User Manual
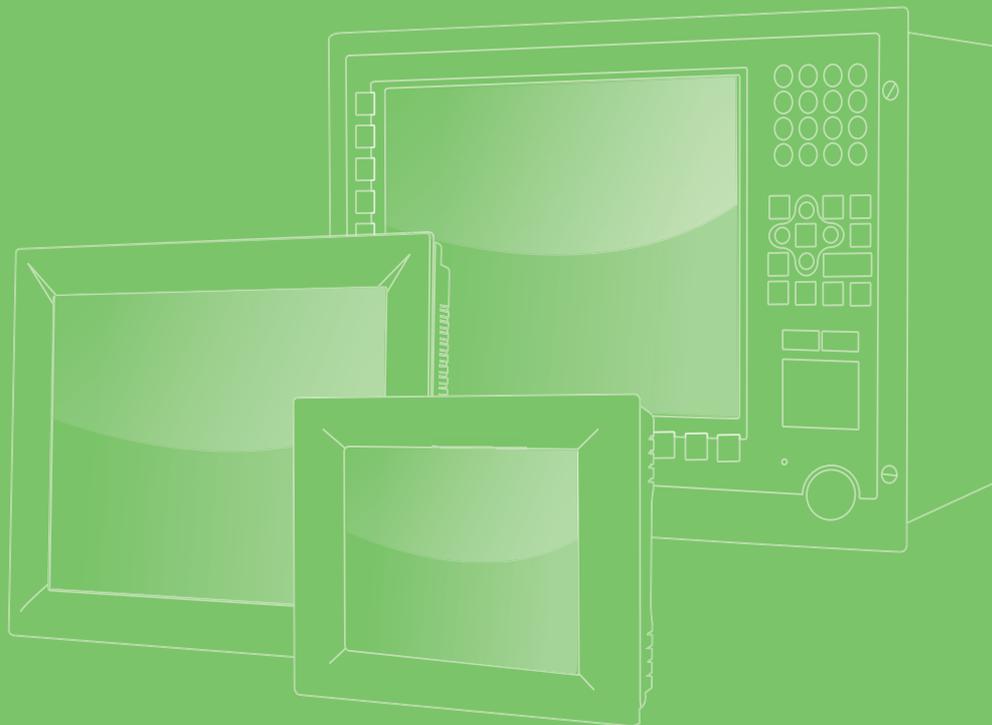
PPC-4211W

Intel® Core i processor based microcomputer, with 21.5" color TFT LCD display

ADVANTECH

Enabling an Intelligent Planet

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Product Warranty (2 years)

Advantech warrants to you, the original purchaser, that each of its products will be free from defects in materials and workmanship for two years from the date of purchase.

This warranty does not apply to any products which have been repaired or altered by persons other than repair personnel authorized by Advantech, or which have been subject to misuse, abuse, accident or improper installation. Advantech assumes no liability under the terms of this warranty as a consequence of such events.

Because of Advantech's high quality-control standards and rigorous testing, most of our customers never need to use our repair service. If an Advantech product is defective, it will be repaired or replaced at no charge during the warranty period. For out-of-warranty repairs, you will be billed according to the cost of replacement materials, service time and freight. Please consult your dealer for more details.

If you think you have a defective product, follow these steps:

1. Collect all the information about the problem encountered. (For example, CPU speed, Advantech products used, other hardware and software used, etc.) Note anything abnormal and list any onscreen messages you get when the problem occurs.

2. Call your dealer and describe the problem. Please have your manual, product, and any helpful information readily available.

3. If your product is diagnosed as defective, obtain an RMA (return merchandize authorization) number from your dealer. This allows us to process your return more quickly.

4. Carefully pack the defective product, a fully-completed Repair and Replacement Order Card and a photocopy proof of purchase date (such as your sales receipt) in a shippable container. A product returned without proof of the purchase date is not eligible for warranty service.

5. Write the RMA number visibly on the outside of the package and ship it prepaid to your dealer.

Declaration of Conformity

CE

This product has passed the CE test for environmental specifications when shielded cables are used for external wiring. We recommend the use of shielded cables. This kind of cable is available from Advantech. Please contact your local supplier for ordering information.

CE

This product has passed the CE test for environmental specifications. Test conditions for passing included the equipment being operated within an industrial enclosure. In order to protect the product from being damaged by ESD (Electrostatic Discharge) and EMI leakage, we strongly recommend the use of CE-compliant industrial enclosure products.

FCC Class B

Note: 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 or more 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.

Technical Support and Assistance

1. Visit the Advantech web site at http://support.advantech.com where you can find the latest information about the product.
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

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).

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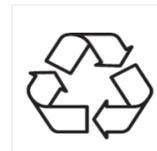
Safety Precaution - Static Electricity

Follow these simple precautions to protect yourself from harm and the products from damage.

- To avoid electrical shock, always disconnect the power from your PC chassis before you work on it. Don't touch any components on the CPU card or other cards while the PC is on.
- Disconnect power before making any configuration changes. The sudden rush of power as you connect a jumper or install a card may damage sensitive electronic components.

Battery Information

Batteries, battery packs and accumulators should not be disposed of as unsorted household waste. Please use the public collection system to return, recycle, or treat them in compliance with the local regulations.

Contents

Chapter 1

General Information

This chapter gives background information on the PPC-4211W panel PC.

Sections include:

■ Introduction

■ Specifications

■ Dimensions

1.1 Introduction

The PPC-4211W is a new generation Panel PC with WXGA (1920 x 1080) screen. The system is equipped with a high performance Intel Core i CPU and with a high efficiency fanless thermal design the heat is easily dissipated. This gives HMI a big step forward in consolidating performance and reliability in one system. Besides, with multiple I/O ports (five COM, five USB and two Gigabit ethernet) its easier to connect to devices and be integrated into machine building industry. In addition, PCIe/PCI expansion allows users to add-on field bus or proprietary cards making more applications possible. Last but not least, the multi-touch screen makes the HMI more intuitive, and brings you the best operating experience.

1.2 Specifications

1.2.1 General Specification

Product	PPC-4211W
LCD Specification	21.5" LCD
Display Type	21.5" TFT LCD (LED backlight)
Max. Resolution	1920 x 1080
Color	16.7M
Pixel Pitch	248.25 (per one triad) x 248.25 um
Viewing Angle	178 (left), 178 (right), 178 (top), 178 (bottom) (Typ.)
Brightness	300 cd/m^2 (Typ.)
Contrast	5000 (Typ.)
Backlight Lifecycle	50, 000 hours
Weight	7.9 Kg (17.43 lb)
Dimensions	558.4 x 349.8 x 63.8 (mm)(21.98" x 13.77" x 2.51")
CPU	Model Frequency Cache i5 - 4300U 2.90GHz 3M Celeron - 2980U 1.60GHz 2M
Memory	One 204 pin slot, up to 8G DDR3L
Storage	Support two 2.5" SATA HDD
Network(LAN1, LAN2)	2 x Gigabit Ethernet ports
I/O Ports	4 x COM-RS232 Ports, 1 x RS-422/485 Port, 4 x USB 3.0, 1 x USB 2.0 2 x Gigabit Ethernet ports 1 x VGA, 1 x DP 1 x Line-out port,1 x Mic-in port, 2 x 1 W speaker (built-in) 1 x Phoenix power port, 1 x Power switch
Expansion Slot	1 x PCIe x4 (standard) 1 x PCI (in the accessory box)
Additional Expansion Slot	1 x Mini PCIe slot and 1 x mSATA card slot
System	Win 7 / Win 8 / Win 8.1 / Linux

1.2.2 Power Specifications

Power	i7: 71 W (test system: Windows7 64bit) i5: 66 W (test system: Windows7 64bit) Celeron: 58 W (test system: Windows7 64bit)
Output Voltage	12-32 V_{DC}, 8~3 A

> **Note!** *The above test conditions are detailed in Note 1.*

1.2.3 Touchscreen Specifications

Type	5-point projected capacitive touchscreen (multi-touch function is only supported in Win 7/WES7P/Win 8/Win 8.1 OS)
Light Transmission	88%+/-5%
Controller	USB interface

1.2.4 Environment Specifications

Operation Temperature	0 ~ 50°C (32 ~ 122°F)
Storage Temperature	-20 ~ 60°C (-4 ~ 140°F)
Relative Temperature	10 ~ 95% @ 40°C (non-condensing)
Shock	10 G peak acceleration (11 msec duration)
Vibration	5 ~ 500 Hz 1 G RMS

1.2.5 Certification Specifications

EMC	BSMI, CE, FCC Class B
Safety	CB, CCC, UL

1.2.6 IP

Front Panel IP Grade	IP65

Note 1:

PPC-4211W's power test conditions are as follows:

Test Software	Test Configuration	Test System
Burn-in 7.0	Memory: Transcend DDR3L 1600 SODIMM 8 GB x 1 HDD: Seageat 500G 2.5"x 2 IO: COM Port RS232 loopback x4, USB3.0 device x4, USB mouse x1	Win7(64bit)

1.3 Dimensions
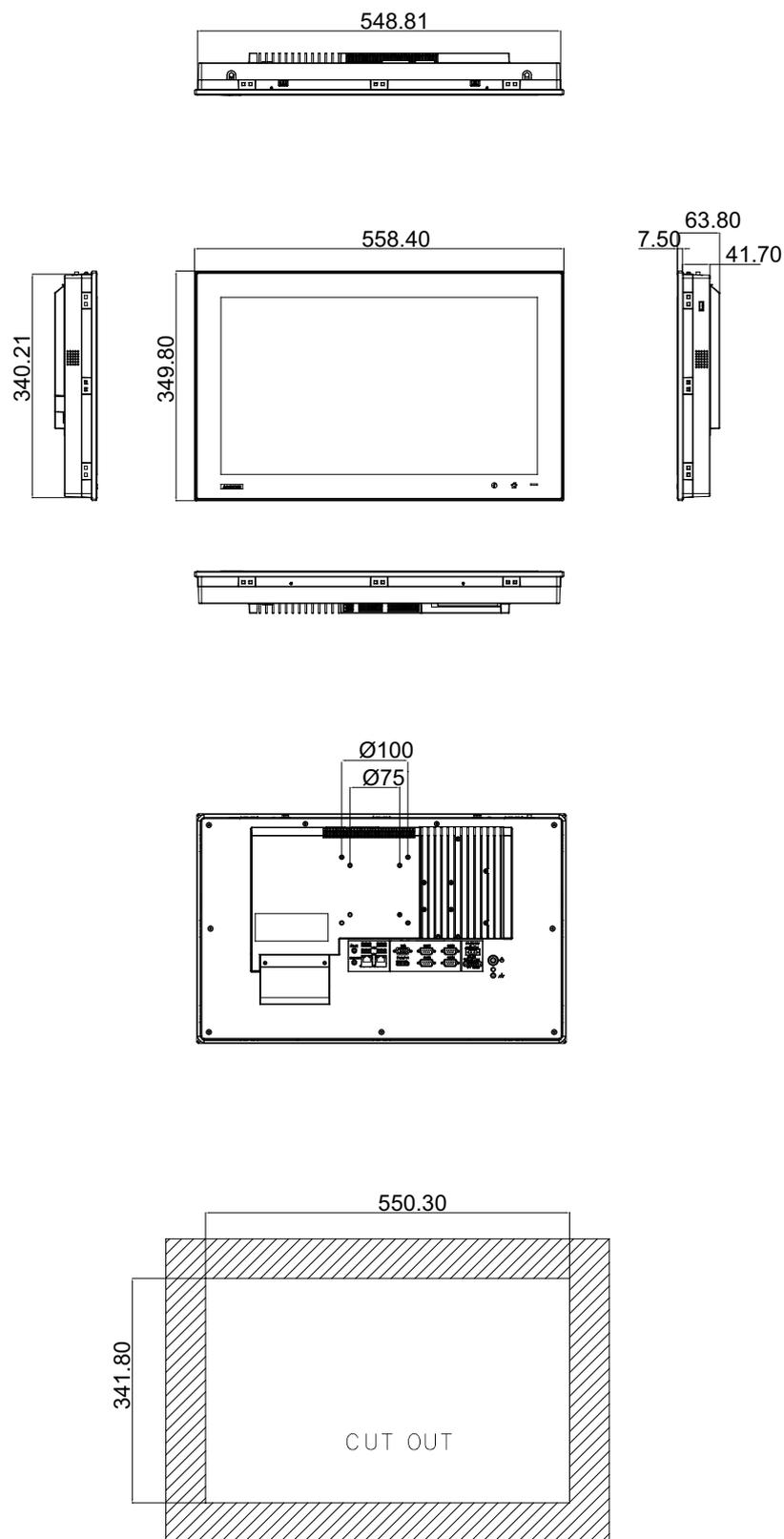
Figure 1.1 PPC-4211W dimensions

Note! *Supports VESA 100 x 100mm & 75 x 75mm; please use M4 screw, 6 mm depth (maximum). Use suitable mounting apparatus to avoid risk of injury.*

Chapter 2

System Installation & Setup

Sections include:
- Quick Installation Guide
- Installation Procedures
- Installing Memory
- Installing HDD
- Installing Mini SATA
- Installing Wireless LAN
- Installing Expansion Card
- AT/ATX Function Switch
- Grounding Installation
- Hook Installation
- Independent Quick Installation

2.1 Quick Start Guide

Before you start to set up the panel PC, take a moment to become familiar with the locations and purposes of the controls, drives, connectors and ports, which are illustrated in the figures below.

When you place the panel PC upright on the desktop, its front panel appears as shown in Figure 2.1.
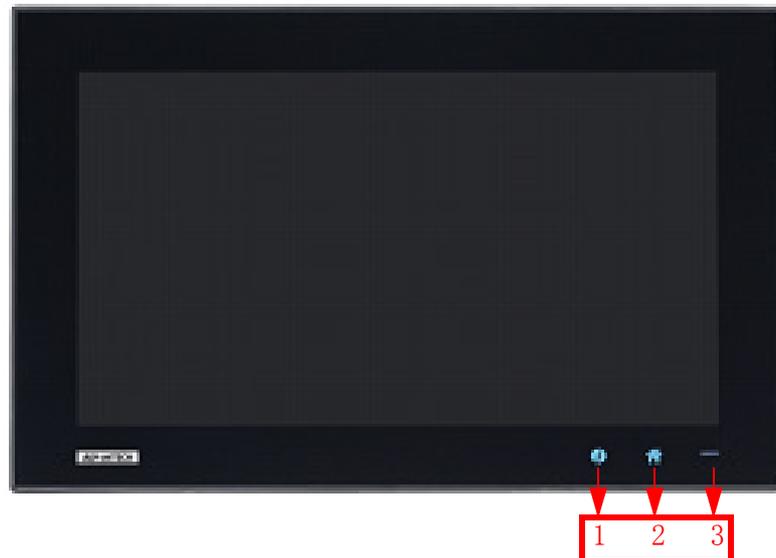
Figure 2.1 Front panel

1. I Key
2. Home Key
3. Power status indicator, off (S5): orange, on (S0): blue

Figure 2.2 Side view

1. Quick installation clip (two)
2. Antenna hole (two)
3. Panel Mount Bracket holes (twelve)
4. Side USB 2.0 interface
5. CPU cooler
6. Speaker (two)

I/O interfaces:
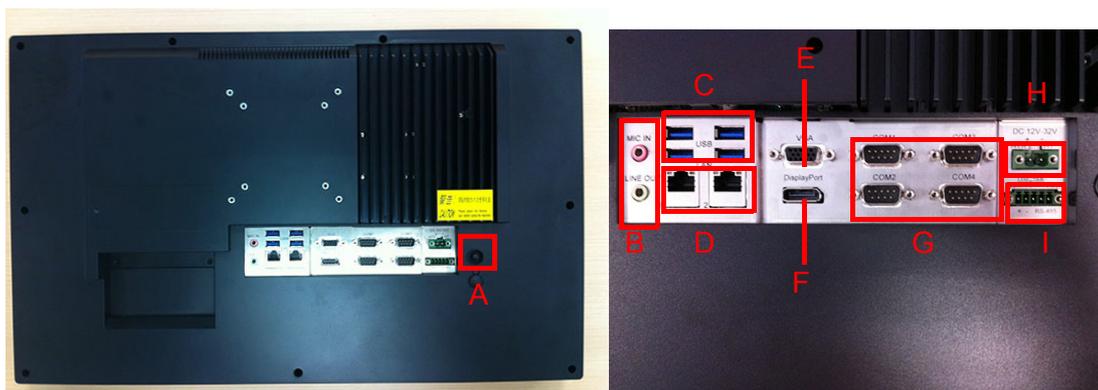
Figure 2.3 Location of I/O interfaces

A: Power button

B: Line out/Mic in

C: 4 x USB 3.0

D: 2 x Giga Ethernet

E: VGA

F: DP

G: 4 x COM RS232

H: DC power(12-32 V)

I: 1 x COM RS422/485

J: PCI/PCIE x4 Expansion slot (refer to Fig 2.4)

K: Grounding screw (refer to Fig 2.5)

Figure 2.4 PCI/PCIe expansion slot

Figure 2.5 Grounding screw

2.2 Installation Procedures

2.2.1 Connecting the Power Cable

The panel PC has DC power socket (12-32 V). When connecting the power cable, please hold the plug end. Please follow the procedures below:

1. Connect the female end of the power cable to panel PC's DC socket.
2. Connect the male end of the power cable to power outlet.

Figure 2.6 Connecting the power cable

2.2.2 Connecting the Keyboard and Mouse

Connect the keyboard and mouse to panel PC's I/O interfaces.

2.2.3 Power ON

The power button is located in the right bottom side of the panel PC.

Note! *Power cable and adapter are optional.*

2.3   Install Memory Card

1. Loosen the screws as indicated in the red circle. (See Fig 2.7)
2. Press the red areas to pull out the card holder (See Fig 2.8 ~ 2.10) and open the rear cover.

Figure 2.7

Figure 2.8

Figure 2.9

Figure 2.10

3. Remove the yellow warning tag first. Then remove the screws as indicated in the red circle. (See Fig 2.11), and take out the CPU heatsink.

Note!   *Take out the black and gray thermal grease from the accessary box (as indicated in Figure 2.12). Attach the CPU heatsink after the grease is applied.*

Figure 2.11
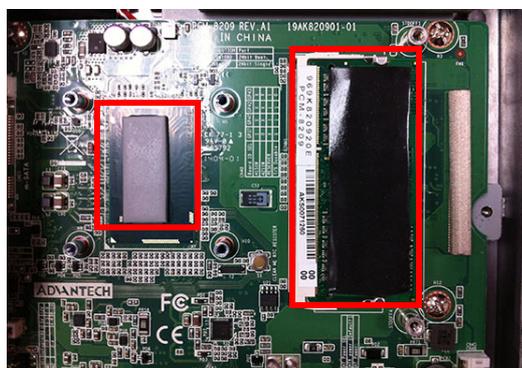
Figure 2.12

Note!   *CPU cooler pad surface is isolated by anodization treatment to avoid static electricity (CPU contact side excluded).*

2.4 Installing the HDD

1. Follow the procedures in Section 2.3 to open the rear cover and remove the screws as indicated in the red circles in Fig 2.13.
2. Remove the HDD bracket from the strength-plate. (See Fig 2.14 and Fig 2.15)
3. Install the HDD (see Fig 2.16 and Fig 2.17), and take out the 4 screws from the accessory box to fix the HDD and then fix the strength-plate (8 screws will be needed if using two HDDs).
4. Lock the HDD bracket, and connect the HDD cable to the mainboard. (See Fig 2.18)
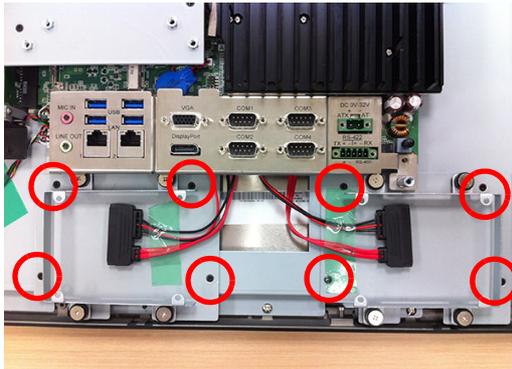
Figure 2.13
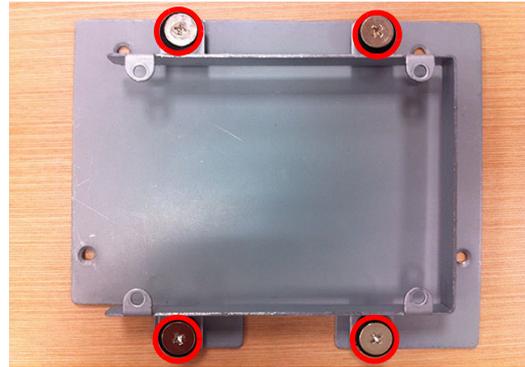
Figure 2.14
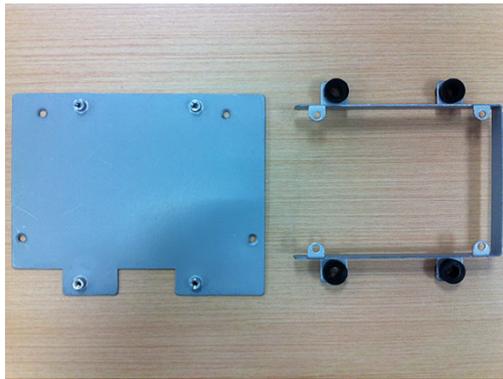
Figure 2.15

Figure 2.16
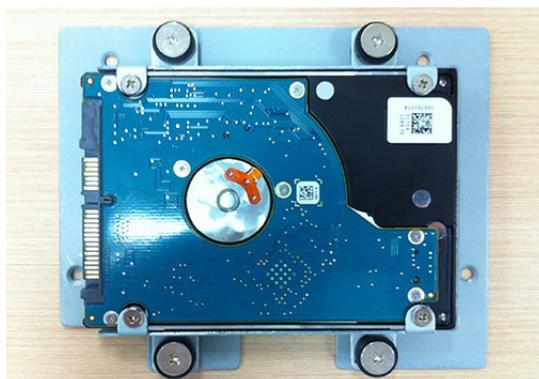
Figure 2.17
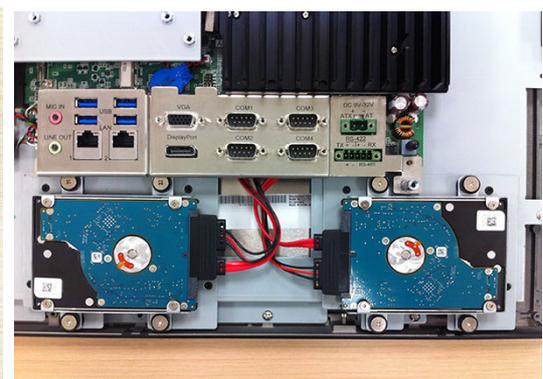
Figure 2.18

2.5   Installing Mini SATA

1.   Follow the procedures in Section 2.3 to remove the rear cover and strength-plate. (See Fig 2.19)
2.   Plug the MiniSATA into the mainboard interface, and remove the 2 M2.5x4 screws from the accessory box to fix it (See Fig 2.20).
3.   Return the rear cover and strength-plate.
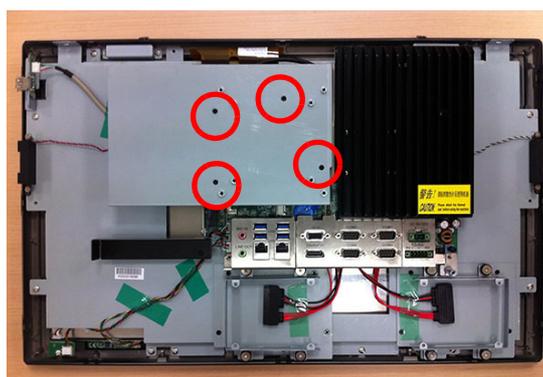
Figure 2.19
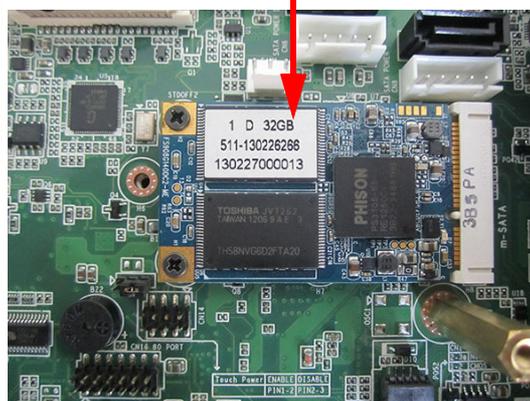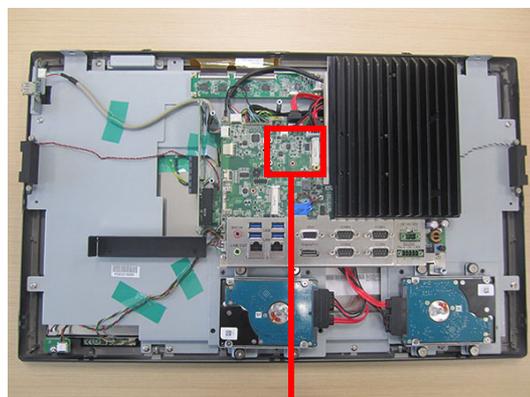
Figure 2.20

2.6 Installing Wireless LAN Card

1. Follow the procedures in Section 2.3 to open the rear cover and strength-plate. The wireless LAN card can be installed to the locations as indicated in Fig 2.21 and 2.22; for the wireless short card, you need to take out one hexagonal screw from the accessory box to fix it.

Figure 2.21   **Figure 2.22**

2. Connect the wireless LAN card module cable to the antenna bracket, please note the installation direction of cable end and screws/cushions. (See Fig 2.23)
3. Remove the two plugs on the left and right sides of the rear cover. (See Fig 2.24)
4. Return the rear cover and install the antenna of the wireless LAN card module. (See Fig 2.25)

Note!   *For wireless LAN card module, you can choose Advantech Product: (Part No. PPC-4211W-WLANE).*
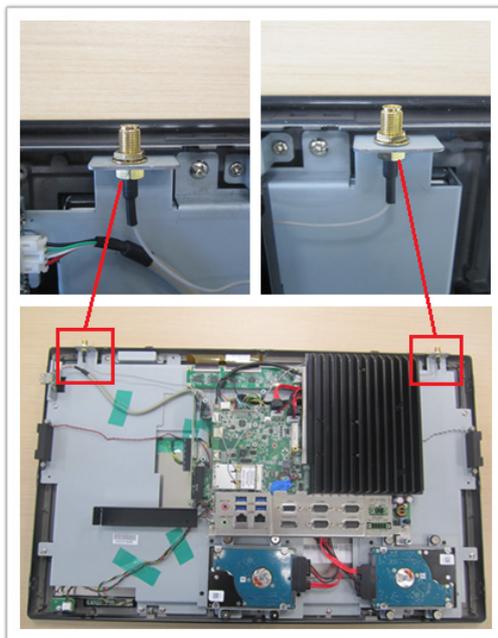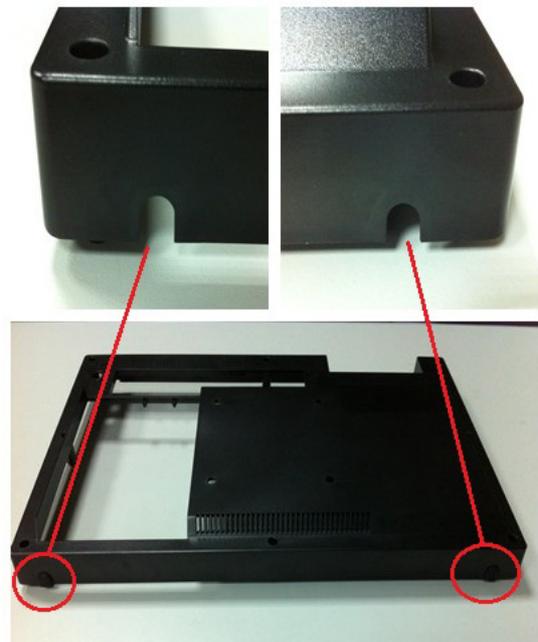
Figure 2.23   **Figure 2.24**
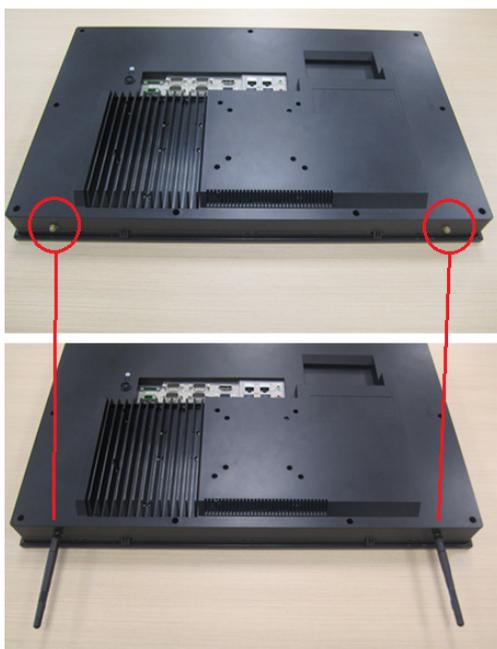
Figure 2.25

2.7 Installing the Riser Card

1. Remove the rear cover of the Panel PC. Then remove the screws and shield as indicated in the red circle in Fig 2.26 and install the expansion card.
2. The original machine provides PCIe x4 riser card (PCM-939), and the installation is shown as Fig 2.26 and 2.27).
3. The installation of expansion PCI riser card is shown as Fig 2.28 and Fig 2.29.

Note! *The maximum dimensions of the expansion card is 167.65 mm x 106.7mm.*
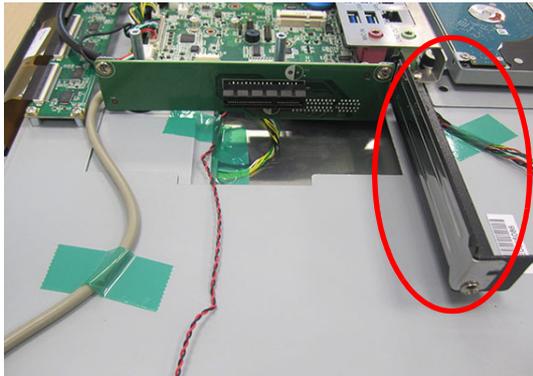
Figure 2.26
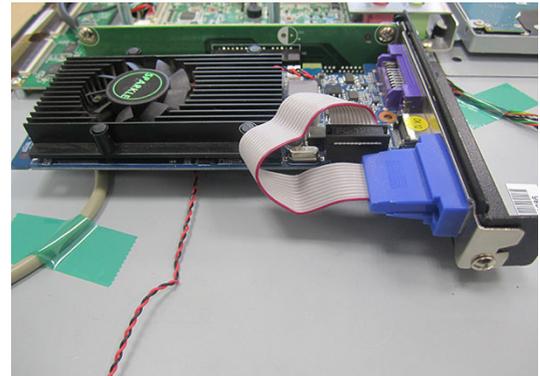
Figure 2.27

Figure 2.28

Figure 2.29

2.8 AT/ATX Function Switch

The switch is built in to the machine. Use it to choose AT/ATX functions without removing the rear cover.
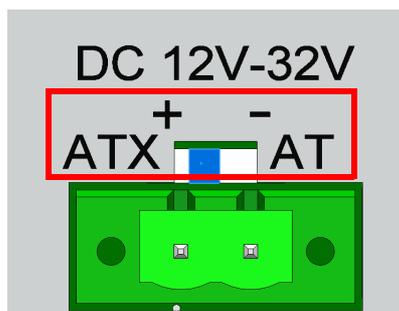
Figure 2.30 ATX mode
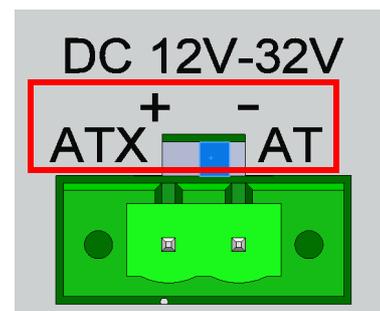
Figure 2.31 AT mode

2.9   Grounding Installation

Loosen the screws, remove down the plastic cover, plug in the grounding cable, and then fix the screws. (See Fig 2.32 ~ Fig 2.35)

Figure 2.32

Figure 2.33

Figure 2.34

Figure 2.35

Note!   *The grounding cable is not provided in the accessory box.*

2.10 Hook Installation

Follow the figures below:

Put the machine into the carbinet, and prepare the hook.

Install the hook into the hole to hold the machine as shown above

Secure the machine by fastening the screws
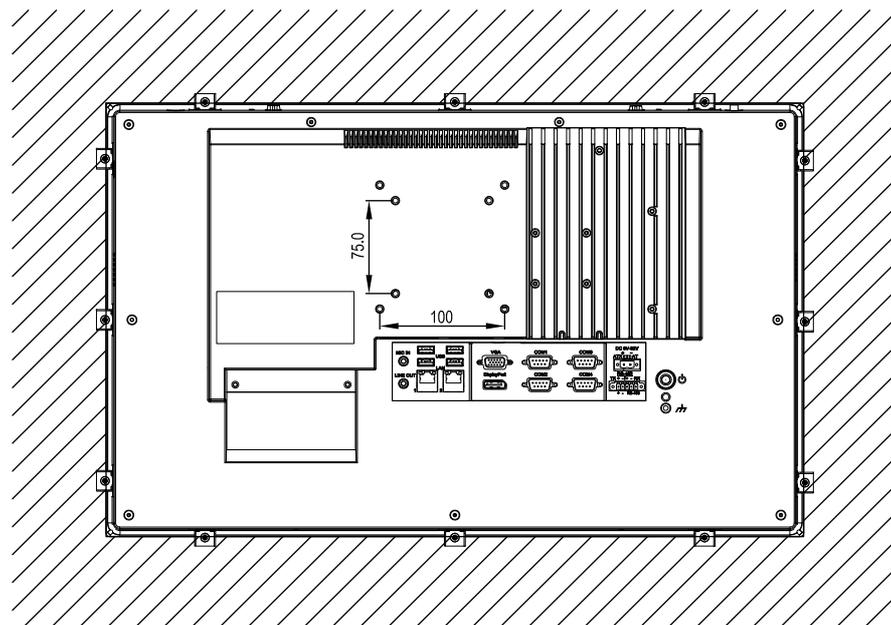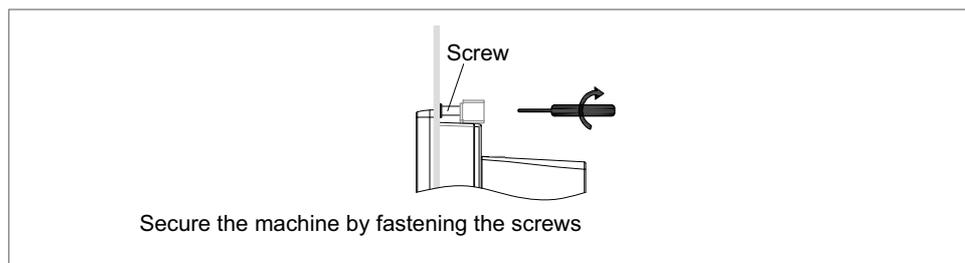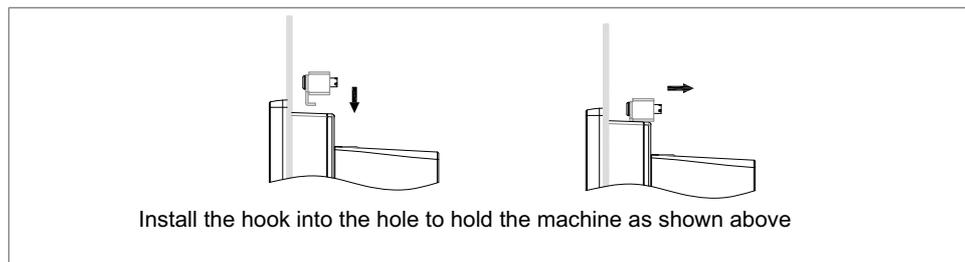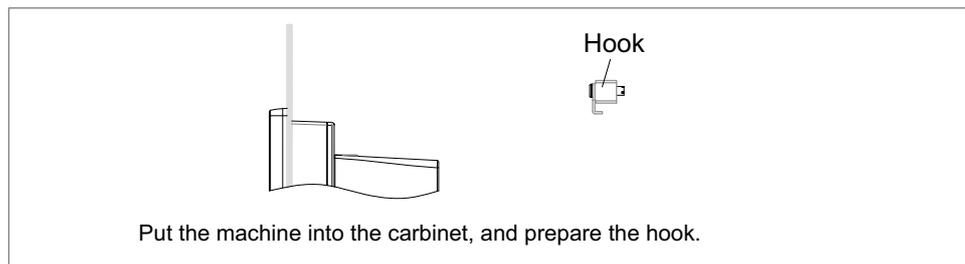
Figure 2.36 Hook Installation

2.11 Solo Quick Installation

Users can independently complete the panel wallmount installation by quick installation Guide. Follow the procedures below:

1. Loosen the two screws at the base, see the figure below.
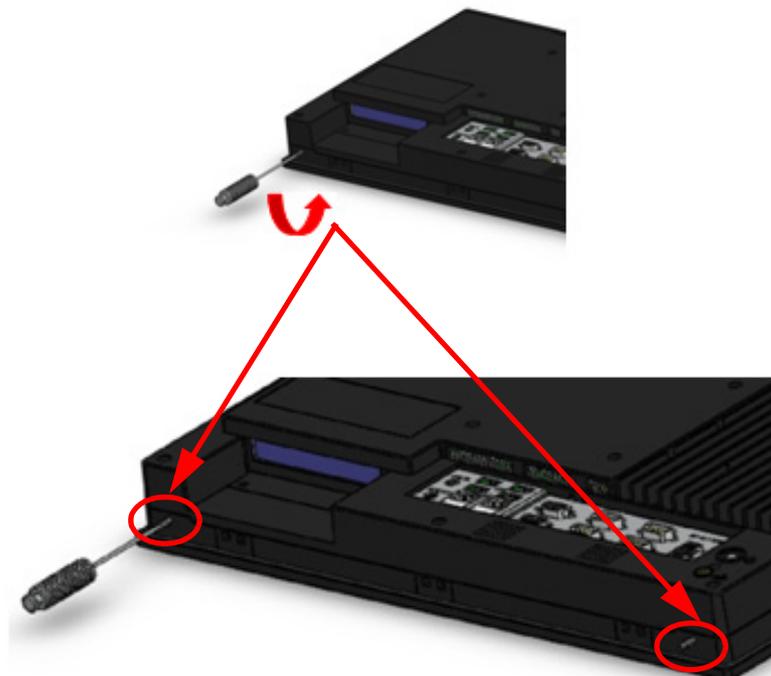
2. Push the machine into a gap in the wall, the spring hook will lock the machine into the wall.
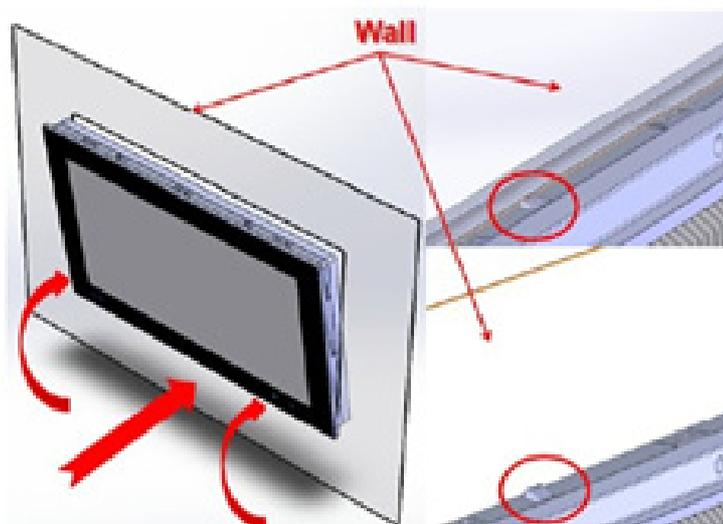
3. Installation is complete as shown in the figure below. Then in the rear of the machine, lock the hook screw and fix the machine according to Section 2.10 "Hook Installation".
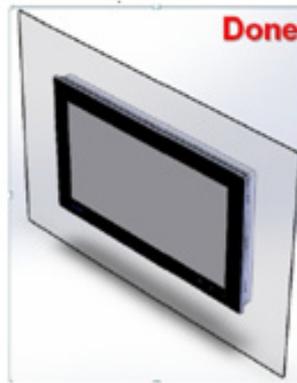
> **Note!** *It is recommend that the mount thickness is smaller than 2 mm (0.079") according to quick installation guide. For other situations, the recommended thickness is less than 6 mm (0.236").*

Chapter 3

Jumper Configuration

Sections include:
- Jumper & Connectors
- External COM Port Pin Definition

3.1 Jumper & Connectors
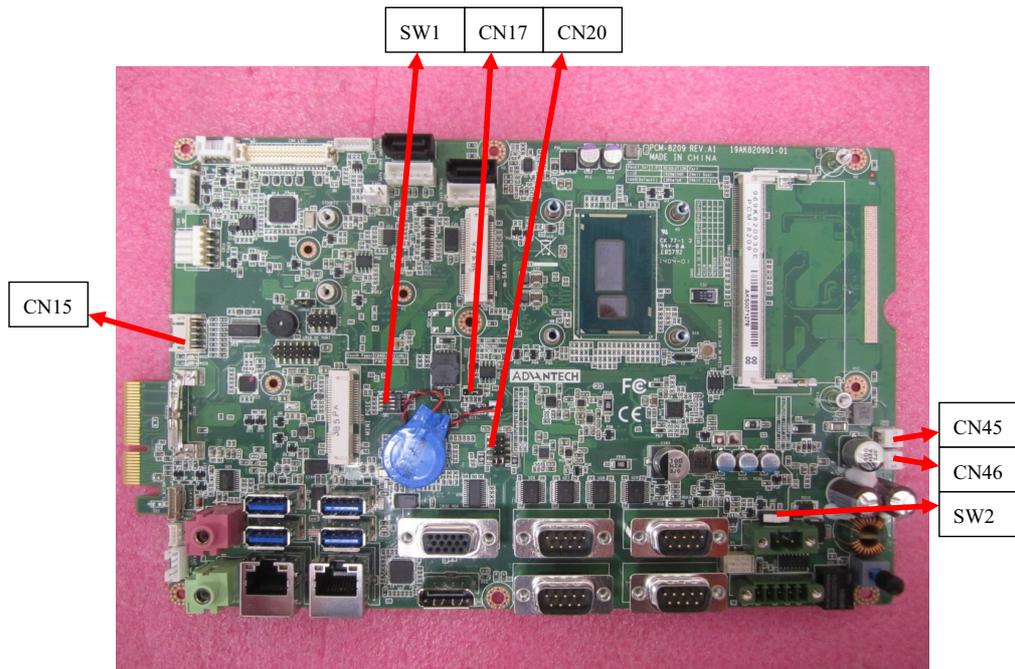
Figure 3.1 PCM-8209 front view

SW1 Panel Resolution Selection	
Setting	**Function**
1000	for 15.6" LCD
1110	for 21.5" LCD
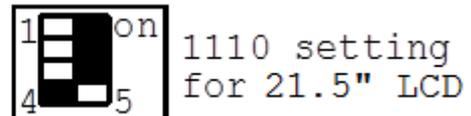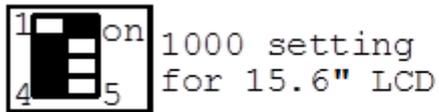
CN20 COM1/COM2 RI Type Select	
Description	**For COM1/COM2 select RI Voltage mode**
Setting	Function
(1-3) (2-4) (default)	RI
(3-5) (4-6)	5V
(7-9) (8-10)	12V
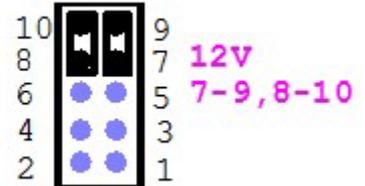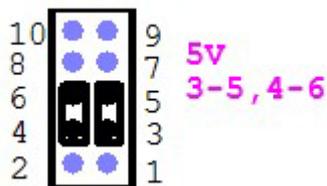
CN17 clean CMOS

Setting	Function
(1-2)	Clear CMOS
(2-3)	Keep CMOS (default)

SW2 ATX/AT Mode Selection

Pin	Pin Name
1-3	ATX Power(default)
2-3	AT Power
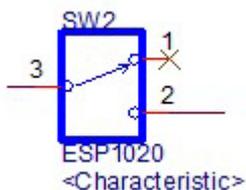
CN15 GPIO

Pin	Pin Name
1	GND
2	GPIO4
3	GPIO0
4	GPIO5
5	GPIO1
6	GPIO6
7	GPIO2
8	GPIO7
9	GPIO3
10	5V
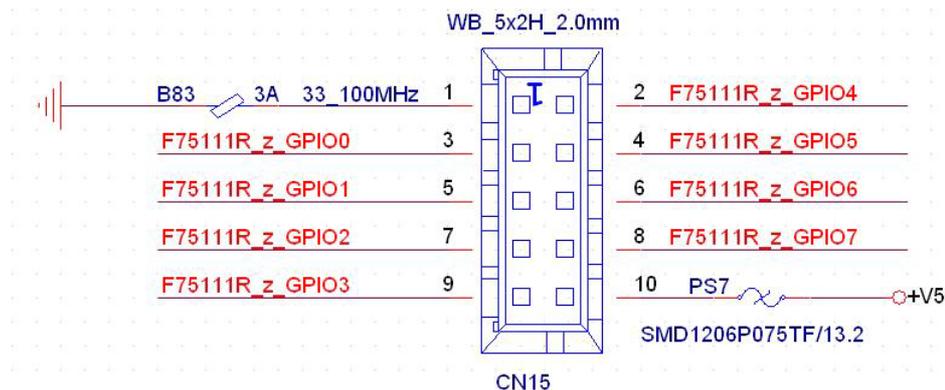
3.2 External COM Port Pin Definition
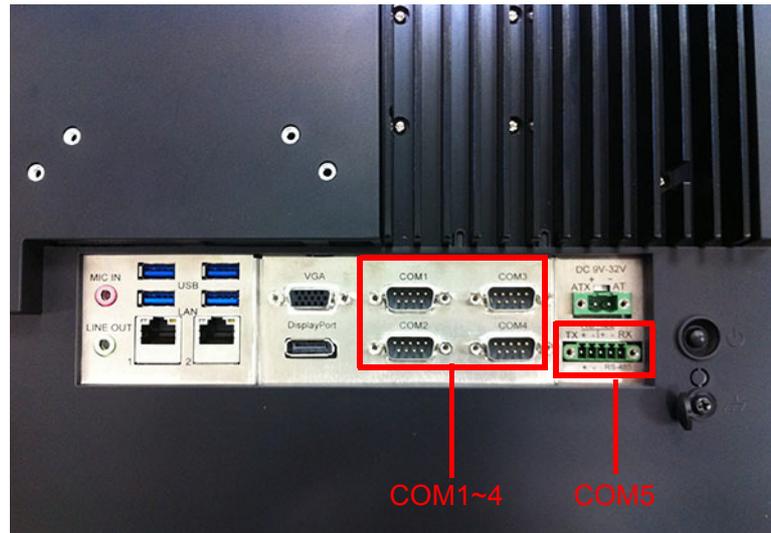
Figure 3.2 COM ports

COM 1 and COM 2 (RS232, pin9 supports 5 V/12 V output)

COM 3 and COM 4 (RS232)

COM 5 RS-422/485

> *Note!* *COM4 doesn't support RING function.*

COM1-4:

Pin	COM1 / COM2	COM3 / COM4
1	DCD	DCD
2	RXD	RXD
3	TXD	TXD
4	DTR	DTR
5	GND	GND
6	DSR	DSR
7	RTS	RTS
8	CTS	CTS
9	RING or 5V/12V output	RING (Only COM3)

Pin9 is set as RI signal in COM port by default, and could be set as 5V/12V output by Jumper
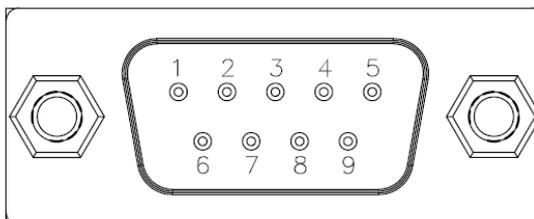
COM5: RS422/485 with Isolation 1000 VDC, BIOS selectable
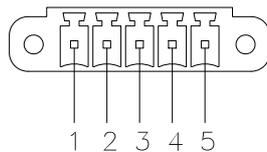
Pin	1	2	3	4	5
RS422	TX+	TX-	RX+	RX-	GND
RS485	D+	D-			GND

UART RS485 Auto Flow Control

COM5 supports RS485 auto flow control function for all UART.

When enabling the RS485 auto control function, it will automatically drive RTS# pin to logic high or low for flow control.

To make this RS485 auto flow control function work, please be noted that the parity and stop-bit setting has to be one of the following three settings:

(1) 8 data bits + 1 parity bit + 1stop bit

(2) 8 data bits + 1 parity bit + 2 stop bits

(3) 8 data bits + 2 stop bits

Chapter 4

Software Configuration

Sections include:
- **Installing Drivers**
- **BIOS Setup Program**

4.1   Install Divers

When first using the system, users need to set up corresponding drivers, in order to ensure all functions are normal. Remove the DVD-ROM from the accessory box and open it in the system:

Follow the instructions to install the drivers. The drivers in the accompanied DVD-ROM may not be the latest version, if needed, find it at:

http://www.advantech.com/

4.2   BIOS Setup

4.2.1   Enter BIOS

Start the computer and press the "**Delete**" key to enter BIOS.

Press "**F4**" to save and exit after any configuration, or the configuration won't be saved in BIOS.

```
         Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.
  Main  Advanced  Chipset  Boot  Security  Save & Exit

 BIOS Information                                         Set the Date. Use Tab to
 BIOS Vendor                  American Megatrends         switch between Date elements.
 Core Version                 4.6.5.4   0.32 x64
 Compliancy                   UEFI 2.3.1; PI 1.2
 Project Version              PCM 8209XP07
 Build Date and Time          03/19/2014 15:03:19

 System Date                  [Sun 06/04/2000]
 System Time                  [23:00:57]



                                                         →←: Select Screen
                                                         ↑↓: Select Item
                                                         Enter: Select
                                                         +/-: Change Opt.
                                                         F1: General Help
                                                         F2: Previous Values
                                                         F3: Optimized Defaults
                                                         F4: Save & Exit
                                                         ESC: Exit



         Version 2.15.1236. Copyright (C) 2012 American Megatrends, Inc.
```

4.2.2 Display Brightness Adjustment

1.   Select "**Brightness Control**" under "**Chipset**".

```
          Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.
      Main   Advanced  Chipset  Boot   Security   Save & Exit

  ▶ PCH-IO Configuration                                   Brightness Control
  ▶ System Agent (SA) Configuration
  ▶ Brightness Control





                                                         ▸◂: Select Screen
                                                         ↑↓: Select Item
                                                         Enter: Select
                                                         +/-: Change Opt.
                                                         F1: General Help
                                                         F2: Previous Values
                                                         F3: Optimized Defaults
                                                         F4: Save & Exit
                                                         ESC: Exit



          Version 2.15.1236. Copyright (C) 2012 American Megatrends, Inc.
```

2.   Select "**Brightness Manual Control**" under "**Brightness Control**", and there
      will be six [6] options:

```
          Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.
             Chipset

  Brightness Control                                       Fixed Brightness 100%, 80%,
                                                           60%, 40%, 20%, 10%
  LCD Brightness Control            [Manual Mode]
  Brightness Manual Control         [ 80%]



                         ┌──── Brightness Manual Control ────┐
                         │   100%                            │
                         │    80%                            │
                         │    60%                            │
                         │    40%                            │
                         │    20%                  Select Screen
                         │    10%                  Select Item
                         └───────────────────────┘r: Select
                                                   : Change Opt.
                                                  F1: General Help
                                                  F2: Previous Values
                                                  F3: Optimized Defaults
                                                  F4: Save & Exit
                                                  ESC: Exit



          Version 2.15.1236. Copyright (C) 2012 American Megatrends, Inc.
```

Note!   *If you want to adjust brightness through AP in the OS, it will keep AP
            configuration mainly, and BIOS configuration will not be saved.*

4.2.3 COM5 Mode Selection (RS422/485)

1. Select "**Super IO Configuration**" under "**Advanced**".

```
          Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.
    Main  Advanced  Chipset  Boot  Security  Save & Exit

  Legacy OpROM Support                                   System Super IO Chip
  Launch PXE OpROM                     [Disabled]        Parameters.

▶ ACPI Settings
▶ CPU Configuration
▶ SATA Configuration
▶ AMT Configuration
▶ USB Configuration
▶ Super IO Configuration
▶ Super IO HW Monitor

                                                         →←: Select Screen
                                                         ↑↓: Select Item
                                                         Enter: Select
                                                         +/-: Change Opt.
                                                         F1: General Help
                                                         F2: Previous Values
                                                         F3: Optimized Defaults
                                                         F4: Save & Exit
                                                         ESC: Exit

          Version 2.15.1236. Copyright (C) 2012 American Megatrends, Inc.
```

2. Select "**Serial Port 5 Configuration**" and then select the operation mode of COM5 by "**Serial Port5 Mode**".

```
          Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.
       Advanced

  Serial Port 5 Configuration                            Allows BIOS to Select mode for
                                                         Serial Port 5.
  Device Settings                      IO=2D0h; IRQ=12;

  Serial Port 5 Mode                   [RS485]
  Serial Port 5 RS485 Terminate        [Disabled]


                              ┌───── Serial Port 5 Mode ─────┐
                              │ RS485                        │
                              │ RS422                        │
                              └──────────────────────────────┘
                                                         →←: Select Screen
                                                         ↑↓: Select Item
                                                         Enter: Select
                                                         +/-: Change Opt.
                                                         F1: General Help
                                                         F2: Previous Values
                                                         F3: Optimized Defaults
                                                         F4: Save & Exit
                                                         ESC: Exit

          Version 2.15.1236. Copyright (C) 2012 American Megatrends, Inc.
```

4.2.4 Wake Up by LAN

1. Select "**ACPI Settings**" under "**Advanced**".

```
             Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.
      Main  Advanced  Chipset  Boot  Security  Save & Exit

   Legacy OpROM Support                                  System ACPI Parameters.
   Launch PXE OpROM                   [Disabled]

 ▶ ACPI Settings
 ▶ CPU Configuration
 ▶ SATA Configuration
 ▶ AMT Configuration
 ▶ USB Configuration
 ▶ Super IO Configuration
 ▶ Super IO HW Monitor


                                                        →←: Select Screen
                                                        ↑↓: Select Item
                                                        Enter: Select
                                                        +/-: Change Opt.
                                                        F1: General Help
                                                        F2: Previous Values
                                                        F3: Optimized Defaults
                                                        F4: Save & Exit
                                                        ESC: Exit



             Version 2.15.1236. Copyright (C) 2012 American Megatrends, Inc.
```

2. Set "**Wake On By LAN or RI**" as "**Enabled**".

```
             Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.
          Advanced

   ACPI Settings                                        Enable or disable LAN or Ring
                                                        to wake the system.
   ACPI Sleep State                   [S1 only(CPU Stop Cl...]

   Power On by RTC Alarm              [Disabled]
   Wake On by LAN or RI               [Enabled]




                                                        →←: Select Screen
                                                        ↑↓: Select Item
                                                        Enter: Select
                                                        +/-: Change Opt.
                                                        F1: General Help
                                                        F2: Previous Values
                                                        F3: Optimized Defaults
                                                        F4: Save & Exit
                                                        ESC: Exit



             Version 2.15.1236. Copyright (C) 2012 American Megatrends, Inc.
```
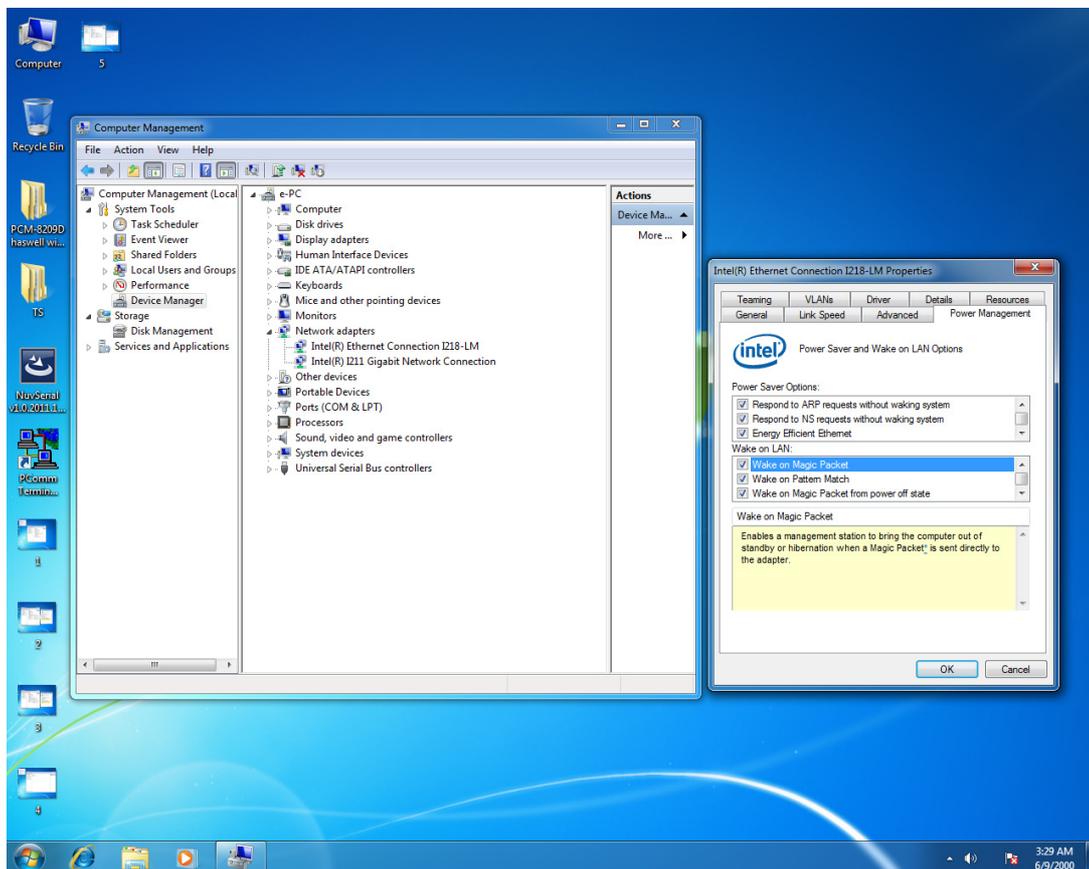
3. Then save the configuration and exit the OS.
4. Right click "**Computer**" and click "**Manage**", then open "**Computer Management**".
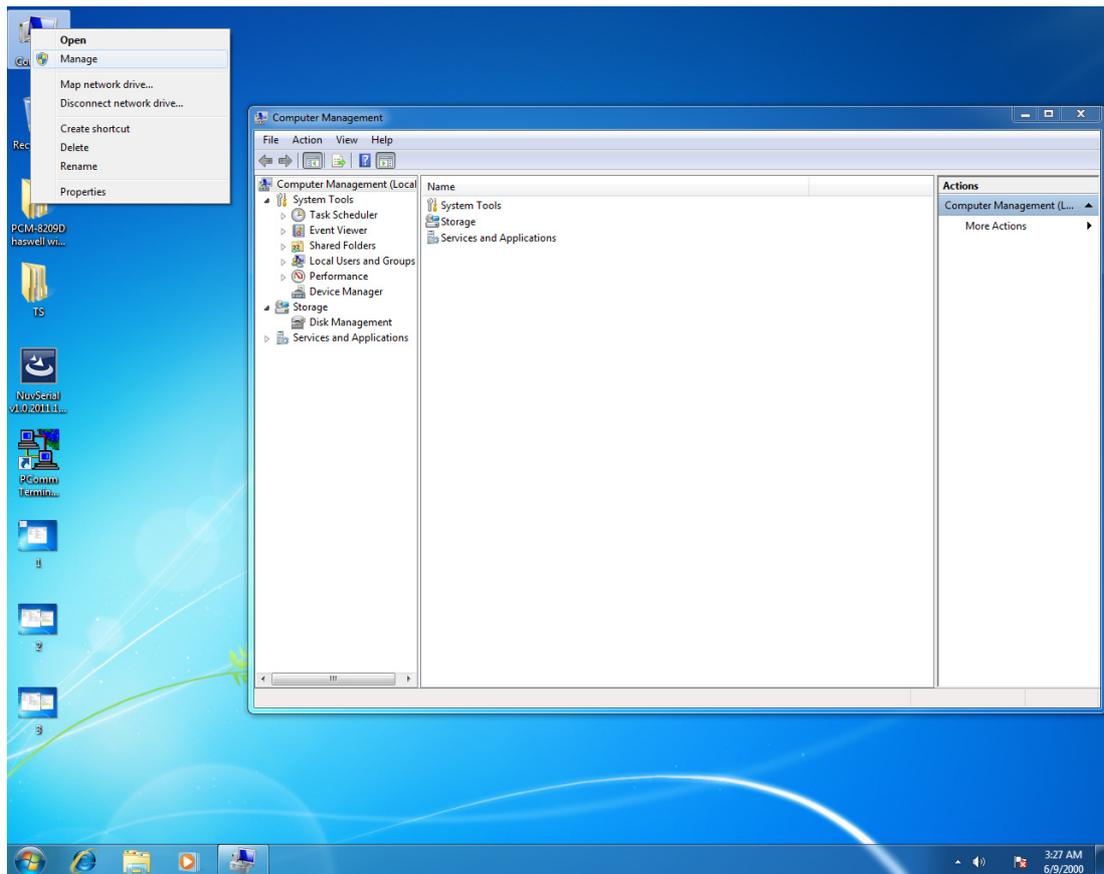
5.   Click "Network adapters" in "Device Management", then right click and select the needed LAN port, then select "Properties" and open "Intel(R) Ethernet".
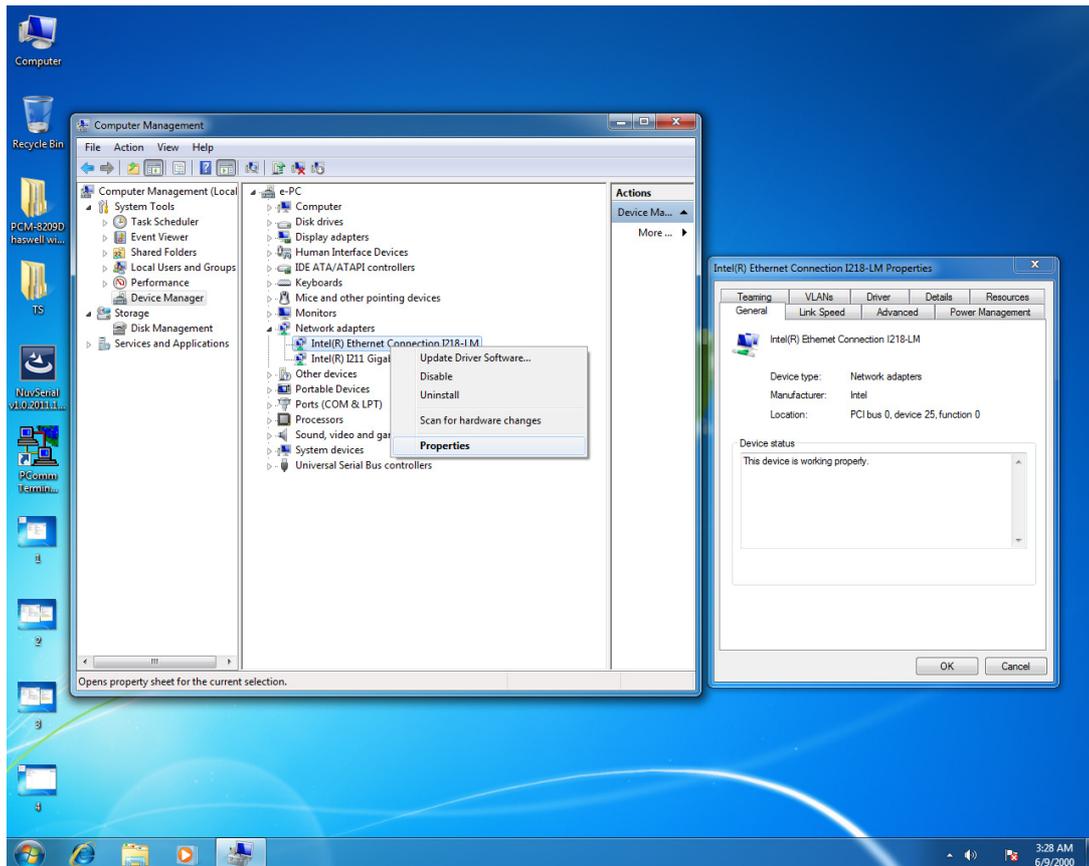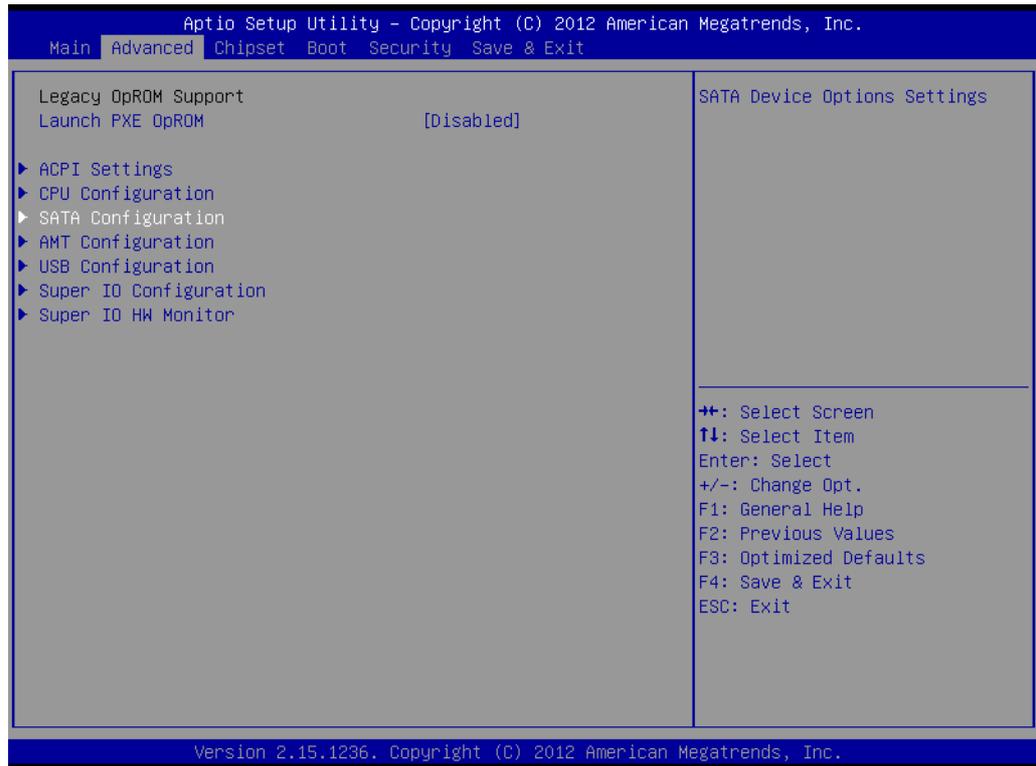

6.   Select "Work On Magic Packet", "Work On Pattern Match" and "Work On Magic Packet From Power Off State" under "Power Management".
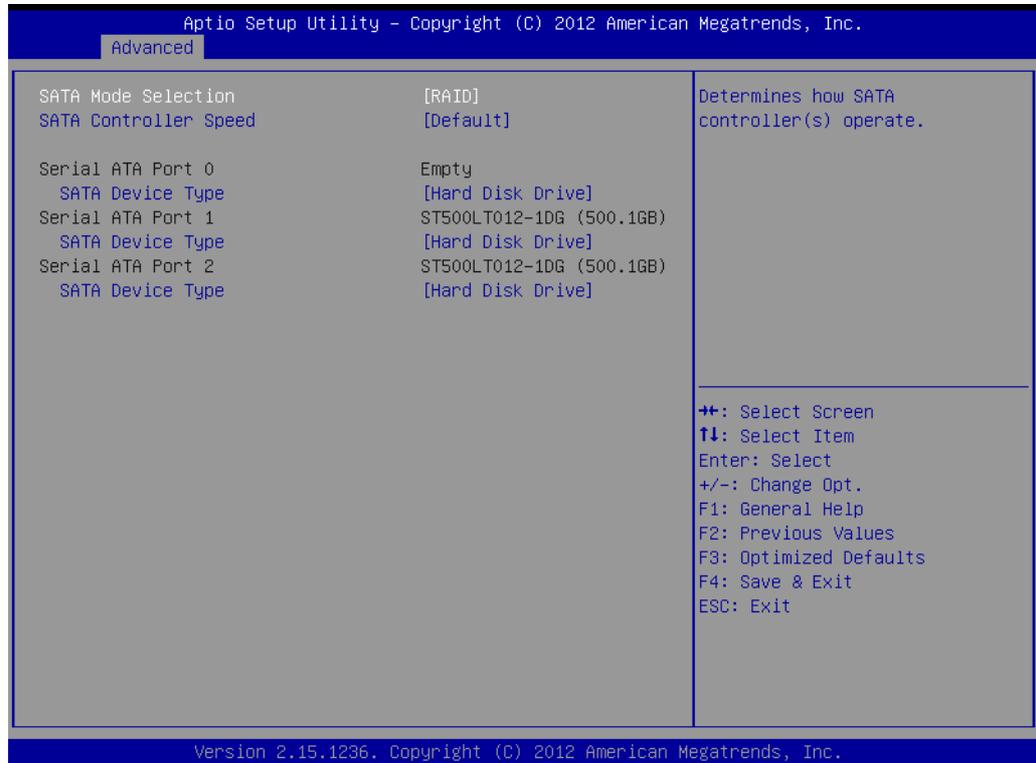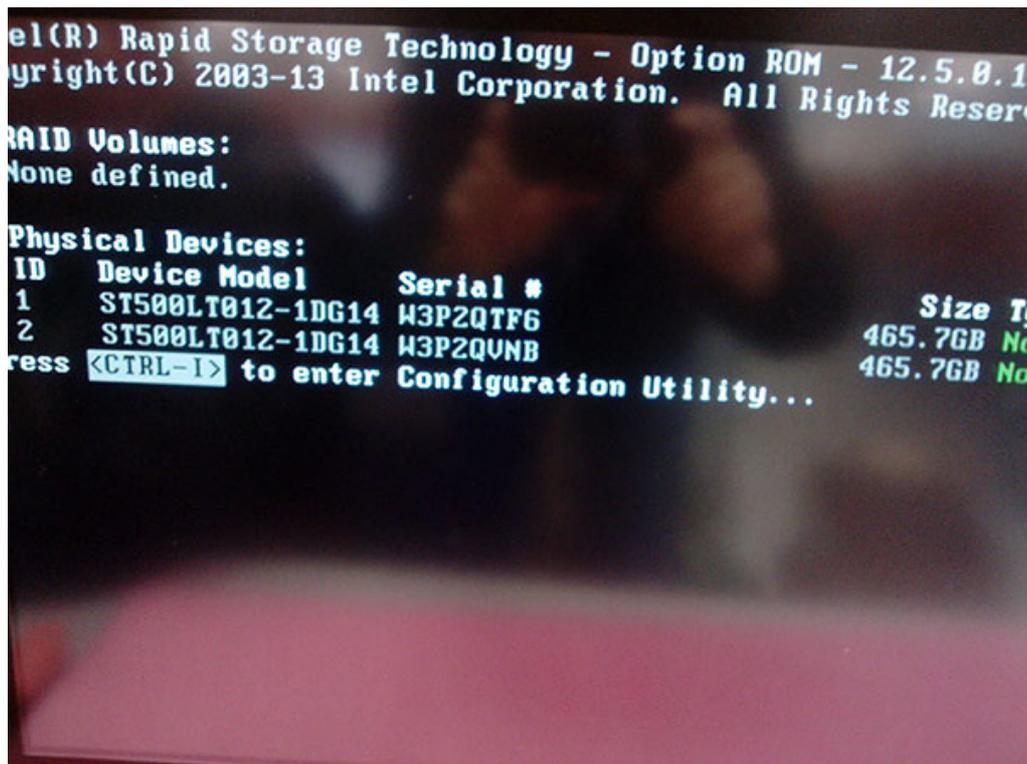
4.2.5 RAID Installation

1. Enter BIOS when boot up, and click "**SATA Configuration**" under Advanced.

```
            Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.
     Main  Advanced  Chipset  Boot  Security  Save & Exit

  Legacy OpROM Support                                      SATA Device Options Settings
    Launch PXE OpROM                   [Disabled]

 ▶ ACPI Settings
 ▶ CPU Configuration
 ▶ SATA Configuration
 ▶ AMT Configuration
 ▶ USB Configuration
 ▶ Super IO Configuration
 ▶ Super IO HW Monitor


                                                          →←: Select Screen
                                                          ↑↓: Select Item
                                                          Enter: Select
                                                          +/-: Change Opt.
                                                          F1: General Help
                                                          F2: Previous Values
                                                          F3: Optimized Defaults
                                                          F4: Save & Exit
                                                          ESC: Exit



            Version 2.15.1236. Copyright (C) 2012 American Megatrends, Inc.
```

2. Set "**SATA Mode Selection**" as "**RAID**", then save and exit.

```
            Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.
      Advanced

  SATA Mode Selection               [RAID]               Determines how SATA
  SATA Controller Speed             [Default]            controller(s) operate.

  Serial ATA Port 0                 Empty
    SATA Device Type                [Hard Disk Drive]
  Serial ATA Port 1                 ST500LT012-1DG (500.1GB)
    SATA Device Type                [Hard Disk Drive]
  Serial ATA Port 2                 ST500LT012-1DG (500.1GB)
    SATA Device Type                [Hard Disk Drive]




                                                          →←: Select Screen
                                                          ↑↓: Select Item
                                                          Enter: Select
                                                          +/-: Change Opt.
                                                          F1: General Help
                                                          F2: Previous Values
                                                          F3: Optimized Defaults
                                                          F4: Save & Exit
                                                          ESC: Exit



            Version 2.15.1236. Copyright (C) 2012 American Megatrends, Inc.
```
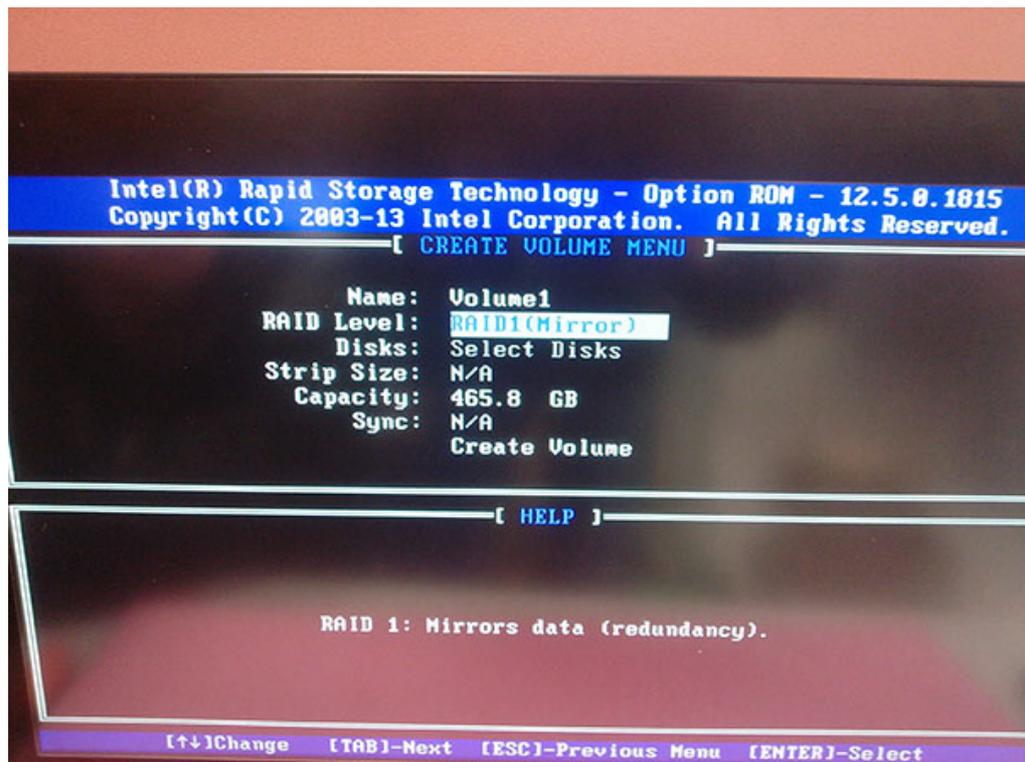
3. Press "**Ctrl + I**" to enter RAID configuration utility when entering the second start-up screen.
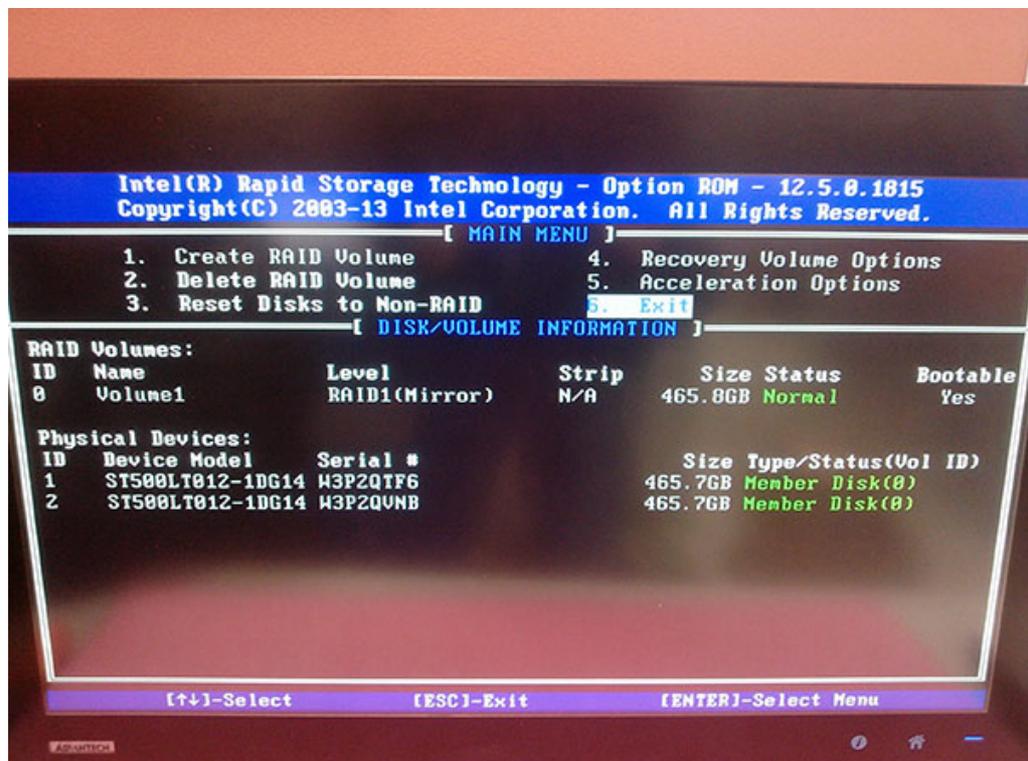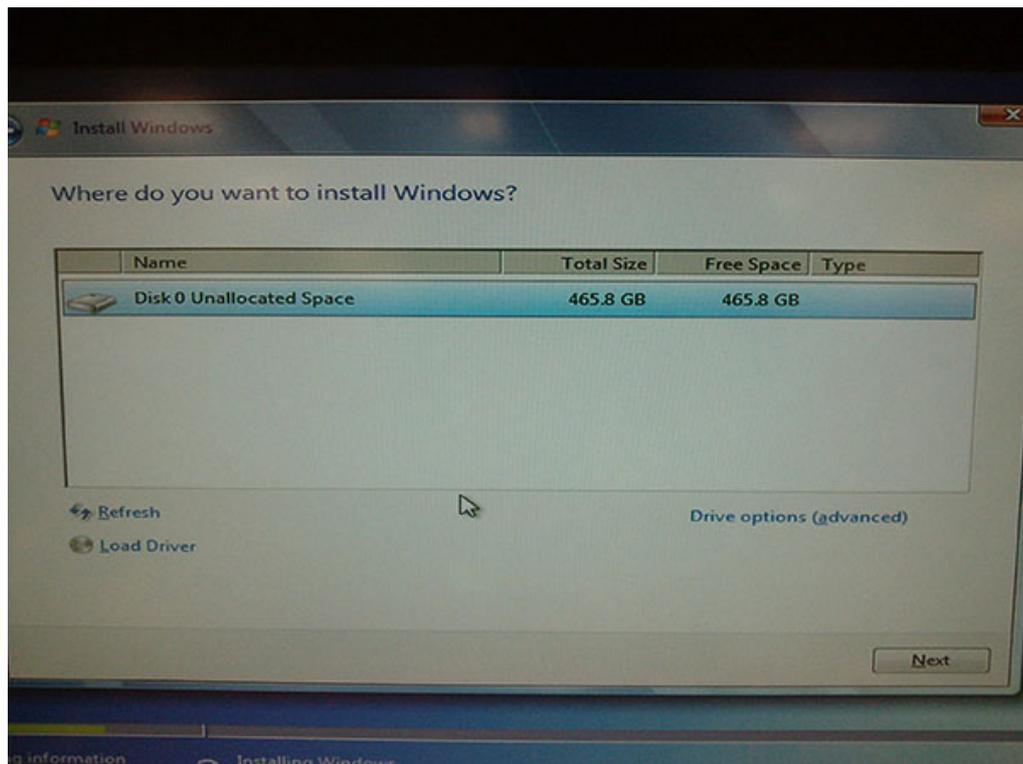

4. Enter "**Create RAID Volume**".

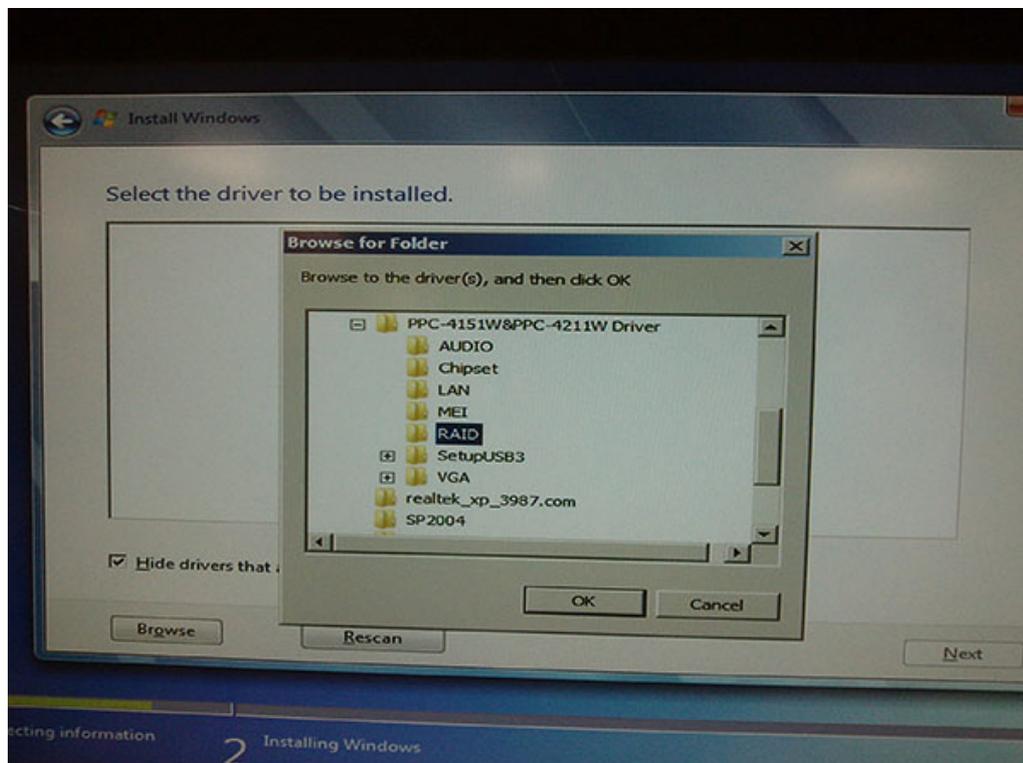5. Input "**Name**" and select "**RAID Level**", and then save and exit "**Create Volume**" menu.

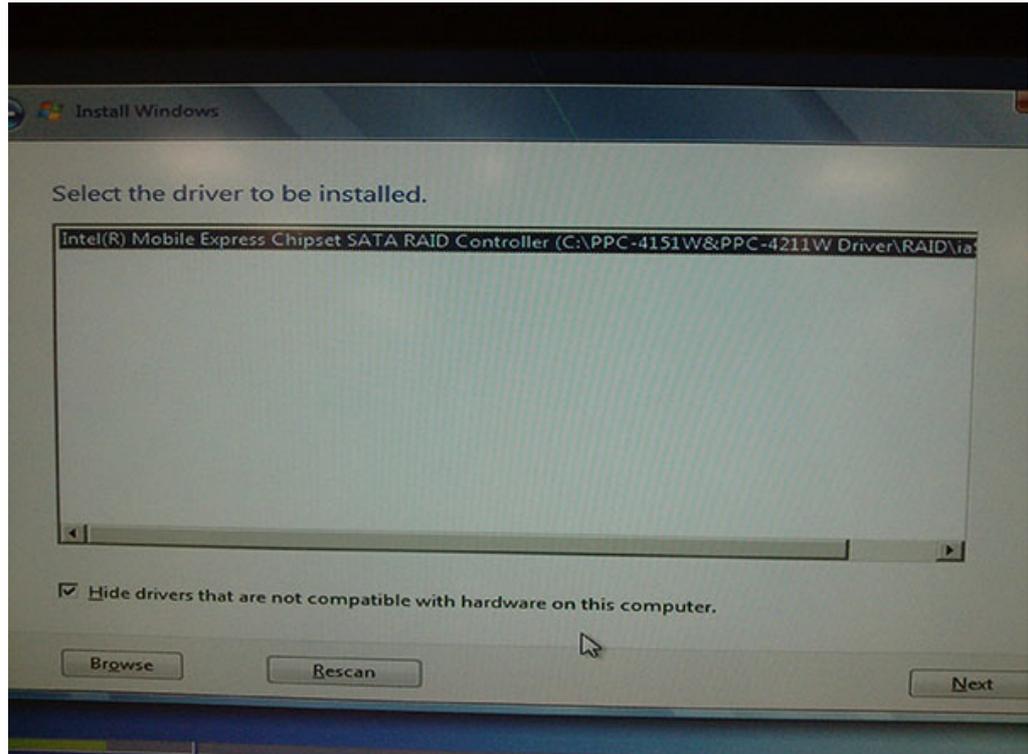6. Click "**Exit**", the device will start the normal RAID installation.

7. Take out the OS setup disk when you see this screen, then insert the driver disk and click "**Load driver**".
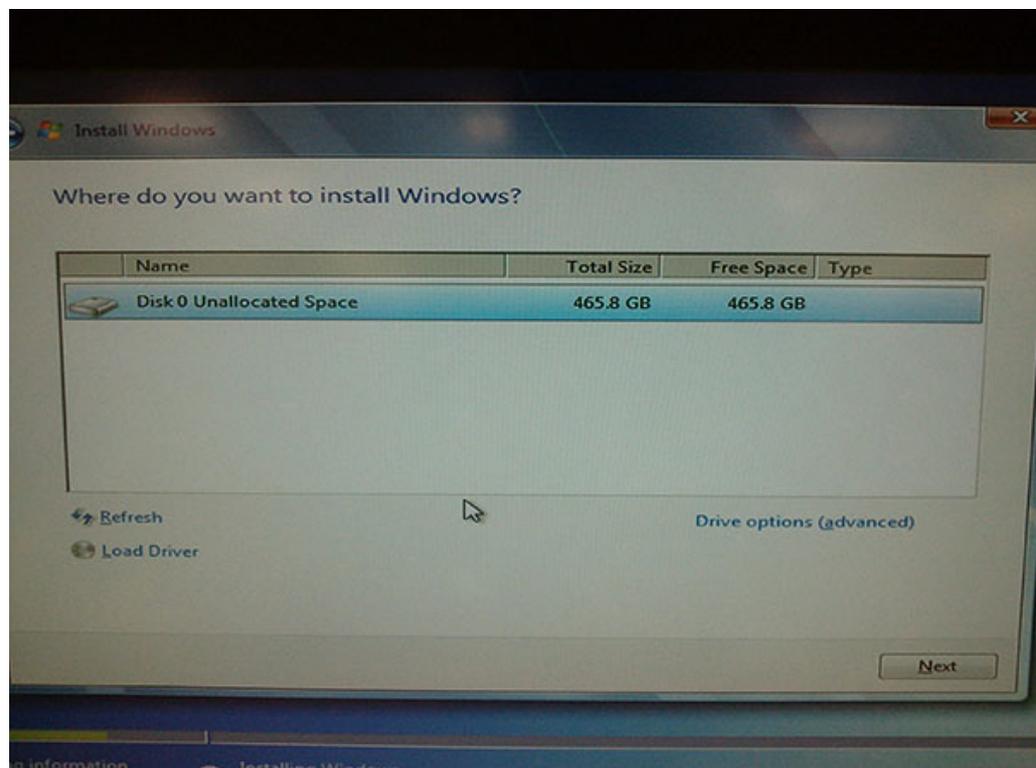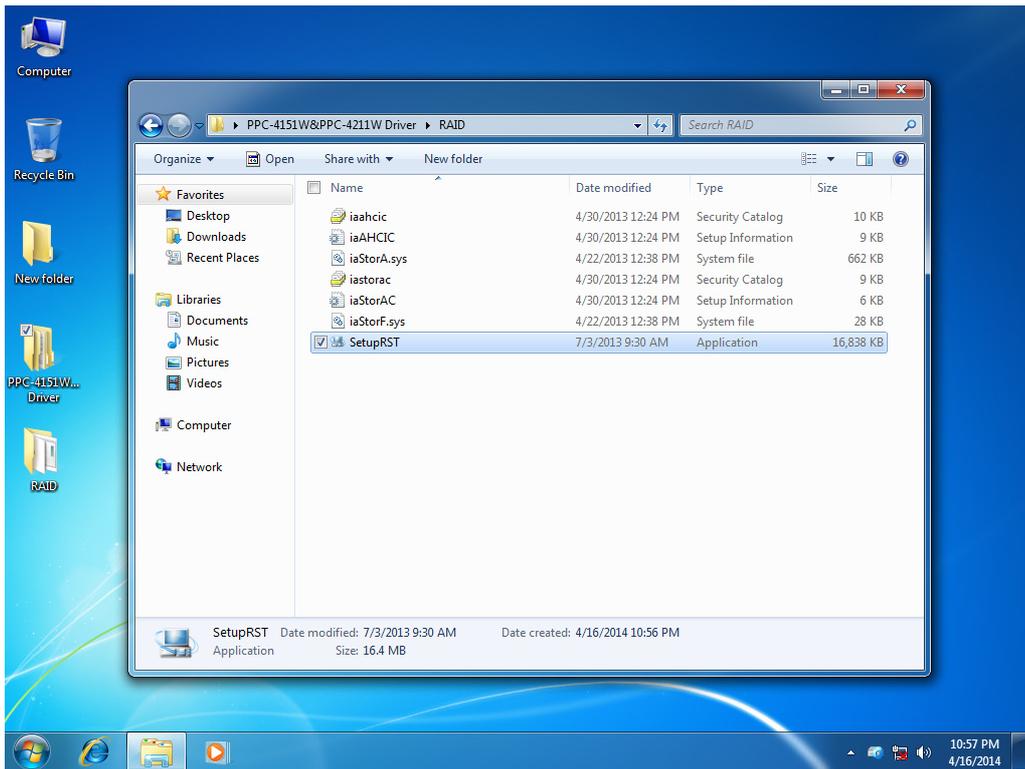

8. Select RAID driver folder and click "**OK**".

9. Click "**Next**".

10. Replace the driver disk with system setup disk after installation of RAID driver is finished, then click "**Next**" to return the normal system installation.

11. After installing all the drivers, click the "**SetupRST.exe**" in the driver folder.

12. Click the icon in the lower-right corner of the screen to check the working status of RAID Volume.
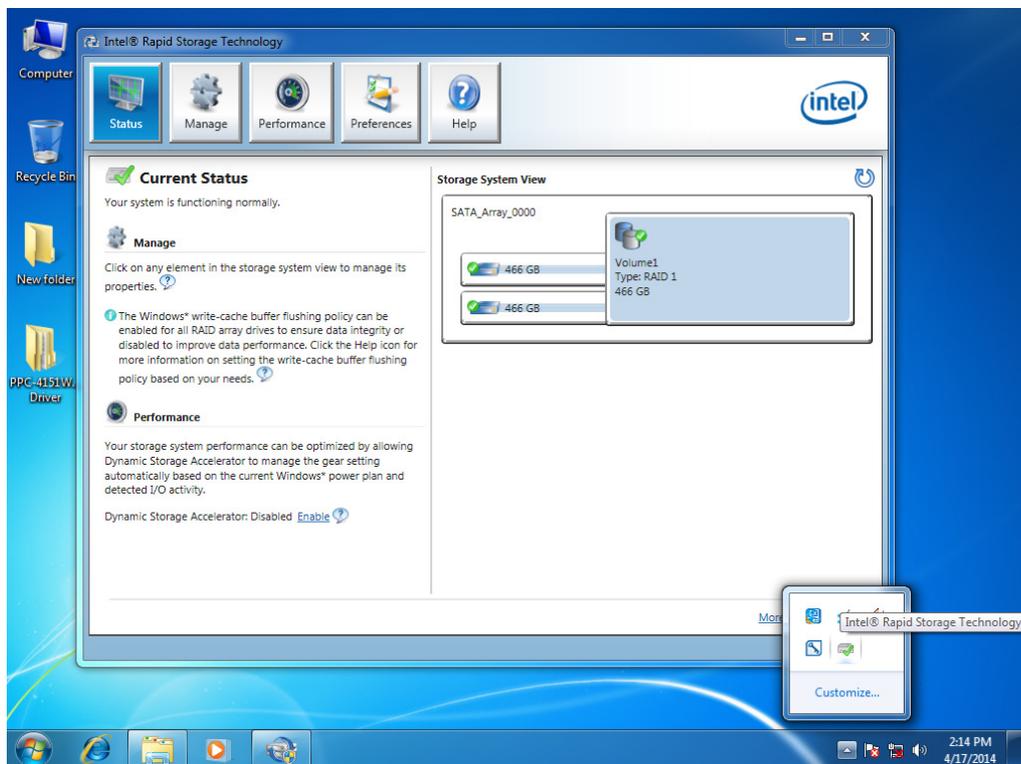
13. If RAID 1 mode is installed and when one the HDDs fails, a pop-up message will appear in the lower right corner. Click the message box to check details of the problem.
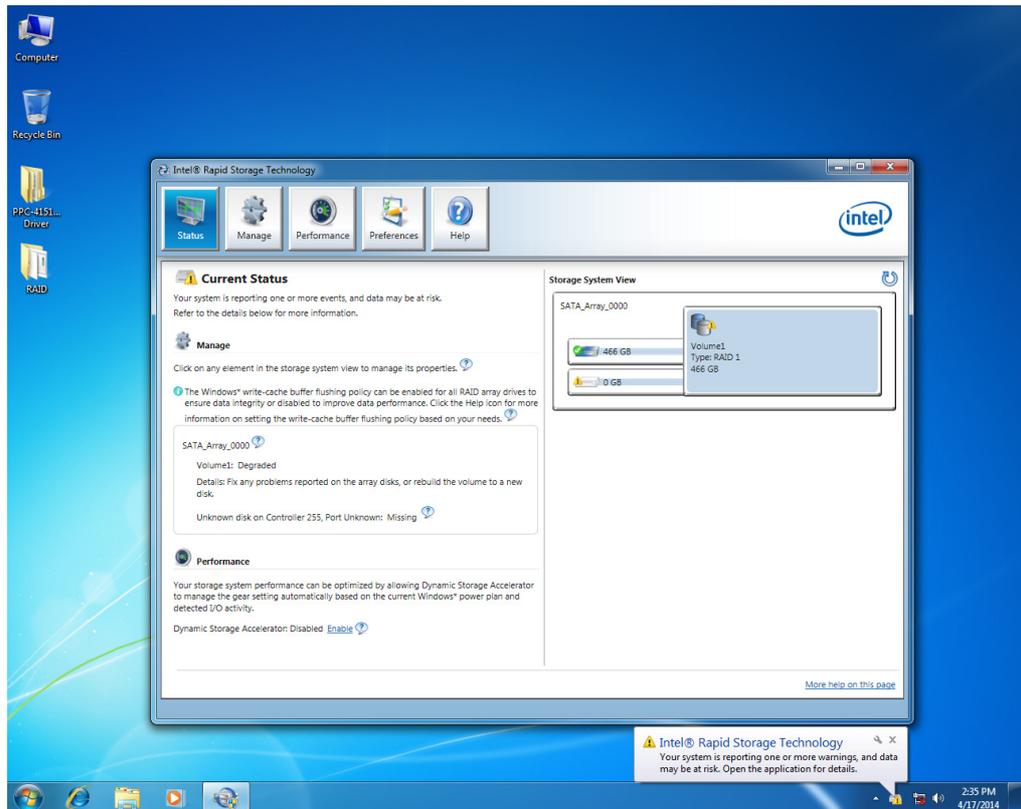
14. At this time, you will need to turn off the computer to change the failed HDD. After entering the system, click "Rebuild to another disk" to back up the system to the new hard disk.
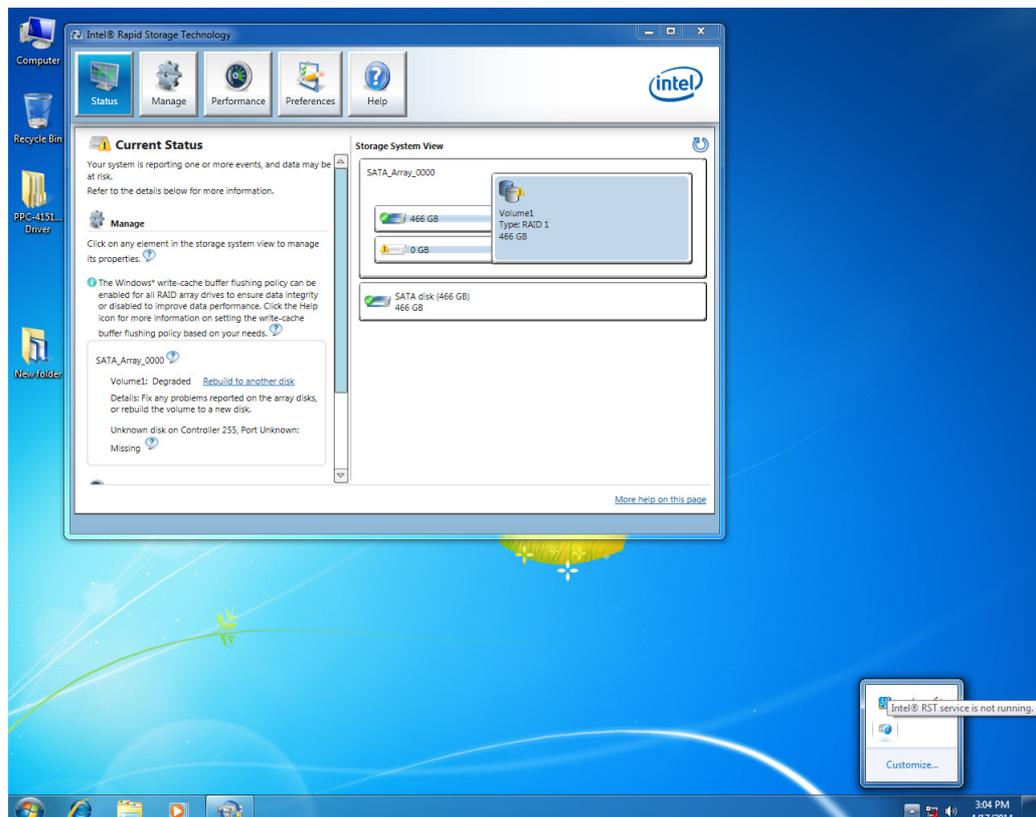
15. When the rebuilding status shows 100%, system backup is complete and RAID 1 function will work again.

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