

User's Manual

BP-325

Version 1.1

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Safety and Warranty

1. Read these safety instructions carefully.
2. Keep this user's manual for later reference.
3. Disconnect this equipment from any AC outlet before cleaning. Do not use liquid or spray detergents for cleaning. Use a damp cloth.
4. For pluggable equipment, the power outlet must be installed 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 could 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 over-voltage.
12. Never pour any liquid into an opening. This could cause fire or electrical shock.
13. Never open the equipment. For safety reasons, only qualified service personnel should open the equipment.
14. If any of the following situations arises, get the equipment checked by service personnel:
 - a. The power cord or plug is damaged.
 - b. Liquid has penetrated into the equipment.
 - c. The equipment has been exposed to moisture.
 - d. The equipment does not work well, or you cannot get it to work according to the user's manual.
 - e. The equipment has been dropped and damaged.
 - f. The equipment has obvious signs of breakage.
15. **DO NOT LEAVE THIS EQUIPMENT IN AN UNCONTROLLED ENVIRONMENT WHERE THE STORAGE TEMPERATURE IS BELOW -20° C (-4°F) OR ABOVE 60° C (140° F). IT MAY DAMAGE THE EQUIPMENT.**

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About this Manual

This manual contains all the information you need to set up and use BP-325.

- Chapter 1** Provides an introduction to BP-325 and this manual.

- Chapter 2** Provides all necessary information for all hardware setup.

- Chapter 3** Provides the necessary information for installing for chipset and its accessories.

- Chapter 4** Lists all BP-325 specifications.

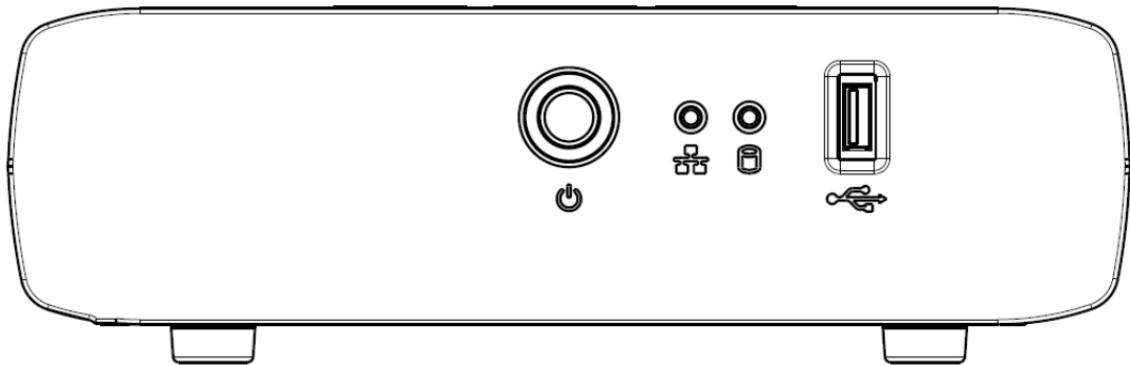
- Chapter 5** Troubleshooting of BP-325.

Introduction

BP-325 Characteristics

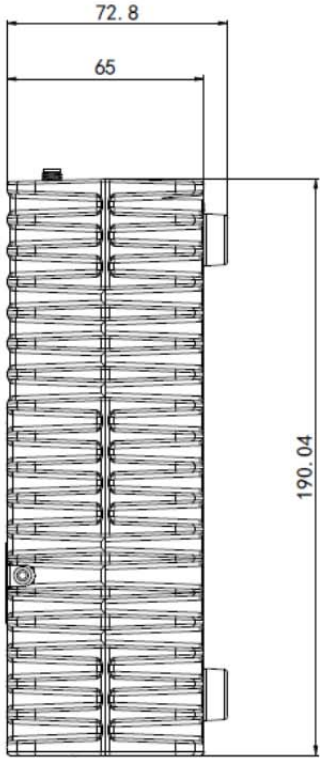
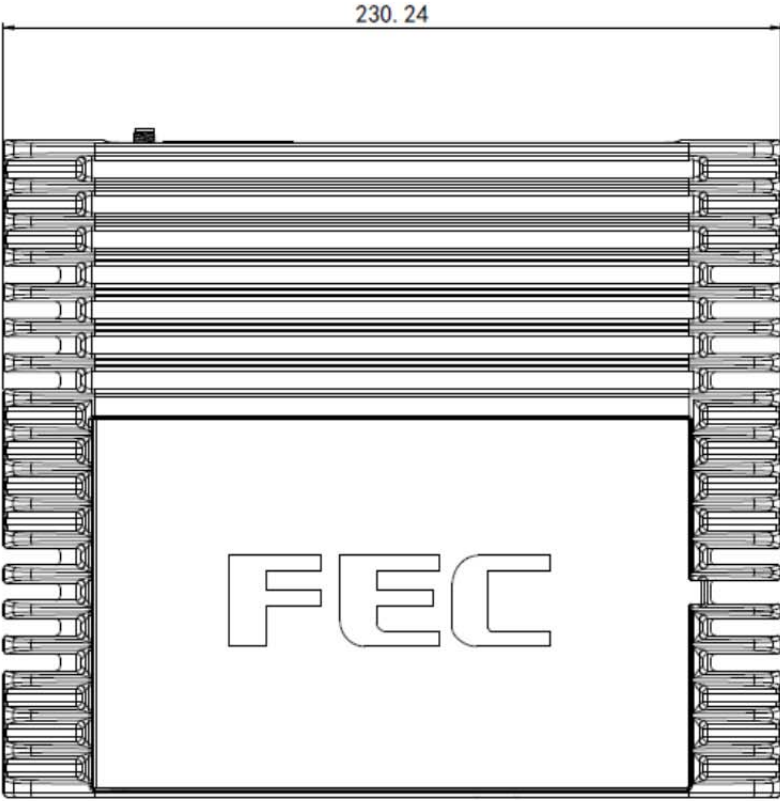
BP-325, with Atom D525 1.8GHz and great heat dissipation ability for any harsh environment, is specially designed for POS application. Its stylish mechanical design with feature of easy maintenance and abundant I/O access make it a decent choice for POS application.

- **System:** Equipped with Intel D525 and ICH8M chipset.
- **Housing:** BP-325 is made with strong metal housing suitable
- **Extensibility:** Low profile design with abundant I/O access, BP-325 is ideal for connecting a variety of system devices:
 - DC 12V out supported — For Display
 - Abundant I/O allowed the box for different kinds of peripherals or devices

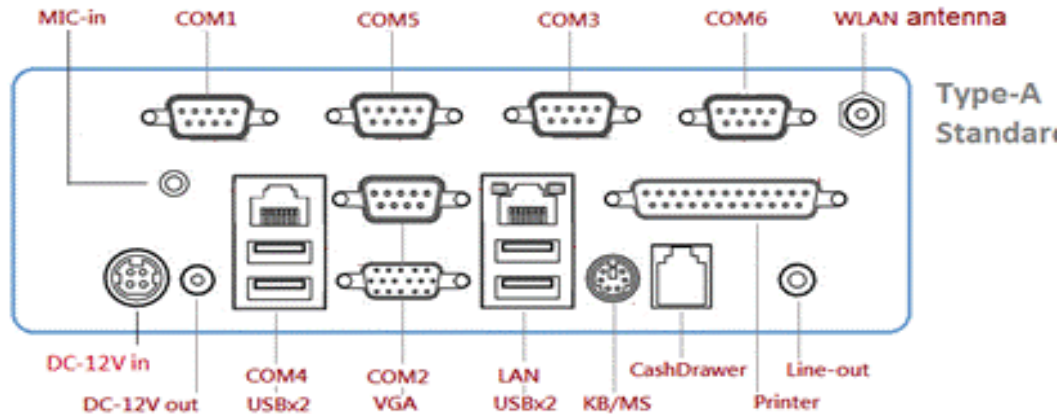


BP-325

BP-325 Dimensions



Rear I/O Panel

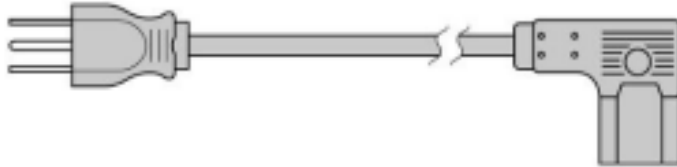


I/O Port	Connector Type	Description
DC-12V in	AC Power Connector	AC power in connector
DC-12V out	12V DC-out connector	This DC-out port can sustain the power of the monitor or any other devices which need 12V DC power input.
VGA	D-Sub 15 Pin Connector	The VGA port is used for connecting LCD or CRT monitors
LAN	LAN RJ45 Connector	The LAN port is applied to hook the terminal to a local area network.
USB Port	USB Type A	Standard USB connector for external device
LPT Port	D-Sub 25 Connector	The parallel port LPT1 can be used to connect parallel devices, such as a printer.
K/B / Mouse	PS/2 Keyboard Connector	The port is for connecting an external keyboard or mouse.
Cash Drawer	RJ11 Connector	Cash Drawer Connector, 12V supported
COM1, COM2, COM3, COM5, COM6	D-Sub 9 Pin Connector	The serial ports can be used to connect serial devices.
Line-Out	Earphone connector	This port is used for audio-out
MIC in	Earphone connector	This port is used for Microphone
COM4	RJ-45 Connector	The serial ports can be used to connect serial devices or VFD.
Wireless Antenna	Antenna Connector	This port is for Wireless Antenna

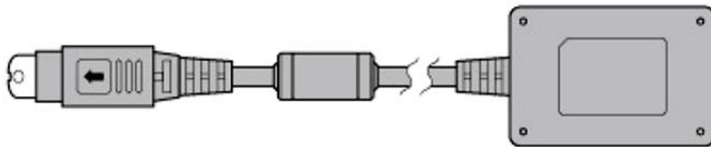
Packing List

The following items are standard with BP-325:

- AC Power Cord x 1



- 12V DC 60W Power Adaptor



Chapter2

Hardware Installation and Upgrading

Warning!



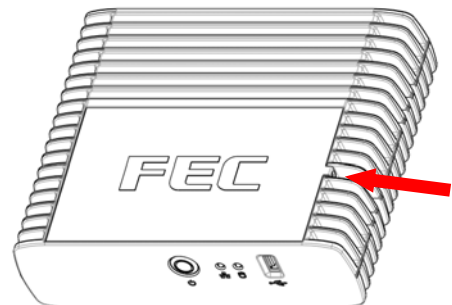
Do not remove the top cover until you have verified that no power is supplied to the system. The system must be switched off and the power cord must be unplugged. Every time you service the system, you should be aware of this.

2.5 inches Hard Disk Drive Installation

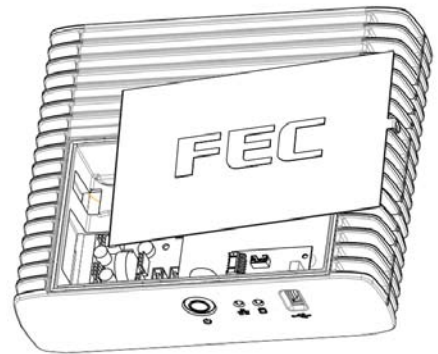
A standard BP-325 comes with a 2.5" hard disk drive (HDD), unless it is pre-requested.

BP-325 (2.5" HDD or other storage disassembly process)

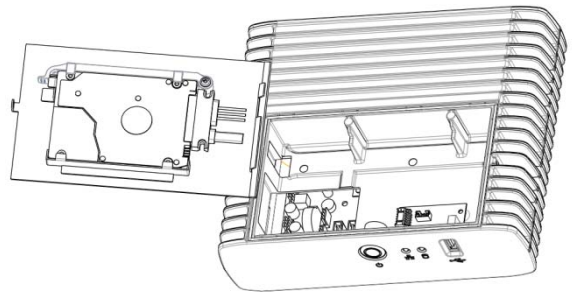
1. Turn off the system and remove power cable from main unit.
2. Unlock the screw and open the HDD door.



3. Take off the cover and beware of the cables.

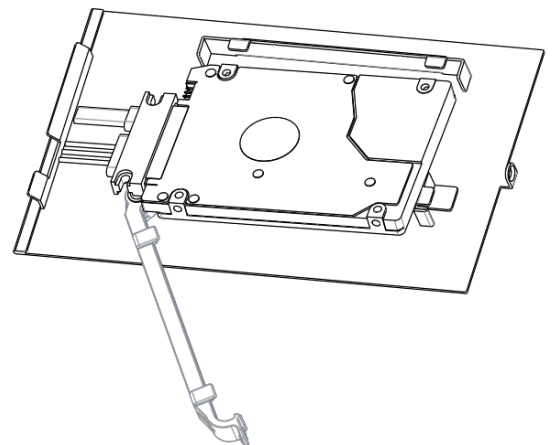


4. Take off the SATA cable.



5. Open the tray of HDD bracket.

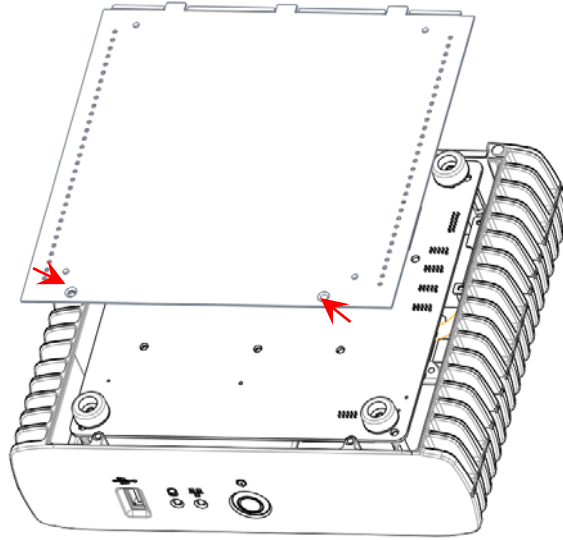
6. Change the HDD and lock back to the tray.



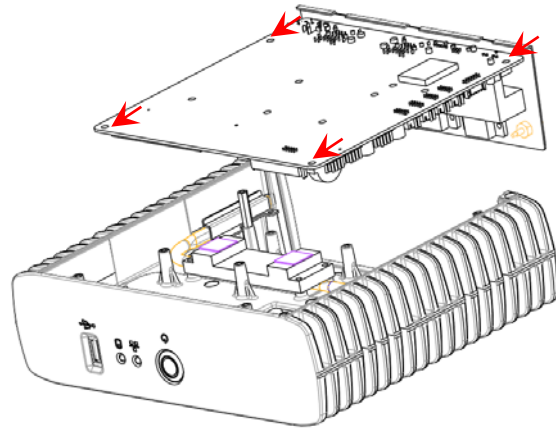
7. Put it back to main unit and fix with the screw.

Memory (DDRIII RAM) Installation

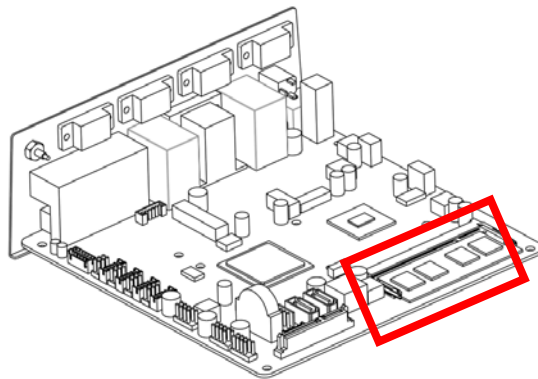
1. Remove two screws on the back cover and take off it.



2. Remove four screws on the M/B and pull it up.



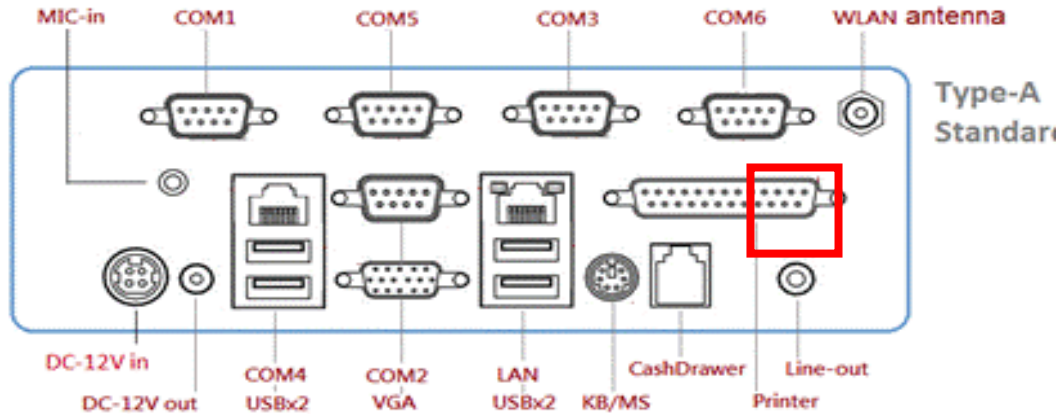
3. Access to RAM slot and restore the unit.



Cash Drawer Installation

Before connecting the cash drawer to the BP-325, please make sure the drive voltage and cable pin assignment of the cash drawer matches the definition of the cash drawer port of BP-325. Please refer to the jumper setting and pin definition (for more information on the Cash Drawer).

Plug cash drawer cable into cash drawer port.



Note: If the cash drawer cannot be detected by the system, please refer to [troubleshooting](#).

Up to two cash drawers may be driven from this port. Driving voltage of the solenoid is DC+12V. I/O port 284 is used for drawer operation. A test program is supplied, for Linux and Windows, source code of which is available on request by software developers.

Value	Description
0x284	Output address.
0x284 read 8bit	Bit 2 => 0: low 1: high
0x200	Sleep 200ms
0x01	Open cashdrawer1 value.
0x02	Open cashdrawer2 value.
0x04	Close cash-drawer value.
0x04	Cash-drawer status mask.

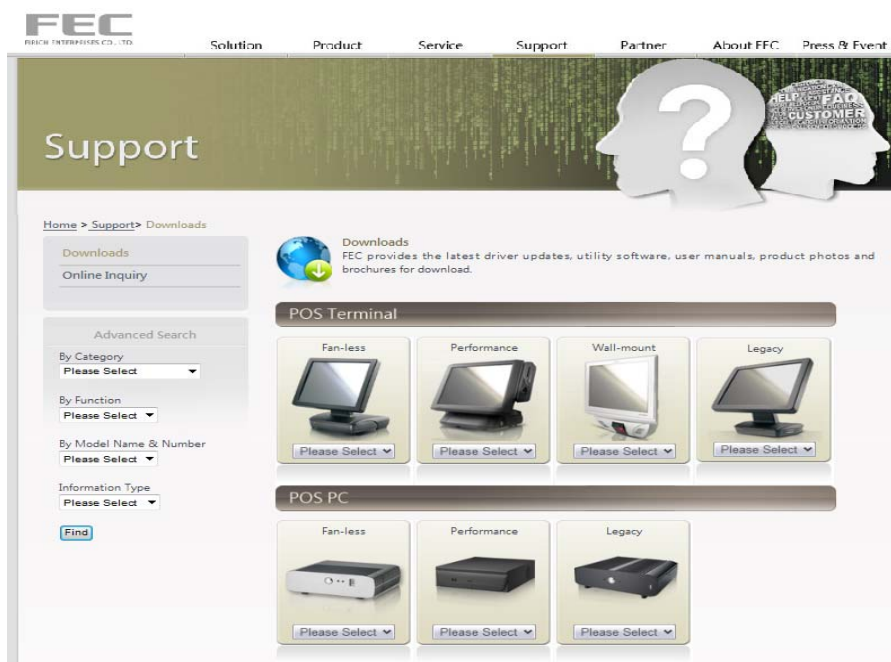
Chapter3

Software Installation and Setup

Driver Download from FEC Website Model

BP325 comes with a variety of drivers for different operating systems.

A. Please go to FEC website and download BP-325 driver.



B: The installation sequence: Chipset Driver -> VGA Driver -> LAN Driver -> Audio Driver -> Other Driver(optional)

C: Then, you can start to install.

Please follow this installation sequence accordingly.

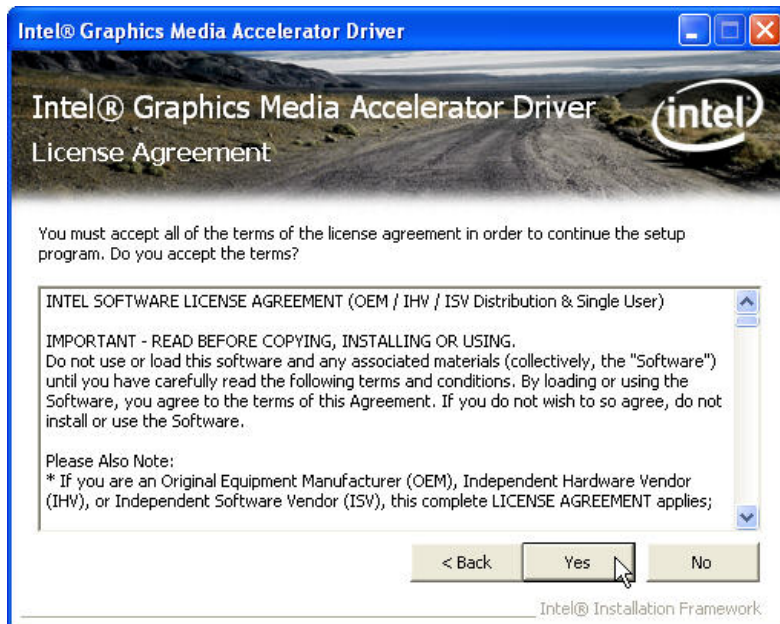
Intel ATOM D525 Chipset Installation Utilities for Windows XP

Step 1. Please double confirm the Intel chipset driver from website.

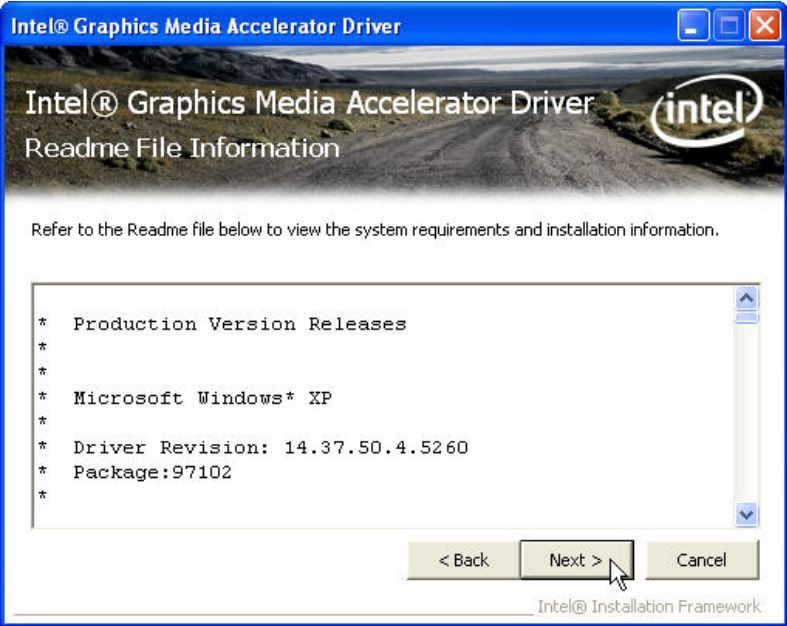
Step 2. Click Next



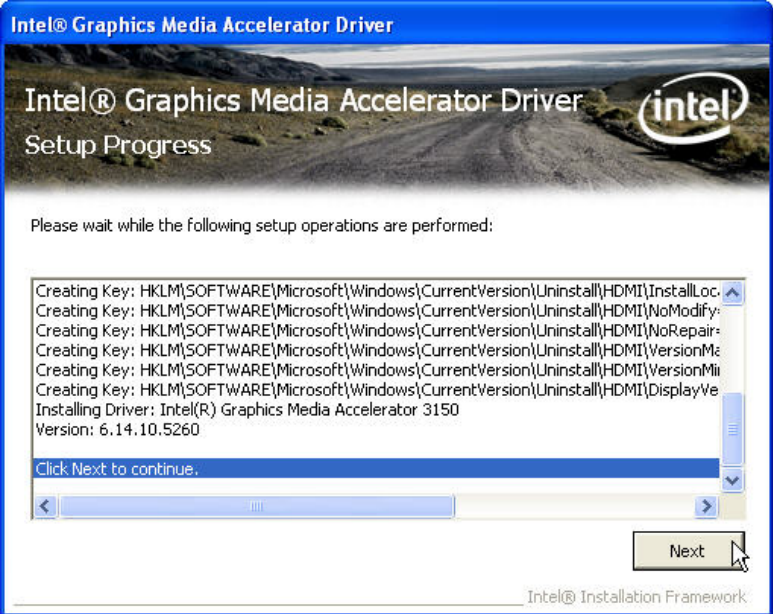
Step 3. Read the License Agreement and click "Yes" to continue



Step 4. Click “Next” to continue



Step 5. Click “Next” to continue



Step 6. Click “Finish” to complete setup



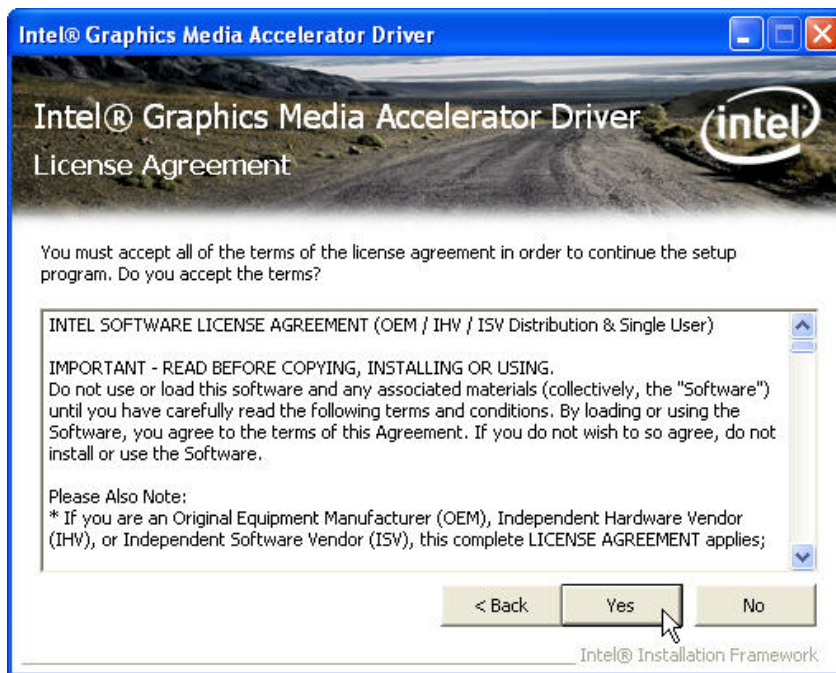
VGA Driver Installation

Step 1. Please double confirm the VGA driver from website.

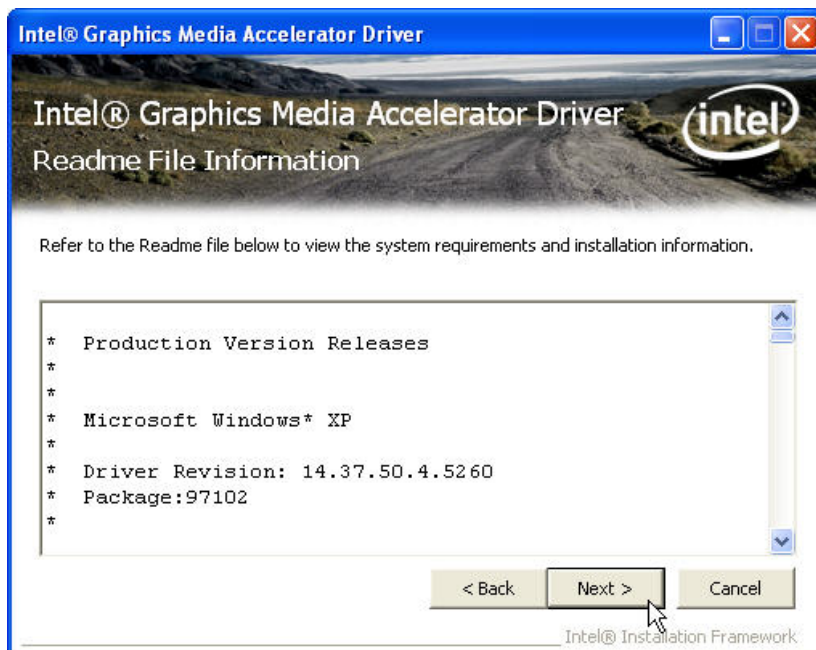
Step 2. Click Next

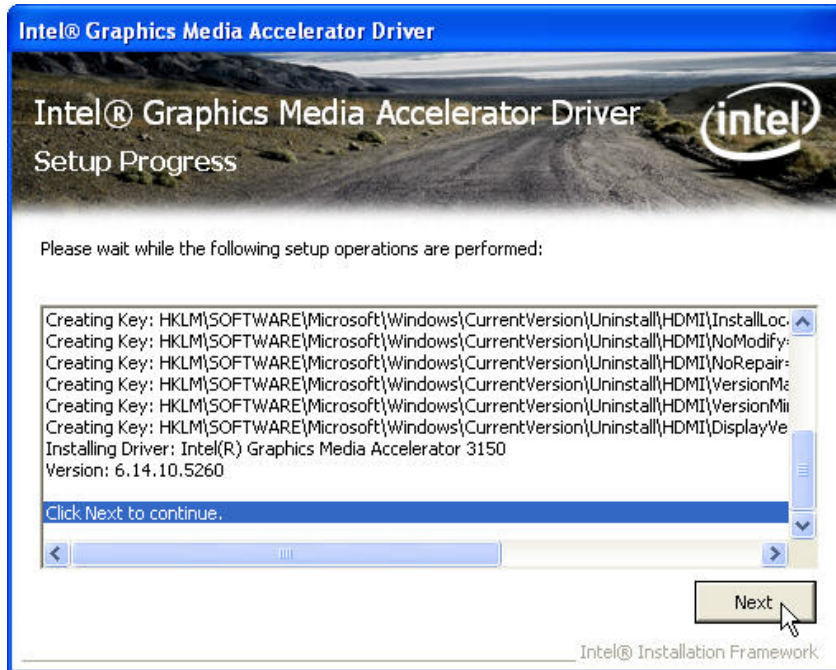


Step 3. Read the License Agreement and click “Yes” to continue



Step 4. Click “Next” to continue

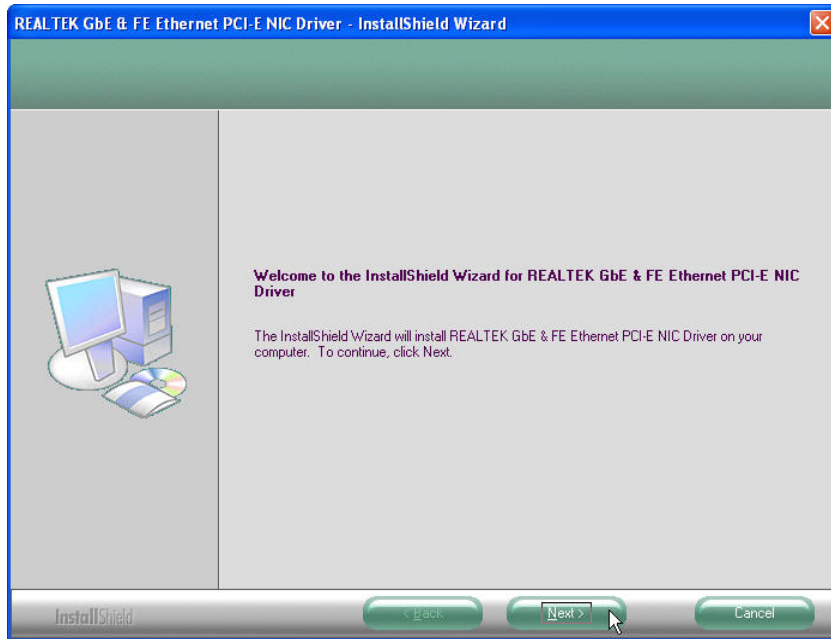


Step 5. Click “Next” to continue**Step 6.** Click “Finish” to complete setup

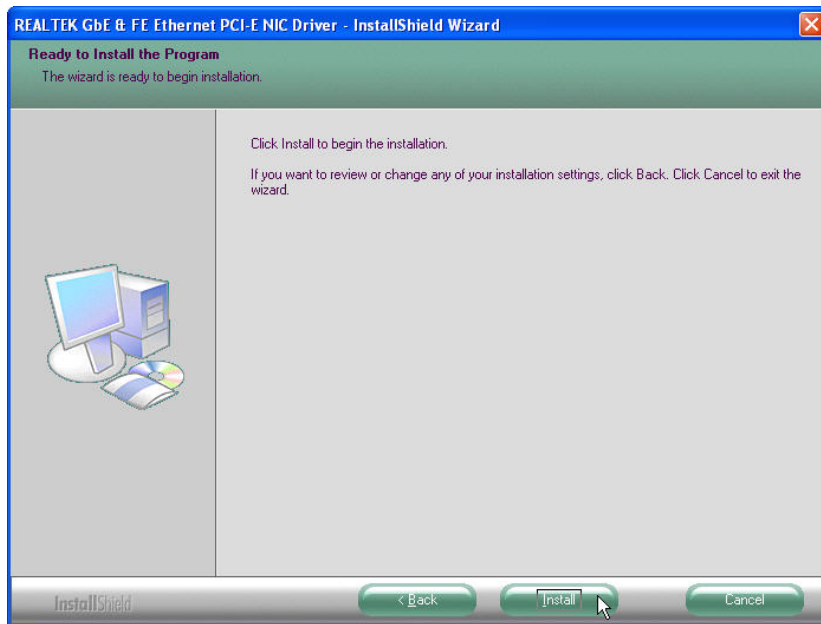
LAN Driver Installation

Step 1. Please double confirm the LAN driver from website.

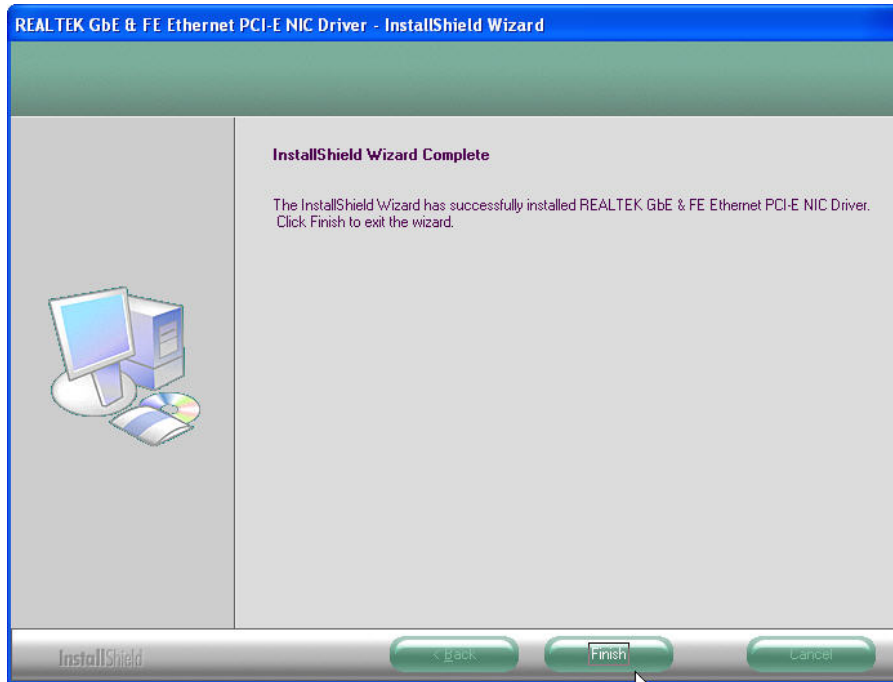
Step 2. Click Next



Step 3. Click “Next” to continue



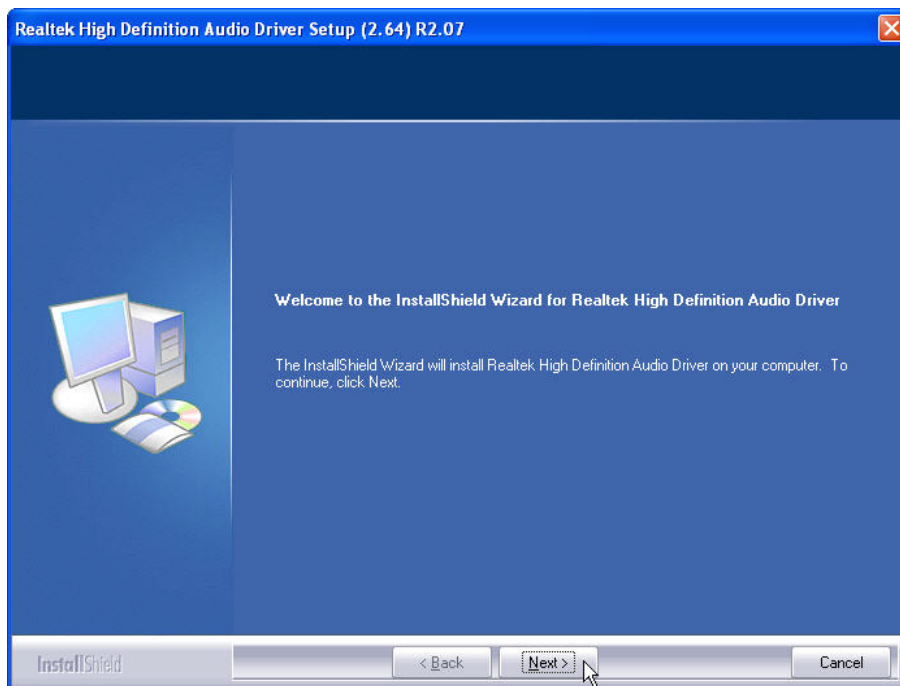
Step 4. Click “Finish” to complete setup

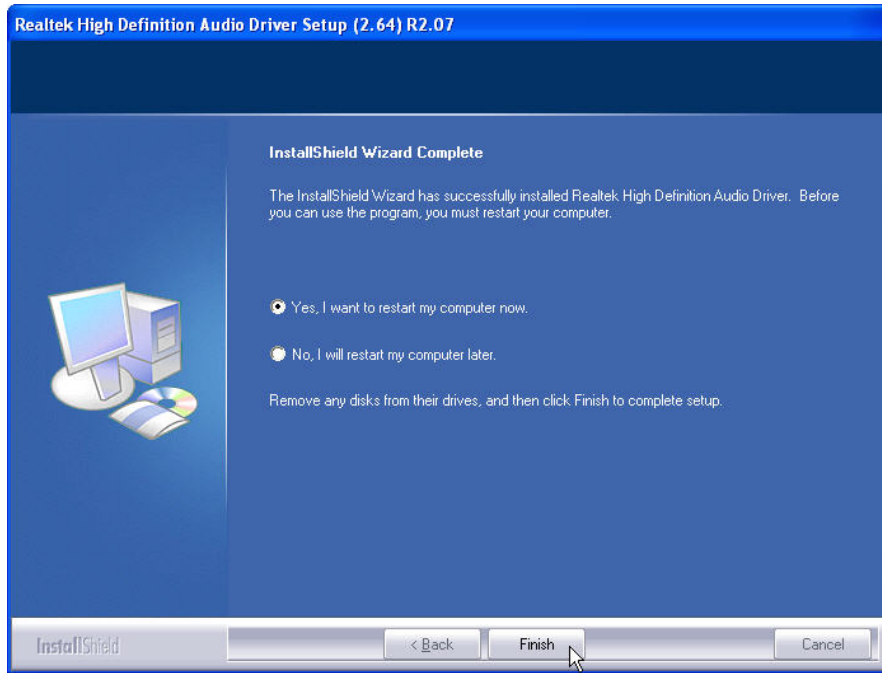
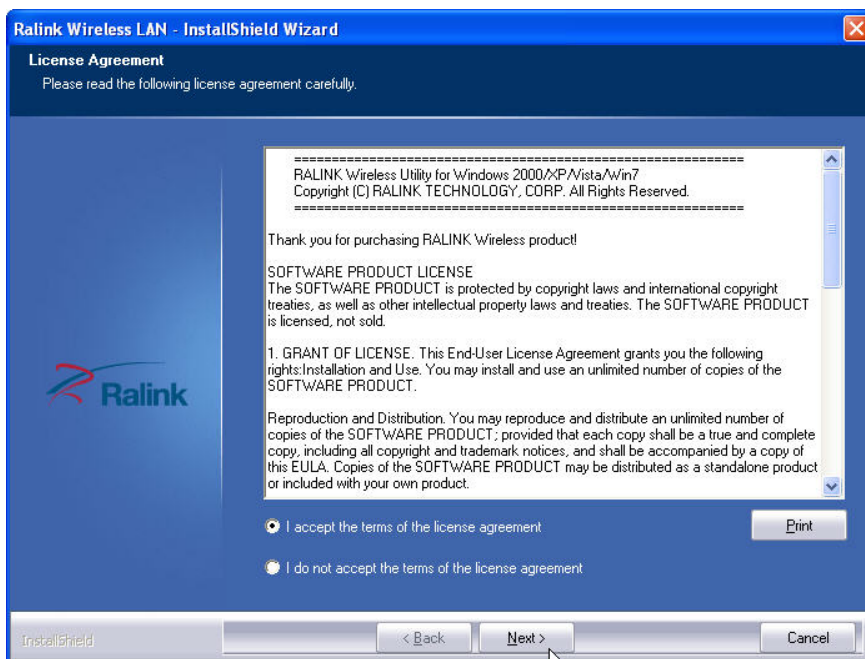


Audio Driver Installation

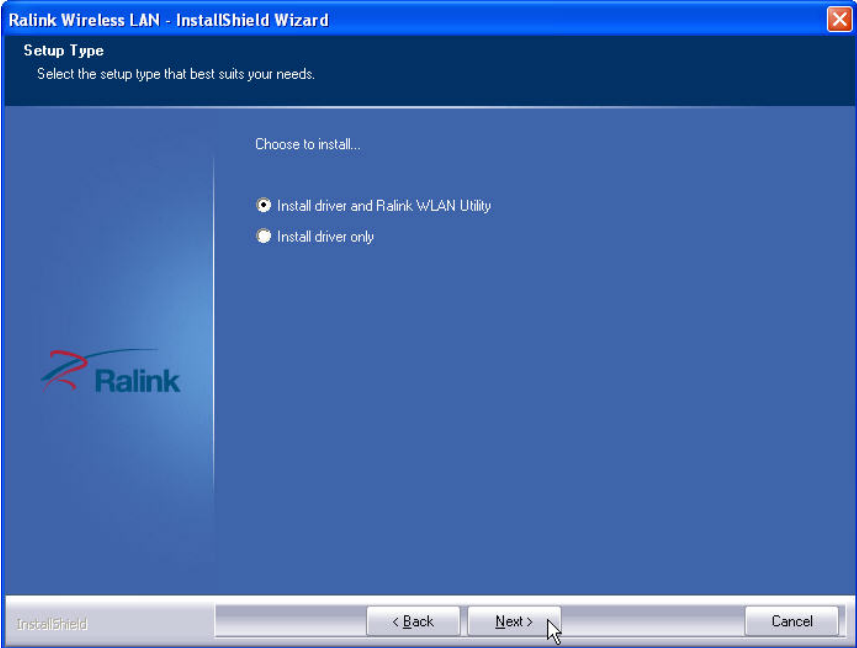
Step 1. Please double confirm the Audio driver from website.

Step 2. Click Next

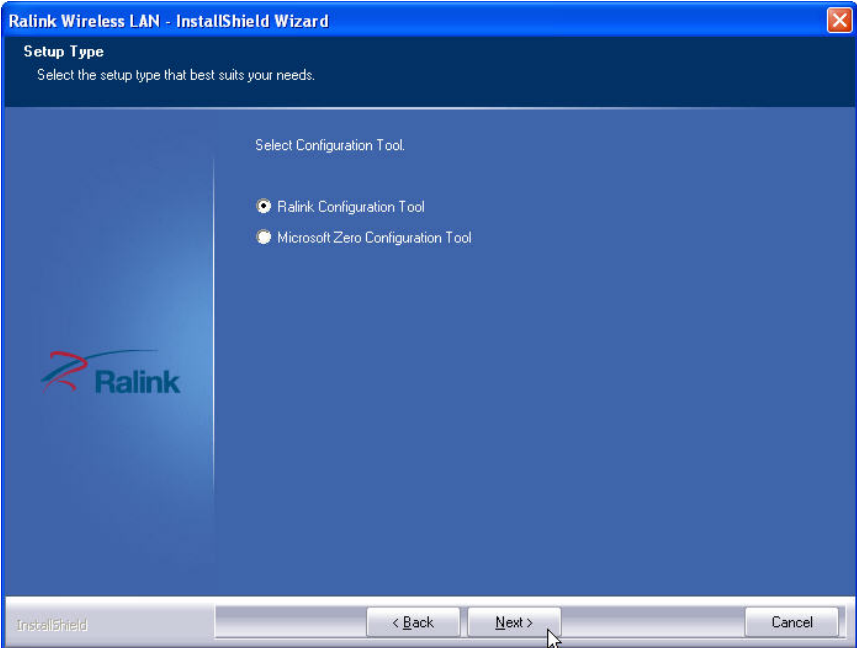


Step 3. Click “Finish” to complete setup**Wireless LAN (optional) Driver Installation****Step 1.** Please double confirm the wireless LAN driver from website.**Step 2.** Click Next

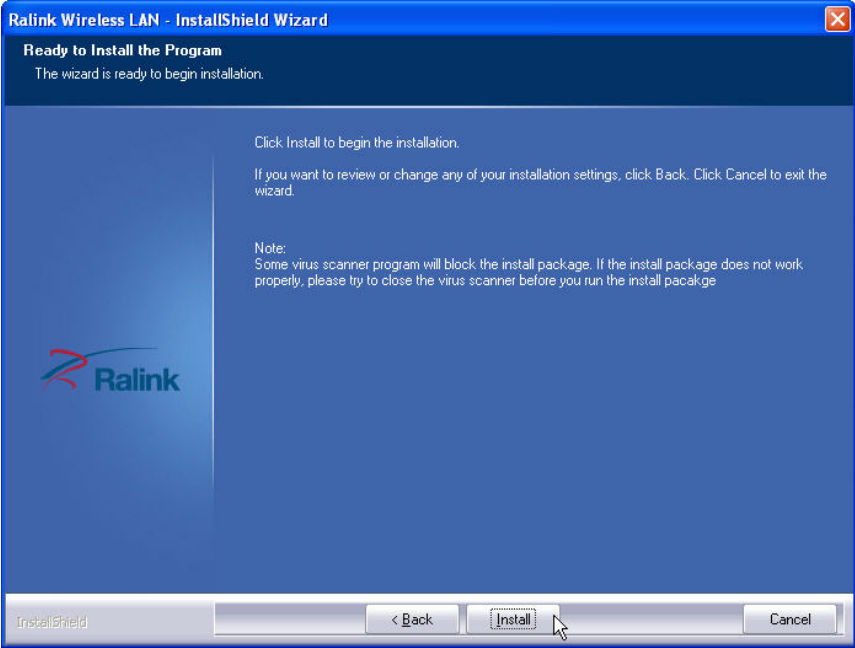
Step3. Select “Install driver and Ralink WLAN Utility”



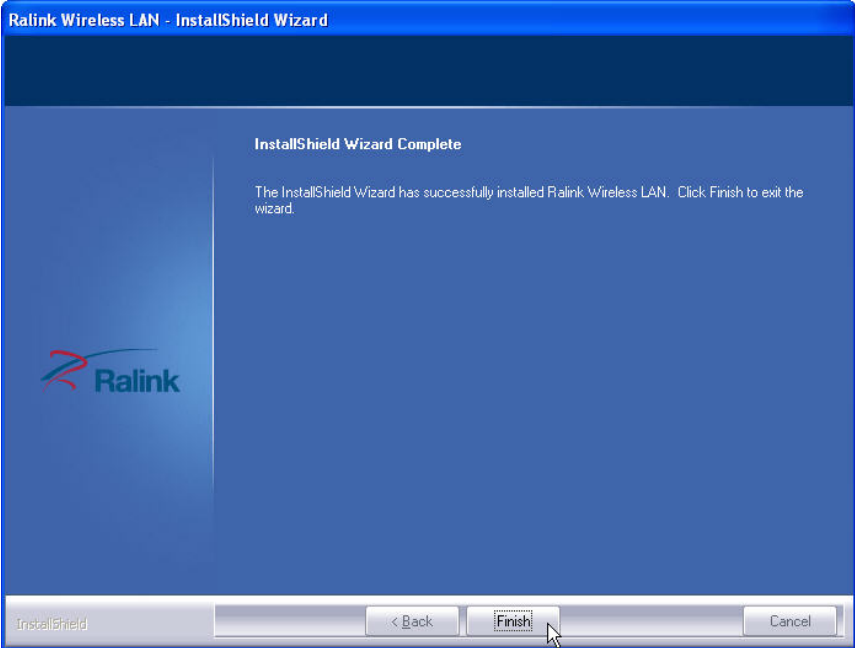
Step4. Select “Ralink Configuration Tool” Select “Optimize for WiFi mode”



Step5. Select “Install”



Step6. Click “Finish”



Chapter4

Specifications

BP-325 System Specifications

System Configuration (Default)	
Processor	Intel D525 1.8GHz (Dual Core, L2 cache 1MB)
Chipset	D525+ICH8M
Memory	1 x DDRIII 800MHz SO-DIMM (Up to 4GB)
VGA/LCD	Intel GMA3150 18 bit single channel LVDS display
LAN	Realtek RTL8111E GbE, 1000/100/10 Mbps
Audio	Realtek ALC269
Connectors	
Serial Port	5 x COM ports (DB-9 male) with 5/12v DC output 1 x COM port (RJ-45) for 12V Customer display
Parallel Port	1 x Parallel port (DB25 female)
USB Port	1 x USB 2.0 (type A/front panel) 4 x USB 2.0 (type A/rear panel), 3 x On board pin header
Cash drawer Port	1 x 12V (RJ11)
Keyboard/Mouse Port	1 x PS/2
LAN Port	1 x RJ45 10/100/1000 Base-T
Audio Port	1 x Line-out; 1 x Mic-in; internal speaker pinheader 2W+2W (at 2 Ohms)
VGA Port	1 x DB-15 female
Storage	1 x 2.5" SATA Storage (HDD / SSD)
Expansion	1 x mini PCI Express

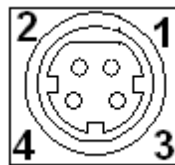
LED Indicator
Power supply
Housing Color / ID
Wireless LAN
Operating Temperature
O/S Supported
EMI/Safety

HDD access/LAN access/Power on
 12V-60W power adaptor 60w for system as default
 Iron Gray
 Built-in wireless 802.11 b/g/n mini PIC-E module (option)
 0°C ~ 40°C
 Windows XP, Windows 7, Linux(By Reques)
 CE, FCC, CCC

I/O Pin Definition

A. DC_IN (DC Adapter 12V in)

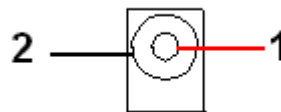
DC_IN



Pin	Definition
1	12V
2	GND
3	12V
4	GND

B. +12V_OUT (12V OUT)

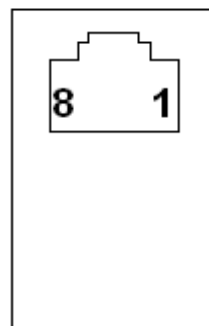
+12V_OUT



Pin	Definition
1	12V
2	GND

C. COM4_USB1 (VFD & RS-232 port + USB 2.0/1.1 port)

COM4_USB1

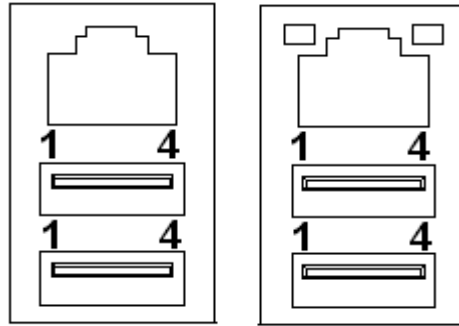


Pin	Definition
1	RI/ 5V /12V
2	CTS & RTS
3	GND
4	RTS & GND
5	DTR
6	DSR
7	TXD
8	RXD

D. USB 2.0/1.1 Port

COM4_USB1

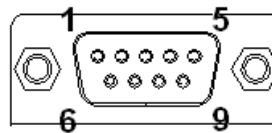
USB_LAN1



Pin	Definition
1	USB 5V
2	D-
3	D+
4	GND

E. COM2

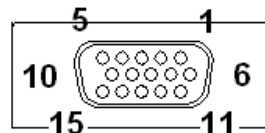
COM2



Pin	Definition
1	DCD
2	RXD
3	TXD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI/ 5V /12V

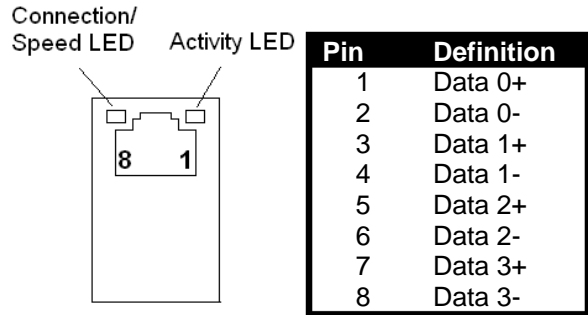
F. VGA

VGA



Pin	Definition
1	RED
2	GREEN
3	BLUE
4	NC
5	GND
6	GND
7	GND
8	GND
9	VCC 5V
10	GND
11	NC
12	DDC Data
13	H-SYNC
14	V-SYNC
15	DDC Clock

G. USB_LAN1 (LAN connector RJ45+USB 2.0/1.1 Port)



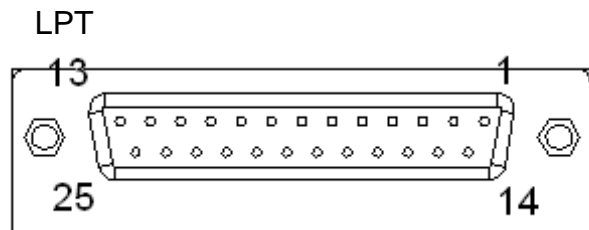
Connection/Speed LED:

State	Description
Orange	Speed: 1 Gbps
Green	Speed: 1 00 Mbps

Activity LED:

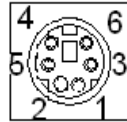
State	Description
On	Transmitting
Off	Not Transmitting

I. LPT Port



Pin	Definition	Pin	Definition
1	STB-	14	AFD-
2	PD0	15	ERR-
3	PD1	16	INIT-
4	PD2	17	SLIN-
5	PD3	18	GND
6	PD4	19	GND
7	PD5	20	GND
8	PD6	21	GND
9	PD7	22	GND
10	ACK-	23	GND
11	BUSY	24	GND
12	PE	25	GND
13	SLCT		

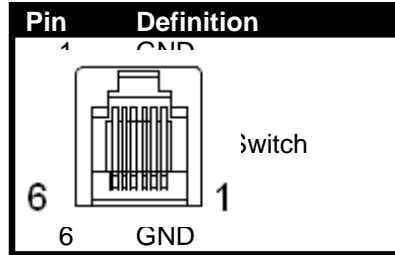
H. KB_MS1 (PS/2 Connector)



Pin	Definition
1	Keyboard Data
2	Mouse Data
3	GND
4	Mouse Clock
5	5V
6	Keyboard Clock

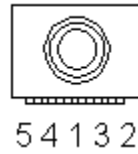
J. RJ11 Port

RJ11



K. AUDIO_JACK (Audio Line Out)

Audio Jack



Pin	Definition
1	GND
2	Line Out (L)
3	AUDIO_JD
4	-ACZ_DET
5	Line Out (R)

Chapter5

Troubleshooting

Please note that the following troubleshooting guide is designed for people with strong computer hardware knowledge such as System Administrators and Engineers.

Display Shows “No Signal” Before Loading into Windows OS

- A) Check if the VGA cable is getting loose while loading the system.
- B) If the monitor is not connected to the VGA port before power on the system, the Windows OS may automatically choose LVDS to be the primary display. As a result, the monitor (VGA-connected device) will then be defined as the 2nd display and “No Signal” will show on the screen. To switch the monitor back to the primary display, please connect a keyboard to the system and press Ctrl + Alt + F1 simultaneously.

Cannot Detect HDD

- A) SATA cable is not connected properly to main board.
- B) HDD power cable is not connected properly to the main board or it could be defective.
- C) Check CMOS setup, set SATA HDD to Auto Detect.
- D) On-board IDE port could be defective.

Cash Drawer Port Is Not Functioning Properly

- A) Make sure the pin assignment matches between the cash drawer and the RJ11 cash drawer port.
- B) The main board or I/O board could be defective.