

**User Manual**

# **ARK-DS350**

**High Graphic Performance  
Digital Signage Platform**

*Trusted ePlatform Services*

**ADVANTECH**

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## Attention!

Please note:

This package contains a hard-copy user manual in Chinese for China CCC certification purposes, and there is an English user manual included as a PDF file on the CD. Please disregard the Chinese hard copy user manual if the product is not to be sold and/or installed in China.

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### FCC Class A

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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2. Contact your distributor, sales representative, or Advantech's customer service center for technical support if you need additional assistance. Please have the following information ready before you call:
  - Product name and serial number
  - Description of your peripheral attachments
  - Description of your software (operating system, version, application software, etc.)
  - A complete description of the problem
  - The exact wording of any error messages

## Warnings, Cautions and Notes

**Warning!** *Warnings indicate conditions, which if not observed, can cause personal injury!*



**Caution!** *Cautions are included to help you avoid damaging hardware or losing data. e.g.*



*There is a danger of a new battery exploding if it is incorrectly installed. Do not attempt to recharge, force open, or heat the battery. Replace the battery only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.*

**Note!** *Notes provide optional additional information.*



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## Safety Instructions

1. Read these safety instructions carefully.
2. Keep this User Manual for later reference.
3. Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.
4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall may cause damage.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. **DO NOT COVER THE OPENINGS.**
8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
9. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.
12. Never pour any liquid into an opening. This may cause fire or electrical shock.
13. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
14. If one of the following situations arises, get the equipment checked by service personnel:
  - The power cord or plug is damaged.
  - Liquid has penetrated into the equipment.
  - The equipment has been exposed to moisture.
  - The equipment does not work well, or you cannot get it to work according to the user's manual.
  - The equipment has been dropped and damaged.
  - The equipment has obvious signs of breakage.
15. **DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT WHERE THE STORAGE TEMPERATURE MAY GO BELOW -20° C (-4° F) OR ABOVE 60° C (140° F). THIS COULD DAMAGE THE EQUIPMENT. THE EQUIPMENT SHOULD BE IN A CONTROLLED ENVIRONMENT.**
16. **CAUTION: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER, DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.**

The sound pressure level at the operator's position according to IEC 704-1:1982 is no more than 70 dB (A).

**RESTRICTED ACCESS AREA:** The equipment should only be installed in a Restricted Access Area.

**DISCLAIMER:** This set of instructions is given according to IEC 704-1. Advantech disclaims all responsibility for the accuracy of any statements contained herein.

## Packing List

Before installation, please ensure the following items have been shipped:

- 1 x ARK-DS350 Unit
- 1 x Adaptor AC 90-264V 90W/ 19VW/ PFC
- 1 x Driver/Utility CD/manual
- 1 x China RoHS
- 1 X Traditional Chinese User Manual for CCC

## Ordering information

Model Number	Description
ARK-DS350-00A1E	ARK-DS350 w_ VGA,HDMI,AUDIO,2GbE,4USB,COM
ARK-DS350-U2A1E	ARK-DS350, 4200+ w/ 1G RAM, 160G HDD
ARK-DS350-U0A1E	ARK-DS350, 3100+ w/ 1G RAM, 160G HDD

## Optional accessories

Part Number	Description
1700001524	Power cable 3-pin 180cm, US/UL
170203183C	Power cable 3-pin 183cm, EU
170203180A	Power cable 3-pin 180cm, UK
XAERVA-AW-VD904	HD decoder module
968EMW0021	Wireless IEEE 802.11b/g/n (AW-NE768)



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# Chapter 1

## General Introduction

This chapter gives background information on ARK-DS350 series.

## 1.1 Introduction

ARK-DS350 is an ideal application ready system platform solution. For digital Signage application, the AMD platform provides high graphic performance and the power for HDTV decoding and multiple media processing. This easy-to-implement appliance enables centralized control, scheduling and delivery of multimedia content through IP/Ethernet network.

All electronics in ARK-DS350 are protected in a compact sealed aluminum and iron case for easy embedding in customers own housing, or as a stand-alone application, where space is limited and the environment harsh. ARK-DS350 offers 2 giga LAN ports, 4 USB, 1 COM, 1 VGA and 1HDMI for Dual display and 1x S/PDIF for better audio experience, packed into a small rugged unit and powered by AMD X2 DUAL-Core processor. ARK-DS350 supports 1 x 2.5" SATA HDD and 1 x Compact Flash card for storage options and it can provide the diversified application field. A TV-tuner option is also available for integrating the TV function into the signage application. Besides, this compact size design and the standard mounting bracket of ARK-DS350 means it can be easily mounted behind signage display device.

## 1.2 Product Feature

### 1.2.1 General

- AMD® AM2/ AM2+ Processor up to 2.2 GHz
- Dual display of HDMI and VGA, support Full HD up to 1080p
- Support 2 GbE, 4 USB 2.0 and 1 COM
- Internal 2.5-inch SATA HDD drive bay
- Built-in MiniPCIe slot for easy expansion e.g. WiFi, TV-tuner<sup>o</sup>l.etc(Optional)
- Easy integration and easy maintenance

### 1.2.2 Display

- Dual display of HDMI and VGA, support Full HD up to 1080p

### 1.2.3 Power consumption

- **Typical:** 31.54W (CPU is AMD Athlon X2 4200+ 2.2GHz and w/o expansion)
- **Max.:** 56.24W (CPU is AMD Athlon X2 4200+ 2.2GHz and w/o expansion)

### 1.2.4 Hardware Specification

- **CPU:** AMD Athlon X2 DUAL-Core PROCESSORS 4200+ 2.2GHz  
or AMD Athlon x2 Single-core processor 3100+ 2.0GHz
- **System Chipset:** AMD 780MN+ SB700
- **BIOS:** Phoenix BIOS on 8Mb SPI Flash ROM
- **System Memory:** 2 x DDR2 DIMM sockets, Support DDR2 533/667/800 MHz, up to 4 GB
- **SSD:** Supports 1 x CF Card TYPE I/II,
- **HDD:** Supports 1 x 2.5" SATA HDD
- **I/O Interface:** 1 x RS232,
- **USB:** 4 x USB 2.0 compliant Ports
- **Audio:** Supports Line-in, Line-out, Microphone-in
- **Ethernet Chipset:** 2 x Broadcom BCM5764M (Gigabit LAN)  
**Speed:** 10/100/1000 Mbps  
**Interface:** 2 x RJ45 w/LED

- Standard:** IEEE 802.3z/ab (1000Base-T) or IEEE 802.3u 100Base-T compliant
- Expansion**
  - PCIe x16(x8 bandwidth):** 1 slot
  - Mini PCIe:** 1 socket(Optional)
- Chipset:** Integrated graphics built in AMD®780MN, ATI Radeon HD 3200
- Resolution**
  - CRT:** 1280x1024@75 Hz
  - HDMI:** Support up to 1920x 1080p
- Dual Independent:** VGA+ HDMI

## 1.3 Mechanical Specification

### 1.3.1 Dimensions

250x 195 x 62.4 mm (9.84" x 7.68" x 2.46")

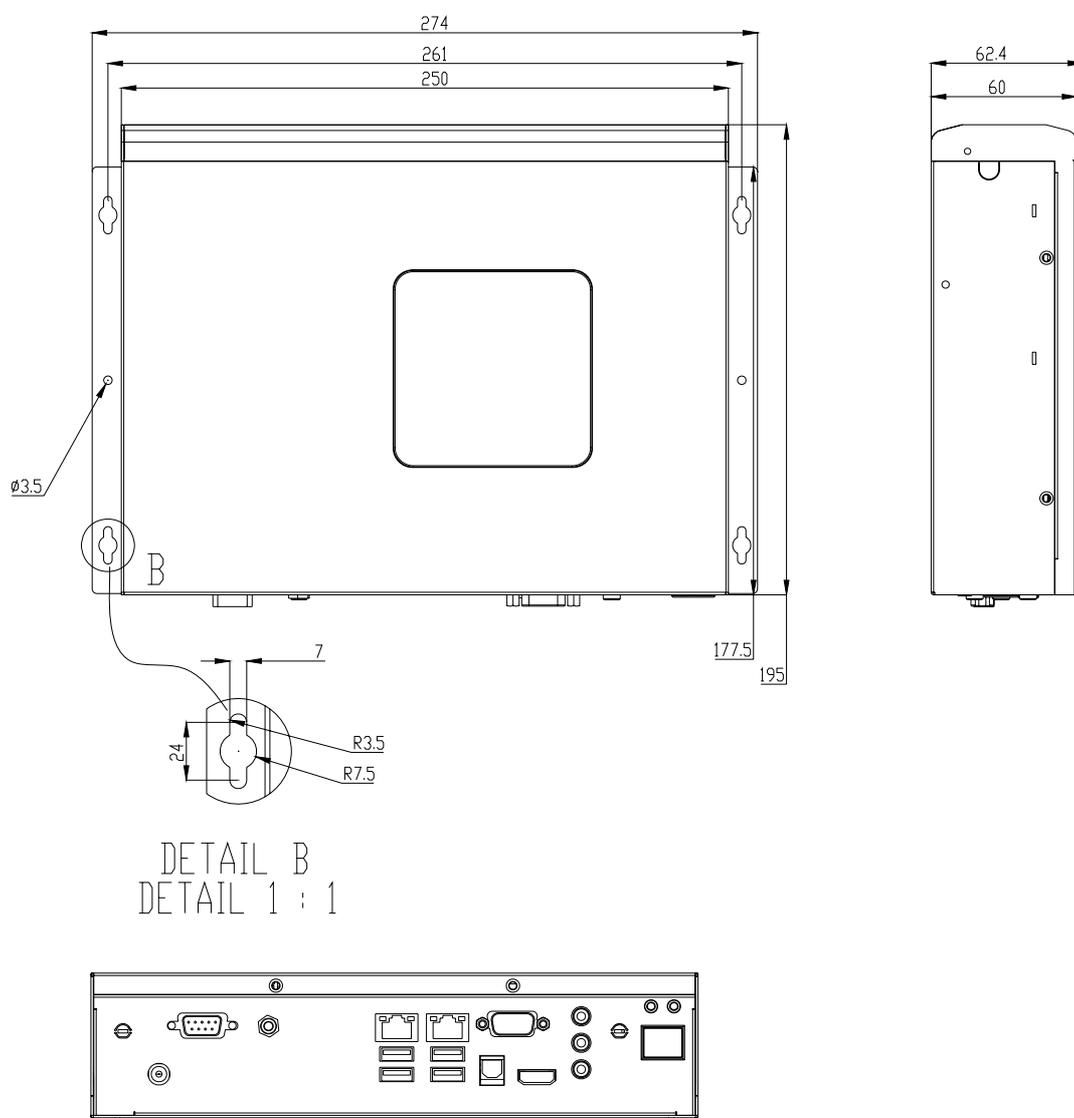


Figure 1.1 ARK-DS350 Mechanical dimension drawing

### 1.3.2 Weight

2kg(4.4 lb)

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## **1.4 Power requirement**

### **1.4.1 System power**

Minimum power input: DC 19V 4.5A

### **1.4.2 RTC battery**

3 V/210 mAH CR20

### **1.4.3 Storage temperature**

-20~70° C (-4~167° F)

### **1.4.4 Safety**

UL, CCC, BSMI

### **1.4.5 EMC**

CE, FCC, CCC, BSMI

# Chapter 2

## Hardware installation

This chapter introduces external IO and the installation of ARK-DS350 Hardware.

## 2.1 ARK-DS350 I/O Indication

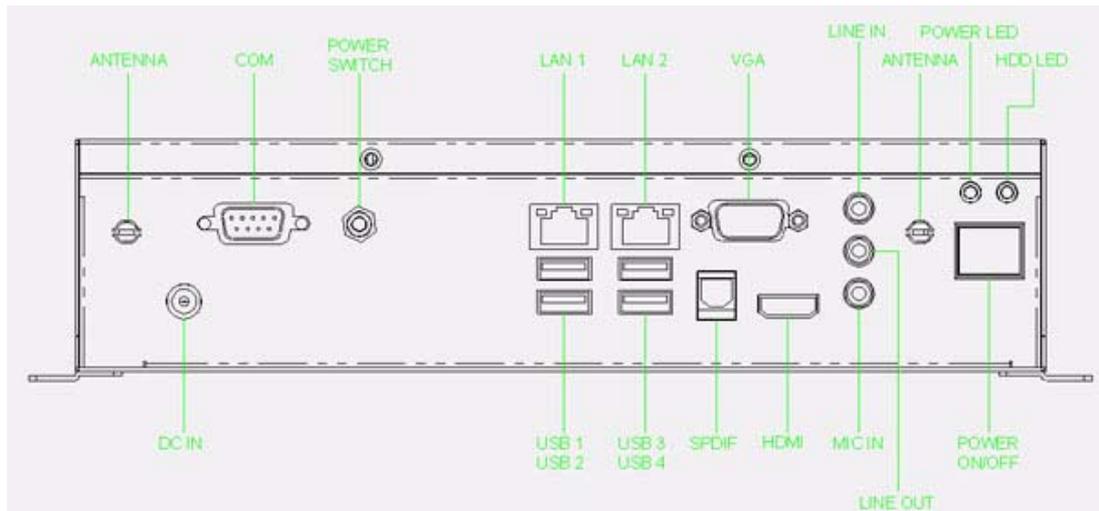


Figure 2.1 ARK-DS350 Rear View

## 2.2 ARK-DS350 rear side external I/O connectors

### 2.2.1 Power Input Connector

ARK-DS350 comes with a DC-Jack header that carries 19VDC external power input.



Figure 2.2 Power Input Connector

### 2.2.2 External power switch

ARK-DS350 provides an ear-jack connector that second power switch can be used via connecting a cable with power on/off button.



Figure 2.3 External power switch

### 2.2.3 COM Connector

ARK-DS350 provides one D-sub 9-pin connectors that are serial communication interface ports. The port can support RS-232 mode communication.

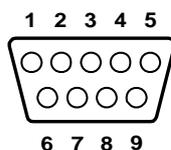


Figure 2.4 COM connector

Table 2.1: COM Port Pin Assignments

Pin	Signal Name
1	DCD
2	RxD
3	TxD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI

### 2.2.4 Ethernet Connector (LAN)

ARK-DS350 provides two RJ45 connectors of LAN interface, they are fully compliant with IEEE 802.3u 10/100/1000 Base-T CSMA/CD standards. The Ethernet port provides a standard RJ-45 jack connector with LED indicators on the front side to show its Active/Link status and Speed status.

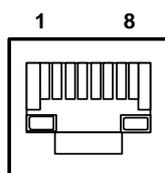


Figure 2.5 Ethernet connector

Table 2.2: LAN Connector Pin Assignments

Pin	Signal Name
1	TX+
2	TX-
3	RX+
4	MDI2+
5	MDI2-
6	RX-
7	MDI3+
8	TX+

## 2.2.5 USB Connectors

The ARK-DS350 provides four USB interface connectors, which give complete Plug & Play and hot swapping for up to 127 external devices. The USB interface is compliant with USB UHCI, Rev. 2.0. The USB interface supports Plug and Play, which enables you to connect or disconnect a device whenever you want, without turning off the computer.

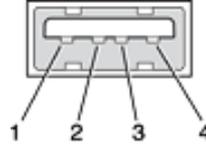


Figure 2.6 USB Port connector

Table 2.3: USB Port Pin Assignments

Pin	Signal Name
1	VCC
2	USB Data-
3	USB Data+
4	GND

## 2.2.6 VGA Connector

The ARK-DS350 provides a high resolution VGA interface connected by a D-sub 15-pin connector to support a VGA CRT monitor. It supports display resolution of up to 1920 x 1080 @ 60Hz.

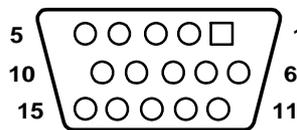


Figure 2.7 VGA connector

Table 2.4: VGA Connector Pin Assignments

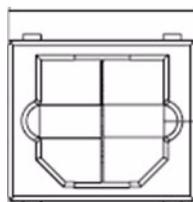
Pin	Signal Name
1	RED
2	GREEN
3	BLUE
4	NC
5	GND
6	GND
7	GND
8	GND
9	NC
10	GND
11	NC
12	DDC DAT
13	H-SYNC

**Table 2.4: VGA Connector Pin Assignments**

14	V-SYNC
15	DDC CLK

### 2.2.7 SPDIF Connector

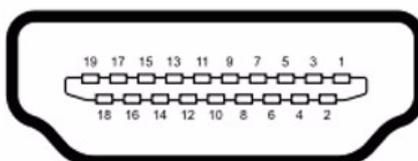
The SPDIF optical output port is capable for providing digital audio to external speakers or compressed AC3 data to an external Dolby Digital Decoder via an optical cable.

**Figure 2.8 SPDIF Optical Connector****Table 2.5: SPDIF Optical Connector Pin Assignments**

Pin	Signal Name
1	Tx

### 2.2.8 HDMI Connector

The HDMI(High-Definition Multimedia Interface)provides an all-digital audio/video interface to transmit the uncompressed audio/video signals and is HDCP compliant. Connect the HDMI audio/video device to this port. The HDMI Technology can support a maximum resolution of 1920x 1080p but the actual resolutions supported depend on the monitor being used.

**Figure 2.9 HDMI Connector****Table 2.6: HDMI Connector Pin Assignments**

Pin	Signal Name
1	TMDS Data2+
2	TMDS Data2 Shield
3	TMDS Data2-
4	TMDS Data1+
5	TMDS Data1 Shield
6	TMDS Data1-
7	TMDS Data0+
8	TMDS Data0 Shield
9	TMDS Data0-

**Table 2.6: HDMI Connector Pin Assignments**

10	TMDS Clock
11	TMDS Clock Shield
12	TMDS Clock-
13	CEC
14	Reserved (N.C. on device)
15	SCL
16	SDA
17	DDC/CEC Ground
18	+5 V Power
19	Hot Plug Detect

### 2.2.9 Audio Connector

Line In: Devices like CD-ROM, walkman etc. can be connected to Line In jack.

Line Out: Stereo speakers, earphone or front surround speakers can be connected to Line Out jack.

MIC In: Microphone must be connected to MIC In jack.



**Figure 2.10 Line in, Line-out and MIC Connector**

### 2.2.10 Power ON/OFF Button

ARK-DS350 has a power ON/OFF button on rear side. Push this button can turn ON and OFF the system. It only supports Delay 4 Second soft power off.



**Figure 2.11 Power ON/OFF Button**

## 2.3 HW Installation

### 2.3.1 CPU installation

1. Raise the locking lever next to the socket before installing the CPU.
2. Insert CPU and push the locking lever back into locked position.

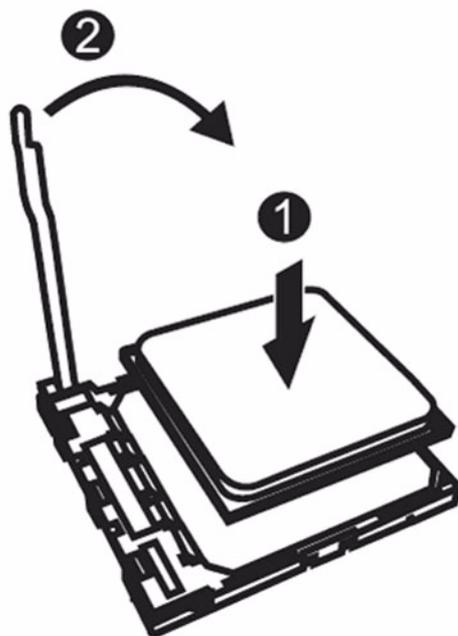


Figure 2.12 CPU installation

### 2.3.2 Memory Installation

1. Remove the top case by loosening the fixing screw.
2. Insert the memory module into the DIMM socket, if only one dimm, please insert into DDR II 1.

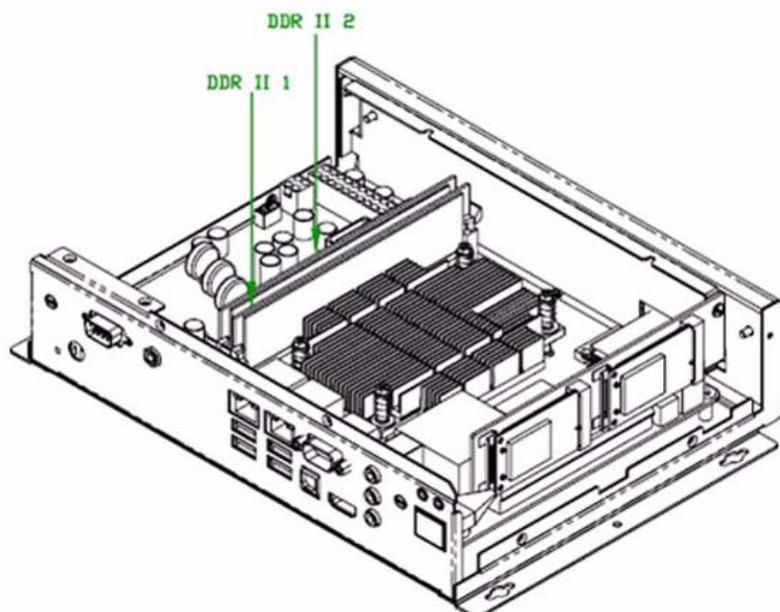


Figure 2.13 Memory installation

### 2.3.3 Compact Flash installation

1. Remove the top case by loosening the fixing screw.
2. Remove the front plate
3. Insert the CF card into CF socket

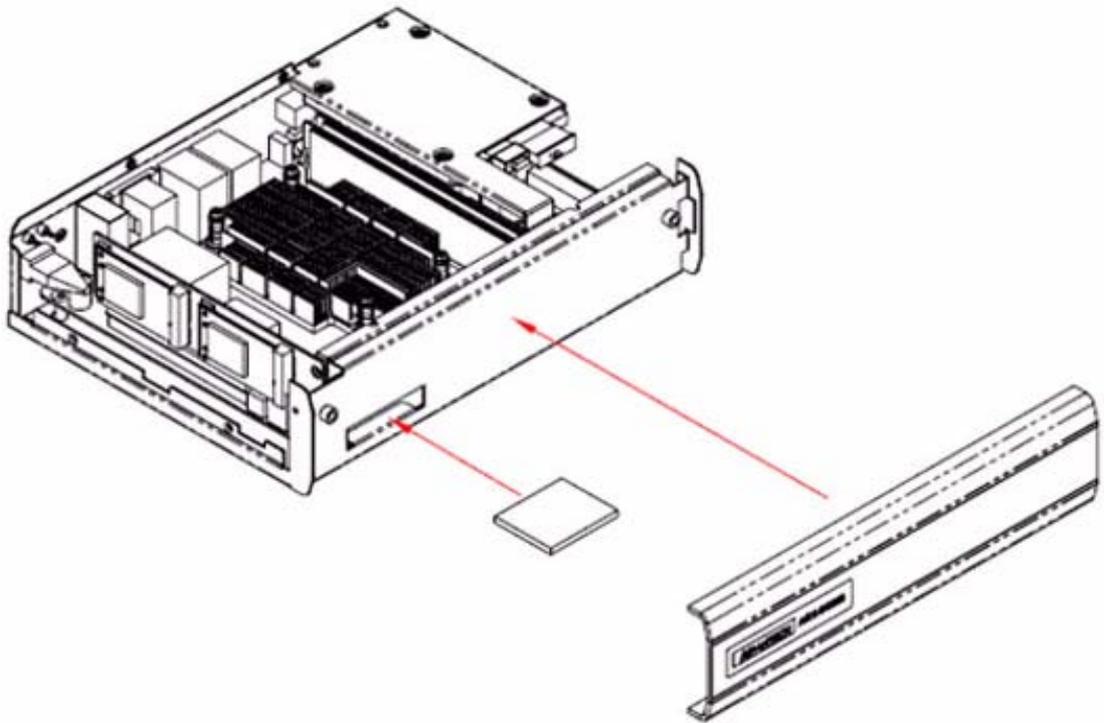
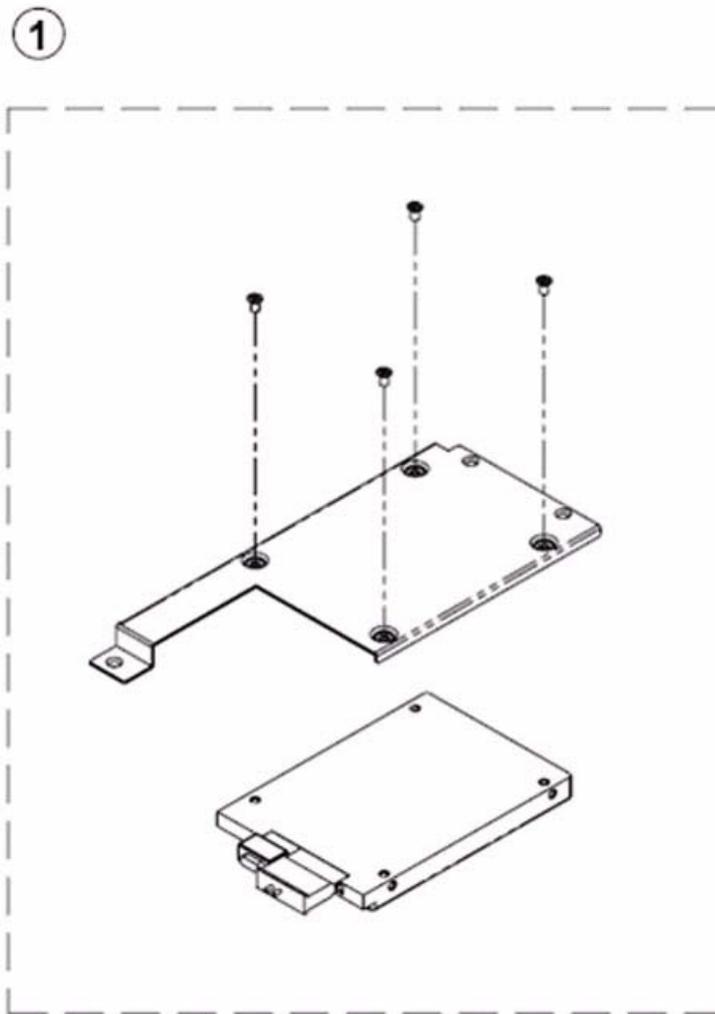


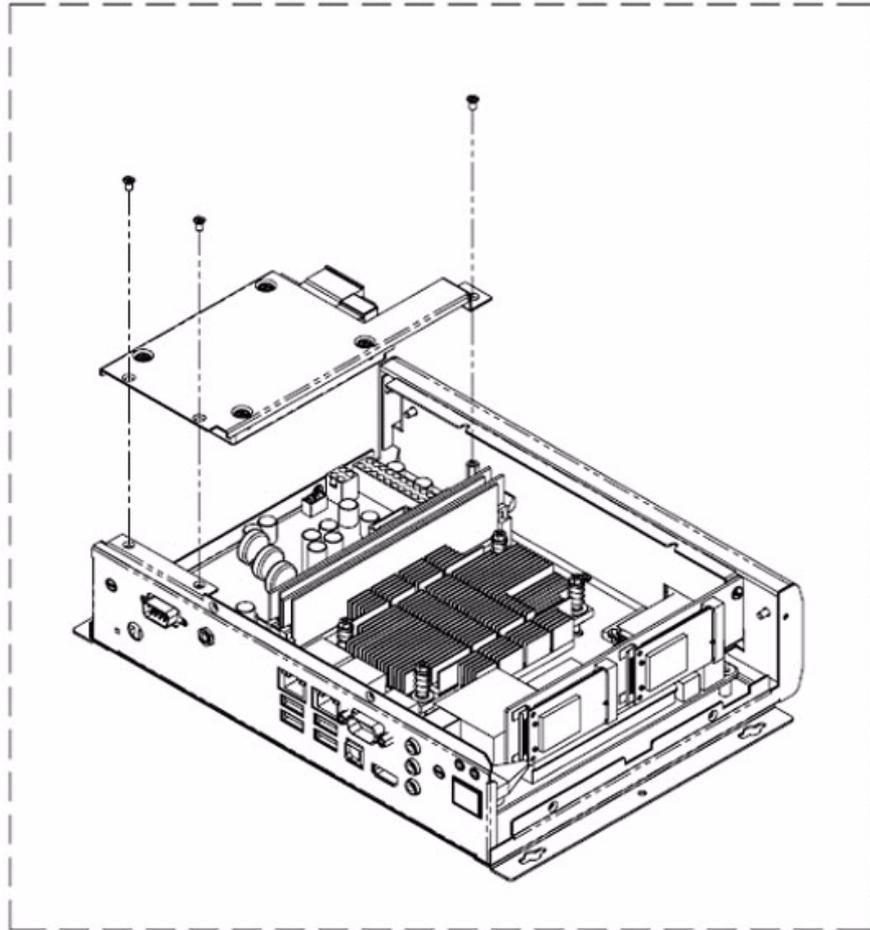
Figure 2.14 CF card installation

### 2.3.4 HDD installation

1. Assemble the 2.5-inch SATA HDD on HDD bracket with 4 HDD screws
2. Remove the top case by loosening the fixing screw.
3. Screw the HDD module to the system.
4. Connect SATA cable and power cable.(Please refer to 2.3.7 section)



**Figure 2.15 Assemble the HDD module**



**Figure 2.16 Assemble the HDD with system**

### 2.3.5 Riser card installation

1. Remove the top case by loosening the fixing screw.
2. Insert the Riser card to PCIe16 slot and fix it with one screw.

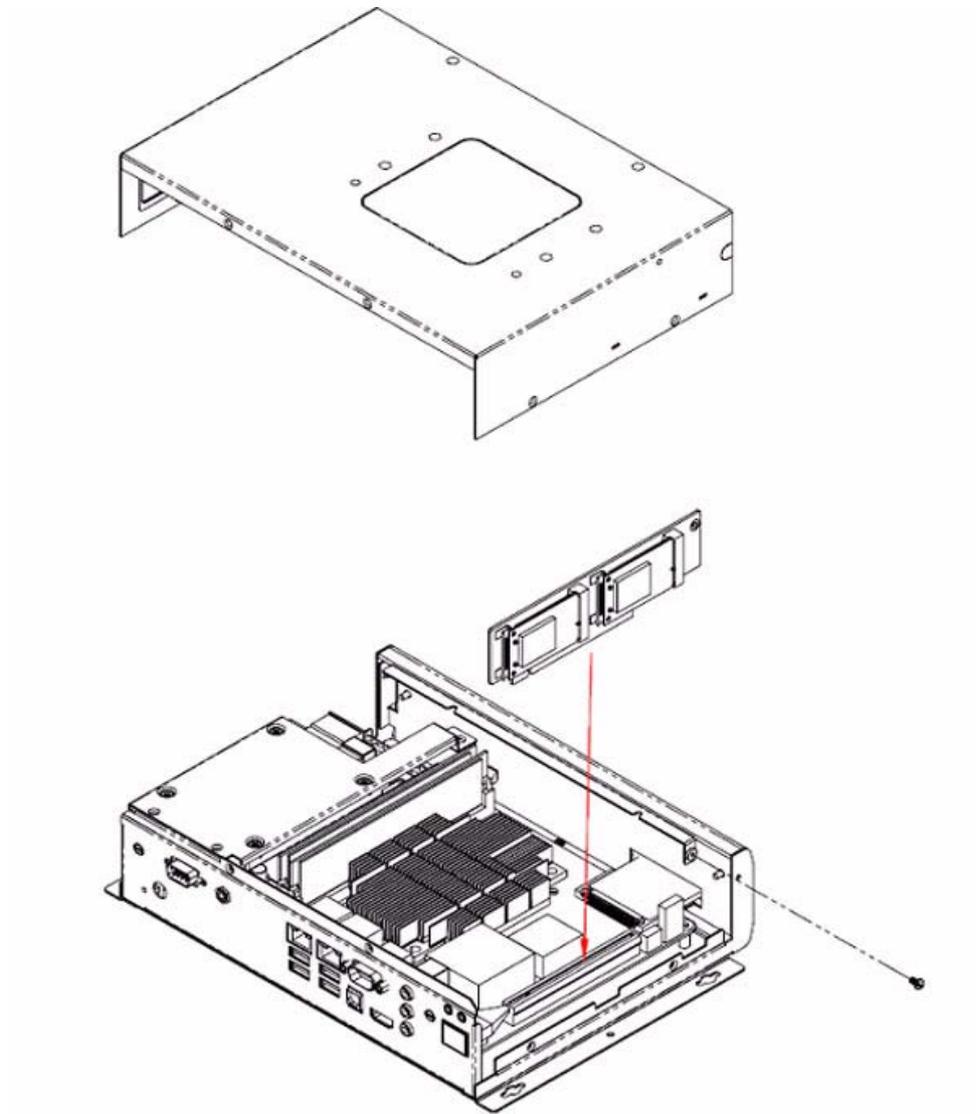


Figure 2.17 Riser card installation

### 2.3.6 Mini PCIe installation-- WLAN

1. Remove the top case by loosening the fixing screw.
2. Insert the Riser card to PCIe16 slot and fix it with one screw.
3. Insert the Mini PCIe card into the Mini PCIe socket on Riser card.
4. Screw the external antenna to rear faceplate.

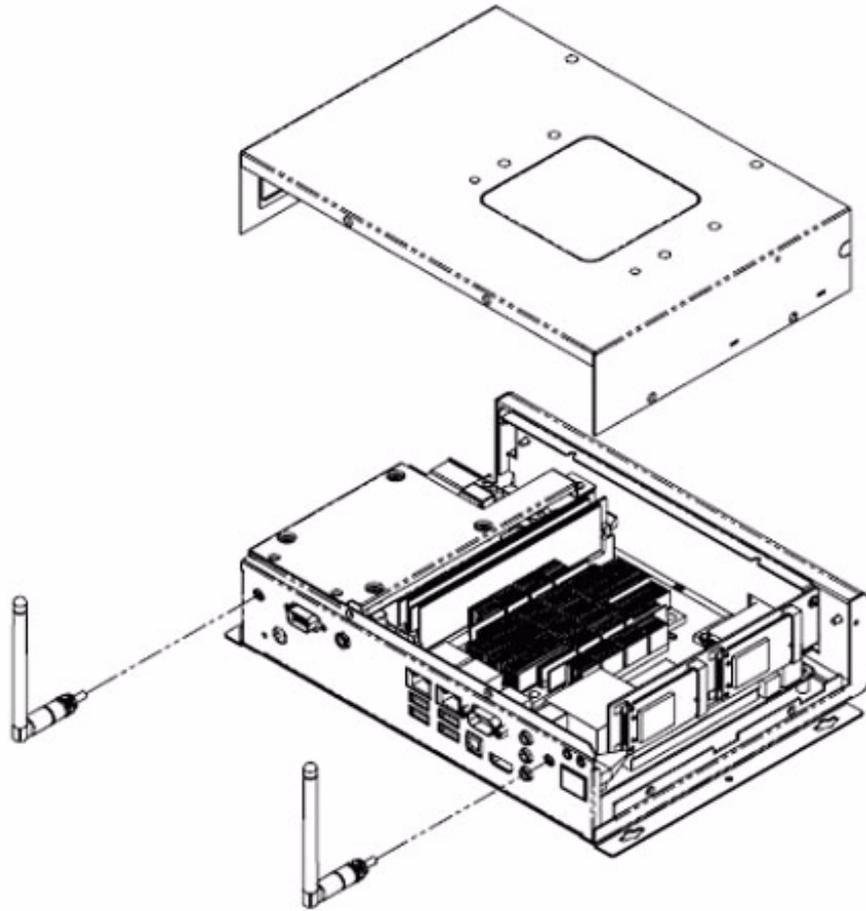


Figure 2.18 WLAN card installation

### 2.3.7 TV tuner installation

1. Remove the top case by loosening the fixing screw.
2. Connect TV tuner cable(Please refer to 2.3.7 section)
3. Hook the TV tuner module with top case and fix it with one screw(Fig. 2.19)
4. Assemble the top case with the system

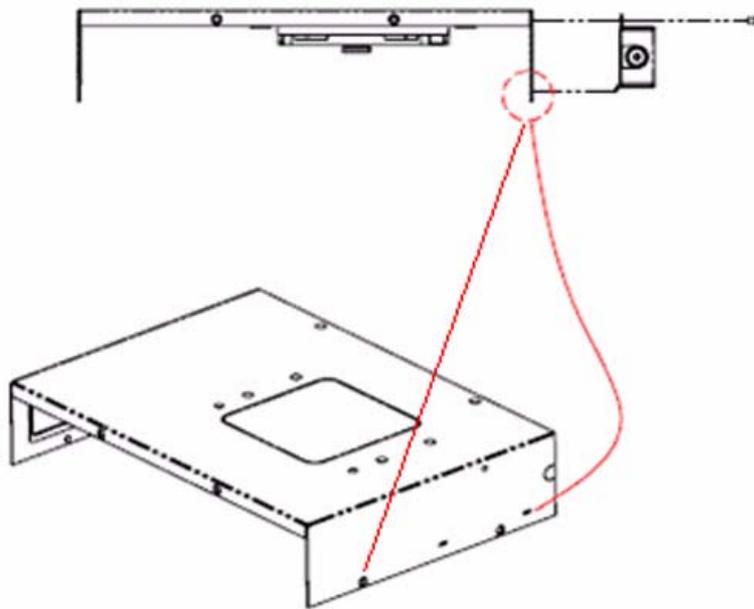


Figure 2.19 Assemble TV tuner to top case

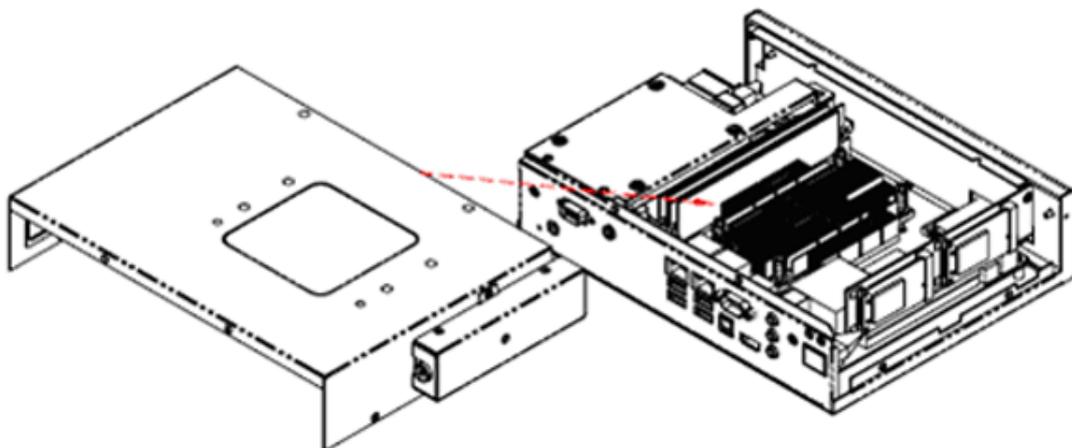


Figure 2.20 Assemble top case to system

## 2.3.8 Cable installation

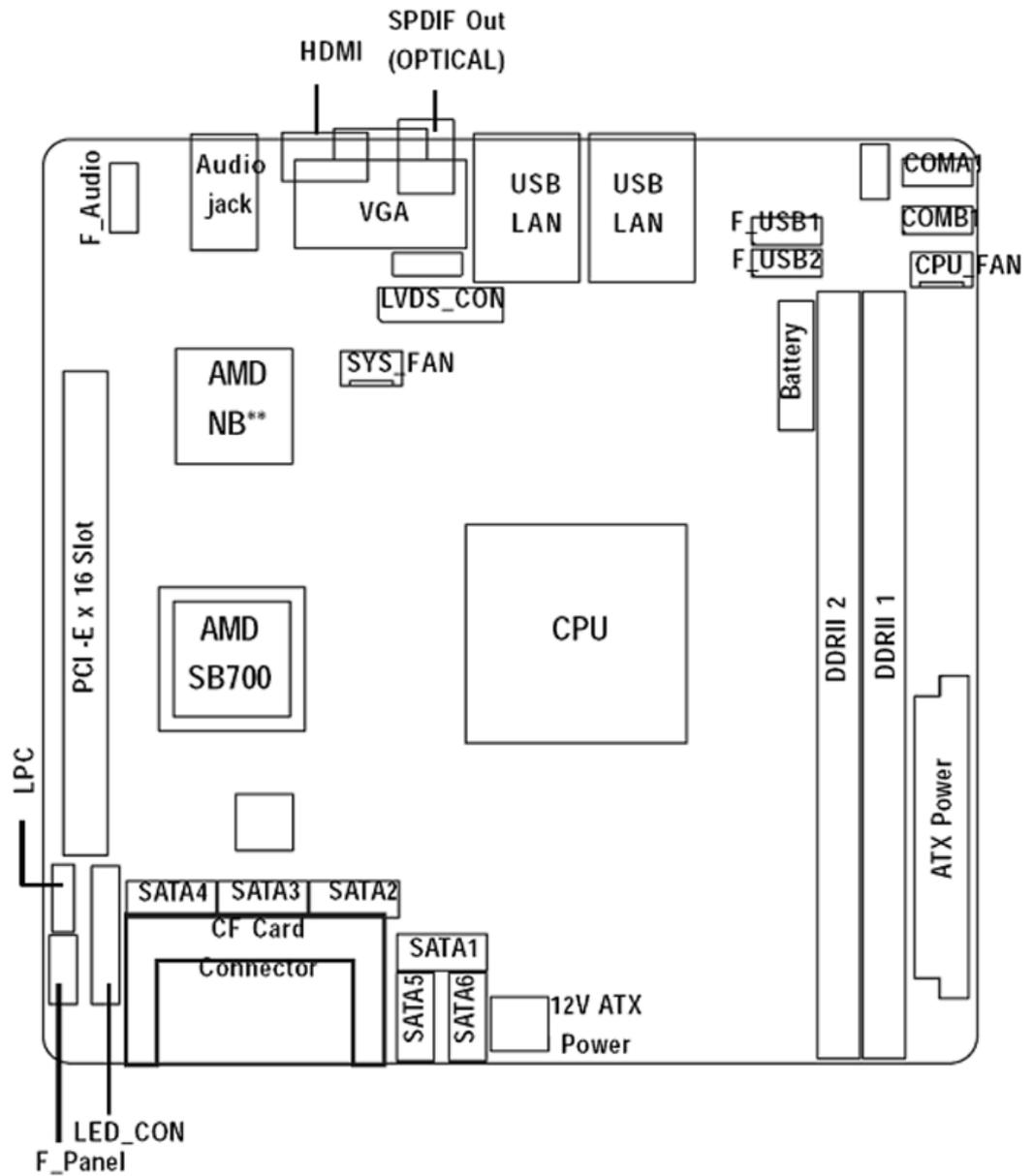


Figure 2.21 Motherboard components

### 2.3.8.1 Connect HDD cable

1. Connect Yellow SATA HDD cable(in accessory box) from SATA3 or SATA4(Fig. 2.21) to the SATA connector on HDD module(Fig. 2.22)
2. Connect the SATA connector of power cable to the power connector(Fig. 2.22) on HDD module.

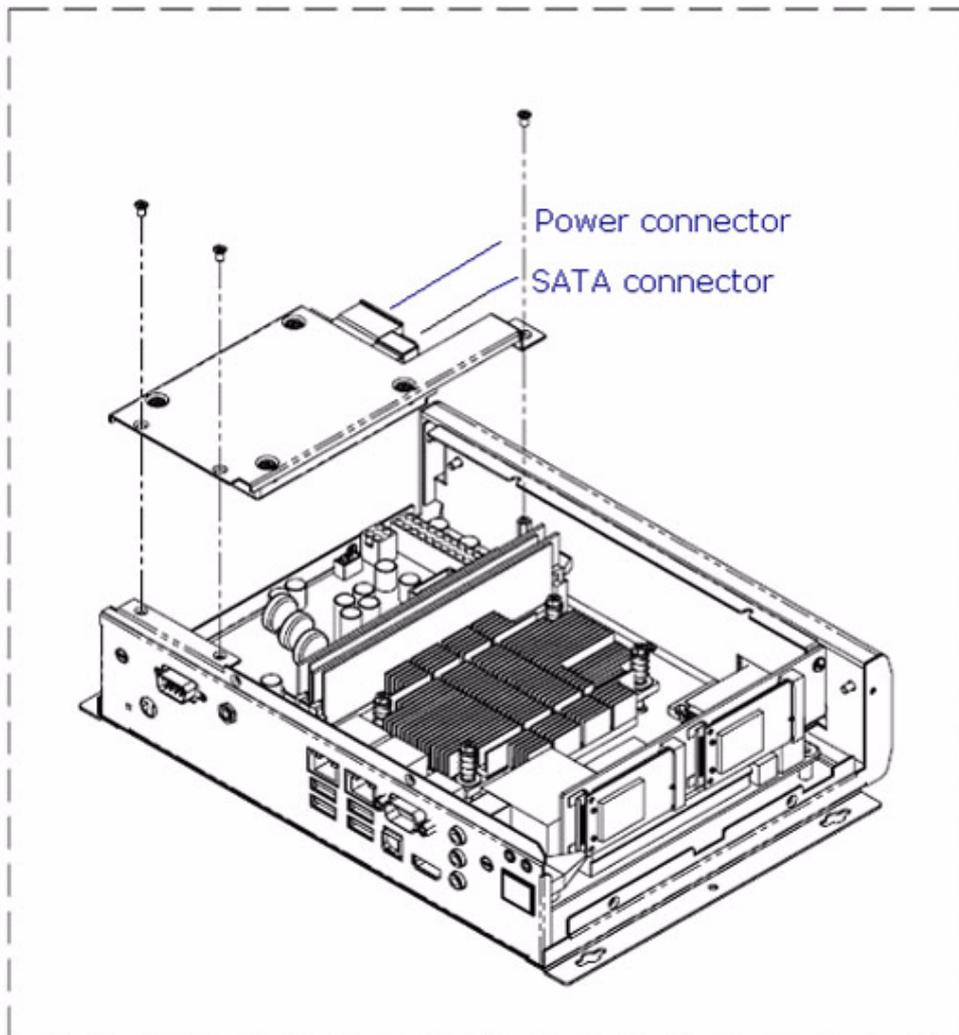


Figure 2.22 HDD installation

### 2.3.8.2 Connect TV tuner cable

1. Connect the USB connector of TV tuner cable to TV tuner module and the other side to USB1 or USB2(Fig. 2.21)

**Note!** Please connect the cable before assembling the top case, and make the cable cross top case via the hole marked as below.

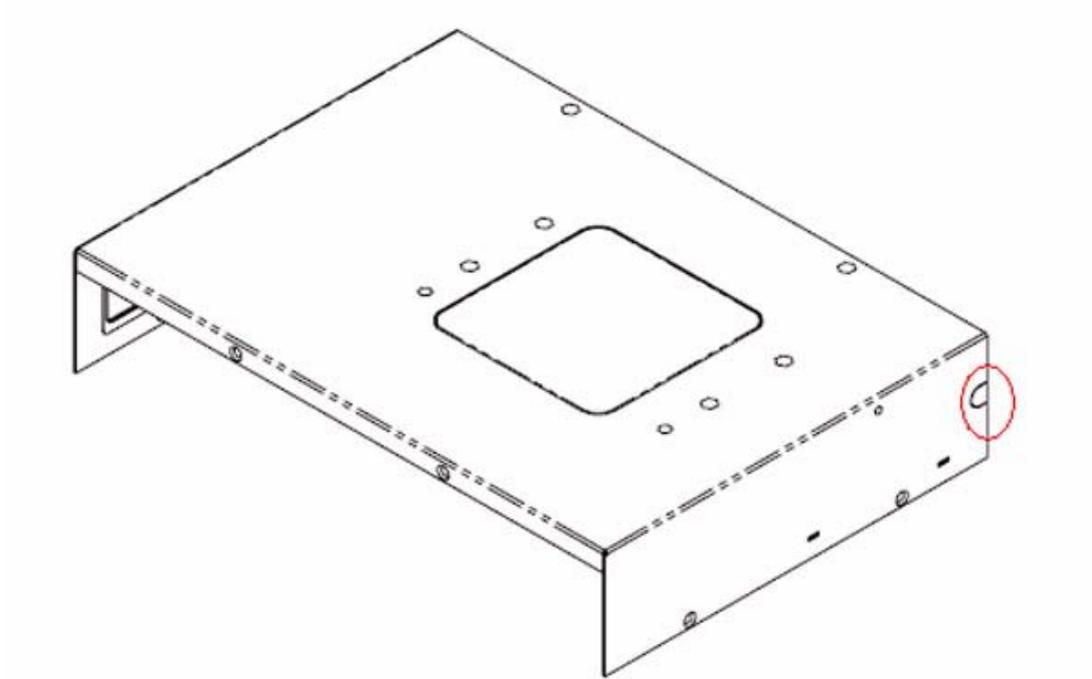


Figure 2.23 Reserved hole for TV tuner cable on top case

# Chapter 3

## BIOS settings

This chapter introduces how to set BIOS configuration data.

## 3.1 BIOS Introduction

Advantech provide full-featured Phoenix BIOS and delivers the superior performance, compatibility and functionality that manufactures of Industry PC and Embedded boards, it's many options and extensions let you customize your products to a wide range of designs and target markets.

The modular, adaptable Phoenix BIOS supports the broadest range of third-party peripherals and all popular chipsets. You can use Advantech's utilities to select and install features to suit your designs for customers need.

## 3.2 BIOS Setup

The ARK-DS350 series system has build-in Phoenix BIOS with a CMOS SETUP utility which allows user to configure required settings or to activate certain system features.

The CMOS SETUP saves the configuration in the CMOS RAM of the motherboard. When the power is turned off, the battery on the board supplies the necessary power to the CMOS RAM.

When the power is turned on, press the <F2> button during the BIOS POST (Power-On Self Test) will take you to the CMOS SETUP screen.

### CONTROL KEYS

< ↑ >< ↓ >< ← >< → >	Move to select item
<Enter>	Select Item
<Esc>	Main Menu - Quit and not save changes into CMOS
	Sub Menu - Exit current page and return to Main Menu
<Page Up/+>	Increase the numeric value or make changes
<Page Down/->	Decrease the numeric value or make changes
<F1>	General help, for Setup Sub Menu
<F9>	Load the Optimized Defaults
<F10>	Save all the CMOS changes, only for Main Menu

### 3.2.1 Main Menu

Press <F2> to enter PhoenixBIOS CMOS Setup Utility, the Main Menu will appear on the screen. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

PhoenixBIOS Setup Utility		
Main	Advanced	Security TPM State Boot Exit
System Time	[19:04:035]	Item Help
System Date	[04/11/2008]	
▶ SATA Port 1	[None]	
▶ SATA Port 2	[None]	
▶ SATA Port 3	[None]	
▶ SATA Port 4	[None]	
▶ SATA Port 5	[None]	
▶ SATA Port 6	[None]	
Halt On	[All, But Keyboard]	
System Memory	633KB	
Extended Memory	915456KB	
F1 Help	↑↓ Select Item	+/- Change Values F9 Setup Defaults
Esc Exit	↔ Select Menu	Enter Select Sub-Menu F10 Save and Exit

- **System Time**

The time is calculated based on the 24-hour military time clock. Set the System Time (HH:MM:SS)

- **System Date**

Set the System Date. Note that the "Day" automatically changed after you set the date. (Weekend: DD: MM: YY) (YY: 1099~2099)

- **Slave/SATA Port 1/2/3/4/5/6**

The category identifies the types of Serial SATA hard disk from drive 1 to 6 that has been installed in the computer. System will automatically detect HDD type.

Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category.

Hard drive information should be labeled on the outside device casing. Enter the appropriate option based on this information.

- 
- **TYPE**  
1-39: Predefined types.  
Users: Set parameters by User.  
Auto: Set parameters automatically. (Default setting)  
CD-ROM: Use for ATAPI CD-ROM drives or double click [Auto] to set all HDD parameters automatically.  
ATAPI Removable: Removable disk drive is installed here.
  - **Multi-Sector Transfer**  
This field displays the information of Multi-Sector Transfer Mode.  
Disabled: The data transfer from and to the device occurs one sector at a time.  
Auto: The data transfer from and to the device occurs multiple sectors at a time if the device supports it.
  - **LBA Mode**  
This field shows if the device type in the specific IDE channel support LBA Mode.
  - **32-Bit I/O**  
Enable this function to maximize the IDE data transfer rate.
  - **Transfer Mode**  
This field shows the information of Transfer Mode.
  - **Ultra DMA Mode**  
This field displays the DMA mode of the device in the specific IDE channel.
  - **Halt On**  
The category determines whether the computer will stop if an error is detected during power up.  
No Errors The system boot will not stop for any error that may be detected and you will be prompted.  
All, But Keyboard The system boot will not stop for a keyboard error; it will stop for all other errors. (Default setting)  
All Errors Whenever the BIOS detects a non-fatal error the system will be stopped.
  - **System Memory**  
The POST of the BIOS will determine the amount of system memory installed in the system.
  - **Extended Memory**  
The BIOS determines how much extended memory is present during the POST. This is the amount of memory located above 1 MB in the CPU's memory address map.

### 3.2.2 Advanced

With this section, allowing user to configure your system for advanced operation. User can set the System Management, CPU Feature, Advanced Chipset Control, I/O Device Configuration, Power Feature, and Hardware Monitor.

PhoenixBIOS Setup Utility				
Main	Advanced	Security	TPM State	Boot Exit
<ul style="list-style-type: none"> <li>▶ System Management</li> <li>▶ CPU Feature</li> <li>▶ Advanced Chipset Control</li> <li>▶ I/O Device Configuration</li> <li>▶ Power Feature]</li> <li>▶ Hardware Monitor</li> </ul>			Item Help	
Quick Boot Mode		[Enabled]		
Boot-time Diagnostic Screen		[Enabled]		
Summary Screen		[Disabled]		
Local Bus IDE adapter		[Both]		
OnChip SATA		[Enabled]		
SATA Class ID		[IDE native class]		
SATA IDE Combined mode		[Enabled]		
PATA Channel Config		[SATA as secondary]		
ACHI ROM POST delay		[3 Seconds]		
USB Host Controller		[Enabled]		
USB BIOS Legacy Support		[Enabled]		
Gigabit LAN		[Enabled]		
LOM Boot ROM		Disabled]		
F1 Help	↑↓ Select Item	+/- Change Values	F9 Setup Defaults	
Esc Exit	↔ Select Menu	Enter Select Sub-Menu	F10 Save and Exit	

## System Information

PhoenixBIOS Setup Utility				
Advanced				
System Management				Item Help
BIOS Version:		2AJEV-E5a		
Product Name:		Bluefin		
BIOS Date (mm/dd/yy)		12/09/08		
CPU Type		AMD Phenom(tm) 9350e Quad		
CPU Speed		200MHz		
AGESA Version:		03.01.09		
NB CIM Version:		4.3.0		
SB CIM Version:		4.0.0		
Memory DIMM1:		Not Installed		
Memory DIMM2:		10024MB		
GBIA Module Version		00.02		
F1 Help	↑↓	Select Item	+/-	Change Values
F9				Setup Defaults
Esc Exit	↔	Select Menu	Enter	Select Sub-Menu
				F10 Save and Exit

### ■ System Information

This category includes the system information of BIOS Version, Product Name, BIOS Build Date, CPU Type, CPU Speed, AGESA version, Memory DIMM1/ DIMM2, NB and SB CIM version, and GBIA Module Version.

## CPU Feature

PhoenixBIOS Setup Utility			
Advanced			
CPU Features		Item Help	
CPU Type	AMD Phenom(tm) 9350e Quad		
CPU Speed	200MHz		
L2 Cache Size:	1024KB		
PowerNow! Technology	[Enabled]		
F1 Help	↑↓ Select Item	+/- Change Values	F9 Setup Defaults
Esc Exit	↔ Select Menu	Enter Select Sub-Menu	F10 Save and Exit

- **CPU Type**  
This item displays the information of installed CPU type.
- **CPU Speed**  
This item displays the information of CPU speed.
- **L2 Cache Size**  
This item displays the information of CPU L2 cache size.
- **PowerNow!Technology**  
Enabled Enable Power Now Technology.  
Disabled Disable Power Now Technology.

## Advanced Chipset Control

PhoenixBIOS Setup Utility	
Advanced	
Advanced Chipset Control	Item Help
▶ Internal Graphics Configuration GFX Dual Slot Configuration [Disabled] GPP Slots Power Limit, W [25] NB Azalaza [Enabled] Aza Snoop [Enabled]	
F1 Help    ↑↓ Select Item    +/- Change Values    F9 Setup Defaults Esc Exit    ← Select Menu    Enter Select Sub-Menu    F10 Save and Exit	

- **Internal Graphics Configuration Internal GraphicMode**  
 This item allows user to select the memory mode used for internal graphics device.  
 UMA Define UMA as internal graphic mode.  
 Disabled Disabled this function.
- **UMA Frame Buffer Size**  
 This item allows user to choose the UMA frame buffer size for internal graphics.  
 Options 32MB, 64MB, 128MB, 256MB, 512MB, Auto. Default setting is 128MB.
- **GFX Engine Clock**  
 This item allows user to control the internal GFX engine clock override function.  
 Options 0 for Auto. Default setting is 0.  
 Lane 0-3/Lane 4-7/Lane 8-11/Lane 12-15
- **PCI-E Lanes setting.**  
 Options Disabled, Port A, Port B, DDI1, DDI2. Default setting is disabled.
- **Bank Mapping Control**  
 Auto Set the Bank Mapping to Auto mode. (Default setting)  
 Manual Set the Bank Mapping to Manual mode.
- **UMA Address Swizzle Control**  
 Auto Set the UMA Address Swizzle Control to Auto mode. (Default setting)  
 Manual Set the UMA Address Swizzle Control to Manual mode.

- **LCD Brightness Level**  
Options Level 0, Level 1, Level 2, Level 3, Level 4, Level 5, Level 6, Level 7, Level 8, Level , Level 9, Level 10, Level 11, Level 12, Level 13, Level 14, Level 15. Default setting is Level 9.
- **Light Sensor Support**  
Enabled Enable Light Sensor Support.  
Disabled Disable Light Sensor Support. (Default setting)
- **GFX Dual Slot Configuration**  
Auto Auto configuration.  
Enabled Enable GFX Dual Slot Configuration  
Disabled Disable GFX Dual Slot Configuration. (Default setting)
- **GPP Slots Power Limit, W**  
Define the GPP Slots Power Limit, W.
- **NB Aza lia**  
Enabled Enable the NB audio function. (Default setting)  
Disabled Disable the NB audio function.
- **Aza Snoop**  
Enabled Enable Aza Snoop function. (Default setting)  
Disabled Disable Aza Snoop function.

### I/O Device Configuration

PhoenixBIOS Setup Utility			
Advanced			
I/O Device Configuration		Item Help	
Serial Port A	[Auto]		
Serial Port B	[Auto]		
F1 Help	↑↓ Select Item	+/- Change Values	F9 Setup Defaults
Esc Exit	⇐ Select Menu	Enter Select Sub-Menu	F10 Save and Exit

- **Serial Port A**

This allows users to configure serial port A by using this option.

Auto Auto detection. (Default setting)

Enabled Enable the configuration.

Disabled Disable the configuration.

- **Serial Port B**

This allows users to configure serial port B by using this option.

Auto Auto detection. (Default setting)

Enabled Enable the configuration.

Disabled Disable the configuration.

## Power Feature

PhoenixBIOS Setup Utility	
Advanced	
Power Features	Item Help
AC-LINK	[Last State]
Resume On Time	[Off]
Resume Time	[00:00:00]
Resume On Modem	[Off]

F1 Help	↑↓ Select Item	+/- Change Values	F9 Setup Defaults
Esc Exit	←→ Select Menu	Enter Select Sub-Menu	F10 Save and Exit

- **AC-LINK**

This option provides user to set the mode of operation if an AC / power loss occurs.

Stay Off Do not power on system when AC power is back.

Last State Set system to the last state when AC power is removed. Do not power on system when AC power is back. (Default setting)

Power On System power state when AC cord is re-plugged.

- **Resume On Time**

On Enable alarm function to POWER ON system.

Off Disable this function. (Default setting)

- **Resume Time**  
Set the specific resume time.  
Time (hh: mm: ss) Alarm :(0~23) : (0~59) : (0~59)
- **Resume On Modem**  
On Enable wake up the system when a incoming call is detected on your modem.  
Off Disable this function. (Default setting)

### Hardware Monitor

PhoenixBIOS Setup Utility				
Advanced				
Hardware Monitor			Item Help	
CPU Temperature	34C/ 093F			
System Temperature	51C / 123F			
▶ Fan Monitor				
▶ Voltage Monitor				
F1 Help	↑↓ Select Item	+/- Change Values	F9 Setup Defaults	
Esc Exit	↔ Select Menu	Enter Select Sub-Menu	F10 Save and Exit	

- **CPU Temperature/System Temperature**  
Detects and displays current system and CPU temperature automatically.
- **CPU Fan/ System Fan**  
Detects and displays the current CPU/system fan speed status automatically
- **Vcore1/1.8V/3.3V/12V**  
Detects and displays the current system's voltage status automatically.

PhoenixBIOS Setup Utility					
Main	Advanced	Security	TPM State	Boot	Exit
<ul style="list-style-type: none"> <li>▶ System Management</li> <li>▶ CPU Feature</li> <li>▶ Advanced Chipset Control</li> <li>▶ I/O Device Configuration</li> <li>▶ Power Feature]</li> <li>▶ Hardware Monitor</li> </ul>				Item Help	
Quick Boot Mode		[Enabled]			
Boot-time Diagnostic Screen		[Enabled]			
Summary Screen		[Disabled]			
Local Bus IDE adapter		[Both]			
OnChip SATA		[Enabled]			
SATA Class ID		[IDE native class]			
SATA IDE Combined mode		[Enabled]			
PATA Channel Config		[SATA as secondary]			
ACHI ROM POST delay		[3 Seconds]			
USB Host Controller		[Enabled]			
USB BIOS Legacy Support		[Enabled]			
Gigabit LAN		[Enabled]			
LOM Boot ROM		Disabled]			
F1 Help	↑↓ Select Item	+/- Change Values	F9 Setup Defaults		
Esc Exit	↔ Select Menu	Enter Select Sub-Menu	F10 Save and Exit		

■ **Quick Boot Mode**

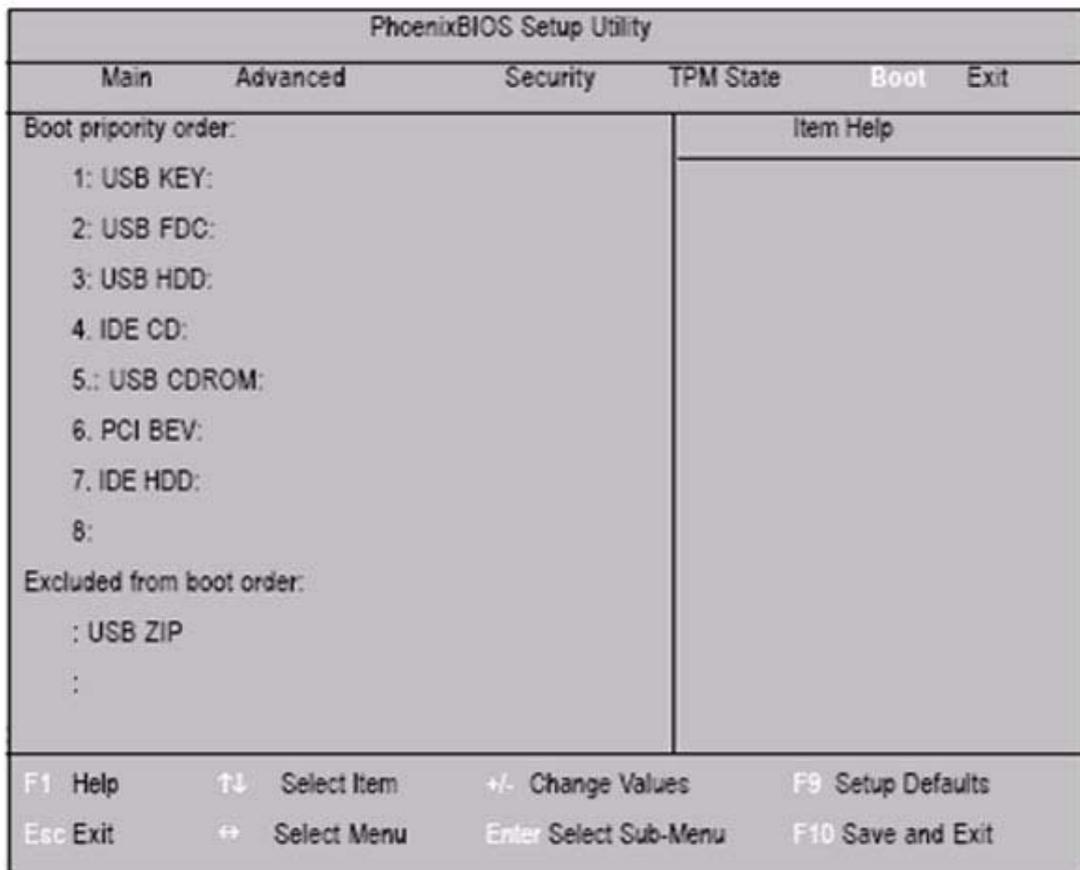
Set this item to enable will allow to skip certain tests during booting. This will decrease the time needed to boot the system.

EnabledEnable Quick Boot Mode. (Default setting)

DisabledDisable Quick Boot Mode.

- **Boot-time Diagnostic Screen**  
 When this item is enabled, system will shows Diagnostic status when system boot.  
 EnabledEnable Boot-time Diagnostic function.  
 DisabledDisable Boot-time Diagnostic function. (Default setting)
- **Summary Screen**  
 Display system configuration on boot.  
 EnabledEnable Summary Screen function. (Default setting)  
 DisabledDisable Summary Screen function.
- **Local Bus IDE adapter**  
 PrimaryEnable primary integrated local bus IDE adapter.  
 Secondary Enable secondary integrated local bus IDE adapter.  
 BothEnable primary and secondary integrated local bus IDE adapter. (Default setting)  
 DisabledDisable integrated local bus IDE adapter.
- **OnChip SATA**  
 EnabledEnable onboard SATA device. (Default setting)  
 DisabledDisable onboard SATA device.
- **SATA Class ID**  
 Change the class ID for SATA device.  
 Options IDE native class, Raid class, ACHI class, IDE Legacy class, IDE-ACHI class, HyperFlash class, IDE-HyperFlash class. Default setting is IDE native class.
- **SATA IDE Combined Mode**  
 EnabledEnable SATA IDE Combined Mode. (Default setting)  
 DisabledDisable SATA IDE Combined Mode.
- **PATA Channel Config**  
 OptionsSATA as secondary, SATA as primary.  
 Default setting is SATA as secondary.
- **ACHI ROM POST delay**  
 Select SATA option ROM POST delay.  
 Options Disabled, 1 seconds, 2 seconds, 3 seconds, 4seconds, 5 seconds, 6 seconds, 7 seconds.
- **USB Host Controller**  
 EnabledEnable onboard USB device. (Default setting)  
 DisabledDisable onboard USB device.
- **USB BIOS Legacy Support**  
 This option allows user to function support for legacy USB keyboard and mice.  
 Enabled Enable support for legacy USB. (Default setting)  
 DisabledDisable support for legacy USB.
- **Gigabit Lan**  
 EnabledEnable onboard Lan device. (Default setting)DisabledDisable onboard Lan device.
- **LOM Boot ROM**  
 EnabledSupport Lan On Motherboard boot.  
 DisabledFaster stand alone boot. (Default setting)S

### 3.2.3 Boot



- **Boot Priority Order**

This field determines which type of device the system attempt to boot from after PhoenixBIOS Post completed. Specifies the boot sequence from the available devices. If the first device is not a bootable device, the system will seek for next available device.

- **Key used to view or configure devices:**

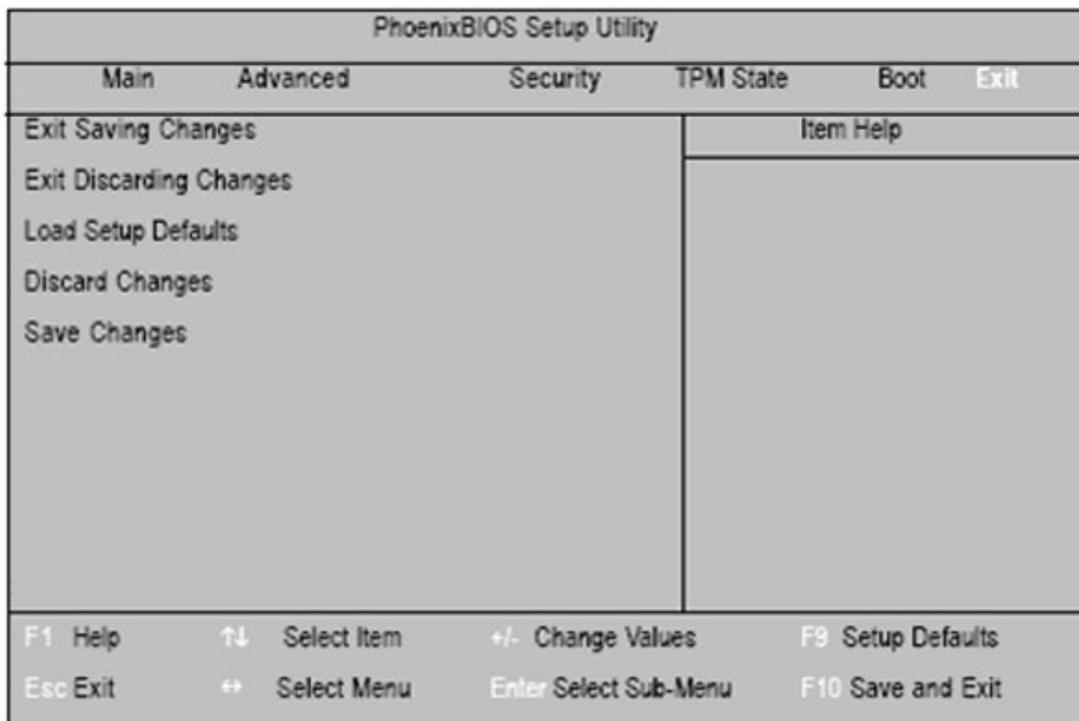
Up and Down arrows select a device.

<+> and <-> moves the device up or down.

<f> and <r> specifies the device fixed or removable. <x> exclude or include the device to boot.

<Shift + 1> Enable or disable a device. <1-4> Loads default boot sequence.

### 3.2.4 Exit



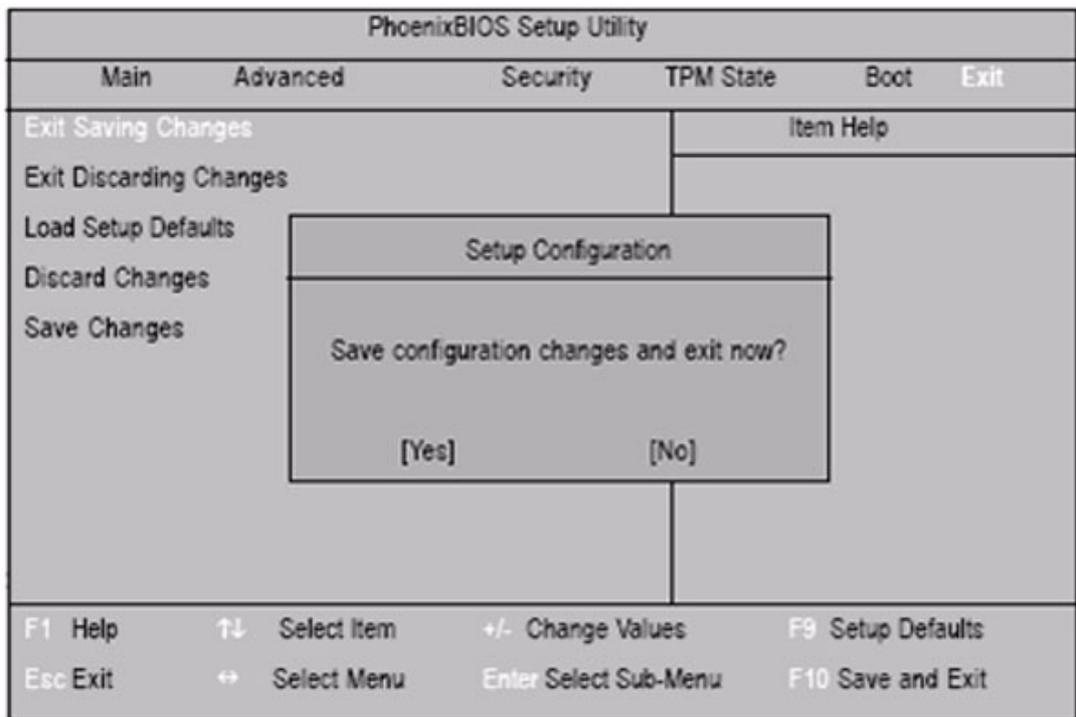
Once you have changed all of the set values in the BIOS setup menu, you should save your changes and exit BIOS setup program. Select "Exit" from the menu bar, to display the following sub-menu.

- **Exit Saving Changes**
- **Exit Discarding Changes**
- **Load Setup Default**
- **Discard Changes**
- **Save Changes**

- **Exit Saving Changes**

This option allows user to exit system setup with saving the changes. Press <Enter> on this item to ask for the following confirmation message:

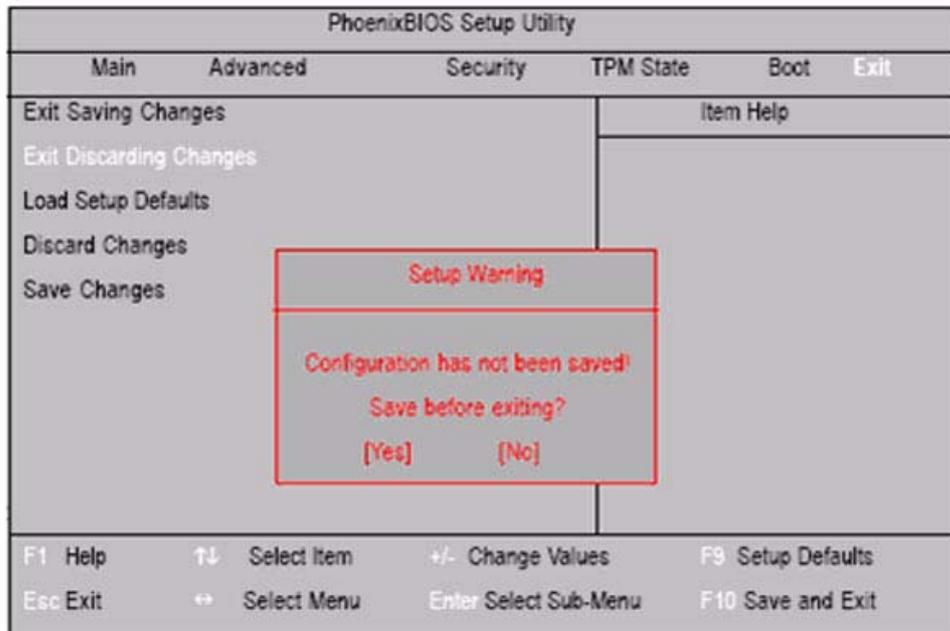
Pressing 'Y' to store all the present setting values tha user made in this time into CMOS. Therefore, whenyou boot up your computer next time, the BIOS will re-configure your system according data in CMOS.



■ **Exit Discarding Changes**

This option allows user to exit system setup without changing any previous settings values in CMOS. The previous selection remain in effect.

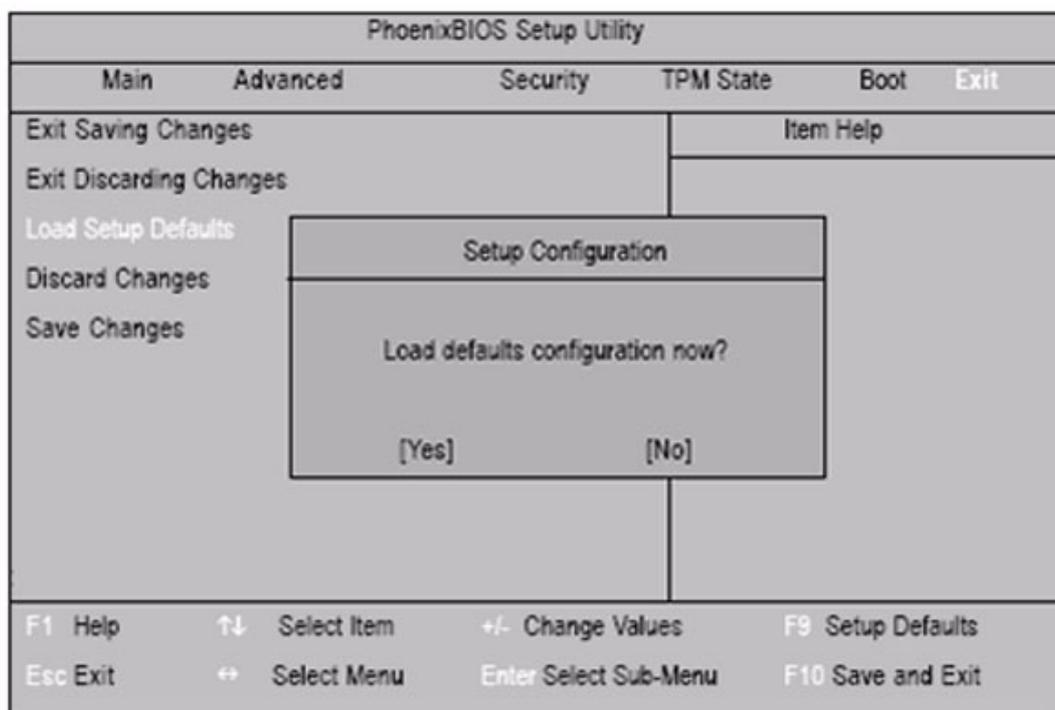
This will exit the Setup Utility and restart your computer when selecting this option.



### ■ Load Setup Default

This option allows user to load default values for all setup items.

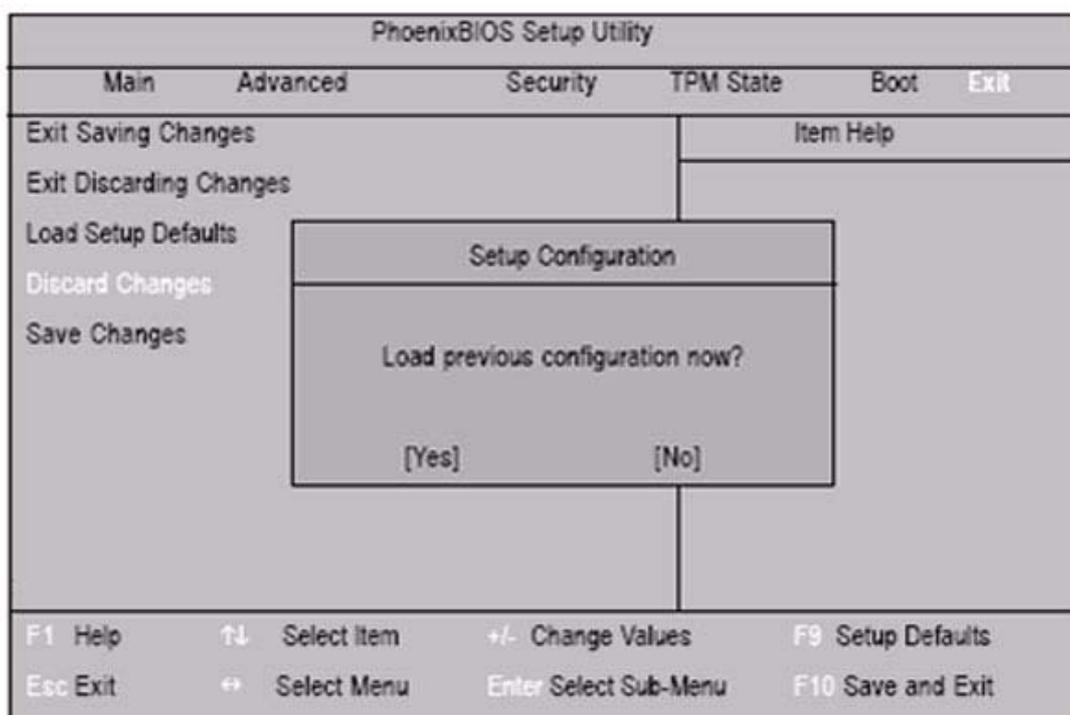
When you press <Enter> on this item, you will get a confirmation dialog box with a message as below:



### ■ Discard Changes

This option allows user to load previous values from CMOS for all setup item.

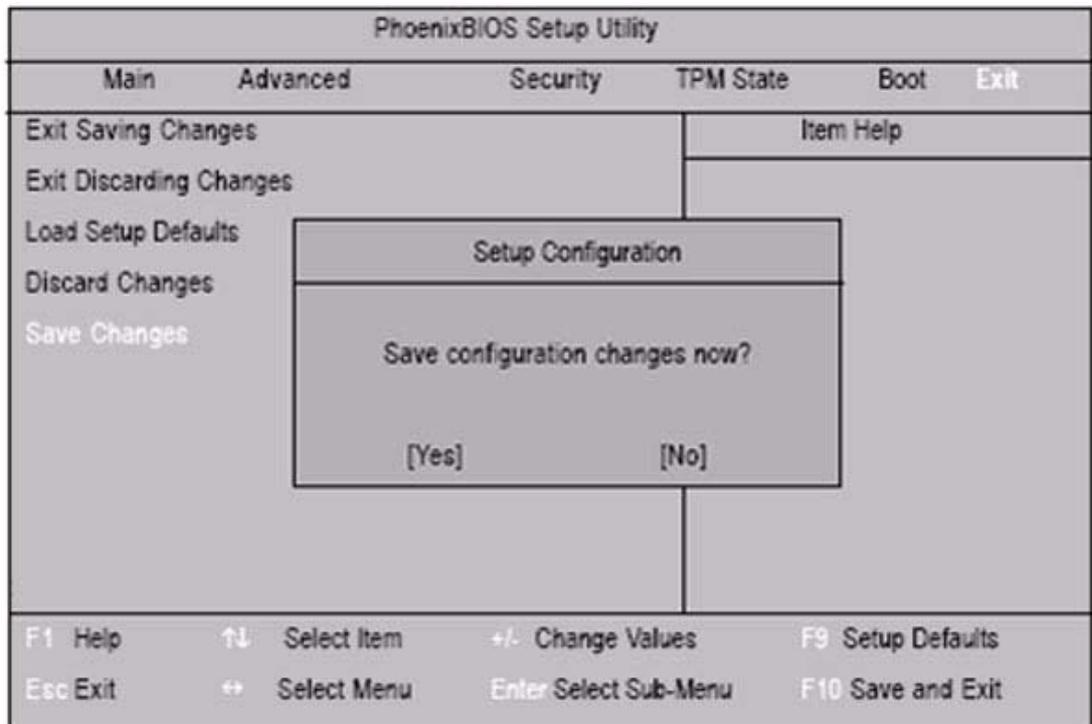
When you press <Enter> on this item, you will get a confirmation dialog box with a message as below:



■ **Save Changes**

This option allows user to save setup dat ato CMOS.

When you press <Enter> on this item, you will get a confirmation dialog box with a message as below:



# Chapter 4

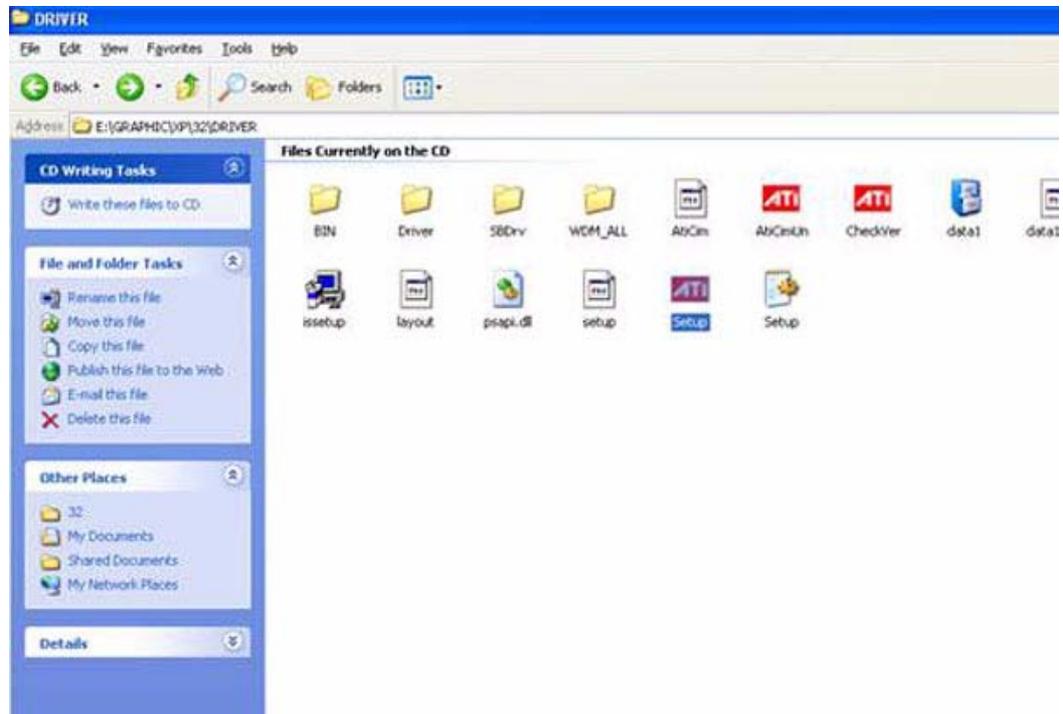
## Software installation

This chapter introduces driver installation.

## 4.1 Driver Installation

### 4.1.1 Graphic driver installation

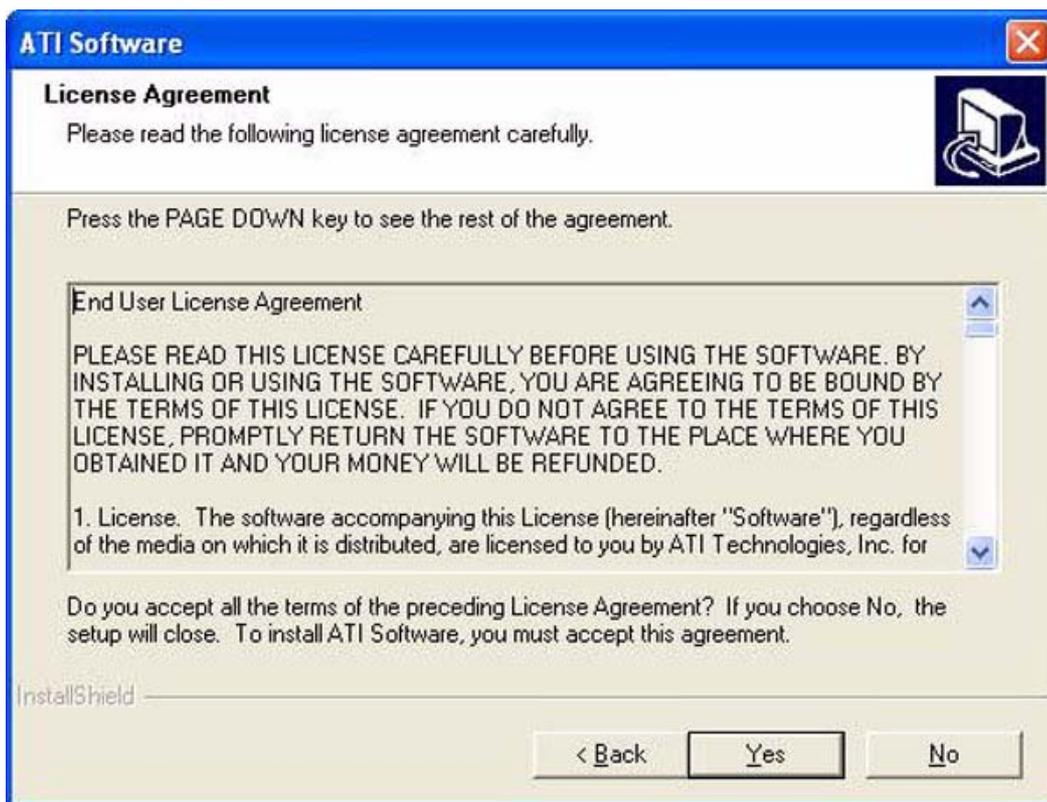
1. Change folder address to \GRAPHICXP\DRIVER. And double click to Setup.exe.



2. Click "Next" bottom to the next step.



3. Click "Yes" to accept License Agreement.



4. Select "Yes, I want to restart this computer now." and click "Finish" bottom. The computer will restart automatically. Then the driver installation is completed.



## 4.1.2 LAN driver installation

1. Change path to Computer Management\Device Manager and click to Ethernet Controller Properties.



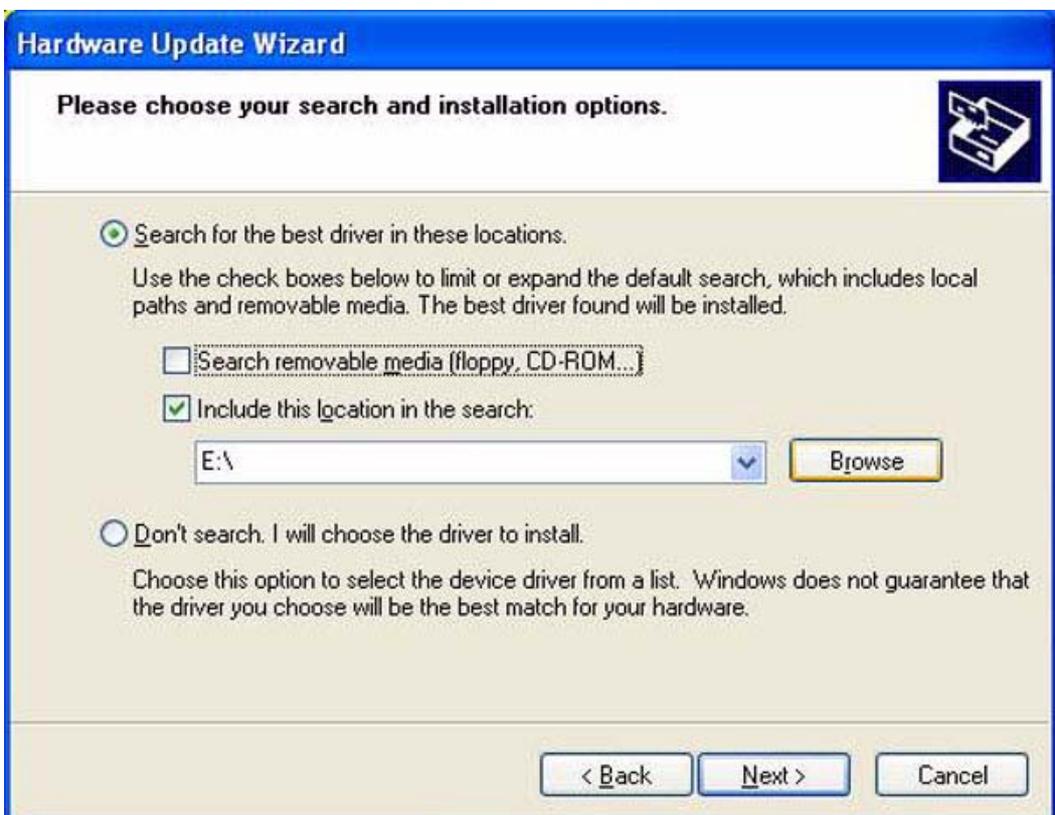
2. Click "Update Driver" button to the next step.



3. Click "Yes, now and every time I connect a device" button to the next step.



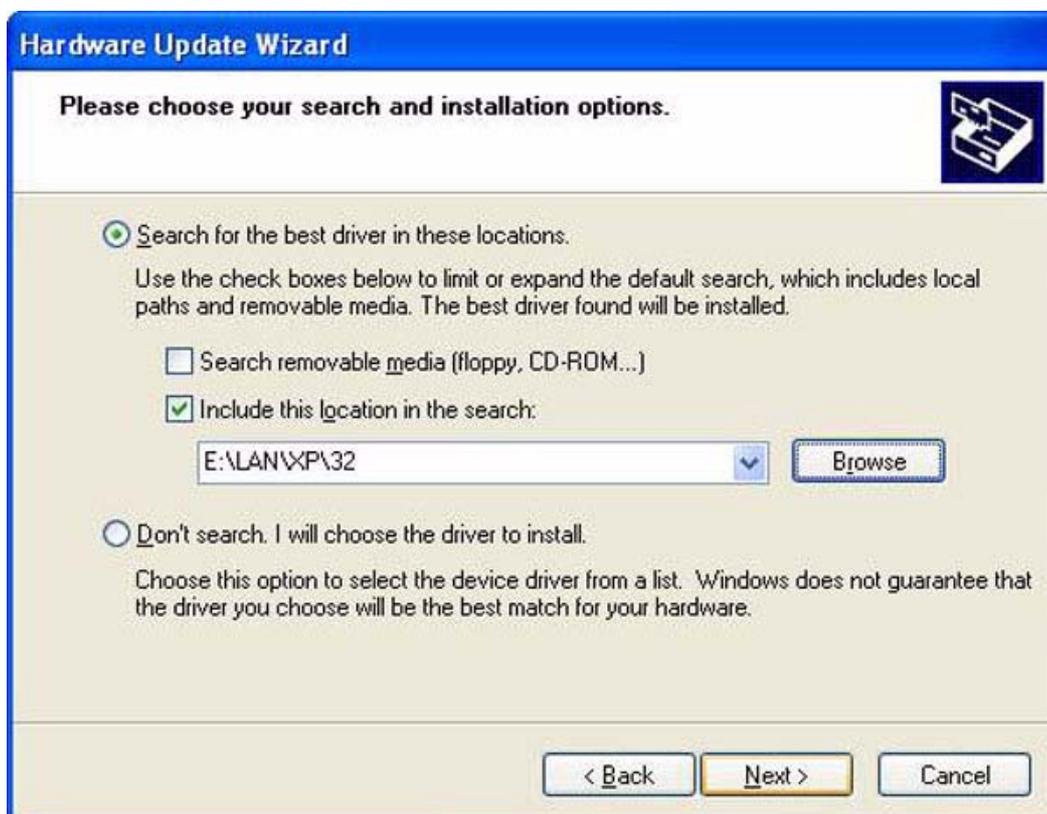
4. Select -> Include this location in the search. And click "Browse" button to option driver path.



5. Select-> LAN -> XP -> 32. And click "OK" button to choose LAN path.



6. Click "Next" button to installation.

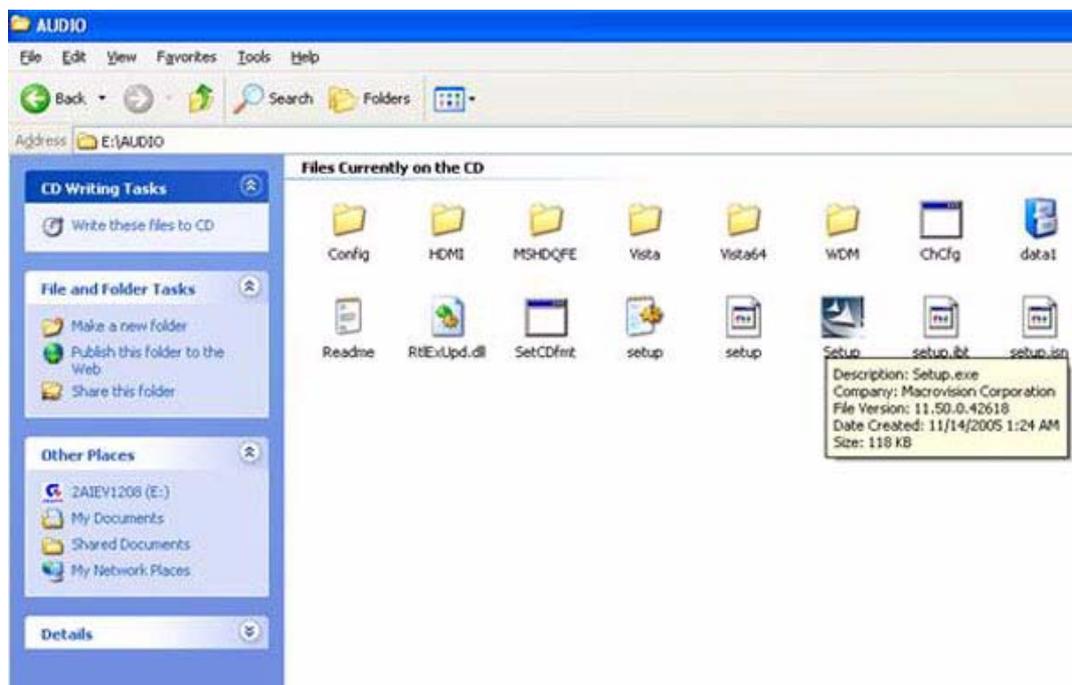


7. Click "Finish" bottom. And the driver installation is completed.

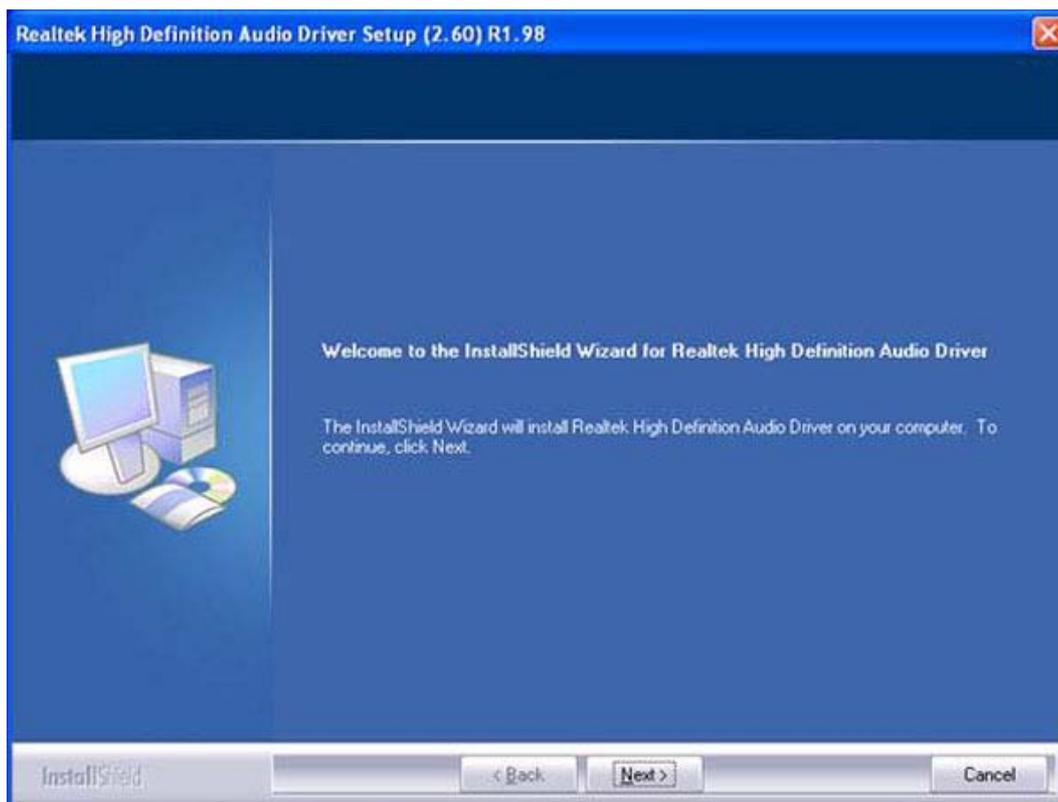


### 4.1.3 Audio driver installation

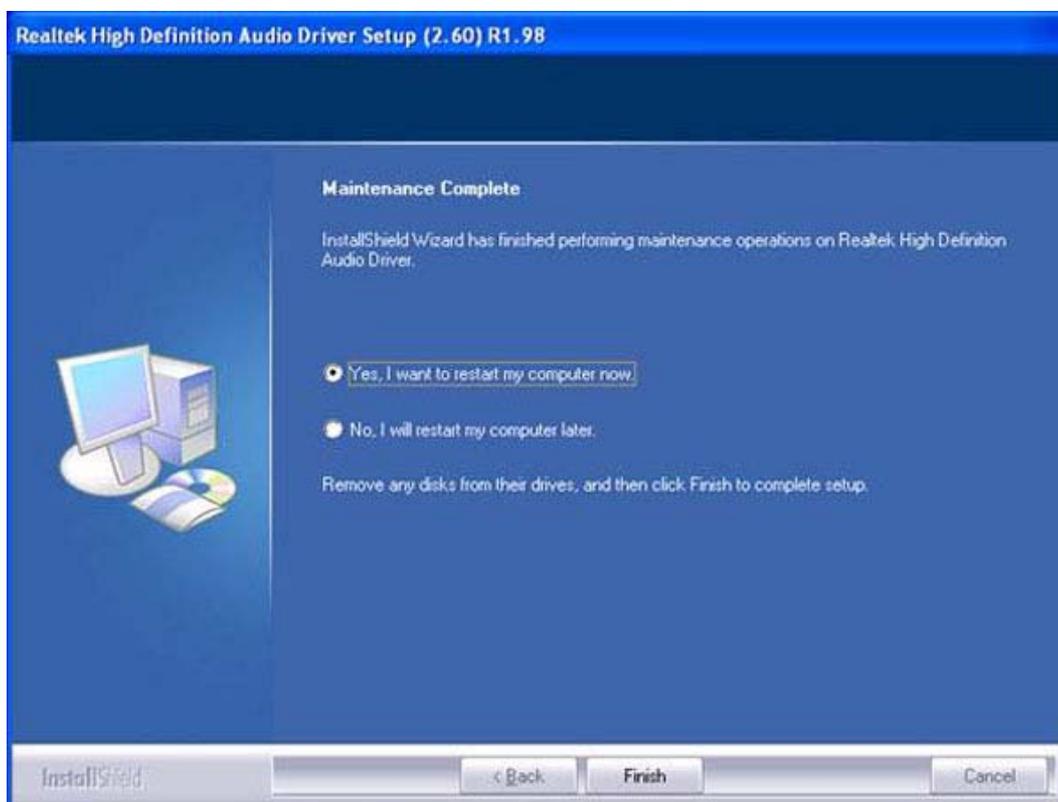
1. Change folder address to \AUDIO. And double click to execute Setup.exe.



2. Click "Next" button to skip welcome message.



3. Select "Yes, I want to restart this computer now." and click "Finish" button. The computer will restart automatically. Then the driver installation is completed.



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