

User Manual



# PPC-179T

**Intel® Core™ 2 Duo LGA775  
Socket-based processor- Based  
Panel PC with 17" Color TFT  
LCD Display**

**ADVANTECH**

*Enabling an Intelligent Planet*

**VICPAS**  
HMI Parts Center

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

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# 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 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.

# Technical Support and Assistance

1. Visit the Advantech web site at [www.advantech.com/support](http://www.advantech.com/support) 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:
  15. The power cord or plug is damaged.
  16. Liquid has penetrated into the equipment.
  17. The equipment has been exposed to moisture.
  18. The equipment does not work well, or you cannot get it to work according to the user's manual.
  19. The equipment has been dropped and damaged.
  20. The equipment has obvious signs of breakage.
21. **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.**
22. **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.**
23. 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.



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# Chapter 1

## General Information

This chapter gives background information on the PPC-179T.

Sections include:

- Specifications
- Dimensions

# 1.1 Introduction

Advantech PPC-179T is an Intel Core™ 2 Duo LGA775 Socket-based processor based Panel PC with a bright 17" LCD display. The powerful Core™ 2 Duo LGA775 Socket-based processor bring the most dynamic applications to life without sacrifices to any industrial reliability. The Internal CFast card interface can serve as an alternate HDD solution for OS booting and the Mini PCIe interface can be used by many expansion cards such as a wireless LAN card to extend device mobility. In order to satisfy customers' security concerns, PPC-179T is also offered in a two Gigabit LAN port configuration. Four serial ports and six USB V2.0 ports give the PPC-179T advanced application capability.

## 1.2 Specifications

### 1.2.1 General Specifications

- **Dimensions (W X H X D):** 446 x 382 x 149 mm (17.56" x 15.04" x 5.87")
- **Weight:** 10 kg (22 lb)
- **Power:**
  - AC Model: 220 W (max.)
  - Input voltage: 100-240 Vac, 60-50 Hz, 4-2 A
  - Output Voltage: +3.3 V @ 2.5 A, +5 V @ 0.8 A, +12 V @ 16.0/10.0 A, +5 Vsb @ 2.5 A, -12 V @ 0.8 A

### 1.2.2 Standard PC Functions

- **CPU:** Supports LGA775 Socket-based Intel Core2 Duo Processor up to 3.0 GHz with Max TDP 65 W
- **BIOS:** PCT 32 M Flash BIOS
- **Chipset:** Intel Q45 + Intel ICH10DO
- **RAM:** Two 204-pin DIMM up to 4GB DDR3 800/1066 Non ECC DRAM
- **Serial ports:** Four serial ports, COM1, 2 and 4 are RS-232; COM3 is RS-232/422/485
- **Universal serial bus (USB) port:** Supports up to six USB V2.0 ports
- **Bus Expansion:** mini PCI-e \*1; PCI or PCI-e bus expansion slot \*1

### 1.2.3 Internal Graphics Specifications

- Core frequency of 400 MHz
  - High-Quality 3D Setup and Render Engine
  - High-Quality Texture Engine
  - 3D Graphics Rendering Enhancements
  - 2D Graphics
  - Video Overlay
  - Multiple Overlay Functionality

### 1.2.4 Audio Functions

- **Chipset:** Realtek ALC892
- **Audio controller:** Supports host/soft audio from the Intel ICH series chipset
- **Stereo sound:** Two stereo ADCs support 16/20/24-bit PCM format

## 1.2.5 Ethernet Interface

- Supports full duplex flow control(IEEE 802.3X)
- Fully compliant with IEEE 802.3,IEEE802.3u,IEEE 802.3ab
- Complies with the IEEE 802.3u specification for 10/100Mbps Ethernet and the IEEE 802.3ab specification for 1000Mbps Ethernet.

## 1.2.6 Touchscreen Specifications (Optional)

**Table 1.1: Touchscreen Specifications**

Type	Analog Resistive
Resolution	2048*2048
Light Transmission	81%
Controller	USB
Power Consumption	+5.5 V @ 70 mA
Software Driver	Supports Windows
Durability (touches in a life- time)	36 million

## 1.2.7 Optional Modules

- **CPU:** Supports LGA775 Socket-based Intel Core2 Duo Processor up to 3.0 GHz with Max TDP 65W
- **Memory:** Two 240-pin DIMM up to 4GB DDR3 800/1066 Non ECC DRAM
- **HDD:** Supports 2.5" SATA HDD
- **Touchscreen:** Analog resistive
- **DVD+/-RW Drive:** SATA Slim 8x or above
- **Combo Drive:** SATA Slim DVD/CD-RW 8D/24W/24E/24R or above
- **CFast:** One type II CFast slot

## 1.2.8 Environment

- **Temperature:** 0 ~ 45° C (32 ~ 113° F)
- **Relative humidity:** 10 ~ 95% @ 40° C (non-condensing)
- **Shock:** 10 G peak acceleration (11 msec duration)

## 1.2.9 Certifications:

- **EMC:** BSMI, VCCI, CE, FCC, CCC
- **BSMI approved Safety:** CE, UL, CB

## 1.3 Dimensions

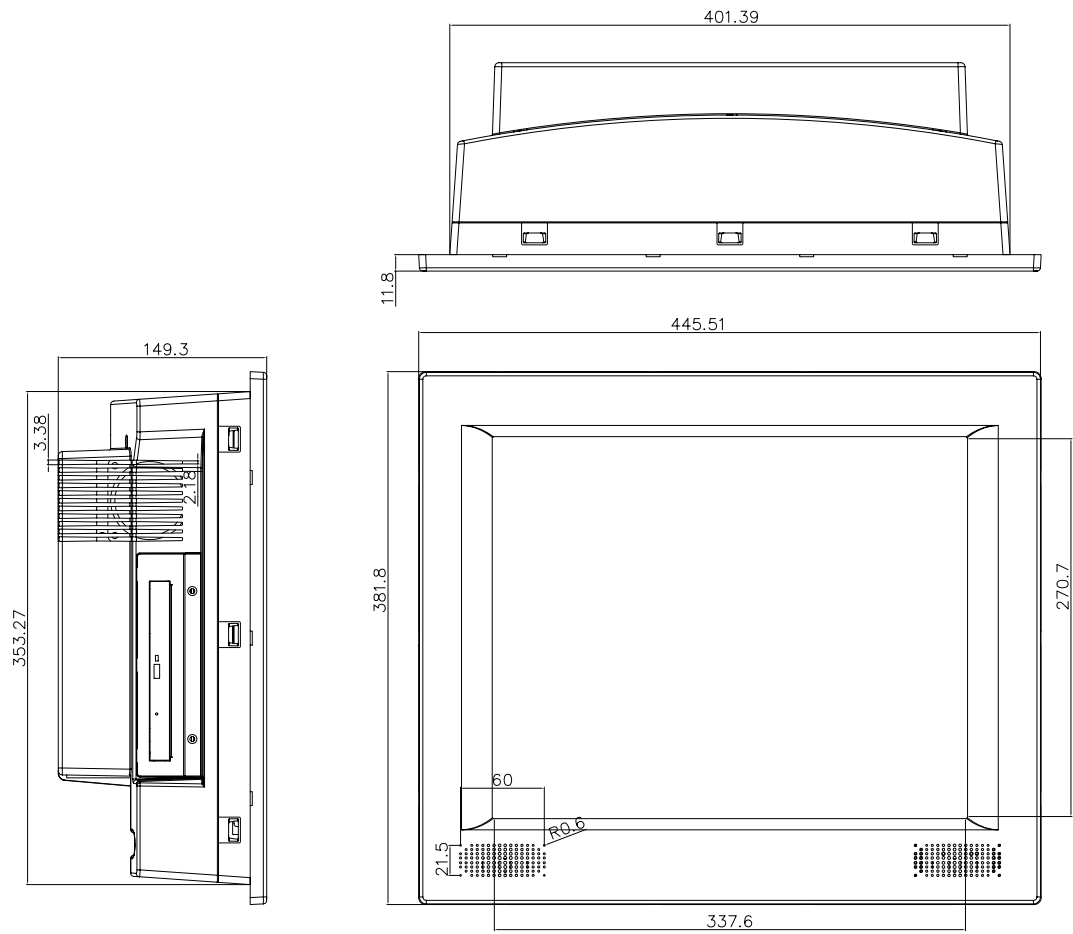


Figure 1.1 Dimensions of PPC-179T

# Chapter 2

## System Setup

This chapter gives system setup information for the PPC-179T.

Sections include:

- A Quick Tour
- Installation Procedures
- Running the BIOS Setup
- Installing System software

## 2.1 A Quick Tour of the Panel PC

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

When placed upright on the desktop, the front panel of the panel PC appears as shown in Figure 2.1.

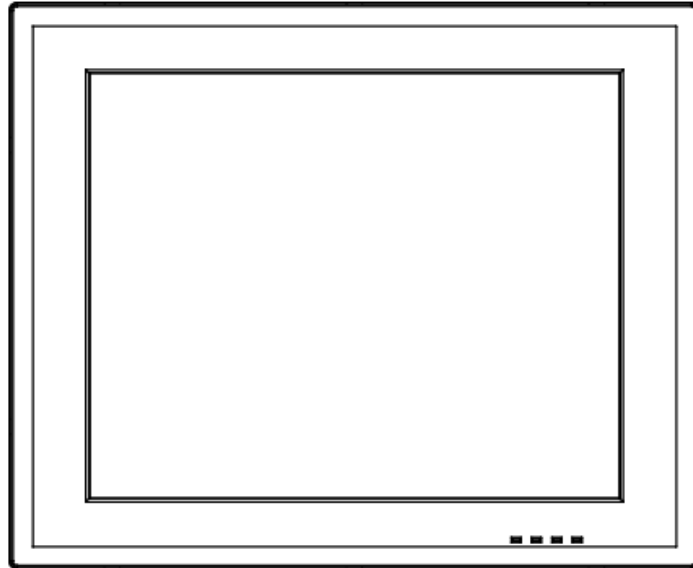


Figure 2.1 Front Panel of PPC-179T

When viewed from the left side of the panel PC, the optical device drive, USB ports are visible, as shown in Figure 2.2.

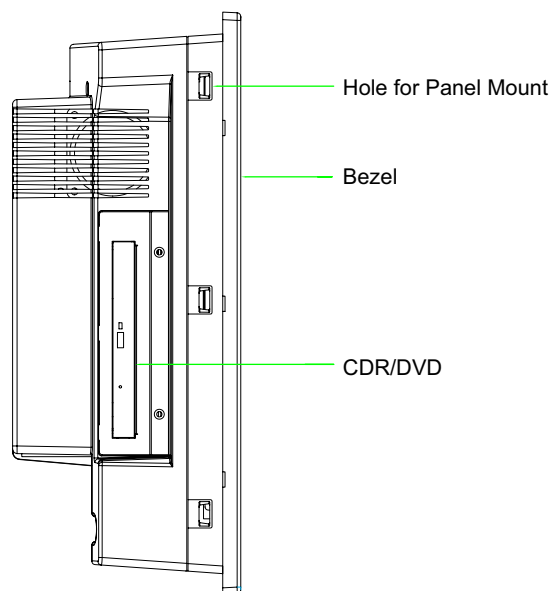
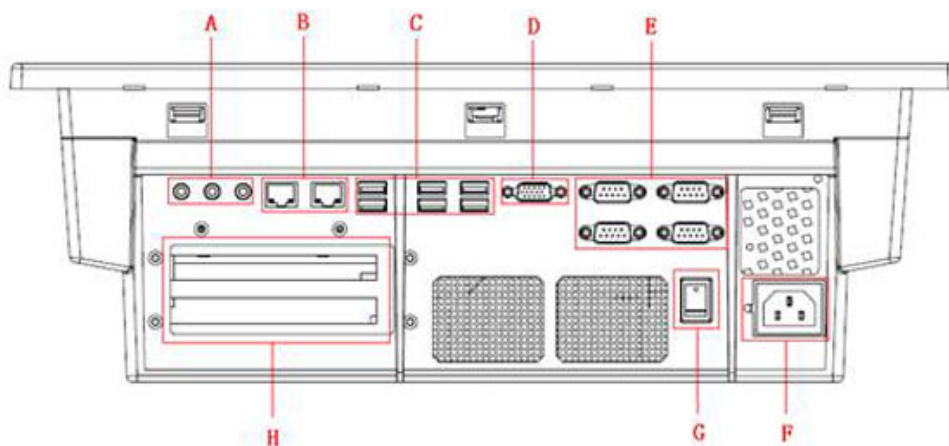


Figure 2.2 Side View of the Panel PC



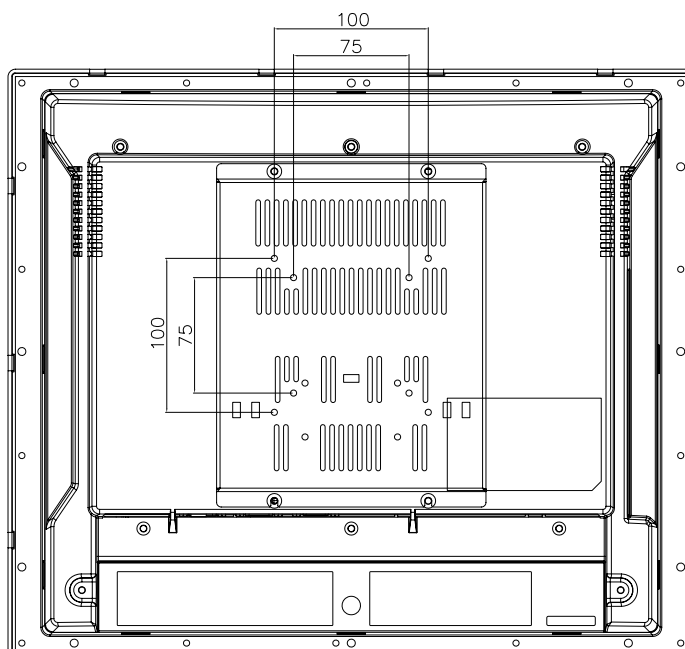
Viewed from the bottom. Please note that the expansion slot is optional for either one PCI slot or one PCI Express. It is located on the back of the Panel PC as shown in Figure 2.3. (The I/O section includes various I/O ports, including serial ports, USB ports, the Ethernet ports, and so on.)



- |                            |                                |
|----------------------------|--------------------------------|
| A. Line-in/Line-out/Mic-in | B. 10/100/1000 Base-T Ethernet |
| C. USB 2.0 x 6             | D. VGA port                    |
| E. COM port x 4            | F. ATX power supply            |
| G. Power Switch            | H. PCI/PCIe slot               |

**Figure 2.3 I/O Peripheral Connectors Panel**

VESA standard, both 100 x 100 mm and 75 x 75 mm mounting size.



**Figure 2.4 Rear View of the Panel PC**

**Caution!** Use recommended mounting apparatus to avoid risk of injury.



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## 2.2 Preparing for First-time Use

Before commencing set up of the panel PC system, the following items should be available:

- Keyboard
- Mouse (for system software installation)

## 2.3 Installation Procedures

### 2.3.1 Connecting the Power Cord

The panel PC can only be powered through an AC electrical outlet (100 ~ 240 volts, 50 ~ 60 Hz). Be sure to handle the power cords by holding the plug ends only. Follow these procedures in order:

1. Connect the female end of the power cord to the AC inlet of the panel PC.
2. Connect the 3-pin male plug of the power cord to an electrical outlet.

### 2.3.2 Connecting the Keyboard and Mouse

Connect the mouse and keyboard to the I/O section of PPC.

If using a serial mouse and the panel PC has a touchscreen, it is possible to connect the mouse to any COM port.

### 2.3.3 Switching on the Power

Switch on the power switch, which is located inside the bottom side cover.

## 2.4 Running the BIOS Setup Program

The panel PC will be properly set up and configured by the dealer prior to delivery. However, it may be necessary to use the panel PC's BIOS (Basic Input-Output System) setup program to change the system configuration information, such as the current date and time, or the type of hard drive. The setup program is stored in read-only memory (ROM). It can be accessed either when you turn on or reset the panel PC, by pressing the 'Del' key on your keyboard immediately after powering on the computer.

The settings specified with the setup program are recorded in a special area of memory called "CMOS RAM". This memory is backed up by a battery so that it will not be erased after turning off or resetting the system. Whenever the power is turned on, the system reads the settings stored in CMOS RAM and compares them to the equipment check conducted during the power on self-test (POST). If a problem occurs, an error message will be displayed on screen, and the computer prompts the user to run the setup program.

## 2.5 Installing System Software

Recent releases of operating systems from major vendors include setup programs which load automatically and guide you through hard disk formatting and operating system installation. The guidelines below will help determine the steps necessary to install the operating system onto the panel PC hard drive.

**Note!** *Some distributors and system integrators may have already pre-installed system software prior to shipment.*



## 2.6 Installing the Drivers

After installing your system software, you will be able to set up the Chipset, Ethernet, VGA, audio and touchscreen functions. All the drivers are stored in a CD-ROM disc labeled "Drivers and Utilities". The CD-ROM can be found in your accessory box.



**Figure 2.5 Drivers and Utilities on the CD-ROM**

The various drivers and utilities in the CD-ROM disc which help users install the drivers and understand their functions. These files are a very useful supplement to the information in this manual.

**Note!** *The drivers and utilities used for the PPC-179T panel PCs are subject to change without notice. If in doubt, check Advantech's website or contact our application engineers for the latest information regarding drivers utilities.*





# Chapter 3

## Using the Panel PC

This chapter explains onboard devices and peripheral I/O ports available on the PPC-179T.

Sections include:

- CD-ROM Drive
- PCI or PCIe Bus Expansion
- Serial COM Ports
- VGA Port
- USB Ports
- Audio Interface
- Ethernet
- Touchscreen (Optional)

## 3.1 Introduction

This chapter describes basic features and procedures for using the panel PC. Topics covered include: the CD-ROM drive, I/O ports and the touchscreen.

This product is a high performance panel PC, please keep upright (see Fig. 3.1).

## 3.2 CD-ROM Drive (Optional)

It is possible to use the USB external optical device.

To insert a CD-ROM disc, press the eject button on the CD-ROM drive.

To eject a CD-ROM disc, first ensure that the drive activity light is not active. Then press the eject button on the drive.



**Figure 3.1 Inserting and ejecting a CD-ROM**

### 3.3 PCI or PCIe Bus Expansion

The panel PC supports either one PCI or one PCIe bus expansion card. To integrate a new expansion bus card into the system, follow these instructions:

1. Turn off the panel PC.
2. Unscrew the screws on the top of the rear cover, and remove them.
3. Remove the metal plate by unscrewing the attaching screw.
4. Insert the PCI or PCIe into the PCIe slot of the riser card. (See Figure 3.2)
5. Run the setup program within the OS to configure the system.

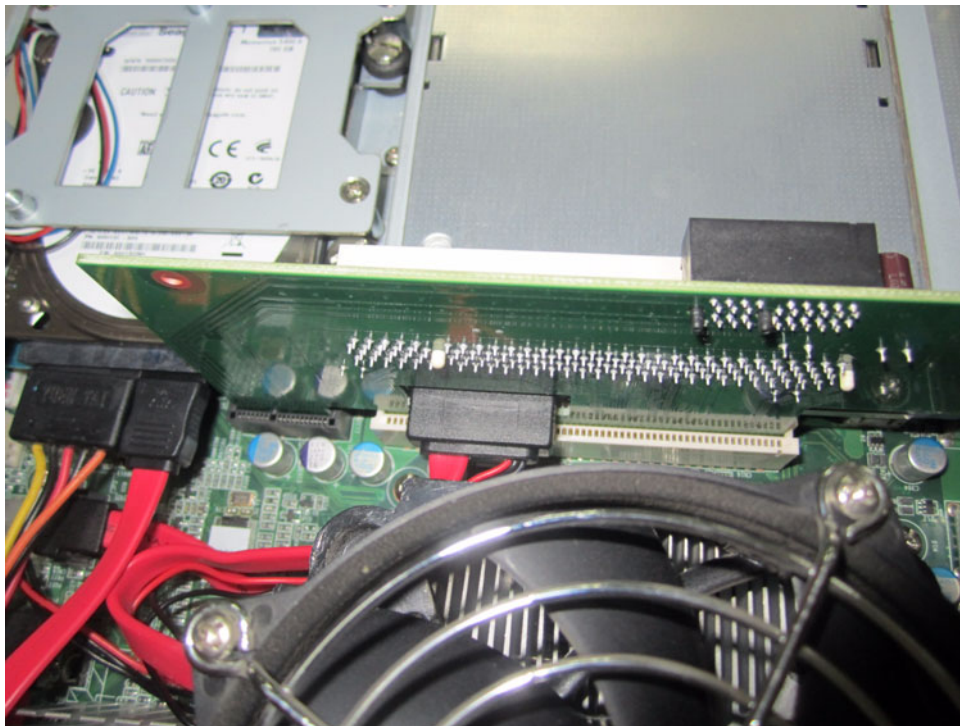
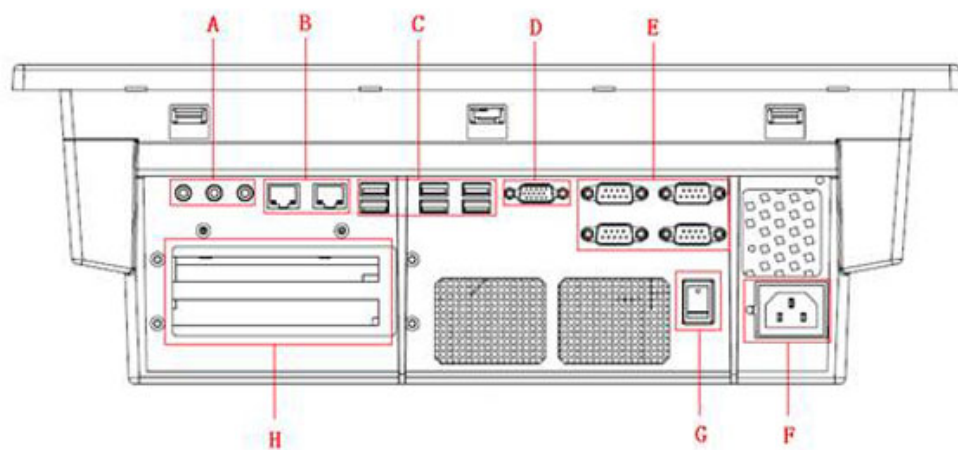


Figure 3.2 PCI & PCIe Bus Expansion

## 3.4 Serial COM Ports

There are four serial COM ports on the bottom. It is simple to attach a serial device to the panel PC, such as an external modem or mouse. Follow these instructions:

1. Be sure the panel PC and any other peripheral devices that are connected to the panel PC are turned off.
2. Attach the interface cable of the serial device to the panel PC's serial port. (See Figure 3.3.) If necessary, attach the other end of the interface cable to the serial device. Fasten any retaining screws.
3. Turn on any other peripheral devices which are connected to the panel PC, and then turn on the panel PC.
4. Refer to the manual(s) which accompanied any serial device(s) for instructions on configuring the operating environment to recognize the device(s).
5. Run the BIOS setup program and configure the jumper settings to change the mode of the COM ports.



- |                            |                                |
|----------------------------|--------------------------------|
| A. Line-in/Line-out/Mic-in | B. 10/100/1000 Base-T Ethernet |
| C. USB 2.0 x 6             | D. VGA port                    |
| E. COM port x 4            | F. ATX power supply            |
| G. Power Switch            | H. PCI/PCIe slot               |

**Figure 3.3 I/O Ports**

## 3.5 VGA Port

An external VGA-compatible device may be connected to the system through the 15-pin external port located on the bottom of the system unit.

The panel PC simultaneously supports an external CRT monitor in addition to the built-in LCD display.

1. Be sure the panel PC is turned off.
2. Connect the external monitor to the system. (See Figure 3.3.)
3. Turn on the panel PC and the external monitor.



## 3.6 USB Ports

An external USB device may be connected to the system through six USB ports located on the rear side and left side of the system unit.

1. Connect the external device to the system. (See Figure 3.3)
2. The USB ports support hot plug-in connections.

## 3.7 Audio Interface

The audio interface includes three jacks: Microphone in, Line out and Line in. (See Figure 3.3) Their functions are:

- Microphone in: Use an external microphone to record voice and sound.
  - Line out: Output audio to external devices such as speakers or earphones.
  - Line in: Input audio from an external CD player or radio.
1. Connect the audio device to the system. (See Figure 3.3)
  2. Install the driver before using the device.

## 3.8 Ethernet

External devices on the network may be connected to the system through the external Ethernet port located on the bottom of the system unit.

1. Be sure the panel PC is turned off.
2. Connect the external device(s) to the panel PC.
3. Turn on the panel PC and the external device(s).

## 3.9 Touchscreen (Optional)

The touchscreen is connected to the internal USB port. Its function is similar to that of a mouse. PPC-179T supports resistive touchscreen.

It is necessary to install the touchscreen driver before it will function. The touchscreen drivers for various operating systems are stored on the CD-ROM disc inside the accessory box.



# Chapter 4

## Hardware Installation

This chapter gives instructions for installing hardware devices on the PPC-179T.

Sections include:

- Jumpers and Connectors
- Disassembling the Panel PC
- Installing the Central
- Processing Unit (CPU)
- Installing the DDR3 DIMM Memory Module

## 4.1 Jumpers and Connectors

The panel PC consists of a PC-based computer that is housed in a metal shielding case with a plastic cover on the rear and bottom. All the computer devices, like the CPU, HDD, SDRAM, and power supply are all readily accessible after removing the rear panel or the HDD cover. Any maintenance or hardware upgrades can be easily completed after removing the rear panel and/or HDD cover.

For information about complete disassembly of the panel PC, refer to Appendix B.

**Warning!** Do not remove the plastic rear cover until verifying that no power is flowing within the panel PC. Power must be switched off and the power cord must be unplugged. Each time the panel PC is serviced, users should be aware of this condition.



## 4.2 Disassembling the Panel PC

The following are standard procedures for disassembling the panel PC before upgrading the system. All procedures are illustrated in Figure 4.1, 4.2.

1. Unfasten the screws securing the rear plastic cover and remove it.



Figure 4.1 Unfastening the Rear Cover



Figure 4.2 The PPC without the Rear Cover

### 4.3 Installing the 2.5" Hard Disk Drive

One enhanced Serial ATA (SATA) hard disk drive may be attached to the panel PC. The following instructions are for installing the HDD:

1. Remove rear cover (see Figure 4.1)
2. Remove the four screws on the metal plate on both sides of the HDD. (See Figure 4.3)



Figure 4.3 The PPC HDD

3. Connect SATA cable from main board.

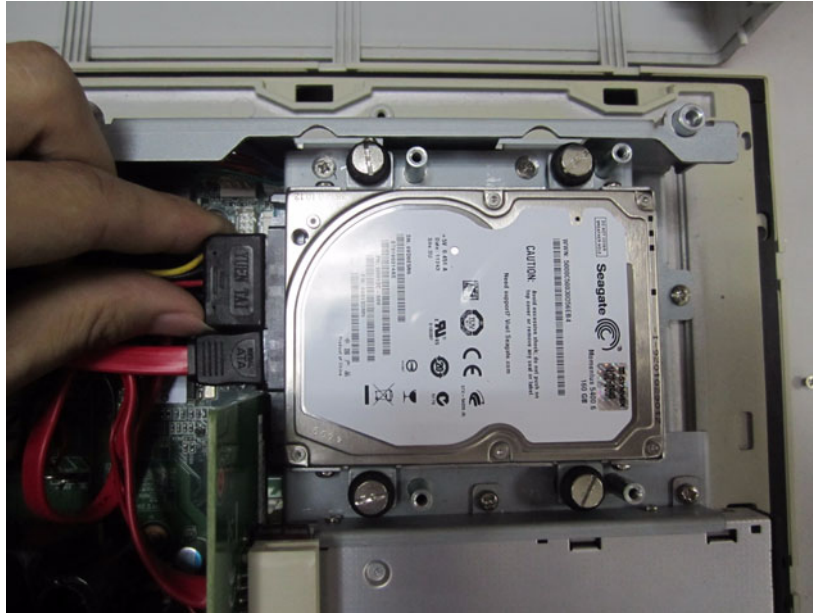


Figure 4.4 Plugging in the SATA Cable

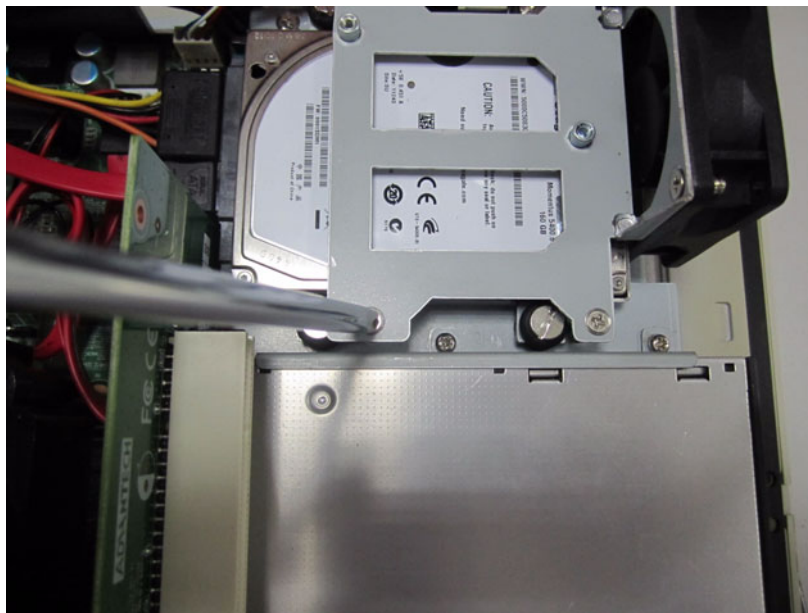


Figure 4.5 Placing the Heatsink and FAN on CPU, then Fastening

## 4.4 Installing the Central Processing Unit (CPU)

The panel PC is equipped with a central processing unit (CPU) that can be upgraded to improve system performance. The panel PC provides one 775-pin ZIF (Zero Insertion Force) socket, or “Socket 775”. The CPU must be fitted with an appropriate heat-sink and CPU fan to prevent overheating.

**Warning!** *The CPU may be damaged if operated without a heat sink, and if the fan is not connected to the CPU fan power connector.*





**Caution!** Always disconnect the power cord from your panel PC when you are working on it. Do not make connections while the power is on as sensitive electronic components can be damaged by the sudden rush of power. Only experienced electronics personnel should open the panel PC.



Follow these instructions to install a CPU:

1. First unfasten the screws of CUP cooler, and disconnect cooler cable from mother board.

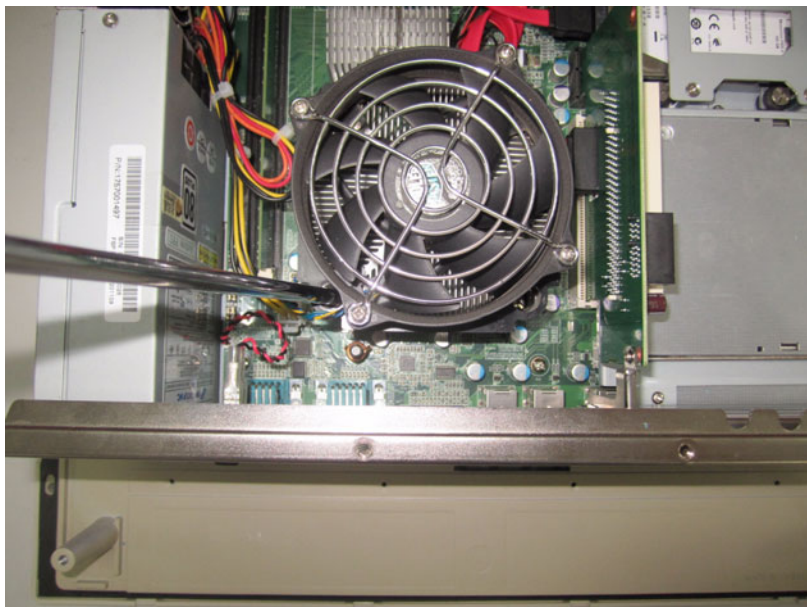


Figure 4.6 Unfasten screws of CPU Cooler

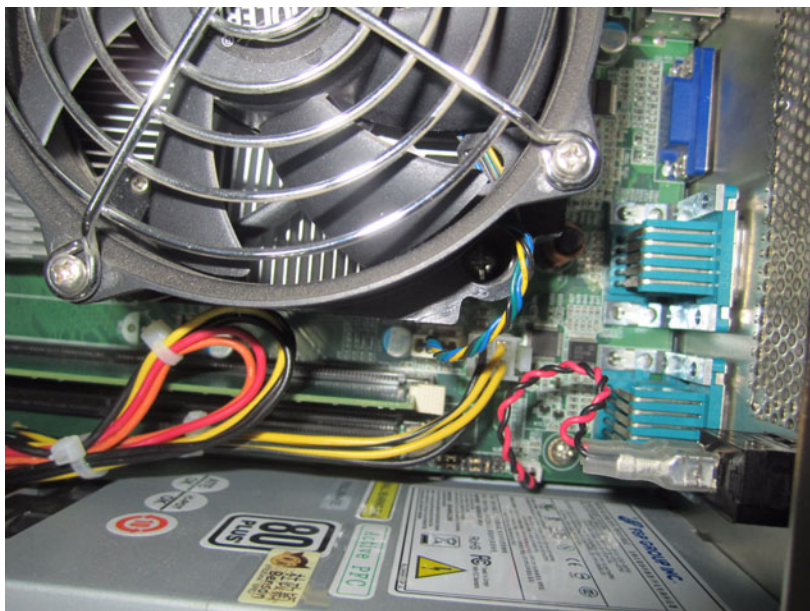
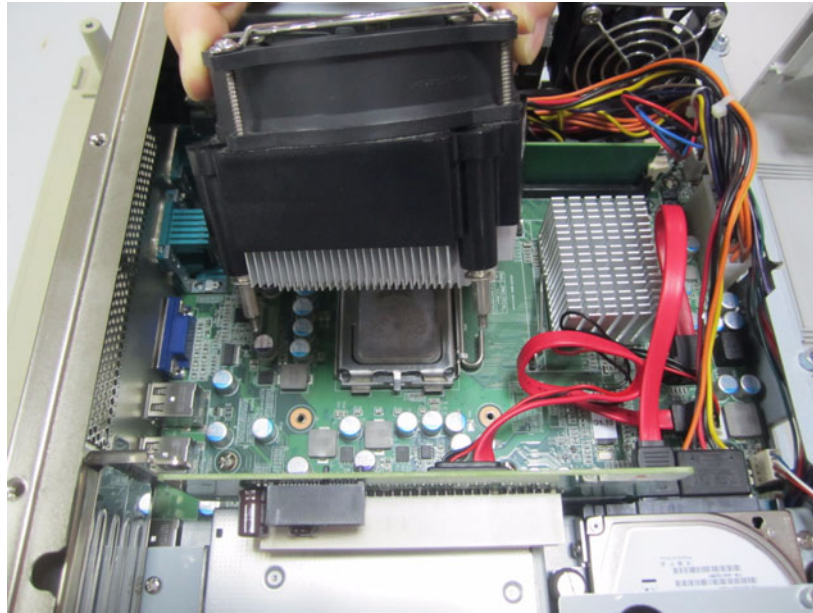


Figure 4.7 Disconnect Cooler Cable From Motherboard

2. Fetch up the cooler carefully, the fix CPU in the socket.



**Figure 4.8 Remove CPU cooler**



**Figure 4.9 Fix CPU in the socket**

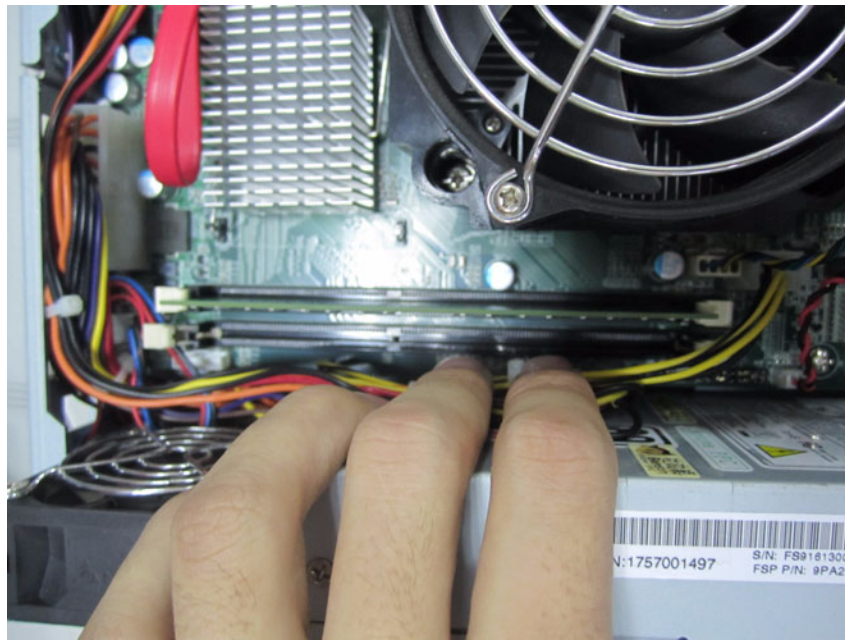
3. Place cooler on top of CPU, fasten cooler screw and connect cooler cable to mother board.



## 4.5 Installing the DDR3 DIMM Memory Module

The panel PC system provides two 204-pin DIMM sockets and it is possible to install 4 GB of DDR3 DiMM memory.

**Note!** *Be sure install first memory in the socket which near CPU (See figure 4.10).*



**Figure 4.10** Placing the Memory Module in the SODIMM Socket

## 4.6 Installing the Optical Device Drive

1. Remove all the screws on the rear cover.



Figure 4.11 Rear Cover Photo

2. Assemble CD-ROM in CD bracket and fasten screw.

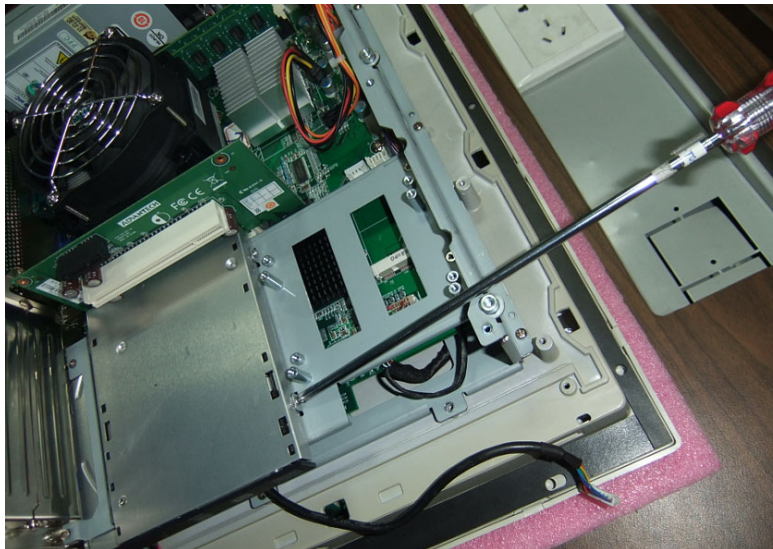
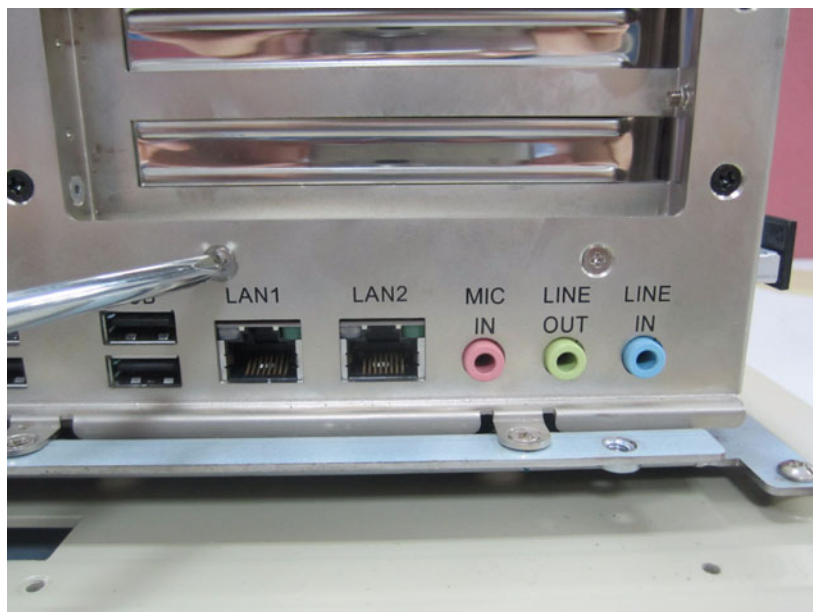


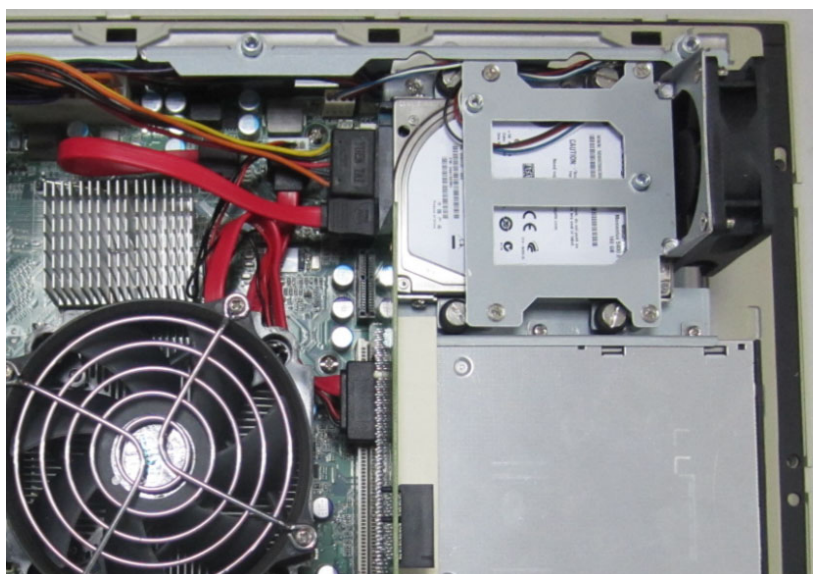
Figure 4.12 Rear Cover Photo with ODD Bracket

3. Fasten the screws on the IO shielding.



**Figure 4.13 I/O Shielding**

4. Insert SATA cable from CD-ROM to M/B.



**Figure 4.14 SATA CD-ROM Cable**



# Chapter 5

## Jumpers and Connectors

This chapter gives information on setting jumpers and using the connectors on the PPC-179T motherboard.

Sections include:

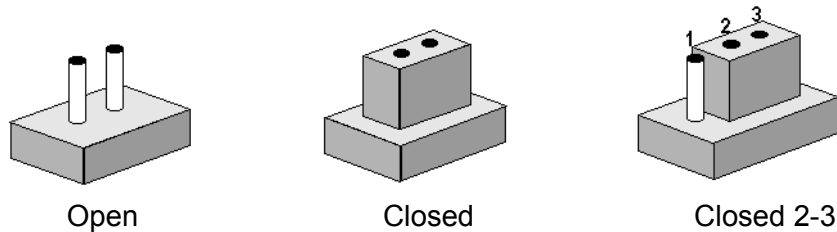
- Setting Jumpers
- Jumpers and Connectors locations
- Connectors

## 5.1 Jumpers and Connectors

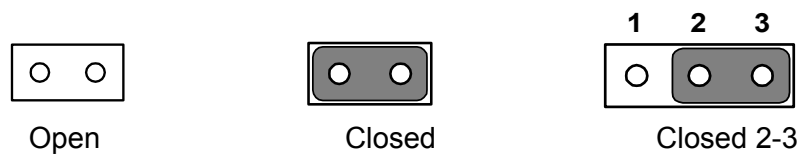
This chapter supplies more detailed information about the internal jumper settings and an outline of the I/O ports available on the PPC-179T.

### 5.1.1 Setting Jumpers

The Panel PC can be configured to match the needs of each application by setting the jumpers. A jumper is the simplest kind of electrical switch. It consists of two metal pins and a small metal clip (often protected by a plastic cover), which slides over the pins to close the circuit and connect them. To "close" a jumper, connect the pins with the clip. To "open" a jumper, remove the clip. Sometimes a jumper has three pins, labeled 1, 2, and 3. In this case, it is possible to connect either pins 1 and 2 or pins 2 and 3 to each other.



The jumper settings are schematically depicted in this manual as follows:



A pair of needle-nose pliers may be helpful when working with jumpers. If there are any doubts about the best hardware configuration for a particular application, contact the local distributor or sales representative before making any changes.

An arrow is printed on the motherboard to indicate the first pin of each jumper.

## 5.1.2 Jumpers

The motherboard of the panel PC has a number of jumpers that help configure the system. It also has LED indicator lamps that display the system operation status. The table below lists the function of each jumper and LED.

The motherboard of the PPC-179T has a number of jumpers that allow you to configure your system to suit your applications.

**Table 5.1: Jumper Setting**

JP3	ATX/AT Mode Selection
JP4	CMOS CLEAR
JP6	COM1/COM2 RI Type Select
JP7	COM3 RS232/422/485 Select

**Table 5.2: JP3(ATX/AT Mode Selection)**

Setting	Function
(1-2)	AT
(2-3)	ATX (default)

**Table 5.3: JP4(CMOS CLEAR)**

Setting	Function
(1-2)	does not clear CMOS (default)
(2-3)	clear CMOS

**Table 5.4: JP6(COM1/COM2 RI Type Select)**

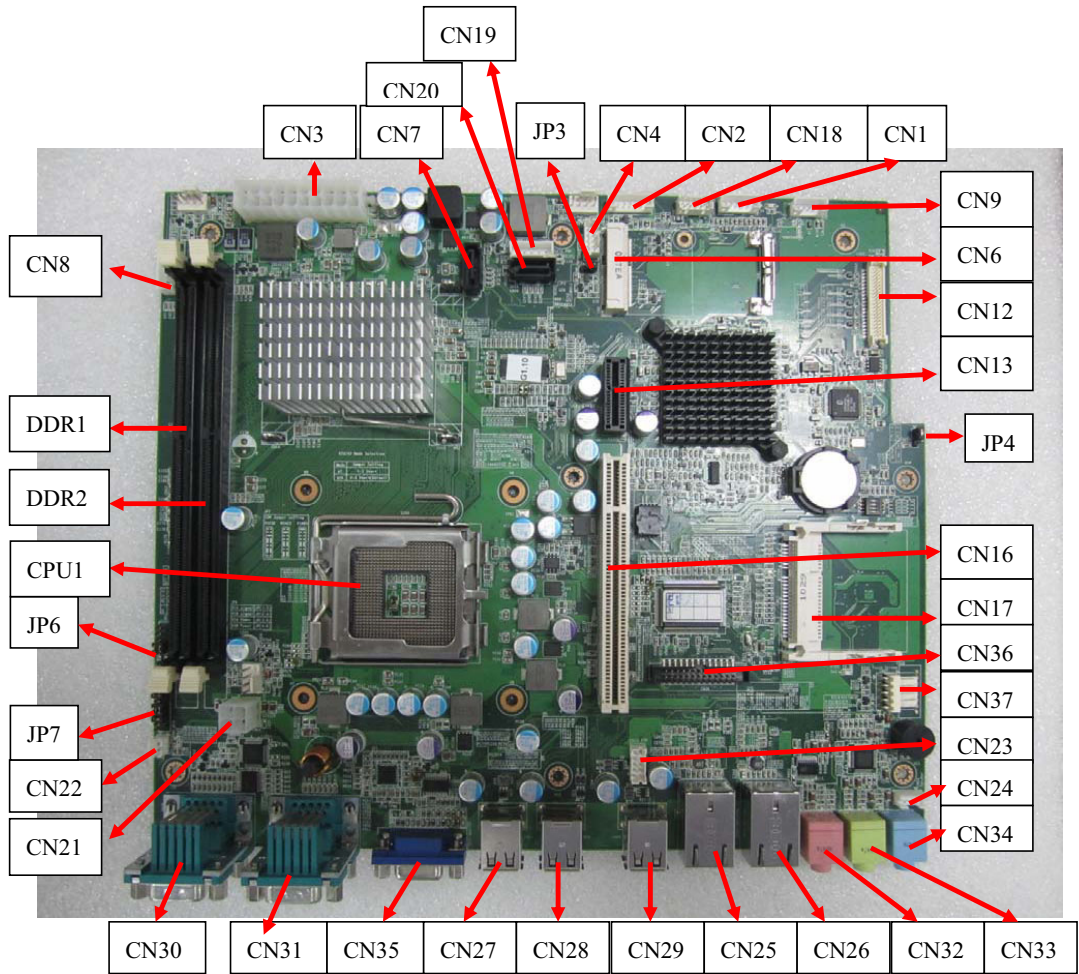
Setting	Function
(1-3)	Add COM1 RI (default)
(2-4)	Add COM2 RI (default)
(5-7)	COM1 RI use 5V
(7-9)	COM1 RI use 12V
(6-8)	COM2 RI use 5V
(8-10)	COM2 RI use 12V

**Table 5.5: JP7(COM3 RS232/422/485 Select)**

Setting	Function
(5-6) (7-9) (8-10) (13-15) (14-16)	RS232 (default)
(3-4) (9-11) (10-12) (15-17) (16-18)	RS422
(1-2) (9-11) (10-12) (15-17) (16-18)	RS485



### 5.1.3 Jumper and Connector Locations



**Figure 5.1 Jumpers & Connectors on PPC-179T Motherboard**



### 5.1.4 Connectors

Onboard connectors link the panel PC to external devices such as hard disk drives. The table below lists the function of each of connectors.

**Table 5.6: Connectors**

DDR1&DDR2	DDR3 MEMORY
CN3	ATX POWER
CN6	MINI_PCIE
CN7	SATA
CN8	SATA Power Output
CN12	LVDS
CN13	PCI-EX1 SLOT
CN16	PCI SLOT
CN17	CFAST
CN18	GPIO
CN19	SATA Power Output
CN20	SATA
CN21	ATX 4PIN
CN22	POWER BUTTON
CN24	AUDIO SPEAKER CONNECT
CN25	LAN1
CN26	LAN2
CN27	USB4/USB5
CN28	USB2/USB3
CN29	USB0/USB1
CN30	COM3/COM4
CN31	COM1/COM2
CN32	MIC_IN
CN33	LINE_OUT
CN34	LINE_IN
CN35	VGA

**Table 5.7: DDR1& DDR2 (DDR3 MEMORY)**

Pin	standard connect
Please use the DIMM of DDR2 which is close to CPU when only use one Memory.	

**Table 5.8: CN3(ATX POWER)**

Pin	Pin Name
1	+3.3V
2	+3.3V
3	GND
4	+5V
5	GND
6	+5V
7	GND
8	POWEROK
9	+5VSB
10	+12V
11	+3.3V
12	-12V
13	GND
14	PSON
15	GND
16	GND
17	GND
18	-5V
19	+5V
20	+5V

**Table 5.9: CN6(MINI\_PCIE)**

Pin	Pin Name
1	WAKE#
2	+3.3SB
3	NC
4	GND
5	NC
6	+1.5
7	NC
8	NC
9	GND
10	NC
11	CLK-
12	NC
13	CLK+
14	NC
15	GND
16	NC
17	NC
18	GND
19	NC
20	DISABLE#

Table 5.9: CN6(MINI_PCIE)	
21	GND
22	PLTRST
23	RX-
24	+3.3SB
25	RX+
26	GND
27	GND
28	+1.5
29	GND
30	SMB_CLK
31	TX-
32	SMB_DAT
33	TX+
34	GND
35	GND
36	USB_P-
37	GND
38	USB_P+
39	+3.3SB
40	GND
41	+3.3SB
42	NC
43	NC
44	NC
45	NC
46	NC
47	NC
48	+1.5
49	NC
50	GND
51	NC
52	+3.3SB
53	NC
54	NC
55	GND
56	GND

**Table 5.10: CN7(SATA)**

Pin	Pin Name
1	GND
2	TX+
3	TX-
4	GND
5	RX-
6	RX+
7	GND

**Table 5.11: CN8(SATA Power Output)**

Pin	Pin Name
1	+3.3V
2	GND
3	+5V
4	GND
5	+12V

**Table 5.12: CN12(LVDS)**

Pin	Pin Name
1	+VDD_LVDS
2	+VDD_LVDS
3	GND
4	GND
5	+VDD_LVDS
6	+VDD_LVDS
7	LVDS2_D0-
8	LVDS3_D0-
9	LVDS2_D0+
10	LVDS3_D0+
11	GND
12	GND
13	LVDS2_D1-
14	LVDS3_D1-
15	LVDS2_D1+
16	LVDS3_D1+
17	GND
18	GND
19	LVDS2_D2-
20	LVDS3_D2-
21	LVDS2_D2+
22	LVDS3_D2+
23	GND
24	GND

**Table 5.12: CN12(LVDS)**

25	LVDS2_CLK-
26	LVDS3_CLK-
27	LVDS2_CLK+
28	LVDS3_CLK+
29	GND
30	GND
31	LVDS2_SC_DDC
32	LVDS2_SD_DDC
33	GND
34	GND
35	LVDS2_D3-
36	LVDS3_D3-
37	LVDS2_D3+
38	LVDS3_D3+
39	NC
40	VCON

**Table 5.13: CN13(PCI-EX1 SLOT)**

Pin	Pin Name
A1	GND
A2	+12V
A3	+12V
A4	GDN
A5	SATA1_TX+
A6	SATA1_TX-
A7	SATA1_RX-
A8	SATA1_RX+
A9	+3.3V
A10	+3.3V
A11	PLTRST
A12	GND
A13	CLK_PCIE_SLOT+
A14	CLK_PCIE_SLOT-
A15	GND
A16	PCIE_RX1+
A17	PCIE_RX1-
A18	GND
B1	+12V
B2	+12V
B3	+12V
B4	GND
B5	SMBCLK
B6	SMBDAT
B7	GND
B8	+3.3V
B9	NC

**Table 5.13: CN13(PCI-EX1 SLOT)**

B10	+3.3VSB
B11	PCIE_WAKE#
B12	NC
B13	GND
B14	PCIE_TX1+
B15	PCIE_TX1-
B16	GND
B17	NC
B18	GND

**Table 5.14: CN16(PCI SLOT)**

Pin	standard connect
-----	------------------

**Table 5.15: CN17(CFAST)**

Pin	Pin Name
S1	GND
S2	SATA2_TX+
S3	SATA2_TX-
S4	GND
S5	SATA2_RX-
S6	SATA2_RX+
S7	GND
PC1	NC
PC2	GND
PC3	NC
PC4	NC
PC5	NC
PC6	NC
PC7	GND
PC8	NC
PC9	NC
PC10	NC
PC11	NC
PC12	NC
PC13	+3.3V
PC14	+3.3V
PC15	GND
PC16	GND
PC17	NC

**Table 5.16: CN18(GPIO)**

Pin	Pin Name
1	GND
2	GPIO4
3	GPIO0
4	GPIO5
5	GPIO1
6	GPIO6
7	GPIO2
8	GPIO7
9	GPIO3
10	+5V

**Table 5.17: CN19(SATA Power Output)**

Pin	Pin Name
1	+3.3V
2	GND
3	+5V
4	GND
5	+12V

**Table 5.18: CN20(SATA)**

Pin	Pin Name
1	GND
2	TX+
3	TX-
4	GND
5	RX-
6	RX+
7	GND

**Table 5.19: CN21(ATX 4PIN)**

Pin	Pin Name
1	GND
2	GND
3	+12V
4	+12V

**Table 5.20: CN22(POWER BUTTON)**

Pin	Pin Name
1	+3.3VSB
2	GND

**Table 5.21: CN24(AUDIO SPEAKER CONNECT)**

Pin	Pin Name
1	AUD_OUTA-
2	AUD_OUTA+
3	AUD_OUTB+
4	AUD_OUTB-

**Table 5.22: CN25(LAN1)**

Pin	Pin Name
1	MDI0+
2	MDI0-
3	MDI1+
4	MDI1-
5	VDC1
6	VDC2
7	MDI2+
8	MDI2-
9	MDI3+
10	MDI3-
11	ACT#
12	+3.3V
13	LINK1000#
14	LINK100#

**Table 5.23: CN26(LAN2)**

Pin	Pin Name
1	MDI0+
2	MDI0-
3	MDI1+
4	MDI1-
5	VDC1
6	VDC2
7	MDI2+
8	MDI2-
9	MDI3+
10	MDI3-
11	ACT#
12	+3.3V
13	LINK1000#
14	LINK100#



**Table 5.24: CN27(USB4/USB5)**

Pin	Pin Name
1	+5V
2	USBD4-
3	USBD4+
4	GND
5	+5V
6	USBD5-
7	USBD5+
8	GND
9	GND
10	GND
11	GND
12	GND

**Table 5.25: CN28(USB2/USB3)**

Pin	Pin Name
1	+5V
2	USBD2-
3	USBD2+
4	GND
5	+5V
6	USBD3-
7	USBD3+
8	GND
9	GND
10	GND
11	GND
12	GND

**Table 5.26: CN29(USB0/USB1)**

Pin	Pin Name
1	+5V
2	USBD0-
3	USBD0+
4	GND
5	+5V
6	USBD1-
7	USBD1+
8	GND
9	GND
10	GND
11	GND
12	GND

**Table 5.27: CN30(COM3/COM4)**

Pin	Pin Name
A1	DCD
A2	RXD
A3	TXD
A4	DTR
A5	GND
A6	COM3_DSR
A7	COM3_RTS
A8	COM3_CTS
A9	RIC
M1	GND
M2	GND
B1	COM4_DCD
B2	COM4_RXD
B3	COM4_TXD
B4	COM4_DTR
B5	GND
B6	COM4_DSR
B7	COM4_RTS
B8	COM4_CTS
B9	RID
M3	GND
M4	GND

**Table 5.28: CN31(COM1/COM2)**

Pin	Pin Name
A1	COM1_DCD
A2	COM1_RXD
A3	COM1_TXD
A4	COM1_DTR
A5	GND
A6	COM1_DSR
A7	COM1_RTS
A8	COM1_CTS
A9	RIA
M1	GND
M2	GND
B1	COM2_DCD
B2	COM2_RXD
B3	COM2_TXD
B4	COM2_DTR
B5	GND
B6	COM2_DSR
B7	COM2_RTS
B8	COM2_CTS
B9	RIC

**Table 5.28: CN31(COM1/COM2)**

M3	GND
M4	GND

**Table 5.29: CN32(MIC\_IN)**

Pin	Pin Name
1	GND_AUD
2	MIC1-L
3	GND_AUD
4	MIC1_JD
5	MIC1-R

**Table 5.30: CN33(LINE\_OUT)**

Pin	Pin Name
1	GND_AUD
2	FRONT-OUT-L
3	GND_AUD
4	FRONT_JD
5	FRONT-OUT-R

**Table 5.31: CN34(LINE\_IN)**

Pin	Pin Name
1	GND_AUD
2	LINE1_L
3	GND_AUD
4	LINE1_JD
5	LINE1_R

**Table 5.32: CN35(VGA)**

Pin	Pin Name
1	VGA_R
2	VGA_G
3	VGA_B
4	NC
5	GND
6	GND
7	GND
8	GND
9	+5V
10	GND
11	NC
12	VGA_DDCDATA
13	VGA_HSYNC
14	VGA_VSYNC
15	VGA_DDCCLK



# Chapter 6

## Driver Installation

This chapter gives information on installing drivers for the PPC-179T.

Sections include:

- Driver Installation
- Updating Drivers

---

## 6.1 Introduction

A Driver CD is supplied inside the accessory box. Customers may need to use an external USB CD-ROM related device to load the CD and install the drivers for the PPC-179T.

### 6.1.1 Driver Installation

Before installing the Ethernet driver, note the procedures below. It is necessary to know which operating system is installed on the PPC-179T. Then refer to the corresponding installation flow chart. Follow the steps described in the flow chart to complete the installation quickly. Drivers and documents included on the CD are for the chipset, LAN, Audio, Touchscreen, VGA, USB and a PDF copy of this user manual.

- Note!**
1. The CD-ROM drive is designated as "D" throughout this chapter.
  2. <Enter> means pressing the "Enter" key on the keyboard.



## 6.2 Updating Driver Search on the Advantech Website

For further information about installing drivers on the PPC-179T, and to access driver updates, troubleshooting guides and FAQ lists, visit the following web resources:

**Advantech websites:**

[www.advantech.com](http://www.advantech.com)

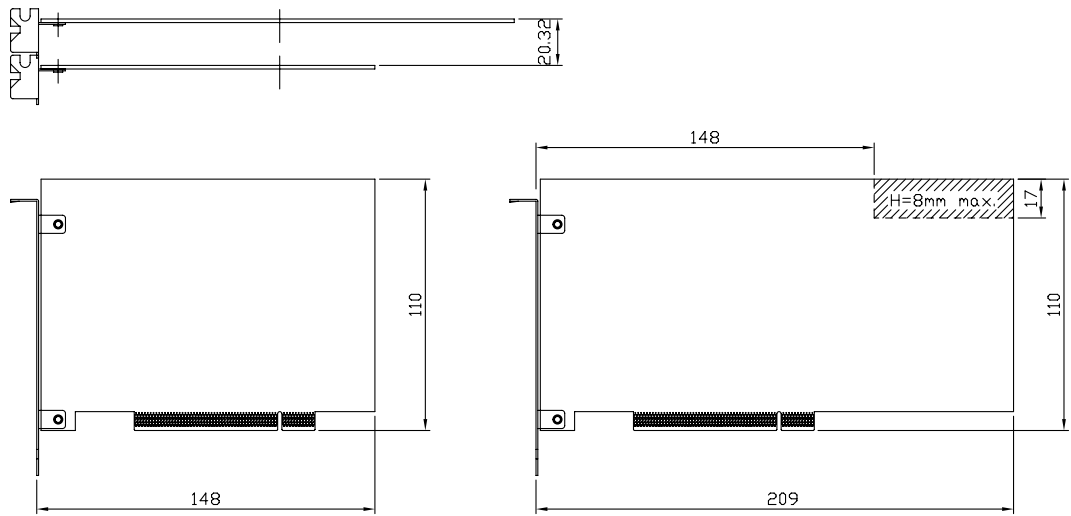
[www.advantech.com.tw](http://www.advantech.com.tw)

# Appendix **A**

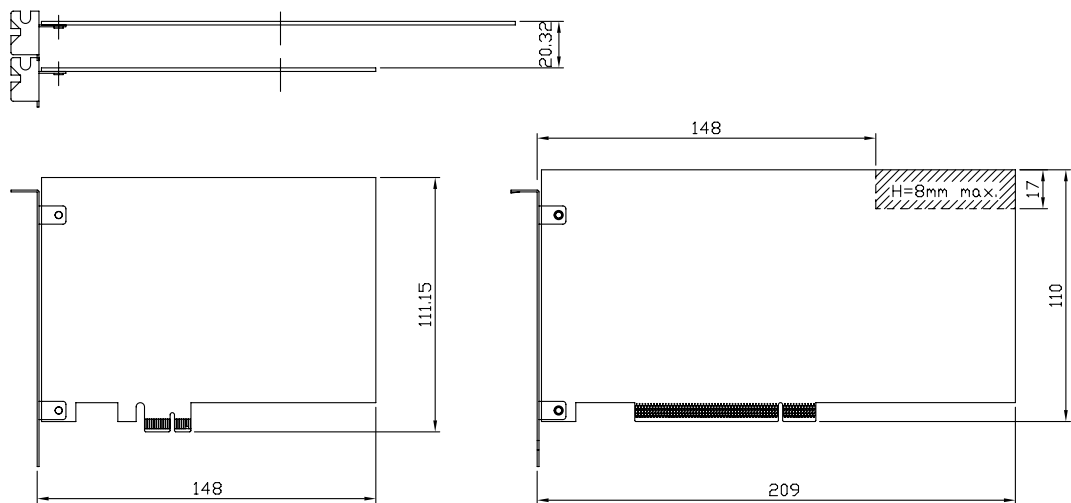
## PCI Card and PCIe Size Limits

This chapter details the size limits for PCI and PCIe cards that may be installed on the Panel PC.

## A.1 Add on card size - 2PCI



## A.2 Add on card size - PCI & PCIe







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