band
- 866Mbps PHY Rate Support
- 2T2R Modes
- 20/40/80MHz Bandwidth Support
- USB 2.0 support for date rates up to 12Mbps full speed and 480Mbps high speed
- IEEE standards support: IEEE 802.11a/b/g/n and 802.11ac draft
- 802.11i- WEP 64/128, AES, TKIP, GCMP, WAPI
- RoHS compliance
- Low Halogen compliance

FUNCTIONAL SPECIFICATIONS

Main Chipset	MT7618BUN
WIFI Standard	IEEE 802.11a/b/g/n/ac draft
Bus Interface	USB 2.0
Form Factor	40 x 33 x 6mm
Data Rate	802.11b: CCK, DQPSK, DBPSK 802.11a/g: 64QAM, 16QAM, QPSK, BPSK 802.11n: 64QAM, 16QAM, QPSK, BPSK 802.11ac: 256QAM, 64QAM, 16QAM, QPSK, BPSK
Frequency Range	2.400 ~ 2.4835 GHz 5.180 ~ 5. 845 GHz
Transmit Output Power	11b: 17 +/- 1.5dBm (11Mbps) 11g: 15 +/- 1.5dBm (54Mbps) 11n: 15 +/- 1.5dBm (MCS7 HT20) 11a: 14 +/- 1.5dBm (54Mbps) 11an: 13.5 +/- 1.5dBm (MCS7 HT20/40)

	11ac: 11.5 +/- 1.5dBm (HT80)
Receive Sensitivity	11b @ 11Mbps: <-82dBm 11g @ 54Mbps: <-70dBm 11n @ MCS7: : <-64dBm 11ac @MCS9: <-56dBm
Temperature & Humidity	Normal Test Condition: 25 +/- 2deg.C , 65 +/- 2% RH Operating: -10 to 70 deg.C Storage: -40 to 85 deg.C
Operating Voltage	5V ±10% I/O supply voltage
Antenna Type	On Board Metallic Antenna x 2
Power Consumption	Standby mode: 40 mA TX: 2.4G HT-20 340 mA HT-40 340 mA 5G HT-20 500mA HT-40 500mA HT-80 500mA

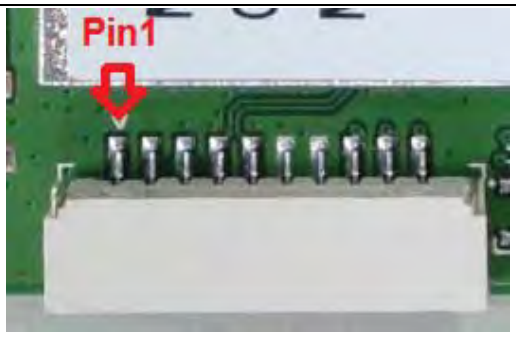
3.2 Antenna spec

input resistance	50Ω
Operating channel	2.4GHz~2.5GHz，5.15~5.85GHz
VSWR	2.4GHz~2.5GHz：VSWR≤2，5.15~5.85GHz：VSWR≤3
Gain	For 2.4GHz，Antenna max gain < 5dBi，for 5GHz，Antenna max gain < 8dBi

3.3 Pin define

PIN ASSIGMENT

Pin	Name
1	WiFi_Reg_On
2	BT_HOST_WAKE
3	+5V
4	USB_D-
5	USB_D+
6	GND
7	GND
8	3D_SYNC
9	RST_N
10	WLAN_DEV_WAKE



USB CONNECTOR SPEC

Plating: MATTE TIN over nickel Plated

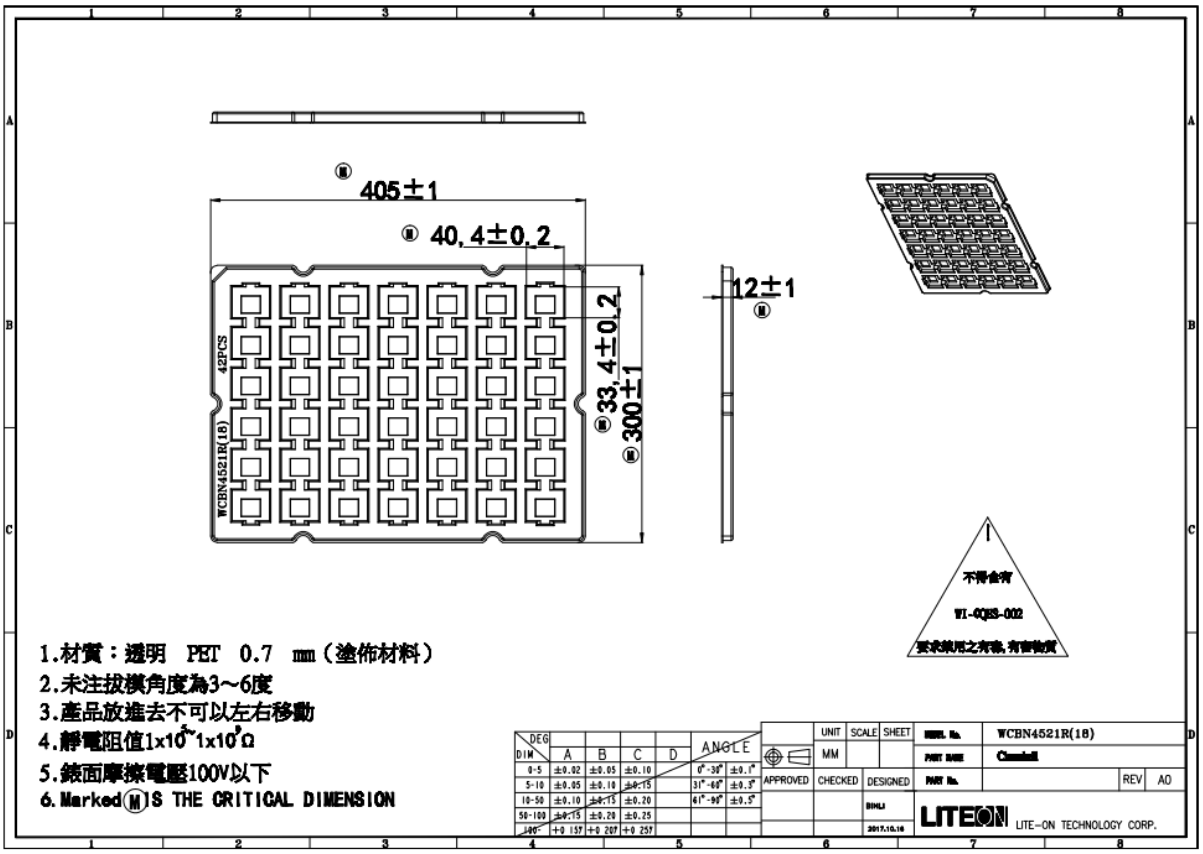
RECOMMENDED OPERATION CONDITIONS

Symbol	Rating	Min	Typ	Max	Units
VDD33	3.3V Supply Voltage	3.0	3.3	3.6	V
VDD12	1.2V Supply Voltage	1.10	1.2	1.23	V

DC CHARACTERISTICS

Symbol	Parameter	Min	Typ	Max	Units
V_{IL}	Input Low Voltage	-	0	0.9	V
V_{IH}	Input High Voltage	2.0	3.3	3.6	V
V_{OL}	Output Low Voltage	0	-	0.33	
V_{OH}	Output High Voltage	2.97	-	3.3	V

4. Packing drawing



5. ENVIRONMENTAL

OPERATING

Operating Temperature: -10 to 70 °C (32 to 158 °F)
Relative Humidity: 5-90% (non-condensing)

STORAGE

Temperature: -40 to 80 °C (-40 to 176 °F)
Relative Humidity: 5-95% (non-condensing)

6 . Environmental requirements

Components used in raw materials, packaging materials, etc., must comply with Hisense Q / RSAG J15.002 chemical substances limit requirements.

FCC Statement

Federal Communication 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 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.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this 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.

This device and its antenna(s) must not be co-located with any other transmitters except in accordance with FCC multi-transmitter product procedures.

Referring to the multi-transmitter policy, multiple-transmitter(s) and module(s) can be operated simultaneously without C2PC.

This device is restricted for indoor use.

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

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.

IMPORTANT NOTE:

This module is intended for OEM integrator. The OEM integrator is responsible for the compliance to all the rules that apply to the product into which this certified RF module is integrated.

Additional testing and certification may be necessary when multiple modules are used.

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.

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 labelling area is small than the palm of the hand, then additional FCC part 15.19 statement is required to be available in the users 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.

LABEL OF THE END PRODUCT:
The final end product must be labeled in a visible area with the following " Contains TX FCC ID: PPQ-WCBN4521R18 ".
If the labelling area is larger than the palm of the hand, then the following FCC part 15.19 statement has to also be available on the label: 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.

Ant.	Brand	Model Name	Antenna Type	Gain (dBi)	
				2.4GHz	5GHz
1	HUN PAI ENTERPRISE Co	W4521R-A0001	PIFA Antenna	3.27	4.72
2	HUN PAI ENTERPRISE Co	W4521R-A0002	PIFA Antenna	4.30	4.20

IC Statement

This device complies with Industry Canada's licence-exempt RSSs. 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.
Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This device and its antenna(s) must not be co-located with any other transmitters except in accordance with IC multi-transmitter product procedures.
Referring to the multi-transmitter policy, multiple-transmitter(s) and module(s) can be operated simultaneously without reassessment permissive change.
Cet appareil et son antenne (s) ne doit pas être co-localisés ou fonctionnement en association avec une autre antenne ou transmetteur.

This radio transmitter (4491A-WCBN4521R18) has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.
Le présent émetteur radio (4491A-WCBN4521R18) a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

Dynamic Frequency Selection (DFS) for devices operating in the bands 5250- 5350 MHz, 5470-5600 MHz and 5650-5725 MHz.
Sélection dynamique de fréquences (DFS) pour les dispositifs fonctionnant dans les bandes 5250-5350 MHz, 5470-5600 MHz et 5650-5725 MHz.

The device for operation in the band 5150–5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems.
les dispositifs fonctionnant dans la bande 5150-5250 MHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux.

The maximum antenna gain permitted for devices in the bands 5250-5350 MHz and 5470-5725 MHz shall be such that the equipment still complies with the e.i.r.p. limit.
le gain maximal d'antenne permis pour les dispositifs utilisant les bandes 5250-5350 MHz et 5470-5725 MHz doit se conformer à la limite de p.i.r.e.

The maximum antenna gain permitted for devices in the band 5725-5850 MHz shall be such that the equipment still complies with the e.i.r.p. limits specified for point-to-point and non-point-to-point operation as appropriate.
le gain maximal d'antenne permis (pour les dispositifs utilisant la bande 5725-5850 MHz)
doit se conformer à la limite de p.i.r.e. spécifiée pour l'exploitation point à point et non point à point, selon le cas.

For indoor use only.
Pour une utilisation en intérieur uniquement.

IMPORTANT NOTE:
IC Radiation Exposure Statement:
This equipment complies with IC RSS-102 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.
Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

IMPORTANT NOTE:
This module is intended for OEM integrator. The OEM integrator is responsible for the compliance to all the rules that apply to the product into which this certified RF module is integrated.
Additional testing and certification may be necessary when multiple modules are used.
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 IC RSS-102 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 IC 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. 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.

LABEL OF THE END PRODUCT:
The final end product must be labeled in a visible area with the following " Contains IC: 4491A-WCBN4521R18 ".
The Host Model Number (HMN) must be indicated at any location on the exterior of the end product or product packaging or product literature which shall be available with the end product or online.