

**Manual**  
**Unihan UPWL60381HP**

## 1.General Description

The UPWL60381HP wireless module is a fully assembled and tested general-purpose module using the AR9381 wireless System-on-Chip(SoC). The module contains AR9381 chip and all other necessary components to operate the UPWL60381HP.

For detailed information on the UPWL60381HP component itself, refer to the UPWL60381HP datasheet.

## 2. Features

Features	Description
Network Standard	IEEE 802.11 b/g/n (final n)
Chipset	Atheros AR9381
Input Voltage	3.3V
Data Rate	802.11b: 1, 2, 5.5, 11Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54Mbps 802.11n-20 MHz: MCS0~MCS23 802.11n-40 MHz: MCS0~MCS23(450Mbps)
Modulation	<b>802.11b:</b> DBPSK(1Mbps),DQPSK(2Mbps),CCK(5.5Mbps,11Mbps) <b>802.11g:</b> BPSK(6Mbps,9Mbps),QPSK(12Mbps,18Mbps), 16QAM(24Mbps,36Mbps),64QAM(48Mbps,54Mbps) <b>802.11n:</b> BPSK(MCS0,MCS8, MCS16), QPSK(MCS1,MCS2,MCS9,MCS10, MCS17, MCS18), 16QAM(MCS3,MCS4,MCS11,MCS12, MCS19, MCS20), 64QAM(MCS5,MCS6,MCS7,MCS13,MCS14,MCS15, MCS21, MCS22, MCS23)
Operating Frequency	802.11b/g/n (2412 ~ 2462 MHz)
Operating Channel	1~11 for North America,
Transceiver/Receiver Mode	3T3R Mode

## 3. Benefits

- Small, self-contained SMT module.
- 3X3 MIMO function support
- High power solution support high speed transmittance

## ■ Federal Communications Commission Statement

This device complies with FCC Rules Part 15. Operation is subject to the following

- i. This device may not cause harmful interference, and
- ii. 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 Part 15 of the Federal Communications Commission (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:

- i. Reorient or relocate the receiving antenna.
- ii. Increase the separation between the equipment and receiver.
- iii. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- iv. Consult the dealer or an experienced radio/TV technician for help.

**CAUTION!** You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

Reprinted from the Code of Federal Regulations #47, part 15.193, 1993. Washington DC: Office of the Federal Register, National Archives and Records Administration, U.S. Government Printing Office.

### 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.

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.

**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 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 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: VUIUPWL60381HP ". If the size of the end product is larger than 8x10cm, 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.

## ■ Safety statements

### Regulatory Information/Disclaimers

Installation and use of this module device must be in strict accordance with the instructions included in the user documentation provided with the product. Any changes or modifications (including the antennas) made to this device that are not expressly approved by the manufacturer may void the user's authority to operate the equipment. The manufacturer is not responsible for any radio or television interference caused by unauthorized modification of this device, or the substitution of the connecting cables and equipment other than manufacturer specified. It is the responsibility of the user to correct any interference caused by such unauthorized modification, substitution or attachment. Manufacturer and its authorized resellers or distributors will assume no liability for any damage or violation of government regulations arising from failing to comply with these guidelines.

**CAUTION!** To maintain compliance with FCC's RF exposure guidelines, this equipment should be installed and operated with minimum distance [20cm] between the radiator and your body. Use on the supplied antenna. Unauthorized antenna, modification, or attachments could damage the transmitter and may violate FCC regulations.

## ■ Safety Information

In order to maintain compliance with the FCC RF exposure guidelines, this equipment should be installed and operated with minimum distance **[20cm]** between the radiator and your body. Use only with supplied antenna.

Unauthorized antenna, modification, or attachments could damage the transmitter and may violate FCC regulations.

**CAUTION!** Any changes or modifications not expressly approved in this manual could void your authorization to use this device.

## ■ MPE Statement

Your device contains a low power transmitter. When device is transmitted it sends out Radio Frequency (RF) signal.

## ■ FCC Radio Frequency Exposure

This module device has been evaluated under FCC Bulletin OET 65C and found compliant to the requirements as set forth in CFR 47 Sections 2.1091, 2.1093, and 15.247(b)(4) addressing RF Exposure from radio frequency devices. The radiation output power of this module device is far below the FCC radio frequency exposure limits. Nevertheless, this device shall be used in such a manner that the potential for human contact during normal operation – as a mobile or portable device but use in a body-worn way is strictly prohibit. When using this device, a certain separation distance between antenna and nearby persons has to be kept to ensure RF exposure compliance. In order to comply with the RF exposure limits established in the ANSI C95.1 standards, the distance between the antennas and the user should not be less than [20cm].

## ■ RF Exposure

The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

## ■ About this guide

This user guide contains the information your PEGATRON WIFI Module.

## IC Statement:

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

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

This device complies with Industry Canada license-exempt RSS standard(s). 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.*

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

*Pour les produits disponibles aux États-Unis / Canada du marché, seul le canal 1 à 11 peuvent être exploités. Sélection d'autres canaux n'est pas possible.*

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

*Cet appareil et son antenne (s) ne doit pas être co-localisés ou fonctionnement en association avec une autre antenne ou transmetteur.*

## 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.

*Declaración de exposición a la radiación de Canada:*

*Este equipo cumple con los límites de exposición a la radiación de la IC establecidos para un ambiente no controlado.*

*Este equipo se debe instalar y operar con una distancia mínima de 20 cm entre el radiador y su cuerpo.*

This module is intended for OEM integrator. The OEM integrator is still responsible for the IC 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 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.

This radio transmitter (identify the device by certification number, or model number if Category II) has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type 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 (identifier le dispositif par son numéro de certification ou son numéro de modèle s'il fait partie du matériel de catégorie I) a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal et l'impédance requise pour chaque type 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.*

Ant. Group	Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	Antenna length (cm)	Remark
1	1-3	Airgain	N2420S	PCB	U.FL	1.3	16.2	TX/RX
2	4-6	Airgain	N2420S	PCB	U.FL	1.42	12.3	TX/RX
3	7-9	Airgain	N2420S	PCB	U.FL	1.63	5.7	TX/RX
4	10-12	WANSIH	WPB243 (UC3WFI0053)	PCB	MHF	3.10	22.4	TX/RX
5	13-15	WANSIH	WPB243 (UC3WFI0055)	PCB	MHF	5.03	15.8	TX/RX
6	16-18	WANSIH	WPB243 (UC3WFI0054)	PCB	MHF	3.03	5	TX/RX
7	19-21	WANSIH	WC3WFI0054	PCB	MHF	5.4	21.3	TX/RX

**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. IC statement is required to be available in the users manual: This Class B digital apparatus complies with Canadian ICES-003. 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 IC : 7582A-UPWL60381HP ".

## ■ System requirements

Before installing the PEGATRON WIFI module, make sure that your system meets the following requirements:

- Intel® Pentium® 4 or AMD K7/K8 system
- Minimum 64MB system memory
- Windows® XP/VISTA operating system

## ■ Installing the device drivers

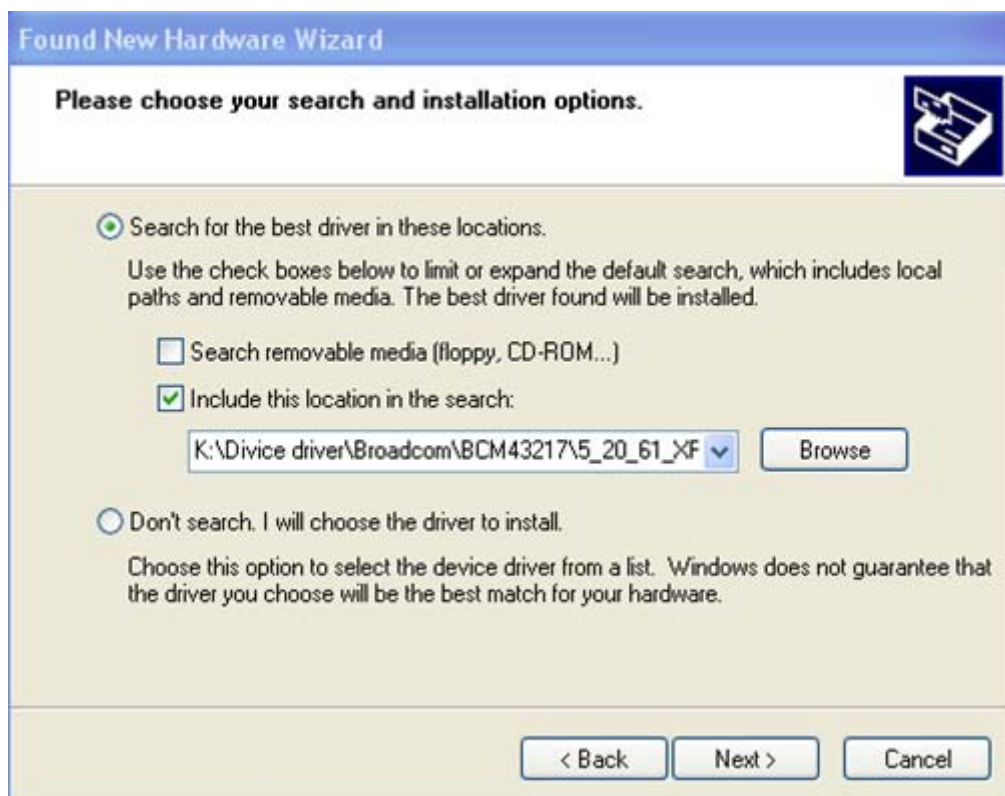
To install the device driver in your computer:

Insert the support CD to the optical drive and follow the following procedure.

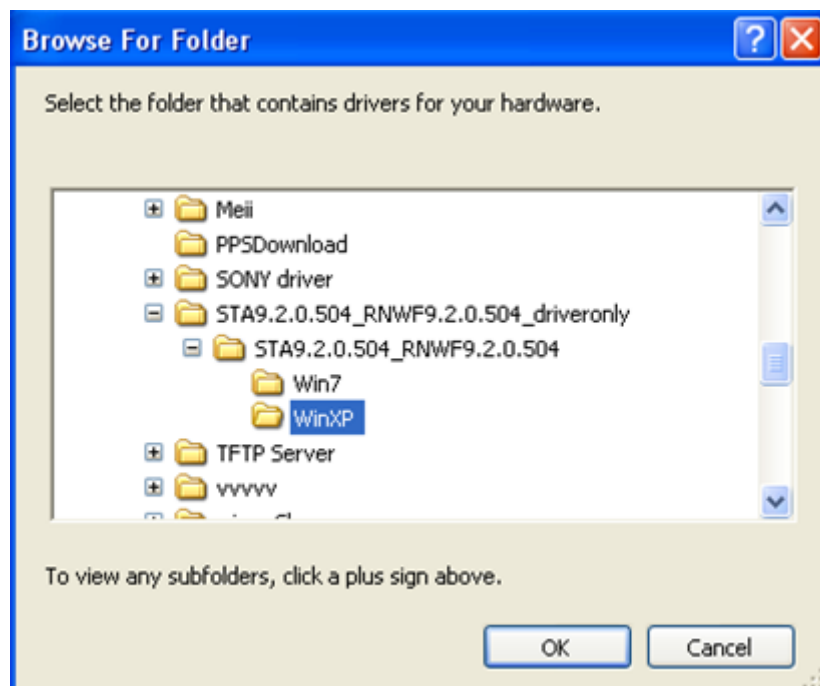
Step 1



## Step 2



## Step 3



Step 4

