

# **PPC-L127T**

**Intel® Celeron® M Processor-  
based Fanless Panel PC with  
12.1" TFT-LCD**

## **User Manual**

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This manual is for the PPC-L127T.

Part No. 2006L12700

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## FCC Class B

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 residential environment. This equipment generates, uses and can radiate radio frequency energy. If not installed and used in accordance with this user manual, it may cause harmful interference to radio communications. Note that even when this equipment is installed and used in accordance with this user manual, there is still no guarantee that interference will not occur. If this equipment is believed to be causing harmful interference to radio or television reception, this can be determined by turning the equipment on and off. If interference is occurring, 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 the receiver
- Connect the equipment to a power outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

**Warning!** *Any changes or modifications made to the equipment which are not expressly approved by the relevant standards authority could void your authority to operate the equipment.*



## **Packing List**

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Before you begin installing your card, please make sure that the following materials have been shipped:

- PPC-L127T series panel PC
- User manual
- Accessories for PPC-L127T
  - Y-shaped adapter for PS/2 mouse and keyboard
  - Warranty card
  - DC plug-in housing (female) is connected on the AC/DC power adapter
  - Driver CD-ROM disc
  - Mounting kits and packet of screws

If any of these items are missing or damaged, contact your distributor or sales representative immediately.

## **Additional Information and Assistance**

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- Step 1. Visit the Advantech web site at **[www.advantech.com](http://www.advantech.com)** where you can find the latest information about the product.
- Step 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

**Caution!**



*Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.*

**Warning!**



1. *Input voltage rated 12 ~ 25 V, 4.5A max*
2. *Use a 3 V @ 195 mA lithium battery*
3. *Packing: please carry the unit with both hands, handle with care*
4. *Maintenance: to properly maintain and clean the surfaces, use only approved products or clean with a dry applicator*
5. *CompactFlash: Turn off power before inserting or removing CompactFlash storage card.*

**Contact information:**

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Advantech Europe GmbH

Kolberger Straße 7

D-40599 Düsseldorf, Germany

Tel: 49-211-97477350

Fax: 49-211-97477300

## Safety Instructions

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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:
  - 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 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 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.

## Wichtige Sicherheitshinweise

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1. Bitte lesen Sie sich diese Hinweise sorgfältig durch.
2. Heben Sie diese Anleitung für den späteren Gebrauch auf.
3. Vor jedem Reinigen ist das Gerät vom Stromnetz zu trennen. Verwenden Sie keine Flüssig- oder Aerosolreiniger. Am besten dient ein angefeuchtetes Tuch zur Reinigung.
4. Die Netzanschlusssteckdose soll nahe dem Gerät angebracht und leicht zugänglich sein.
5. Das Gerät ist vor Feuchtigkeit zu schützen.
6. Bei der Aufstellung des Gerätes ist auf sicheren Stand zu achten. Ein Kippen oder Fallen könnte Verletzungen hervorrufen.
7. Die Belüftungsöffnungen dienen zur Luftzirkulation, die das Gerät vor Überhitzung schützt. Sorgen Sie dafür, dass diese Öffnungen nicht abgedeckt werden.
8. Beachten Sie beim Anschluss an das Stromnetz die Anschlusswerte.
9. Verlegen Sie die Netzanschlussleitung so, dass niemand darüber fallen kann. Es sollte auch nichts auf der Leitung abgestellt werden.
10. Alle Hinweise und Warnungen, die sich an den Geräten befinden, sind zu beachten.
11. Wird das Gerät über einen längeren Zeitraum nicht benutzt, sollten Sie es vom Stromnetz trennen. Somit wird im Falle einer Überspannung eine Beschädigung vermieden.
12. Durch die Lüftungsöffnungen dürfen niemals Gegenstände oder Flüssigkeiten in das Gerät gelangen. Dies könnte einen Brand bzw. elektrischen Schlag auslösen.
13. Öffnen Sie niemals das Gerät. Das Gerät darf aus Gründen der elektrischen Sicherheit nur von autorisiertem Servicepersonal geöffnet werden.
14. Wenn folgende Situationen auftreten, ist das Gerät vom Stromnetz zu trennen und von einer qualifizierten Servicestelle zu überprüfen:
  - a - Netzkabel oder Netzstecker sind beschädigt.
  - b - Flüssigkeit ist in das Gerät eingedrungen.
  - c - Das Gerät war Feuchtigkeit ausgesetzt.
  - d - Wenn das Gerät nicht der Bedienungsanleitung entsprechend funktioniert oder Sie mit Hilfe dieser Anleitung keine Verbesserung erzielen.
  - e - Das Gerät ist gefallen und/oder das Gehäuse ist beschädigt.
  - f - Wenn das Gerät deutliche Anzeichen eines Defektes aufweist.
15. **VORSICHT:** Explosionsgefahr bei unsachgemäßen Austausch der Batterie. Ersatz nur durch denselben oder einem vom Hersteller empfohlenen ähnlichen Typ. Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

Der arbeitsplatzbezogene Schalldruckpegel nach DIN 45 635 Teil 1000 beträgt 70dB(A) oder weniger.

DISCLAIMER: This set of instructions is given according to IEC704-1. Advantech disclaims all responsibility for the accuracy of any statements contained herein.





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## General Information

This chapter gives background information on the PPC-L127T panel PC.

Sections include:

- Introduction
- General Specifications
- LCD Specifications
- Dimensions

# Chapter 1 General Information

## 1.1 Introduction

---

The PPC-L127T panel PC is an Intel low-power Celeron M processor computer that is designed to serve as a human machine interface (HMI) and as a multimedia computer. It is a PC-based system with 12.1" color TFT LCD display, on-board PCI Ethernet controller, multi-COM port interfaces and an audio controller. With a built-in internal IDE connectors, and an optional PCI/ISA expansion socket, the PPC-L127T is as compact and user friendly as a multi-function computer. In addition, its “fit anywhere” design makes it very flexible and able to be used in many different kinds of installations. It can be wall mounted, panel mounted or stood upright on a desktop.

For system integrators, this simple, complete, compact and highly integrated multimedia system lets you easily build a panel PC into your applications. Common industrial applications include factory automation systems, precision machinery, and production process control. It is also suitable for many nonindustrial applications, including interactive kiosk systems, entertainment management, and car park automation. Our panel PC is a reliable, cost-effective solution to your application's processing requirements.

## 1.2 General Specifications

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### General

- **Dimensions (W x H x D):** 340.5 x 269.3 x 70.5 mm
- **Weight:** 3.25 kg
- **Power supply:** ATX type

Input Voltage: +12 ~ 25 VDC, 4.5A Max.

**Power adaptor:** AC/DC (Optional PS-DC19-L60)

Input voltage: 100 ~ 240 V<sub>AC</sub>

Output voltage: 19 V @ 3.16 A

- **Disk drive housing:** Space for one 2.5" HDD, one slim type CD-ROM
- **Front panel:** IP65/NEMA4 compliant

### Standard PC functions

- **CPU:** On board Intel ULV Celeron M 1GHz with 0 L2 cache / Intel UL Celeron M 1GHz with 512 L2 cache (Optional)
- **BIOS:** Award 4 Mbit flash BIOS, ACPI 2.0 Compliant
- **System Chipset:** Intel 852GM + ICH4, Or Intel 855GME + ICH4 (Optional)
- **Front side bus:** 400 MHz
- **2nd level cache:** Nona / 512 KB (Optional)
- **System Memory:** One 184-pin DIMM socket, accepting up to 1GB DDR 200/266
- **PCI bus master IDE interface:** Supports two connectors. Each connector has one channel and supports two IDE devices. Each channel supports PIO modes 0 ~ 4, DMA mode 0 ~ 2, and Ultra DMA 33/66/100 simultaneously. The secondary connector is designated for the CD-ROM drive or CompactFlash card. BIOS supports IDE CDROM boot-up.
- **Keyboard/mouse connector:** Supports PS/2 Keyboard and Mouse
- **Parallel port:** One parallel port, supports SPP/EPP/ECP parallel mode.
- **Serial ports:** Four serial ports with three RS-232 ports (COM 1,3, and 4), one RS-232/422/485 port (COM2). All ports are compatible with 16C550 UARTs, +5V/+12V power supply selectable
- **Universal serial bus (USB) port:** Support Up to 6 USB V2.0 ( 4 x external, 2 x internal. One is reserved for T/S function.

- **PCI/ISA bus expansion slot (optional):** Accepts either one ISA card or one PCI bus card
- **Mini PCI bus expansion slot:** Accepts one type III mini PCI bus card
- **Solid State Disk:** Supports one 50-pin socket for CompactFlash type I/II (True IDE mode)
- **Watchdog timer:** 255-level timer intervals, from 15 sec to 14835 sec, setup by software, jumperless selection, generates system reset
- **Battery:** 3.0 V @ 195 mA lithium battery
- **Power management:** Supports power saving modes including Normal/Standby/Suspend modes. APM 1.2 compliant

### **VGA/LCD Interface**

- **Chipset:** Integrated in Intel 852GM or Intel 855GME (Optional)
- **Frame buffer:** Supports 64 MB frame buffer with system memory
- **Interface:** VGA/ LCD interface, support for 18-bit TFT
- **Display mode:** CRT Modes: 1600 x 1200 @ 16bpp (60 Hz), 1024 x 768 @ 32bpp (85 Hz); LCD/Simultaneous Modes: 800 x 600; 1024 x 768 @ 16bpp (60 Hz)

### **Audio function**

- **Chipset:** Intel ICH4 South Bridge
- **Audio controller:** ALC650 AC97 Ver 2.0 compliant interface, Multi-stream Direct sound and Direct Sound 3D acceleration
- **Stereo sound:** 20-bit full-duplex codec
- **Audio interface:** Microphone in, Line in, CD audio in; Line out, Speaker L, Speaker R

### **PCI bus Ethernet interface**

- **Chipset:** Realtek RTL 8100CL PCI local bus Ethernet controller
- **Ethernet interface:** Full compliance with IEEE 802.3u 100Base-T and 10 Base-T specifications. Includes software drivers and boot ROM
- **100/10Base-T auto-sensing capability**
- **Wake-on-LAN:** Supports Wake-on-LAN function with ATX power control

## Touchscreen (Optional)

|   |                                       |
|---|---------------------------------------|
| <b>Type</b>                                   | Analog Resistive                      |
| <b>Resolution</b>                             | Continuous                            |
| <b>Light Transmission</b>                     | 80%                                   |
| <b>Controller</b>                             | USB interface                         |
| <b>Power Consumption</b>                      | <5 V@ 60 mA                           |
| <b>Software Driver</b>                        | Supports Windows NT/98/<br>2000/ME/XP |
| <b>Durability<br/>(touches in a lifetime)</b> | 35 million                            |

*Note: The panel PC with the optionally installed touchscreen will share the COM4 port. Once the touchscreen is installed, COM4 cannot be used for other purposes.*

## Optional modules

- **Memory:** One 184-pin DIMM socket, accepting up to 1 GB DDR 200/266
- **CD-ROM Module:** Slim type CD-ROM Module 989KL12711E
- **Combo Module:** Slim type Combo Module 989KL12710E
- **Adaptor:** PS-DC19-L60
- **HDD:** 2.5" HDD
- **Operating System:** Microsoft® DOS, Windows 2000, XP, NT
- **Touchscreen:** Analog resistive
- **Battery pack:** Rechargeable Li-ion 3S2P 11.1 V 4400 mAh PPC-BP-LTC4006E

## Environment

- **Operating Temperature:** 0 ~ 50° C (32 ~ 122° F)
- **Storage Temperature:** -20 ~ 60° C

- **Relative humidity:** 10 ~ 95% @ 40° C (non-condensing)
- **Shock:** 10 G peak acceleration (11 ms duration)
- **Certification:** EMC: CE, FCC, BSMI. Safety: UL 60950, CB, CCC, BSMI
- **Vibration:** 5 ~ 500 Hz 1 G RMS Random vibration

### 1.3 LCD Specifications

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- **Display type:** 12.1" TFT LCD
- **Max. resolution:** 800 x 600
- **Colors:** 262 K
- **Dot size (mm):** 0.3075 x 0.3075
- **Viewing angle:** 70° (left), 70° (right), 60° (up), 50° (down)
- **Luminance:** 400 cd/m<sup>2</sup>
- **Temperature:** -10 ~ 65° C
- **\*VR control:** Brightness
- **Backlight lifetime:** 50,000 hours

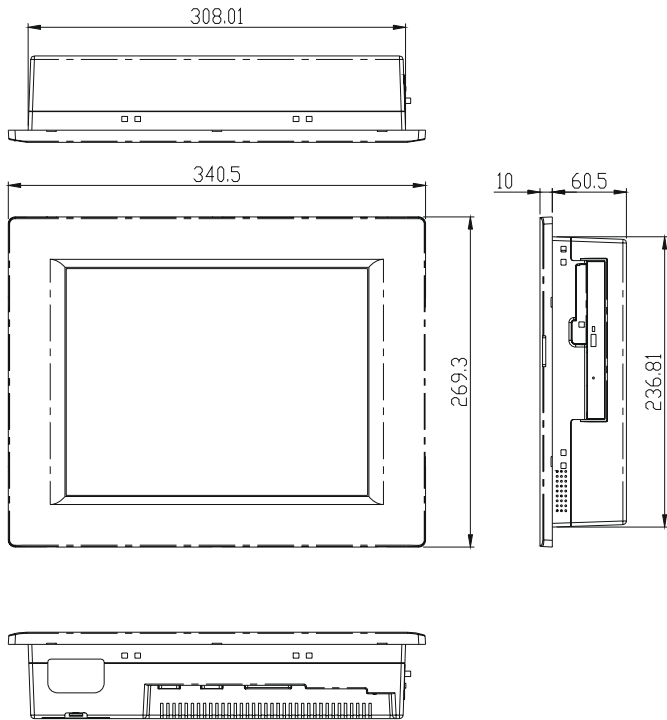
\* The VR control is defined by hot key in DOS or BIOS mode as below: Ctrl-Alt-F3, Ctrl-Alt-F4.

*Note: The color LCD display installed in the panel PC is high-quality and reliable. However, it may contain a few defective pixels which do not always illuminate. With current technology, it is impossible to completely eliminate defective pixels. Advantech is actively working to improve this technology.*



# 1.4 Dimensions

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*Figure 1.1: Dimensions of PPC-L127T*



## **System Setup**

This chapter details system setup on the PPC-L127T panel PC.

Sections include:

- A Quick Tour of the Panel PC
- Installation procedures
- Running the BIOS Setup Program
- Installing System Software
- Installing the Drivers

# Chapter 2 System Setup

## 2.1 A Quick Tour of the Panel PC

---

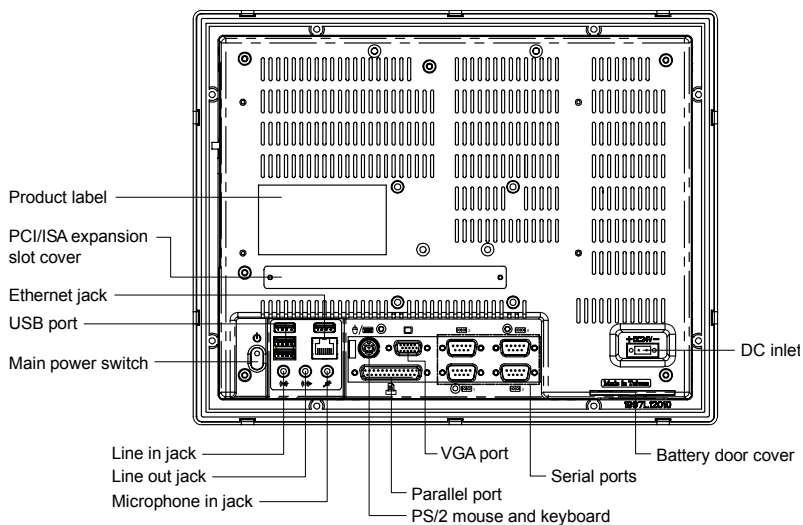
Before you start to set up the panel PC, take a moment to become familiar with the locations and purposes of the controls, drives, connectors and ports, which are illustrated in the figures below.

When you place the panel PC upright on the desktop, its front panel appears as shown in Figure 2-1.

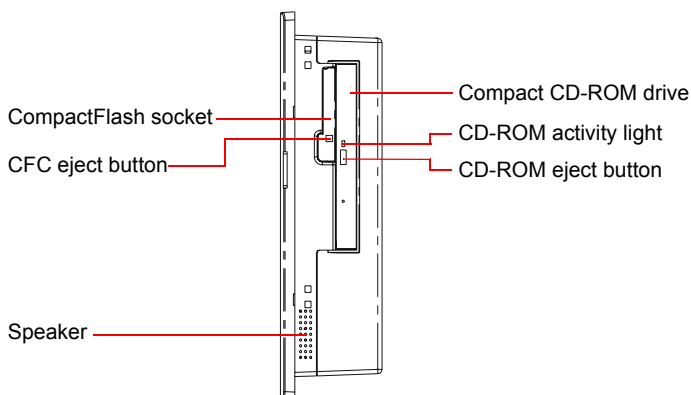


*Figure 2.1: Front view of PPC-L127T panel PC*

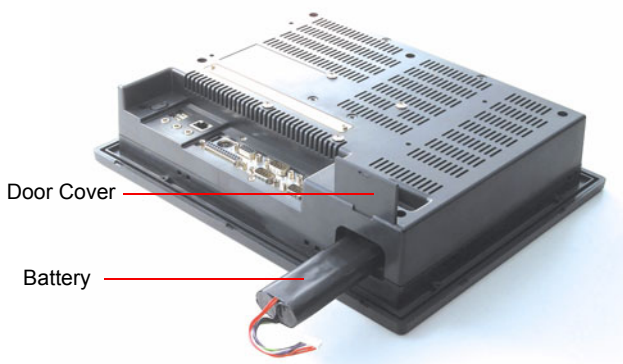
When you turn the panel PC around and look at its rear cover, you will find the I/O section as shown in Fig. 2-2. (The I/O section includes various I/O ports, including serial ports, parallel port, the Ethernet port, USB ports, the Line-in/Line-out jack, and so on.) The battery door cover is at the bottom of the panel PC, as shown in Fig. 2-4.



**Figure 2.2: Rear view of Panel PC**



**Figure 2.3: Side view of the panel PC**



*Figure 2.4: Bottom view of the panel PC*

## 2.2 Installation Procedures

---

### 2.2.1 Connecting the power cord (Optional item: PS-DC19-L60)

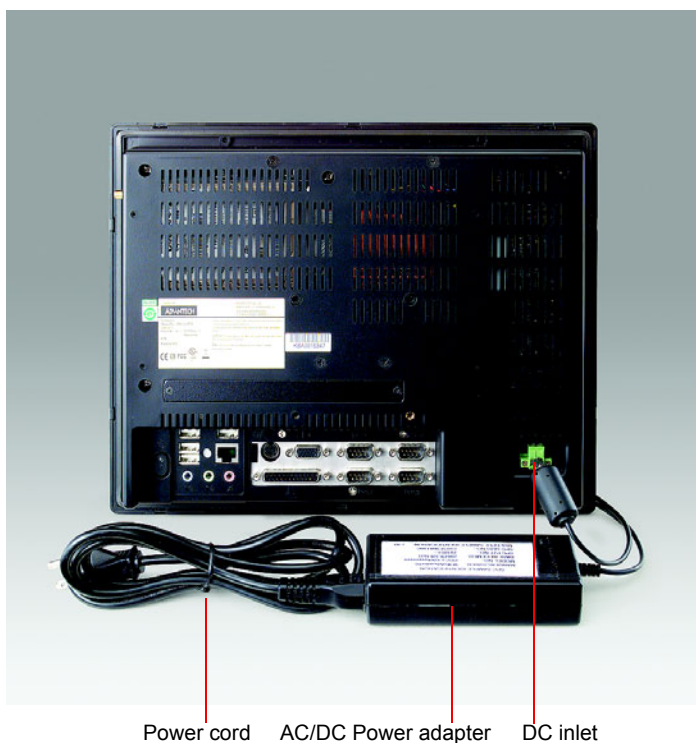
The panel PC can only be powered by a DC electrical outlet. Be sure to always handle the power cords by holding the plug ends only. Please follow the Figure 2-5 to connect the male plug of the power cord to the DC inlet of the panel PC.

### 2.2.2 Connecting the keyboard or mouse

Before you start the computer, please connect the Y-shaped adaptor to the PS/2 mouse and keyboard port on the I/O section of the panel PC, then connect the necessary mouse or keyboard to the Y-shaped adaptor or serial ports.

### 2.2.3 Switching on the power

When you look at the rear side of the panel PC, you will see the power switch as shown in Figure 2-2.



*Figure 2.5: Connect the power cord to the DC inlet*

## 2.3 Running the BIOS Setup Program

---

Your panel PC is likely to have been properly set up and configured by your dealer prior to delivery. You may still find it necessary to use the panel PC's BIOS (Basic Input-Output System) setup program to change system configuration information, such as the current date and time or your 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 you specify with the setup program are recorded in a special area of memory called CMOS RAM. This memory is backed up by a bat-

tery so that it will not be erased when you turn off or reset the system. Whenever you turn on the power, 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 an error occurs, an error message will be displayed on screen, and you will be prompted to run the setup program.

If you want to change the setup of BIOS, refer to Chapter 9 for more detailed information.

## 2.4 Installing System Software

---

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

*Note: Some distributors and system integrators may have already pre-installed system software prior to shipment of your panel PC.*

Installing software requires an installed HDD. Software can be loaded in the PPC-L127T using any of four methods:

### 2.4.1 Method 1: Use the Ethernet

You can use the Ethernet port to download software to the HDD.

### 2.4.2 Method 2: Use the COM or parallel port

You can use Lap Link 6 or similar transmission software. Connect another PC to the PPC-L127T with an appropriate cable and transmit the software to the PPC-L127T.

### 2.4.3 Method 3: Use a CD-ROM

If required, insert your operating system's installation or setup diskette into the diskette drive until the release button pops out.

The BIOS of the panel PC supports system boot-up directly from the CD-ROM drive. You may also insert your system installation CD-ROM into the CD-ROM drive.

Power on your panel PC or reset the system by pressing the "Ctrl+Alt+Del" keys simultaneously. The panel PC will automatically load the operating system from the diskette or CD-ROM.



If you are presented with the opening screen of a setup or installation program, follow the instructions on screen. The setup program will guide you through preparation of your hard drive, and installation of the operating system. If you are presented with an operating system command prompt, such as A:\>, then you must partition and format your hard drive, and manually copy the operating system files to it. Refer to your operating system user manual for instructions on partitioning and formatting a hard drive.

## 2.5 Installing the Drivers

---

After installing your system software, you will be able to set up the Ethernet, SVGA, audio, and touchscreen functions. All drivers are stored in a CD-ROM disc entitled “Drivers and Utilities” which can be found in your accessory box.

The various drivers and utilities in the CD-ROM disc have their own text files 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-L127T 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 and utilities.*



## **Hardware Installation and Upgrading**

This chapter details installing the PPC-L127T panel PC hardware.

Sections include:

- Overview of Hardware Installation and Upgrading
- Installing the 2.5" Hard Disk Drive (HDD)
- Installing the battery pack

# Chapter 3 Hardware Installation and Upgrading

## 3.1 Introduction

---

The panel PC consists of a PC-based computer that is housed in a plastic rear panel and a metal shielding case. You can install a HDD, DRAM, and battery pack by removing the rear panel and shielding case. Any maintenance or hardware upgrades can be easily completed after removing the rear panel and shielding case.

If you are a systems integrator and need to know how to completely disassemble the panel PC, you can find more useful information in Appendix C.

**Warning!**



*Do not remove the plastic rear cover until you have verified that no power is flowing within the panel PC. Power must be switched off and the power cord must be unplugged. Every time you service the panel PC, you should be aware of this.*

## 3.2 Installing the 2.5" Hard Disk Drive (HDD)

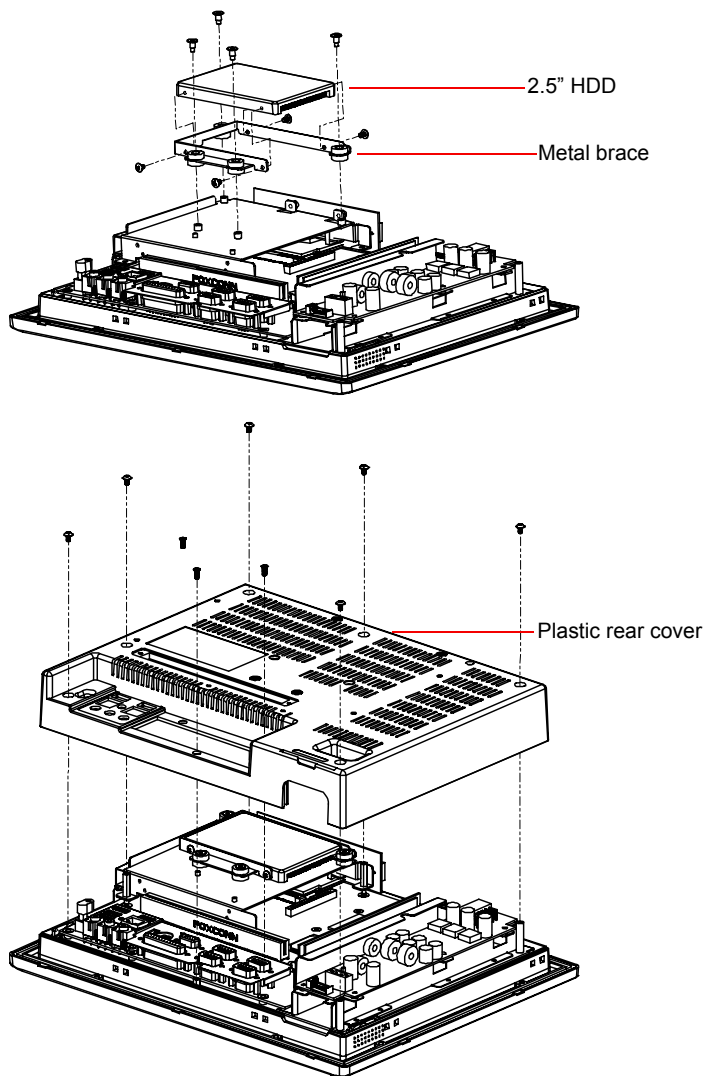
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You can attach one enhanced Integrated Device Electronics (IDE) hard disk drive to the panel PC's internal controller which uses a PCI local-bus interface. The advanced IDE controller supports faster data transfer and allows the IDE hard drive to exceed 528 MB. The following are instructions for installation:

1. Detach and remove the plastic rear cover.
2. There is a metal brace which holds the HDD to the upper left-hand side of the metal shielding case. (See Fig. 3-1.)
3. Place the HDD in the metal brace, and tighten the screws.
4. The HDD cable (1 x 44-pin to 1 x 44-pin) is next to the metal brace. Connect the HDD cable to the PC board (CN7). Make sure that the red/blue wire corresponds to Pin 1 on the connector, which is labeled on the board. Plug the other end of the cable into the IDE

hard drive, with Pin 1 on the cable corresponding to Pin 1 on the hard drive.

5. Put the plastic rear cover on and tighten the screws.

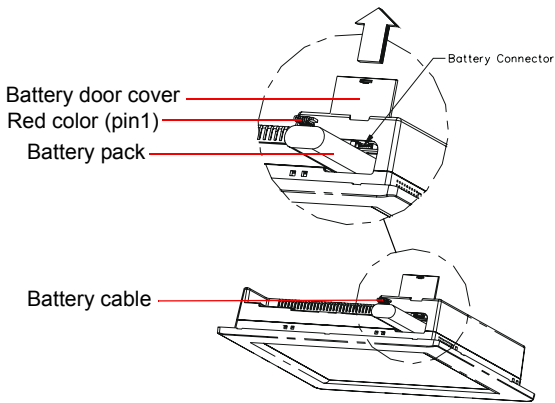


*Figure 3.1: Installing primary 2.5" HDD*

### 3.3 Installing the battery pack

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1. Pull up the battery door cover on the right bottom of PPC-L127T.
2. Put the battery pack in, then connect the battery cable to battery connector in the PPC-L127T. Make sure the red wire corresponds to Pin 1 on the connector.
3. Close the battery door cover.



***Figure 3.2: Installing the battery pack***

## **Jumper Settings and Connectors**

This chapter tells how to set up the panel PC hardware, including instructions on setting jumpers and connecting peripherals, switches and indicators. Be sure to read all the safety precautions before you begin the installation procedures.

Sections include:

- Jumpers and Connectors
- CMOS Clear for External RTC (J5)
- COM Port Interface
- VGA Interface
- Watchdog Timer Configuration

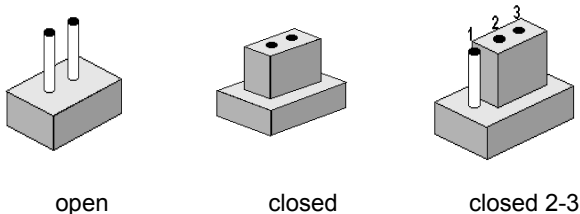
# Chapter 4 Jumper Settings and Connectors

## 4.1 Jumpers and Connectors

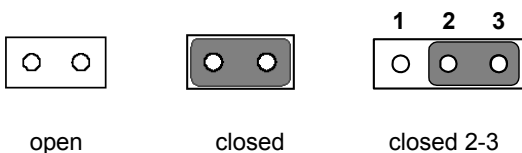
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### 4.1.1 Setting jumpers

You can configure your panel PC to match the needs of your application by setting 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) that slides over the pins to connect them. To “close” a jumper, you connect the pins with the clip. To “open” a jumper you remove the clip. Sometimes a jumper will have three pins, labeled 1, 2, and 3. In this case, you would connect either pins 1 and 2 or pins 2 and 3.



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 you have any doubts about the best hardware configuration for your application, contact your local distributor or sales representative before you make any changes.



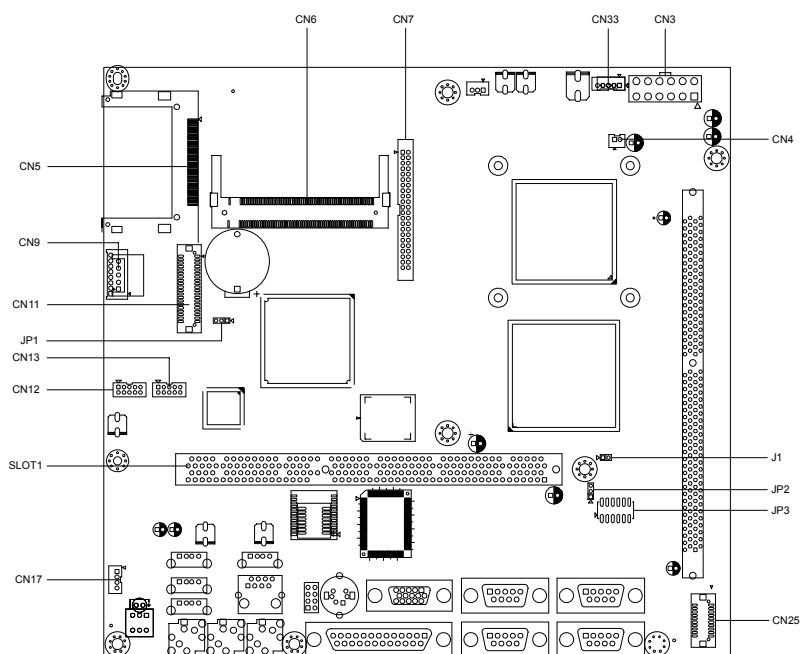
## 4.1.2 Jumpers and connectors

The motherboard of the PPC-L127T has a number of jumpers and connectors that allow you to configure your system to suit your applications. The table below lists the function of each of the board's jumpers.

**Table 4.1: Table 4.1: Jumpers and Connector functions**

|        |                                     |
|--------|-------------------------------------|
| CN3    | ATX power connector                 |
| CN4    | Reset button                        |
| CN5    | CF Slot ,TYPEII                     |
| CN6    | MINIPCI_124V                        |
| CN7    | IDE hard drive connector (2.5" HDD) |
| CN9    | Touch Screen connector              |
| CN11   | Slim Type CD ROM connector          |
| CN12   | Internal USB                        |
| CN13   | Internal COM Port                   |
| CN17   | Internal Speaker connector          |
| CN25   | LVDS connector                      |
| CN33   | Inverter power connector            |
| J1     | ATX/AT Select                       |
| JP1    | Clear CMOS                          |
| JP2    | COM Port PWR                        |
| JP3    | COM Pin 9 Select                    |
| Slot 1 | PCI/ISA bus expansion connector     |

### 4.1.3 Locating jumpers and connectors



*Figure 4.1: Jumpers and Connectors on the PPC-L127T motherboard*

## 4.2 CMOS Clear for External RTC (JP1)

**Warning!** To avoid damaging the computer, always turn off the power supply before setting “Clear CMOS”. Set the jumper back to “Normal operation” before turning on the power supply.

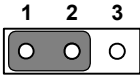
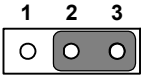


This jumper is used to erase CMOS data and reset system BIOS information.

The procedure for clearing CMOS is:

1. Turn off system.
2. Short pin 2 and pin 3.
3. Return jumper to pins 1 and 2.
4. Turn on the system. The BIOS is now reset to its default setting.

**Table 4.2: CMOS clear (J1)**

| * Normal operation   | Clear CMOS   |
|--|--|
|  |  |

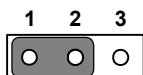
\* Default setting

## 4.2.1 COM1/COM2/COM3/COM4 pin 9 output setting (JP2; JP3)

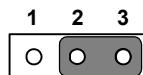
**Table 4.3: COM1/ COM2/COM3/COM4 pin 9 output setting (JP2; JP3)**

### JP2

\* +5V output



+12V output

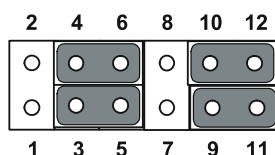
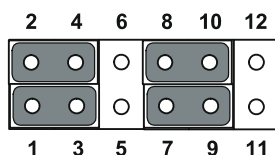


\*Default setting

### JP3

\*Pin 9 = Ring

Pin 9 + 5V or +12V Power output



\*Default setting

**Note:**

- Pins 1, 3 and 5 are dedicated to COM1*
- Pins 2, 4 and 6 are dedicated to COM2*
- Pins 7, 9 and 11 are dedicated to COM3*
- Pins 8, 10 and 12 are dedicated to COM4*

## 4.3 VGA Interface

### 4.3.1 LCD panel power setting

The panel PC's AGP SVGA interface supports 3.3 V LCD displays. The LCD cable already has a built-in default setting. You do not need to adjust any jumper or switch to select the panel power.

## I/O Pin Assignments

# Appendix A Pin Assignments

## A.1 Keyboard and PS/2 Mouse Connector (CN20)

*Table A.1: Keyboard and mouse connector (CN20)*

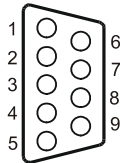
| Pin | Signal |
|-----|--------|
| 1   | KB_DAT |
| 2   | MS-DAT |
| 3   | GND    |
| 4   | +5 V   |
| 5   | KB_CLK |
| 6   | MS-CLK |

## A.2 USB port (CN12)

*Table A.2: USB port (CN12)*

| Pin | Signal |
|-----|--------|
| 1   | VCC    |
| 2   | DATA-  |
| 3   | DATA+  |
| 4   | GND    |

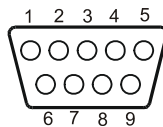
## A.3 COM1 RS-232 serial port (CN30)



*Table A.3: COM1 RS-232 serial port (CN30)*

| Pin | Signal | Pin | Signal |
|-----|--------|-----|--------|
| 1   | DCD    | 2   | RXD    |
| 3   | TxD    | 4   | DTR    |
| 5   | GND    | 6   | DSR    |
| 7   | RTS    | 8   | CTS    |
| 9   | RI     |     |        |

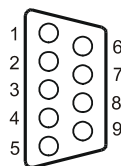
### A.4 COM2 (CN22)



**Table A.4: COM2 (CN22)**

| Pin | Signal RS-232 | RS-422 | RS-485 |
|-----|---------------|--------|--------|
| 1   | DCD           | TX-    | DATA-  |
| 2   | RX            | TX+    | DATA+  |
| 3   | TX            | RX+    |        |
| 4   | DTR           | RX-    |        |
| 5   | GND           | GND    |        |
| 6   | DSR           |        |        |
| 7   | RTS           |        |        |
| 8   | CTS           |        |        |
| 9   | RI            |        |        |

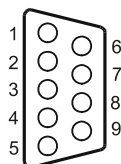
### A.5 COM3 RS-232 serial port (CN31)



**Table A.5: COM3 RS-232 serial port (CN31)**

| Pin | Signal | Pin | Signal |
|-----|--------|-----|--------|
| 1   | DCD    | 2   | RXD    |
| 3   | TxD    | 4   | DTR    |
| 5   | GND    | 6   | DSR    |
| 7   | RTS    | 8   | CTS    |
| 9   | RI     |     |        |

## A.6 COM4 RS-232 serial port (CN23)



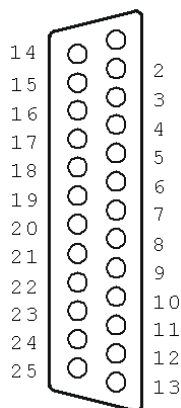
**Table A.6: COM3 RS-232 serial port (CN23)**

| Pin | Signal | Pin | Signal |
|-----|--------|-----|--------|
| 1   | DCD    | 2   | RXD    |
| 3   | TxD    | 4   | DTR    |
| 5   | GND    | 6   | DSR    |
| 7   | RTS    | 8   | CTS    |
| 9   | RI     |     |        |

## A.7 Parallel Port Connector (CN29)

**Table A.7: Parallel Port Connector (CN29)**

| Pin | Signal   | Pin | Signal  |
|-----|----------|-----|---------|
| 1   | STROBE*  | 2   | D0      |
| 3   | D1       | 4   | D2      |
| 5   | D3       | 6   | D4      |
| 7   | D5       | 8   | D6      |
| 9   | D7       | 10  | ACK*    |
| 11  | BUSY     | 12  | PE      |
| 13  | SLCT     | 14  | AUTOFD* |
| 15  | ERR*     | 16  | INIT*   |
| 17  | SLCTINI* | 18  | GND     |
| 19  | GND      | 20  | GND     |
| 21  | GND      | 22  | GND     |
| 23  | GND      | 24  | GND     |
| 25  | GND      |     |         |



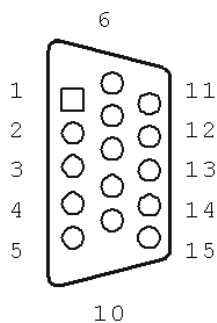
\*Low active



## A.8 VGA Connector (CN2)

**Table A.8: VGA connector (CN2)**

| Pin | Signal |
|-----|--------|
| 1   | RED    |
| 2   | GREEN  |
| 3   | BLUE   |
| 4   | N/A    |
| 5   | GND    |
| 6   | GND    |
| 7   | GND    |
| 8   | GND    |
| 9   | N/A    |
| 10  | GND    |
| 11  | N/A    |
| 12  | SPDAT  |
| 13  | HSYNC  |
| 14  | VSYNC  |
| 15  | SPCLK  |



# A.9 PCI/ISA Bus connector (Slot 1)

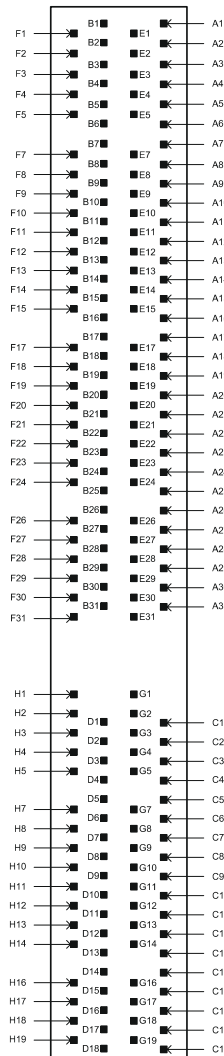


Figure A.1: PCI/ISA connector (Side View)

**Table A.9: PCI/ISA pin assignments (Pins A and B)**

| Pin | Signal | Pin | Signal |
|-----|--------|-----|--------|
| A1  | IOCHK  | B1  | GND    |
| A2  | SD7    | B2  | RST    |
| A3  | SD6    | B3  | VCC    |
| A4  | SD5    | B4  | IRQ9   |
| A5  | SD4    | B5  | -5 V   |
| A6  | SD3    | B6  | DRQ2   |
| A7  | SD2    | B7  | -12 V  |
| A8  | SD1    | B8  | OWS    |
| A9  | SD0    | B9  | +12 V  |
| A10 | IORDY  | B10 | GND    |
| A11 | AEN    | B11 | SMW    |
| A12 | SA19   | B12 | SMR    |
| A13 | SA18   | B13 | IOW    |
| A14 | SA17   | B14 | IOR    |
| A15 | SA16   | B15 | DACK3  |
| A16 | SA15   | B16 | DRQ3   |
| A17 | SA14   | B17 | DACK1  |
| A18 | SA13   | B18 | DRQ1   |
| A19 | SA12   | B19 | RFSH   |
| A20 | SA11   | B20 | SCLk   |
| A21 | SA10   | B21 | IRQ7   |
| A22 | SA9    | B22 | IRQ6   |
| A23 | SA8    | B23 | IRQ5   |
| A24 | SA7    | B24 | IRQ4   |
| A25 | SA6    | B25 | IRQ3   |
| A26 | SA5    | B26 | DACK2  |
| A27 | SA4    | B27 | TC     |
| A28 | SA3    | B28 | ALE    |
| A29 | SA2    | B29 | VCC    |
| A30 | SA1    | B30 | OSC    |
| A31 | SA0    | B31 | GND    |

**Table A.10: PCI/ISA pin assignments (Pins C and D)**

| <b>Pin</b> | <b>Signal</b> | <b>Pin</b> | <b>Signal</b>   |
|------------|---------------|------------|-----------------|
| C1         | sbhe          | D1         | mem16           |
| C2         | la23          | D2         | io16            |
| C3         | la22          | D3         | irq10           |
| C4         | la21          | D4         | irq11           |
| C5         | la20          | D5         | irq12           |
| C6         | la19          | D6         | irq15           |
| C7         | la18          | D7         | irq14           |
| C8         | la17          | D8         | dack0           |
| C9         | memr          | D9         | drq0            |
| C10        | memw          | D10        | dack5           |
| C11        | sd8           | D11        | drq5            |
| C12        | sd9           | D12        | dack6           |
| C13        | sd10          | D13        | drq6            |
| C14        | sd11          | D14        | dack7           |
| C15        | sd12          | D15        | drq7            |
| C16        | sd13          | D16        | v <sub>cc</sub> |
| C17        | sd14          | D17        | master          |
| C18        | sd15          | D18        | gnd             |

**Table A.11: PCI/ISA pin assignments (Pins E and F)**

| Pin | Signal          | Pin | Signal          |
|-----|-----------------|-----|-----------------|
| E1  | gnd             | F1  | GND             |
| E2  | gnd             | F2  | gnd             |
| E3  | int 1           | F3  | int3            |
| E4  | int 2           | F4  | int4            |
| E5  | v <sub>cc</sub> | F5  | v <sub>cc</sub> |
| E6  | —               | F6  | —               |
| E7  | v <sub>cc</sub> | F7  | v <sub>cc</sub> |
| E8  | PCIRST          | F8  | pclk2           |
| E9  | GNT1            | F9  | GND             |
| E10 | REQ1            | F10 | GNT2            |
| E11 | gnd             | F11 | gnD             |
| E12 | pclk1           | F12 | REQ2            |
| E13 | gnd             | F13 | ad31            |
| E14 | ad30            | F14 | ad29            |
| E15 | REQ3            | F15 | nc              |
| E16 | —               | F16 | —               |
| E17 | GNT3            | F17 | nc              |
| E18 | ad28            | F18 | ad27            |
| E19 | ad26            | F19 | ad25            |
| E20 | ad24            | F20 | cbe3            |
| E21 | ad22            | F21 | ad23            |
| E22 | ad20            | F22 | ad21            |
| E23 | ad18            | F23 | ad19            |
| E24 | nc              | F24 | PMF             |
| E25 | —               | F25 | —               |
| E26 | NC              | F26 | VSB3.3          |
| E27 | ad16            | F27 | ad17            |
| E28 | frame           | F28 | irdy            |
| E29 | cbe2            | F29 | devsel          |
| E30 | trdy            | F30 | lock            |
| E31 | stop            | F31 | perr            |

**Table A.12: PCI/ISA pin assignments (Pins G and H)**

| Pin | Signal          | Pin | Signal          |
|-----|-----------------|-----|-----------------|
| G1  | NC              | H1  | serr            |
| G2  | NC              | H2  | ad15            |
| G3  | cbe1            | H3  | ad14            |
| G4  | par             | H4  | ad12            |
| G5  | gnd             | H5  | gnd             |
| G6  | —               | H6  | —               |
| G7  | gnd             | H7  | gnd             |
| G8  | ad13            | H8  | ad10            |
| G9  | ad11            | H9  | ad8             |
| G10 | ad9             | H10 | ad7             |
| G11 | cbeo            | H11 | ad5             |
| G12 | ad6             | H12 | ad3             |
| G13 | ad4             | H13 | ad1             |
| G14 | ad2             | H14 | ad0             |
| G15 | —               | H15 | —               |
| G16 | v <sub>cc</sub> | H16 | v <sub>cc</sub> |
| G17 | v <sub>cc</sub> | H17 | v <sub>cc</sub> |
| G18 | gnd             | H18 | gnd             |
| G19 | gnd             | H19 | gnd             |



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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