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

J20H049

USB2.0 WLAN CARD

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1.Introduction

Project Name: 802.11b/g/n (1x1) card based on IC Atheros AR9271(UB91) 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 Atheros AR9271(UB91) 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 6.5, 13, 19.5, 26, 39, 52, 58.5, 65Mbps for HT20.

1.2 Function

- **RoHS and Green Compliant.**
- **802.11b/g/n 1x1 based on Atheros AR9271(UB91) 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 30cm 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 15dBm for 11b** **Typical 15dBm for 11g** **Typical 15dBm for HT20**
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**

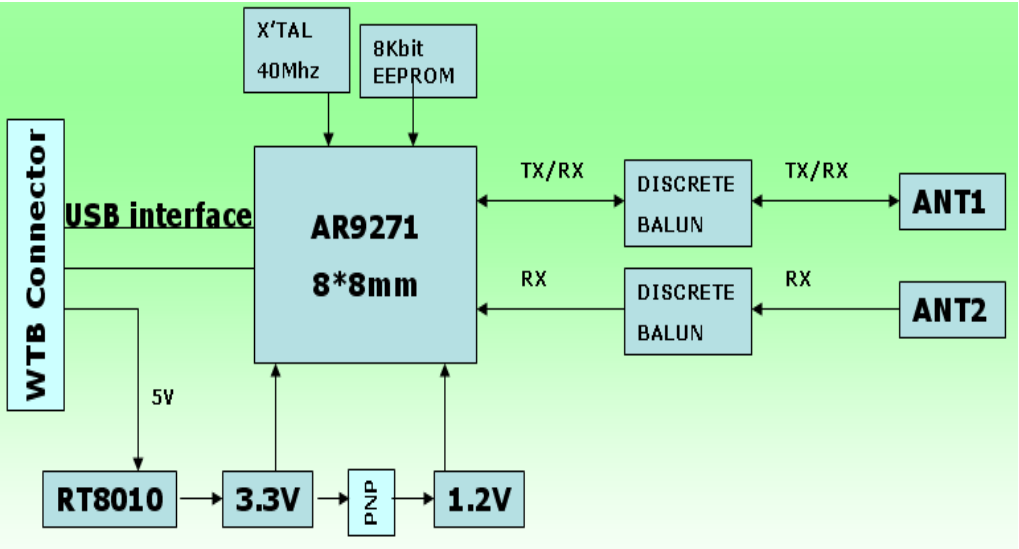
3. Product Requirements

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 No.	Name	Type	Description
1	GND	-	Ground
2	VCC	POWER	+5V
3	DP	I/O	USB Data+
4	DM	I/O	USB Data-
5	GND	-	Ground

4 FCC Notice

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.

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.

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.

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

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

FOXCONN declared that J20H049 is limited in CH1~11 from 2412 to 2462 MHz by specified firmware controlled in USA.

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

The antenna must be installed such that 20 cm is maintained between the antenna and users, and

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 (for example, digital device emissions, PC peripheral requirements, etc.).

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 TX FCC ID: MCLJ20H049”.

Manual Information That Must be Included

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 users manual of the end product which integrate this module.

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The users manual for OEM integrators must include the following information in a prominent location “ IMPORTANT NOTE: To comply with FCC RF exposure compliance requirements, the antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

5 Canada Notice

Industry Canada Statement

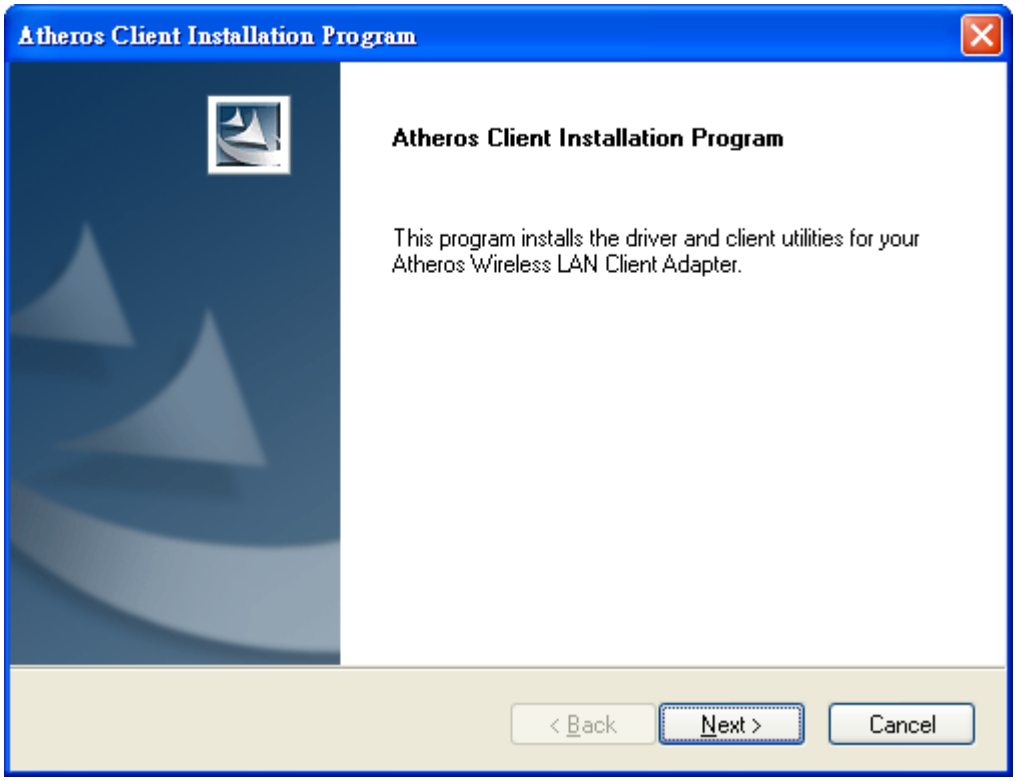
Operation is subject to the following two conditions:
1) this device may not cause interference and
2) this device must accept any interference, including interference that may cause undesired operation of the device

To prevent radio interference to the licensed service, this device is intended to be operated indoors and away from windows to provide maximum shielding.
Equipment (or its transmit antenna) that is installed outdoors is subject to licensing.

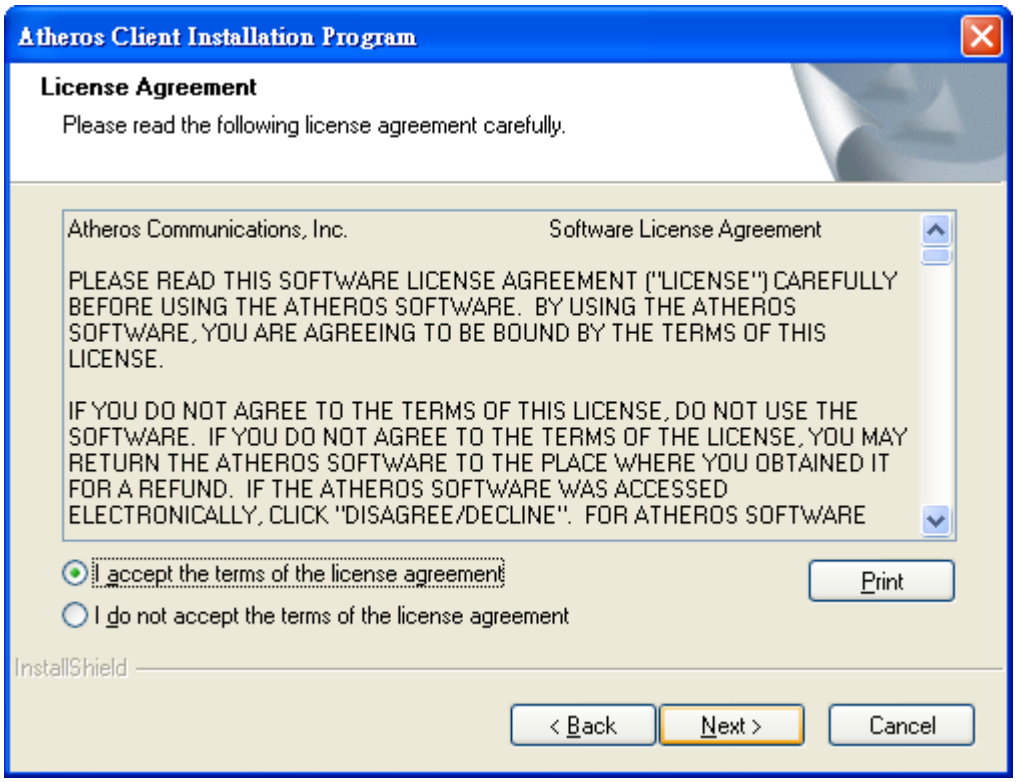
Section Two: Windows XP Wireless Utility and install

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

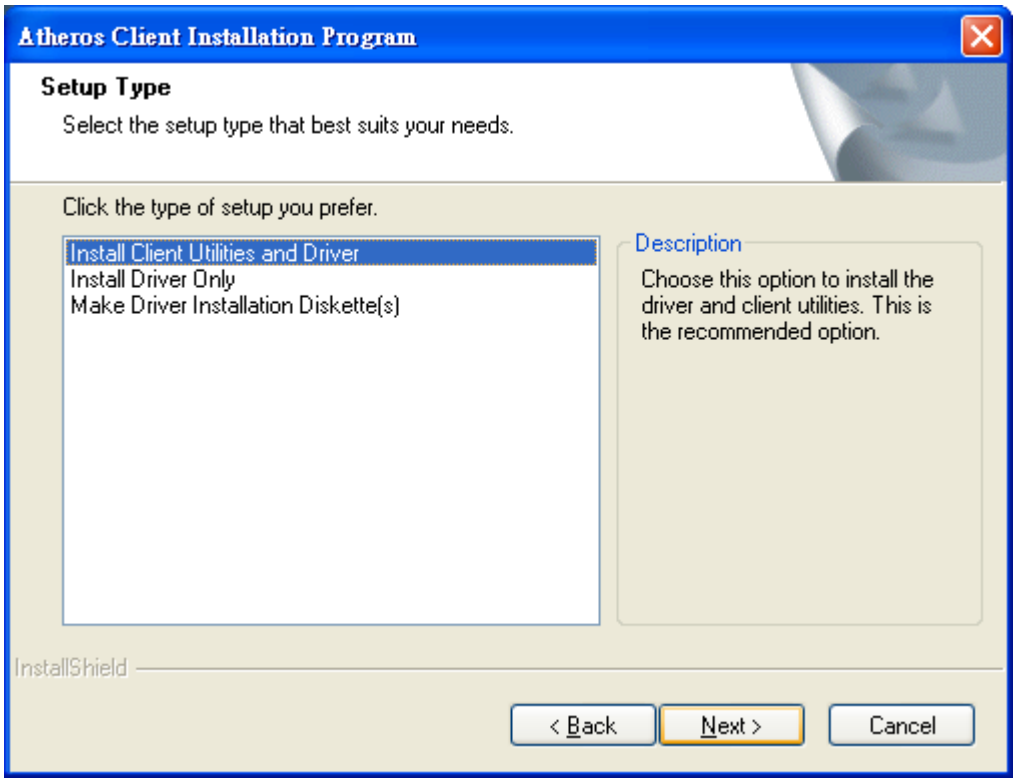
2. You can see next interface, press “next”



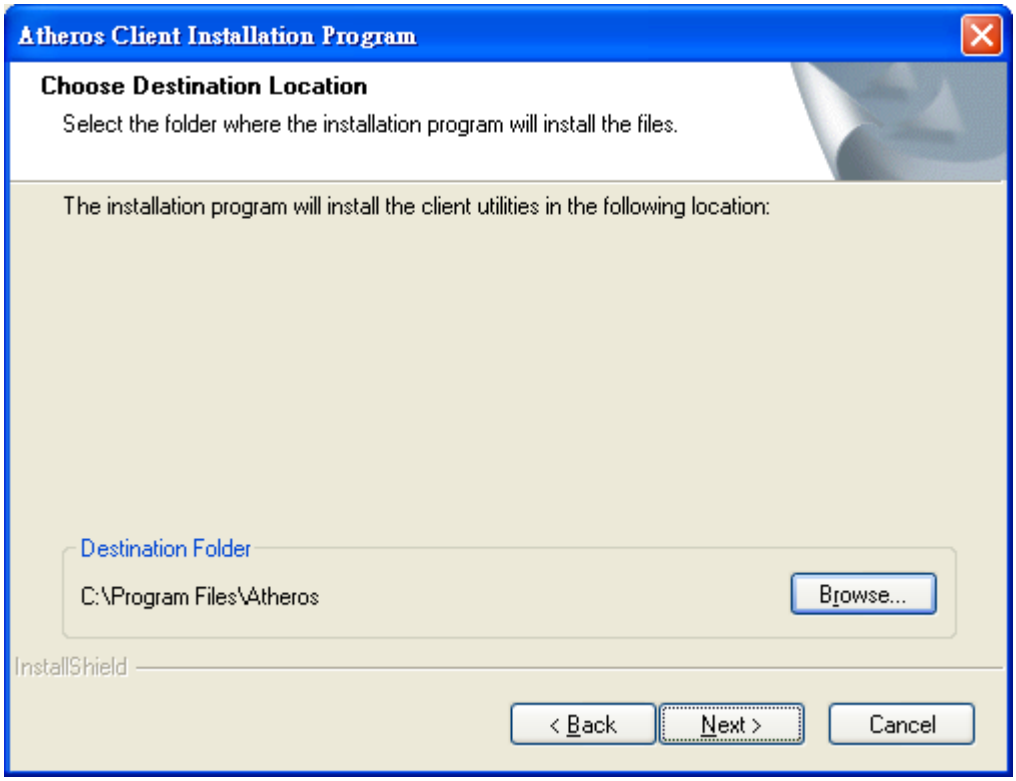
3. Read the license agreement of Atheros and select “accept”(or you will can not use the program),then click“next”

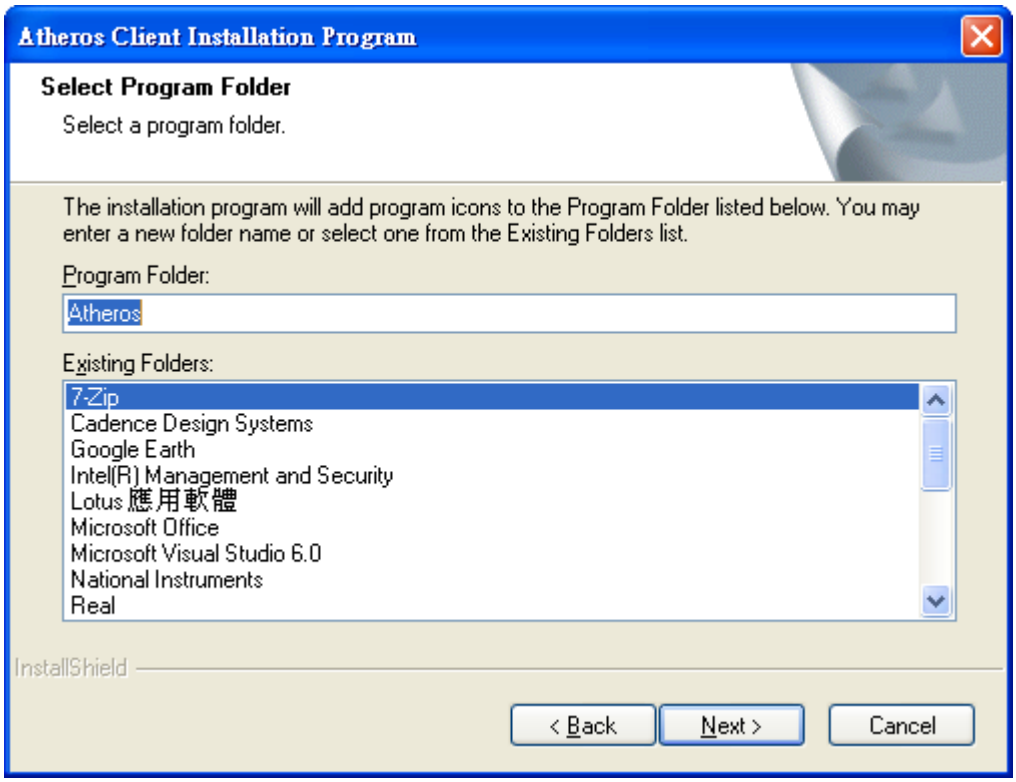


4. In the next interface you can select the setup type that best suits your needs

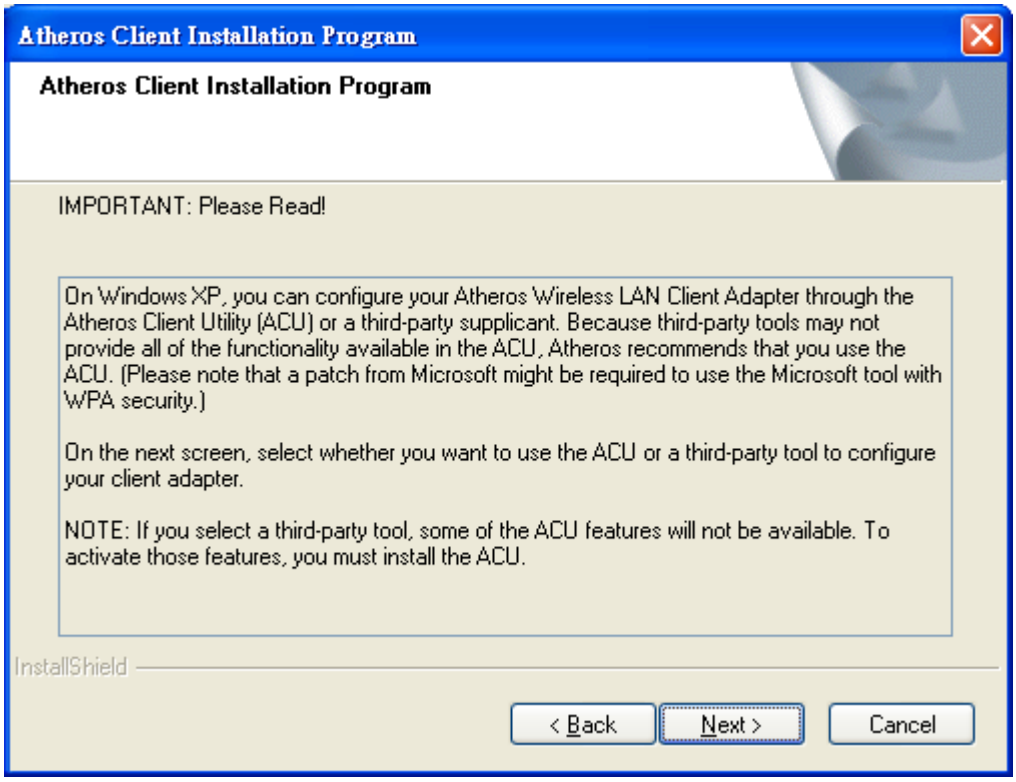


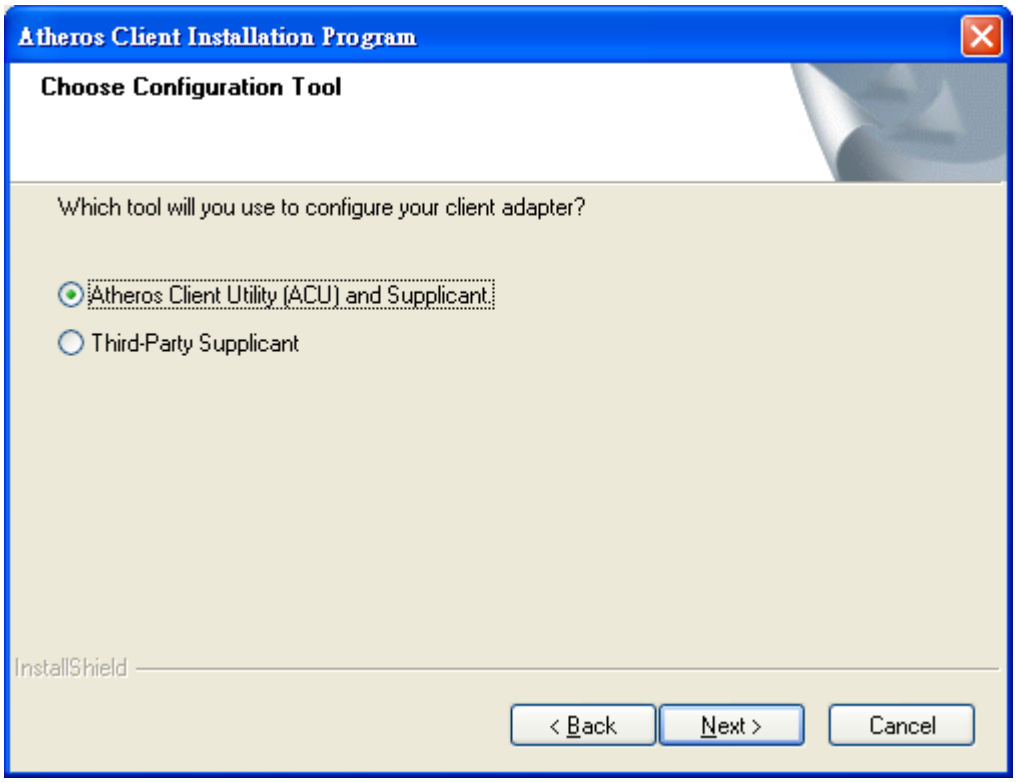
5. You will see next two interfaces and they will direct you to select the the destination location.



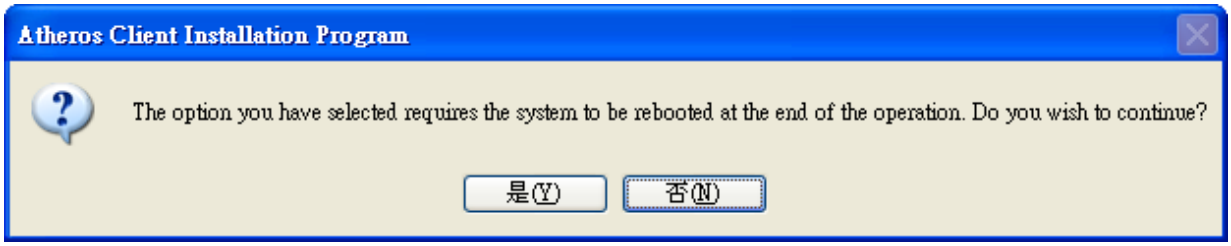


6. you can see this interface and the note will tell you how to select in the second interface.

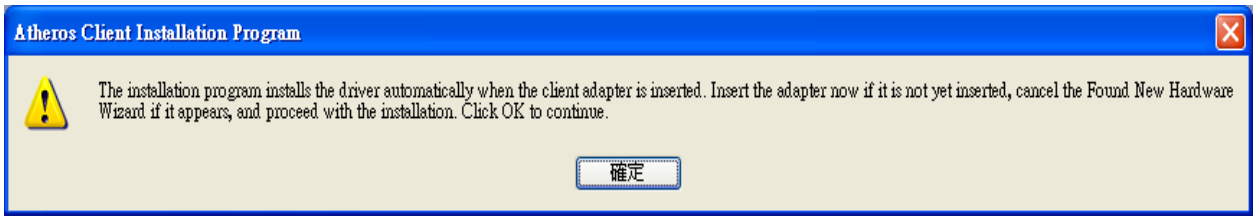




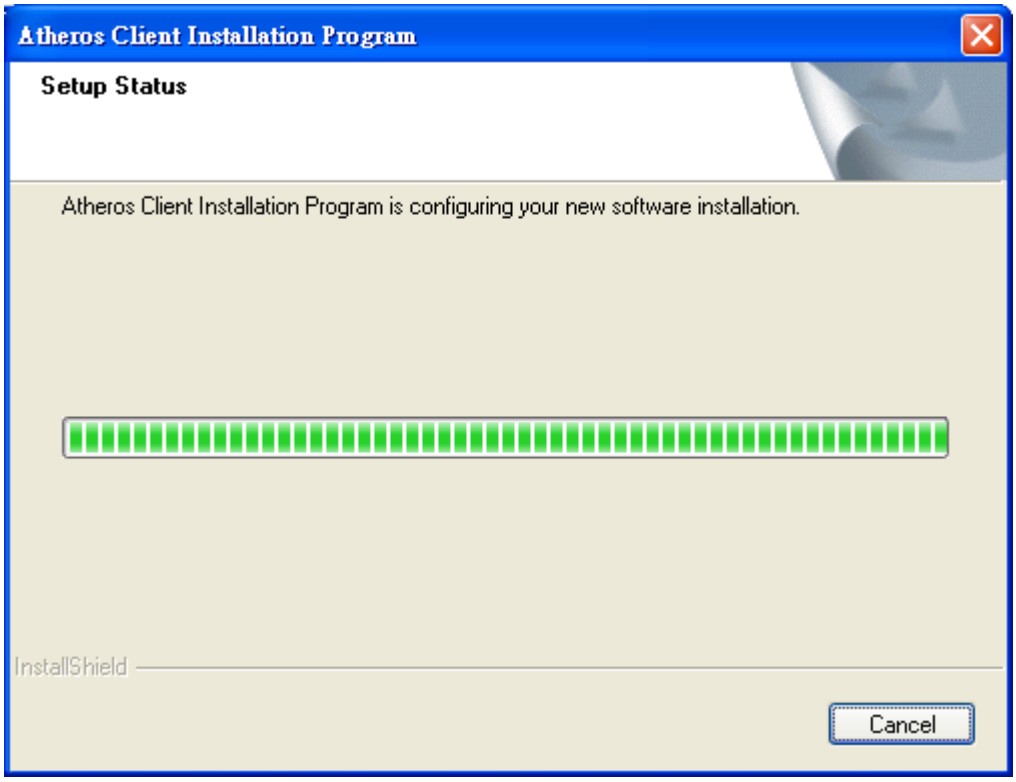
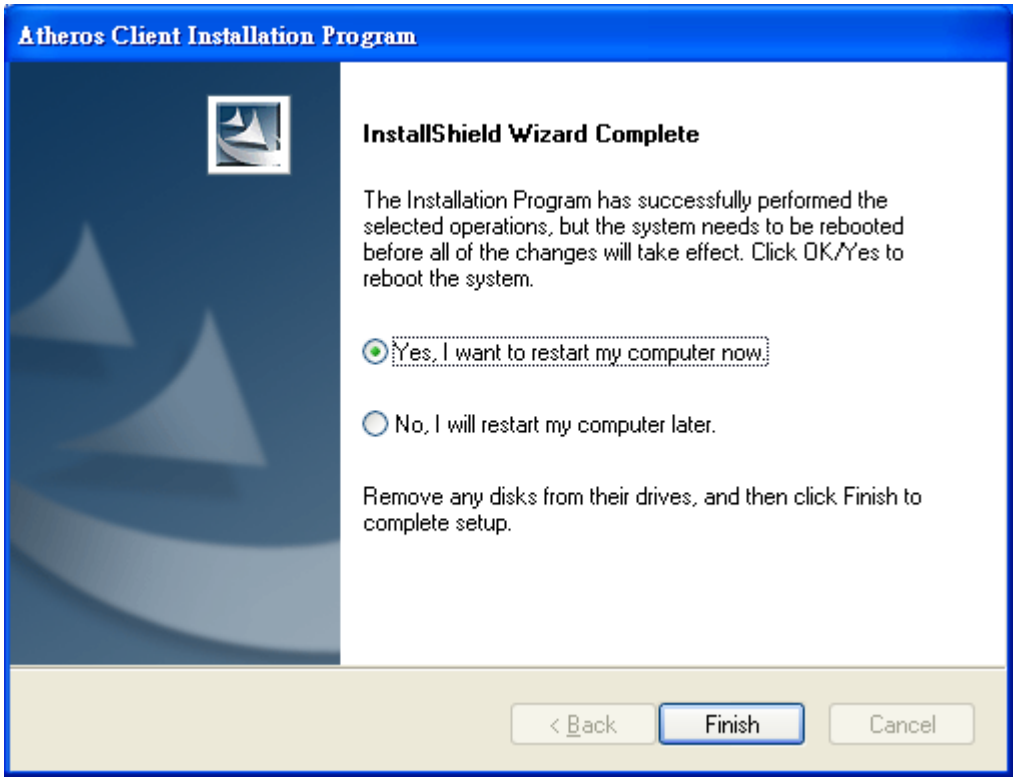
7.the program will reboot the system before working, and click“ yes”



8.the warning prompt you to inert your client adapter before install the program.



9. Install driver now



10. Install completely and restart computer