U S E R ' S M A N U A L

J20H058

USB2.0 WLAN CARD

Contents

1.Introduction

Project Name: 802.11b/g/n (1x1) card based on IC Realtek RTL8188(CTV) with QFN package.

802.11b/g/n module provides wireless modem functionality utilizing direct sequence spread spectrum and OFDM/CCK technology. The typical use model for this embedded device is to allow the host device to be connected to an 802.11b/g/n 1x1 wireless network with infrastructure mode or to serve as an ad-hoc (peer-to-peer) data path.

1.1 Scope

The Wireless Realtek RTL8188(CTV) available 11n solution in the 2.4-GHz band, compatible with the IEEE 802.11b standard , 802.11g standard and 11n standard. The 802.11g data rate provides for 54, 48, 36, 24, 18, 12, 9, 6Mbps, and 802.11b data rate provides for 11, 5.5, 2, 1Mbps. In addition, 11n provide 7.2, 14.4, 21.7, 28.9, 43.3, 57.8, 65, 72.2Mbps for HT20. 15, 30, 45, 60, 90, 120, 135, 150Mbps for HT40.

1.2 Function

- **RoHS and Green Compliant.**
- **802.11b/g/n 1x1 based on Realtek RTL8188(CTV) IC**
- **Modulation type: DBPSK, DQPSK and CCK with 802.11b mode. OFDM, QPSK, BPSK, 16-QAM, and 64-QAM with 802.11g/n mode.**
- **USB 2.0 Interface, High and Full Speeds supported.**
- **Module is powered by the host with a 5.0V +/- 10% supply (300mVpp ripple).**
- **Module's clock source is provided by the on board XTAL Oscillator of 40 MHz (+/- 10ppm).**
- **Module connected to motherboard with approximately 10cm cable.**
- **Unit dependent RF parameters are programmed into each module EEPROM at production test time by the manufacturer.**

2.Product Specification

2.1 Hardware Specification

Wireless LAN Standards	**IEEE802.11b/g/n compatible** **ARIB STD-T66 compatible** **ETSI 300.328 compatible** **FCC 15.247 compatible** **FCC 15.407 compatible**
Operating Frequency	**2.400~2.4835GHz**
Channel Numbers	**1~11 channels active** **12,13 channels passive** **14 channels no need**
WLAN Data Rate	**802.11g: 54Mbps with fall back of 48, 36, 24, 18, 12, 9, 6Mbps.** **802.11b: 11Mbps with fall back rates of 5.5, 2, and 1Mbps** **11n: 6.5, 13, 19.5, 26, 39, 52, 58.5, 65Mbps for HT20**
Transmitter Output Power	**Typical 16dBm for 11b** **Typical 14dBm for 11g** **Typical 13dBm for HT20/40**
Receiver Sensitivity (ANT2)	**Typical –73dBm for MCS7 *(HT20)* @10%PER** **Typical –93dBm for MCS0 *(HT20)* @10%PER** **Typical –76dBm for *54Mbps* @ 10% PER** **Typical –91dBm for *6Mbps* @ 10% PER** **Typical –89dBm for *11Mbps* @ 8% PER** **Typical –96dBm for *1Mbps* @ 8% PER**
Receiver Sensitivity (ANT1)	**Typical –69dBm for MCS7 *(HT20)* @10%PER** **Typical –89dBm for MCS0 *(HT20)* @10%PER** **Typical –72dBm for *54Mbps* @ 10% PER** **Typical –87dBm for *6Mbps* @ 10% PER** **Typical –85dBm for *11Mbps* @ 8% PER** **Typical –92dBm for *1Mbps* @ 8% PER**

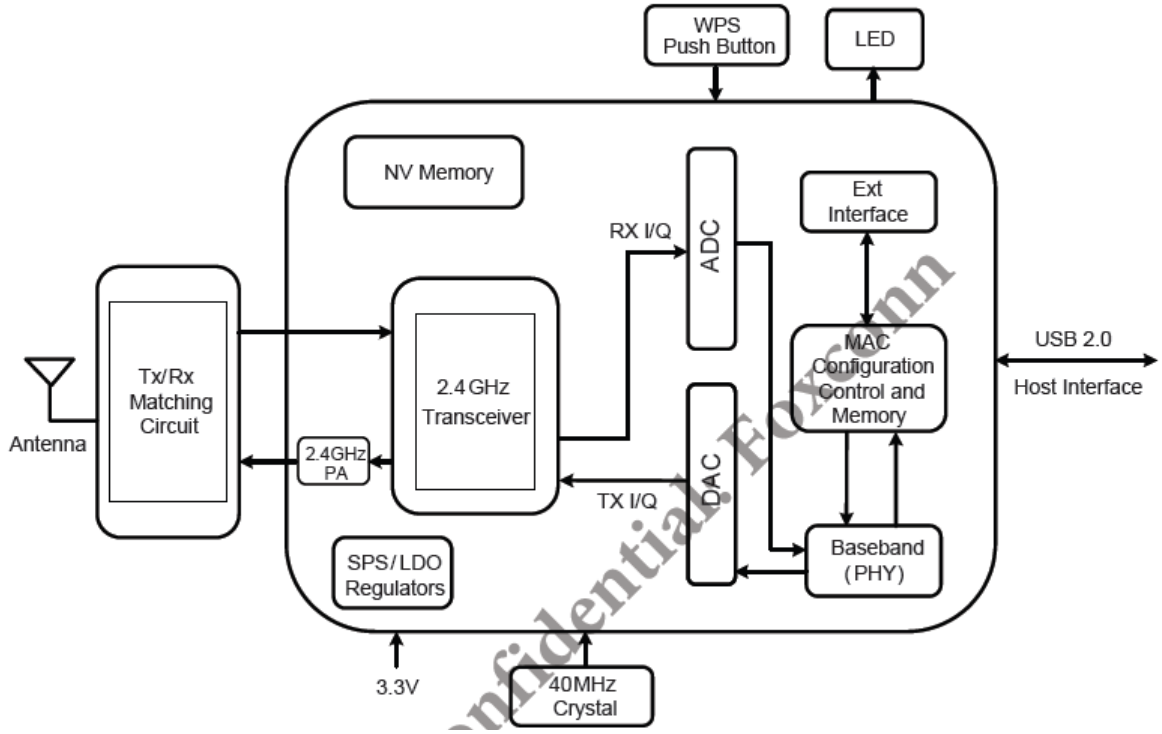
3. Product Requirements

3.1 Hardware Requirements

Host Interface	**USB 2.0**
PCB	**2-layer FR4**
Antenna port:	**ANT1 for TX/RX , ANT2 for RX Diversity**

3.2 Hardware Architecture

This specification describes an embedded 802.11b/g/n WiFi interface PCA 'module' for embedded device products. The module has two on-board connector. This module is powered from the host (5.0V) and interfaces to the host with USB 2.0 signals. No switches, indicators or related user interface signals are provided on this module. An on-board 40 MHz XTAL is included.



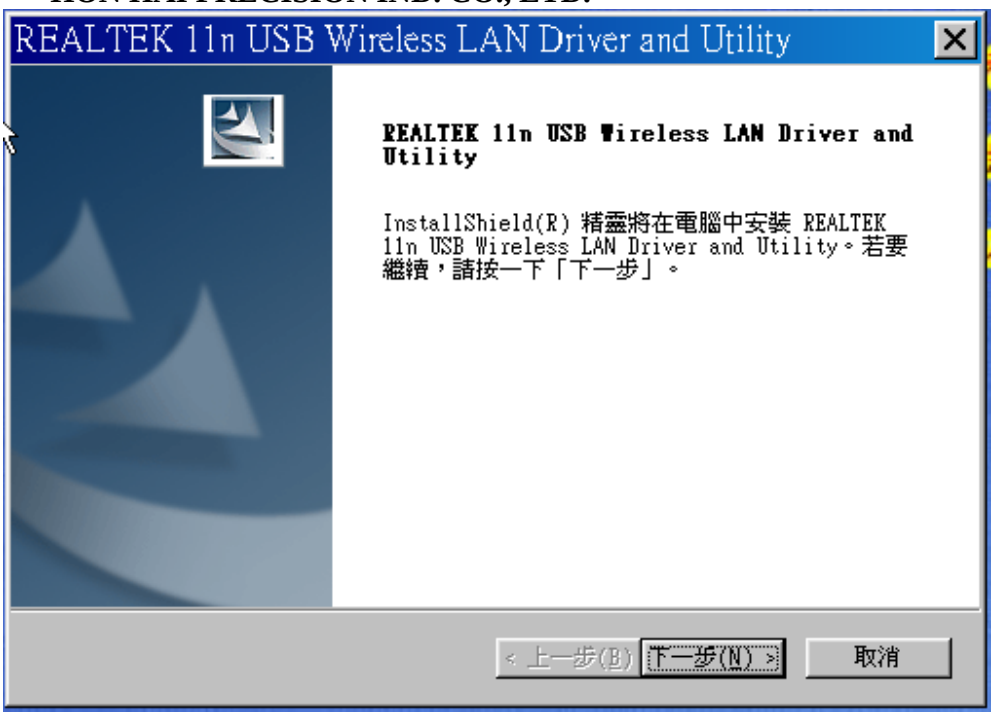
PIN DEFINE

Pin	Name	Type	Description
1	VCC	PWR	5V
2	GND	-	Ground
3	D-	I/O	USB Data -
4	D+	I/O	USB Data +
5	GND	-	Ground

Section Two: Windows XP Wireless Utility and install

1. Open your Install Programs files folder or InstallCD and double Clicked the file named“setup.exe”.

2. You can choose the language and see next interface, press “next”



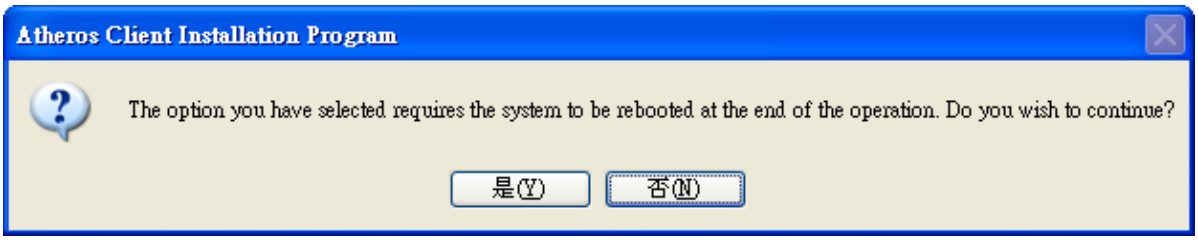
3. Read the license agreement of Realtek and select “accept”(or you will can not use the program),then click“next”

4. In the next interface you can select the setup type that best suits your needs

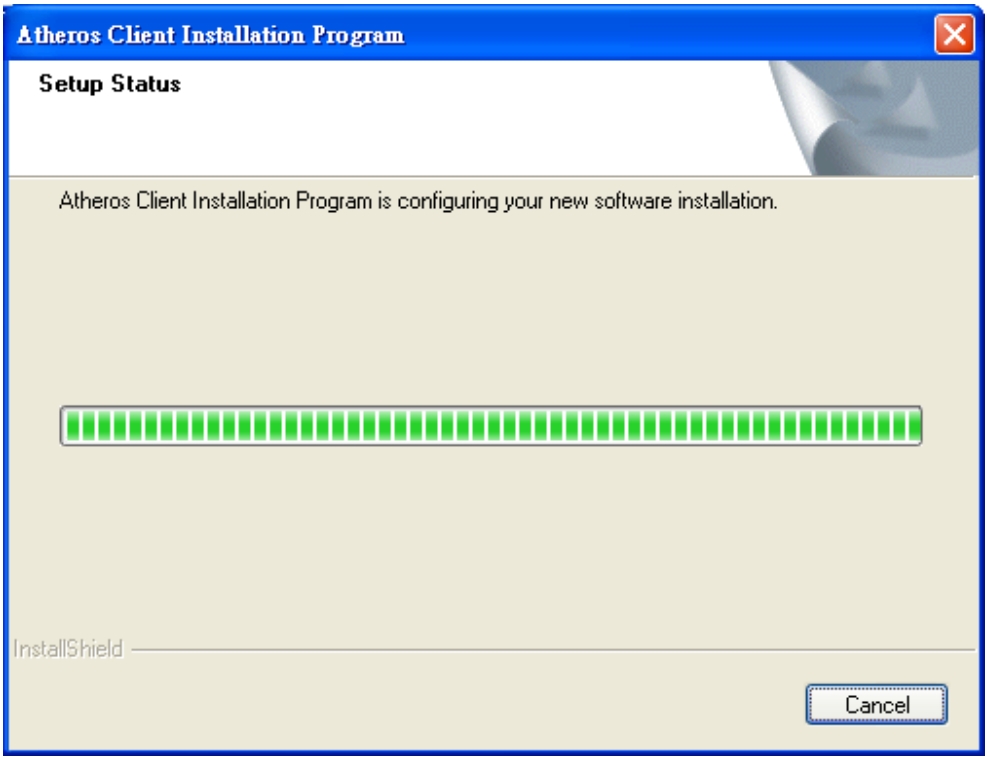
5. You will see next two interfaces and they will direct you to select the the destination location.

6. you can see this interface and the note will tell you how to select in the second interface.

7. The program will reboot the system before working, and click“ yes”



8. Install driver now



9. Install completely and restart computer


REALTEK 11n USB Wireless LAN Driver and Utility
InstallShield Wizard 完成
InstallShield Wizard 已成功安裝了 REALTEK 11n USB Wireless LAN Driver and Utility。按一下「完成」以結束精靈。
< 上一步(B)
完成
取消

4.FCC Notice:

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 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 transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

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.

This device is intended only for OEM integrators under the following conditions:

1) The antenna must be installed such that 20 cm is maintained between the antenna and users, and
2) The transmitter module may not be co-located with any other transmitter or antenna.

As long as 2 conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed

IMPORTANT NOTE: In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

End Product Labeling
This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm 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: MCLJ20H058”. The grantee's FCC ID can be used only when all FCC compliance requirements are met.

Manual Information To the End User
The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user’s manual of the end product which integrates this module.

The end user manual shall include all required regulatory information/warning as show in this manual.

5.Canada Notice

This device complies with RSS-210 of the Industry Canada 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.

Ce dispositif est conforme à la norme CNR-210 d'Industrie Canada applicable aux appareils radio exempts de licence. Son fonctionnement est sujet aux deux conditions suivantes: (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

Radiation Exposure Statement:
This equipment complies with IC 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.

Déclaration d'exposition aux radiations:
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.

HON HAI PRECISION IND. CO., LTD.

This device is intended only for OEM integrators under the following conditions: (For module device use)

1) The antenna must be installed such that 20 cm is maintained between the antenna and users, and
2) The transmitter module may not be co-located with any other transmitter or antenna.

As long as 2 conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed.

Cet appareil est conçu uniquement pour les intégrateurs OEM dans les conditions suivantes: (Pour utilisation de dispositif module)

1) L'antenne doit être installée de telle sorte qu'une distance de 20 cm est respectée entre l'antenne et les utilisateurs, et
2) Le module émetteur peut ne pas être coïmplanté avec un autre émetteur ou antenne.

Tant que les 2 conditions ci-dessus sont remplies, des essais supplémentaires sur l'émetteur ne seront pas nécessaires. Toutefois, l'intégrateur OEM est toujours responsable des essais sur son produit final pour toutes exigences de conformité supplémentaires requis pour ce module installé.

IMPORTANT NOTE:

In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the Canada authorization is no longer considered valid and the IC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate Canada authorization.

NOTE IMPORTANTE:

Dans le cas où ces conditions ne peuvent être satisfaites (par exemple pour certaines configurations d'ordinateur portable ou de certaines co-localisation avec un autre émetteur), l'autorisation du Canada n'est plus considéré comme valide et l'ID IC ne peut pas être utilisé sur le produit final. Dans ces circonstances, l'intégrateur OEM sera chargé de réévaluer le produit final (y compris l'émetteur) et l'obtention d'une autorisation distincte au Canada.

End Product Labeling

This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users. The final end product must be labeled in a visible area with the following: “Contains IC: 2878D-J20H058”.

Plaque signalétique du produit final

Ce module émetteur est autorisé uniquement pour une utilisation dans un dispositif où l'antenne peut être installée de telle sorte qu'une distance de 20cm peut être maintenue entre l'antenne et les utilisateurs. Le produit final doit être étiqueté dans un endroit visible avec l'inscription suivante: "Contient des IC: 2878D-J20H058".

Manual Information To the End User

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user’s manual of the end product which integrates this module.
The end user manual shall include all required regulatory information/warning as show in this manual.

Manuel d'information à l'utilisateur final

L'intégrateur OEM doit être conscient de ne pas fournir des informations à l'utilisateur final quant à la façon d'installer ou de supprimer ce module RF dans le manuel de l'utilisateur du produit final qui intègre ce module.
Le manuel de l'utilisateur final doit inclure toutes les informations réglementaires requises et avertissements comme indiqué dans ce manuel.