

**PNA-1800 Series**  
**Communications Appliance**

**User's Manual**



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# Chapter 1 Introduction

## 1.1 About This Manual

This manual describes all required information for setting up and using the PNA-1800 series products.

PNA-1800 series products provide the essential components for delivering optimal performance and functionality in the value communications appliance market segment. This manual should help its users to get familiar with PNA-1800 series products to be able to fulfill requirements.

Features of PNA-1800 series products includes:

- Versatile networking and I/O capabilities: 3/4/6 choice of Ethernet ports (optional per model)
- Support one compact flash card or one 2.5" HDD per IDE channel
- Two USB ports
- Two available COM ports
- One on-board DMA33 IDE channel to support two IDE hard disk drives
- One PCI expansion slot

## 1.2 Manual Organization

The manual describes how to configure your PNA-1800 system to meet various operating requirements. It is divided into three chapters, with each chapter addressing a basic concept and operation of this whole system.

Chapter 1: Introduction. It's a briefing of the whole documentation and has some guidelines for users who do not want to read through all the pages, but still finding what they need.

Chapter 2: Hardware Configuration Setting and Installation. This chapter shows how the hardware was put together. Detail information is also included in this section of this article. It shows the definitions and locations of Jumpers and Connectors that you can easily configure your system. Descriptions on how to properly mount the CPU and main memory to get a safe installation. By reading this chapter, the users should be able to set up PNA-1800.

Chapter 3: Operation Information. It illustrates the main board system architecture. This section intends to give the users more information on the system architecture and how its performance can be maximized.

Any updates to this manual, technical clarification, and answers to frequently asked questions will be posted on the following web site: <http://www.portwell.com.tw/technical.htm>

### *1.3 Technical Support Options*

Users may find helpful tips or related information on Portwell's Web site.  
<http://www.portwell.com.tw>. A direct contact to Portwell's technical person is also available.

For further support, users may also contact our headquarter in Taipei or contact Portwell's distributors.

## Chapter 2      Getting Started

This section describes how the hardware installation and system settings should be done.

### 2.1 *Included Hardware*

The following hardware are included in your kit:

- PPAP-100W net appliance system board
- Vertical 3-Slot (2xPCI) PICMG Backplane
- PNA-N106F3/ F4/F6 Ethernet LAN port board
- 125 W power supply
- 1U Chassis
- One CPU and one SODIMM
- One NULL cable

### 2.2 *Before You Begin*

To prevent damage to any system board, it is important to handle it with care. The following measures are generally sufficient to protect your equipment from static electricity discharge:

When handling the board, use a grounded wrist strap designed for static discharge elimination. Touch a grounded metal object before removing the board from the antistatic bag. Handle the board by its edges only; do not touch its components, peripheral chips, memory modules or gold contacts.

When handling processor chips or memory modules, avoid touching their pins or gold edge fingers. Put the value communications appliance system board and peripherals back into the antistatic bag when they are not in use or not installed in the chassis.

Some circuitry on the system board can continue to operate even though the power is switched off. Under no circumstances should the Lithium coin cell that is being used to power the real-time clock be allowed to be shorted. The coin cell can heat under these conditions and present a burn hazard.

**Warning :** This guide is for technically qualified personnel who have experience installing and configuring system boards. Disconnect the system board power supply from its power source before you connect or disconnect cables or install or remove any system board components. Failure to do this can result in personnel injury or equipment damage.

**Warning :** Avoid short-circuiting the lithium battery; this can cause it to superheat and cause burns if touched.

**Warning :** Do not operate the processor without a thermal solution. Damage to the processor can occur in seconds.

## 2.3 The Chassis

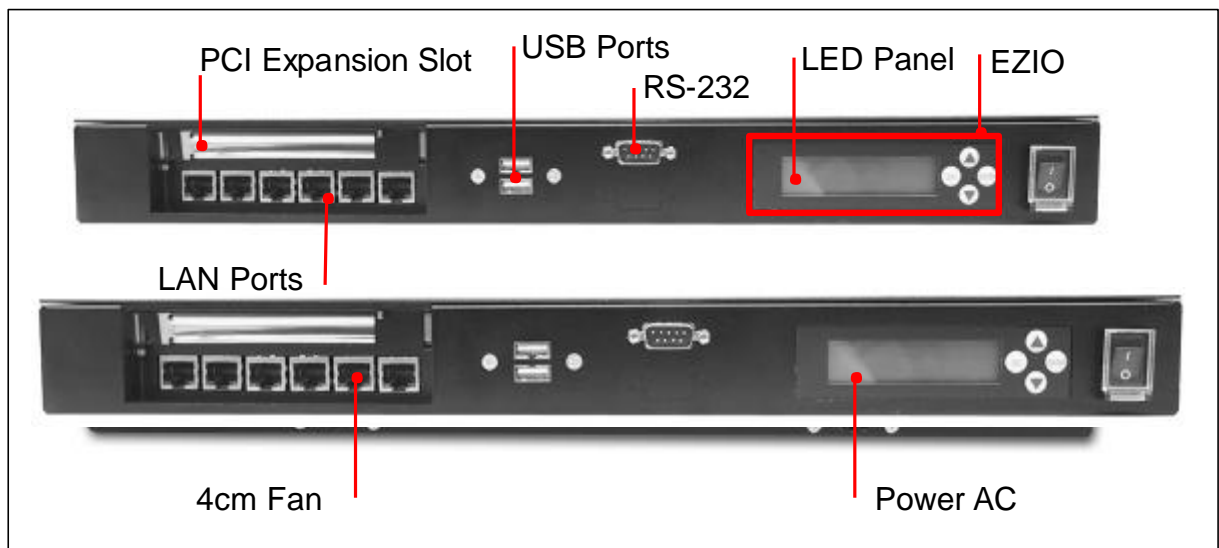
The system is integrated in a standard 19" 1U chassis and fits in all standard rack or cabinet (**Fig. 2-1** , **Fig. 2-2**). Front accessible are an EZIO (For PNA-1810 only), one RS-232 port, two USB ports, on PCI-expansion slot and a set of LAN ports. The LAN ports number (3, 4 or 6) can be different according to model.



**Fig. 2-1** Front View of the Chassis



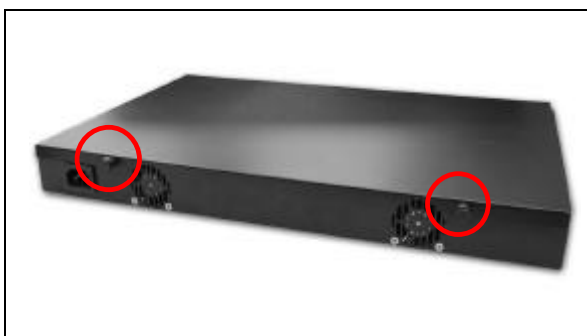
**Fig. 2-2** Rear View of the Chassis



**Fig. 2-3** Function description of front and rear panel

## 2.4 Opening the Chassis

To open the chassis, follow below steps: (**Fig. 2-4** to **Fig. 2-5**)



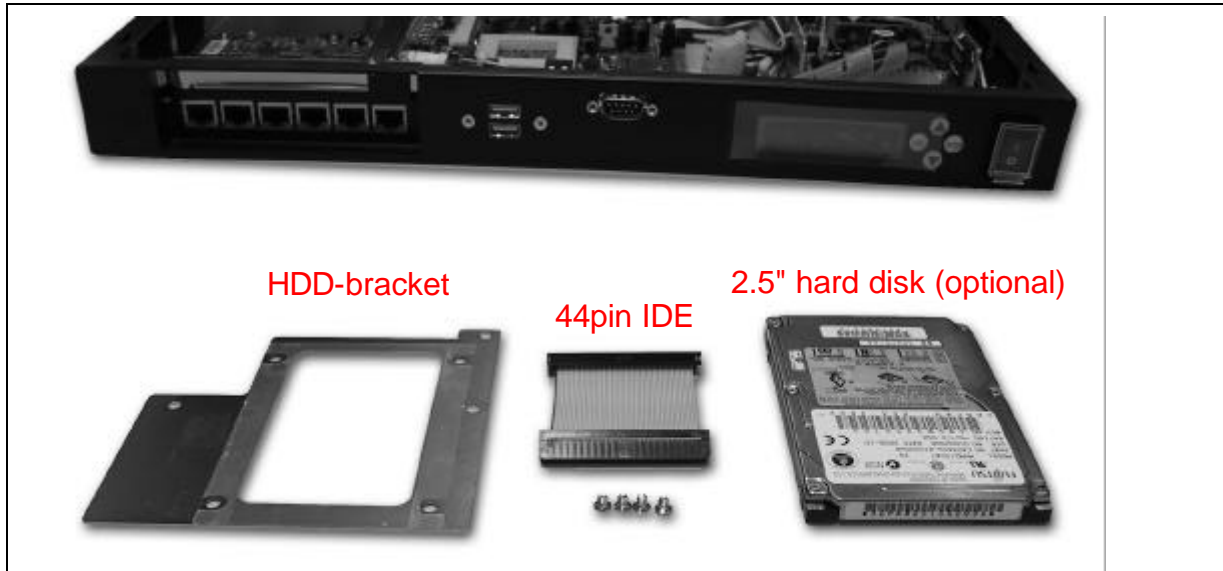
**Fig. 2-4** Remove the screw by hand or



**Fig. 2-5** Slide lightly the top-cover to rear side

## 2.5 Installing a Hard Disk Drive

The system has a internal drive bay for one 2.5" hard disk drive or CF(Compact Flash) adaptor board. If the HDD is not pre-installed, you can install by yourself. Please follow steps from **Fig. 2-6 to Fig.20**. Before you install HDD, you need the parts from the accessory-bag as shown on **Fig. 2-6**. They are one HDD-bracket, several screws and one 44pin IDE cable.



**Fig. 2-6**



**Fig. 2-7** Fix the hard disk drive on the HDD bracket with four sink-head screws

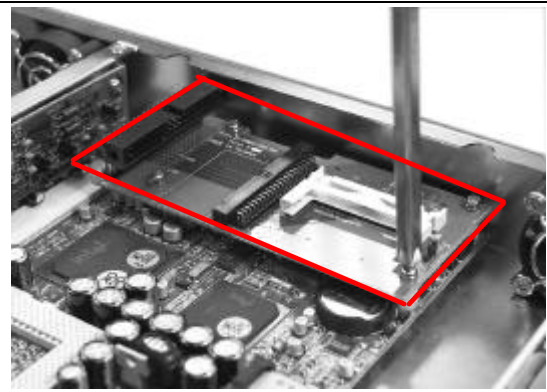


**Fig. 2-8** Plug the IDE cable into hard disk drive connector

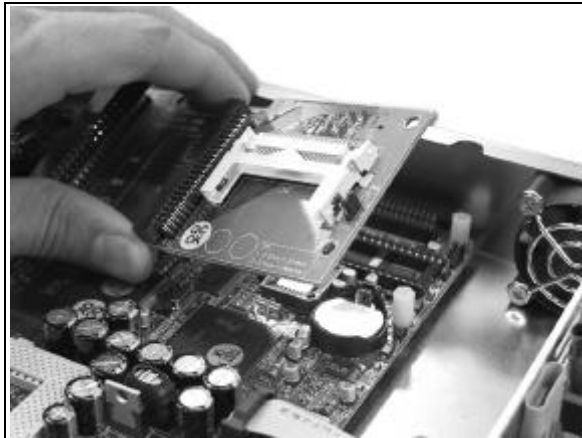
**Note :** Red cable have to aim at first pin on hard disk drive and PPAP-100 CPU board



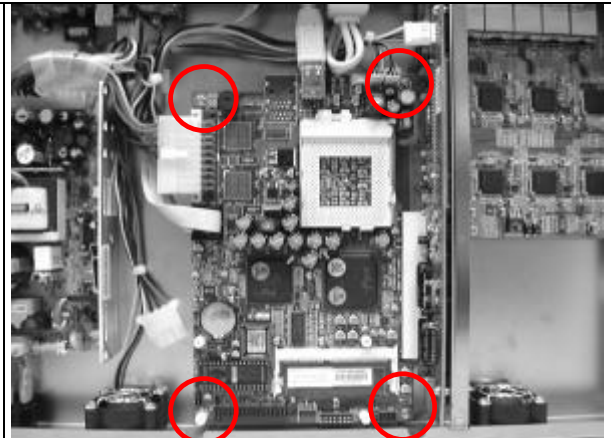
**Fig. 2-9** The half assembled hard disk drive



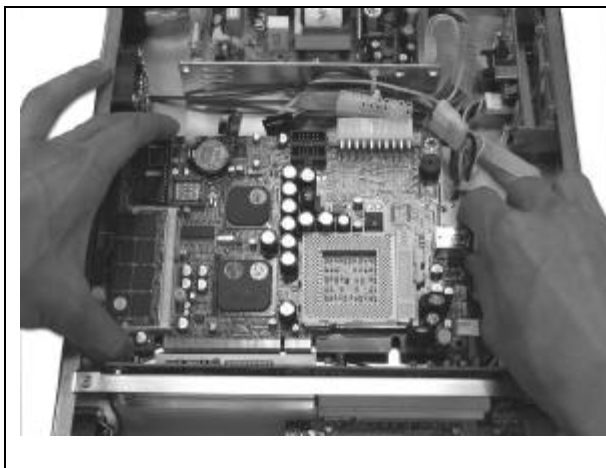
**Fig. 2-10** Remove the screws



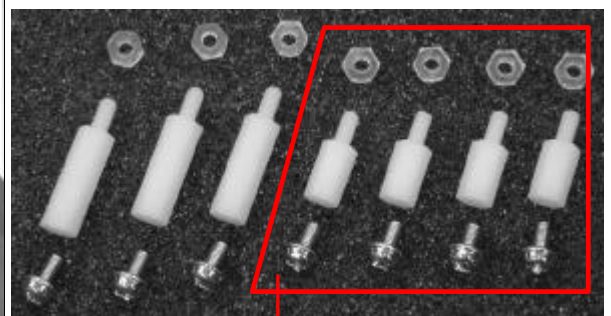
**Fig. 2-11** Take away the CF-adaptor board



**Fig. 2-12** Remove three round-head screws and one plastic hex-stand-off



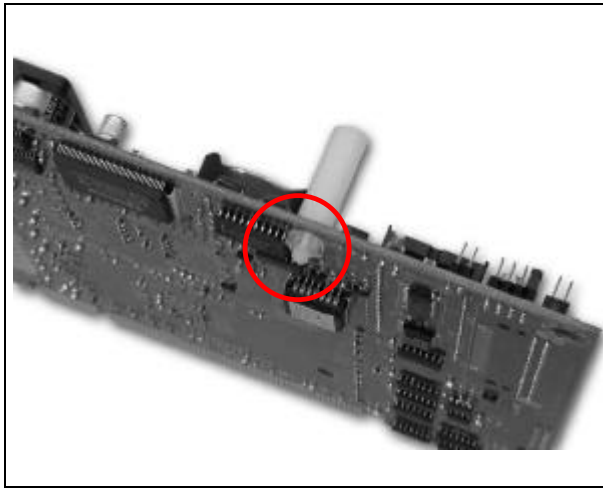
**Fig. 2-13** Remove all connectors (except USB connector), then pull out PPAP-100W CPU board vertically



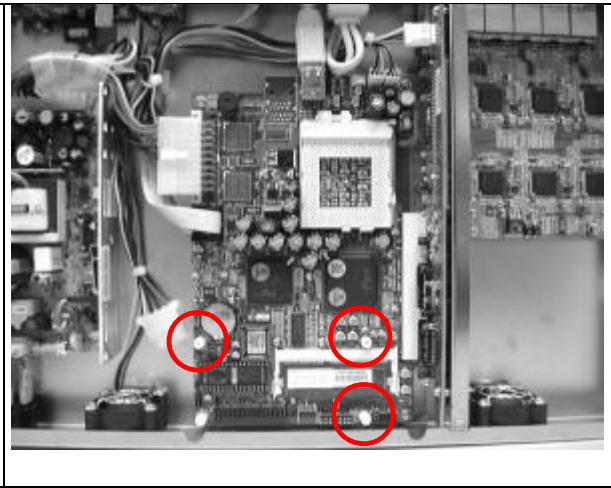
Attached in accessory-bag

**Fig. 2-14** Long and short plastic hex-stand-off and nut

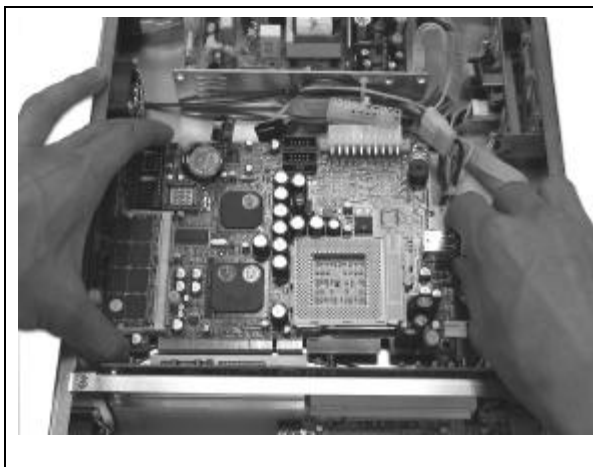




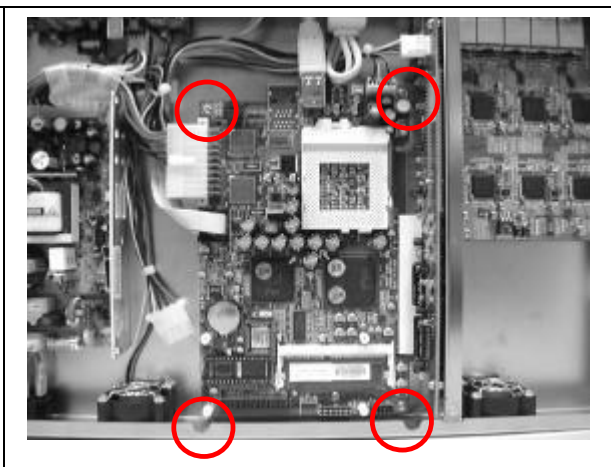
**Fig. 2-15** Remove plastic nut and pull out long plastic hex-stand-off



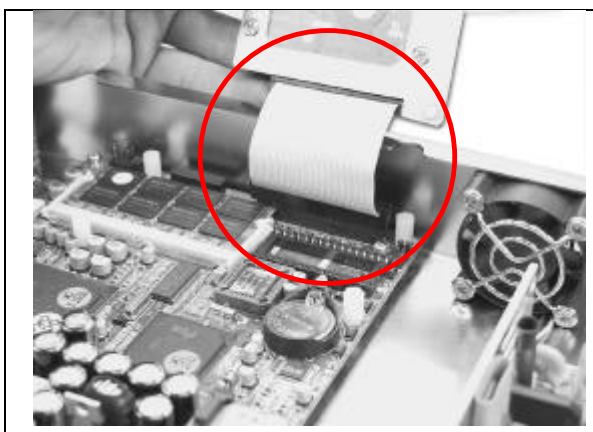
**Fig. 2-16** Replaced long plastic hex-stand-off with short plastic hex-stand-off and then fix plastic nuts



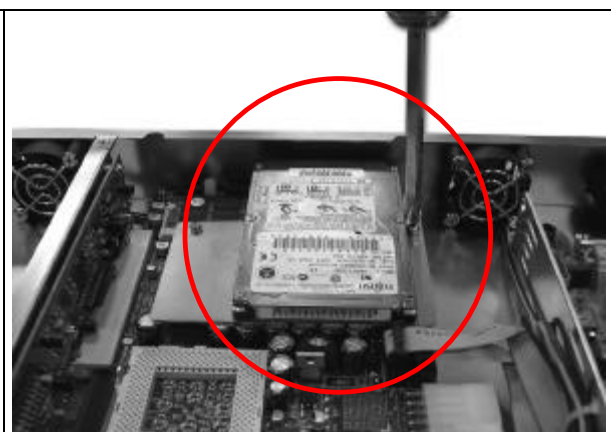
**Fig. 2-17** Replace the PPAP-100W CPU Board



**Fig. 2-18** Replace long plastic hex-stand-off with short plastic hex-stand-off, then fix it and three round-head screws on the corner



**Fig. 2-19** Plug the cable into the connector on PPAP-100W CPU card



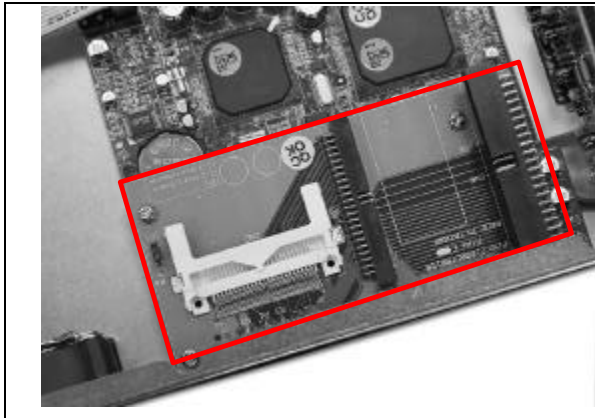
**Fig. 2-20** Place the hard disk drive over the PPAP-100W CPU card, then fix the four round-head screws in four plastic hex-stand-off holes

## 2.6 Installing a CF (Compact Flash) Card

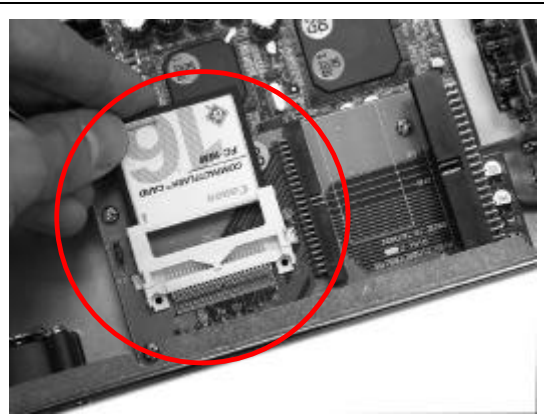
1. The adaptor board for compact flash card is over the PPAP-100W SBC and in the middle

front in the chassis (**Fig. 2-21**)

2. To install a compact flash card, it needs only to insert the CF card into the white socket on the adaptor board (**Fig. 2-22**)



**Fig. 2-21**



**Fig. 2-22**

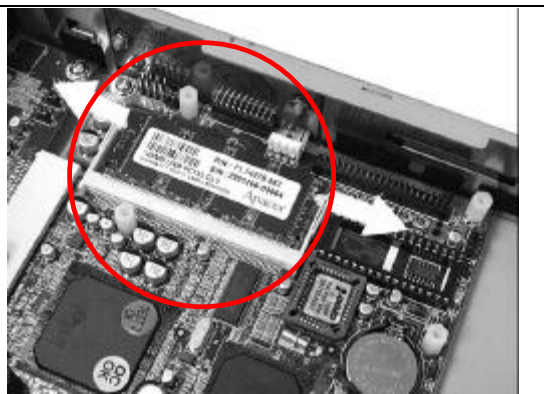
## 2.7 Upgrading the RAM Module

In case of upgrading system RAM module, follow these steps:

1. Remove the screws on four corners, then pull out the CF-adaptor board vertically. (**Fig.2-23**)
2. The RAM module lies directly under the CF-adaptor board (**Fig.2-24**). Pull out the lock arms on both side and the RAM module springs up automatically.

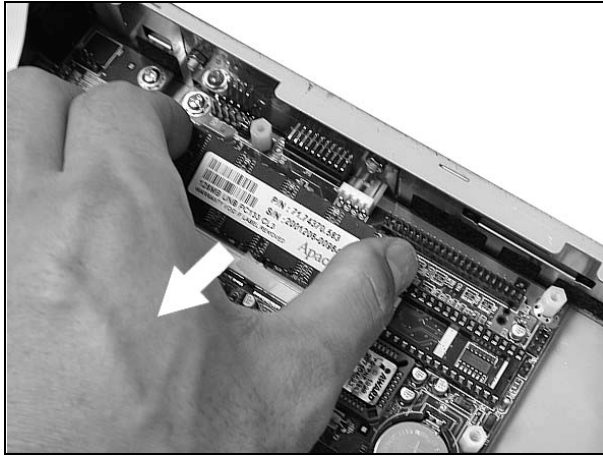


**Fig. 2-23**

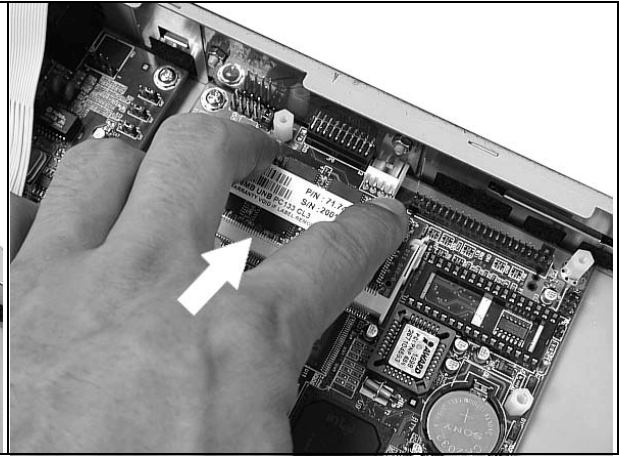


**Fig. 2-24**

4. Pull out the old module and then insert the new one (**Fig.2-25**).
5. Press down gently on both left and right edges of the module (**Fig.2-26**) until it "clicks".



**Fig. 2-25**

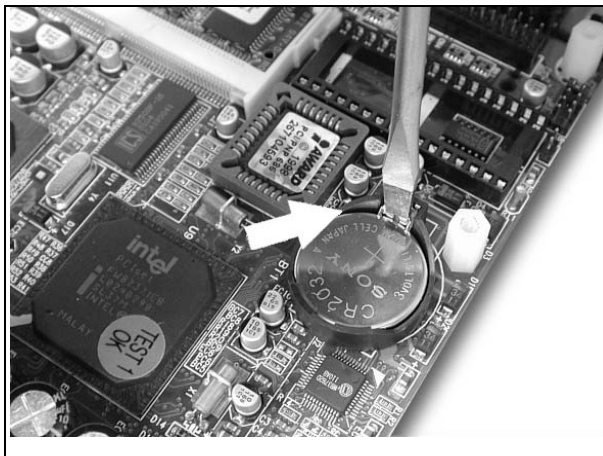


**Fig. 2-26**

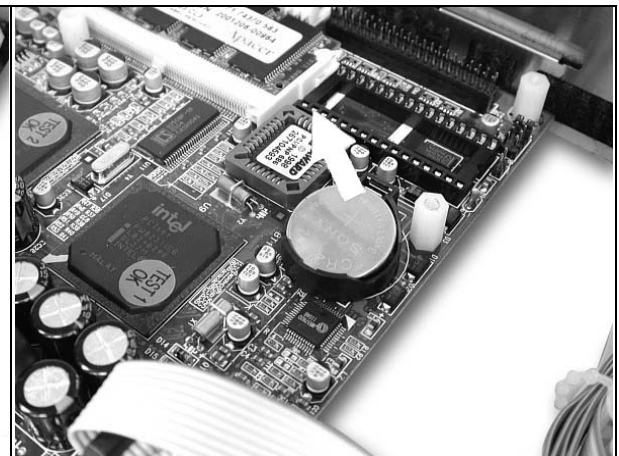
7. Then reverse step 1 to install back the CF-adaptor board.

## 2.8 Replace the Battery

In case of replacing the battery, follow these steps:

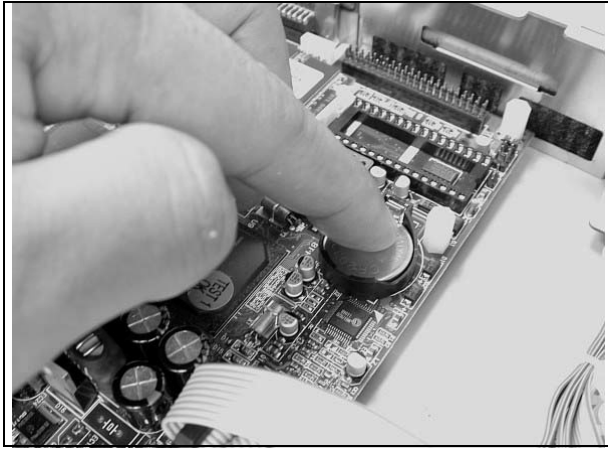


**Fig. 2-27**



**Fig. 2-28**

1. The same procedure as upgrading RAM module, step 1.
2. Press the metal hook backward. (**Fig.2-27**)
3. The battery springs automatically. (**Fig.2-28**)



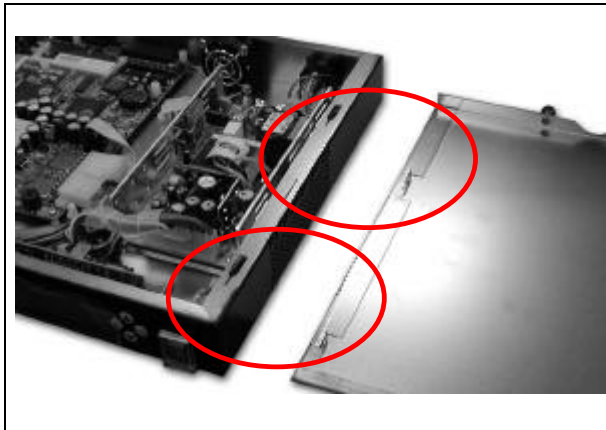
**Fig. 2-29**

4. Replace a new one and press it back with fingertip. (**Fig.2-29**)

## 2.9 Assembling the System

The mechanism of top cover assembly to chassis is very user friendly and needs only two screws by hand on rear panel to fix the top cover. However, by assembling the top cover one has to notice that the hooks must get in the proper position so that the top cover can fit the chassis.

1. Lay the top cover properly above the chassis (**Fig.2-30,31**) and make sure that all four hooks are in the right position.
2. Push the top cover towards to the front side. (**Fig.2-32**)
3. Fix the screws by hand or screwdriver (**Fig.2-33**)



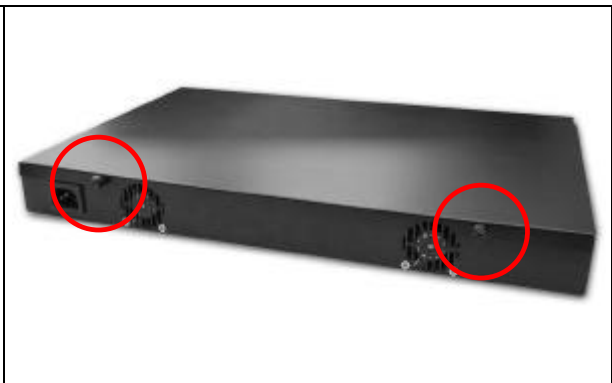
**Fig. 2-30**



**Fig. 2-31**



**Fig. 2-32**



**Fig. 2-33**

## 2.10 Configuring the System Board



### 2.10.1 Product Specifications

<b>Main processor</b>	?? Intel® FC-PGA Celeron™/Pentium® III Processors (66/100 MHz system bus only)
<b>BIOS</b>	?? Award system BIOS with 256KB Flash ROM to support DMI, PnP, Green function, Redirect to console.
<b>Main Memory</b>	?? One 144-pin SODIMM socket, supporting 3.3V SDRAM up to 256MB
<b>L2 Cache Memory</b>	?? 128KB/256KB PBSRAM built in (Celeron™/Pentium® III) CPU module
<b>Chipset</b>	?? Intel® 440BX AGPset

<b>IDE Interface</b>	?? One on-board DMA33 IDE channel to support two IDE devices Default support 2.5" IDE devices only
<b>Serial Ports</b>	?? One DB9 Connector for connecting to console ?? One internal Pin pair connector for optional LCD/Key pad module (Portwell Proprietary)
<b>USB Interface</b>	?? Support two USB ports for high speed I/O peripheral devices
<b>Auxiliary I/O Interfaces</b>	?? System reset switch, Power LED, LAN activity LED, Power On/Off button and HDD LED interface
<b>Watchdog Timer</b>	?? 0.5,1,2,4,8,16,32,64 sec. time-out intervals by jumper setting or 255 intervals from 0.5 min. to 254.5 min. by software programming
<b>Power Inlet</b>	?? One standard 20-pin ATX power connector, with power button pin ?? One on-board DC input jack
<b>I<sup>2</sup>C</b>	?? One I <sup>2</sup> C interface connector
<b>PCI Golden Finger</b>	?? One PCI golden finger edge connector for PCI connection
<b>Disk-On-Chip Feature</b>	?? One 32-pin socket for M-system Flash Disk up to 288MB
<b>Hardware Monitor</b>	On-board hardware monitor for: ?? CPU fan x 1 ?? Chassis fan x 2 ?? System voltages: +5V and +12V
<b>Power Good</b>	?? On-board power good generator with reset time, 300ms~500ms

## 2.10.2 Hardware Configuration Setting

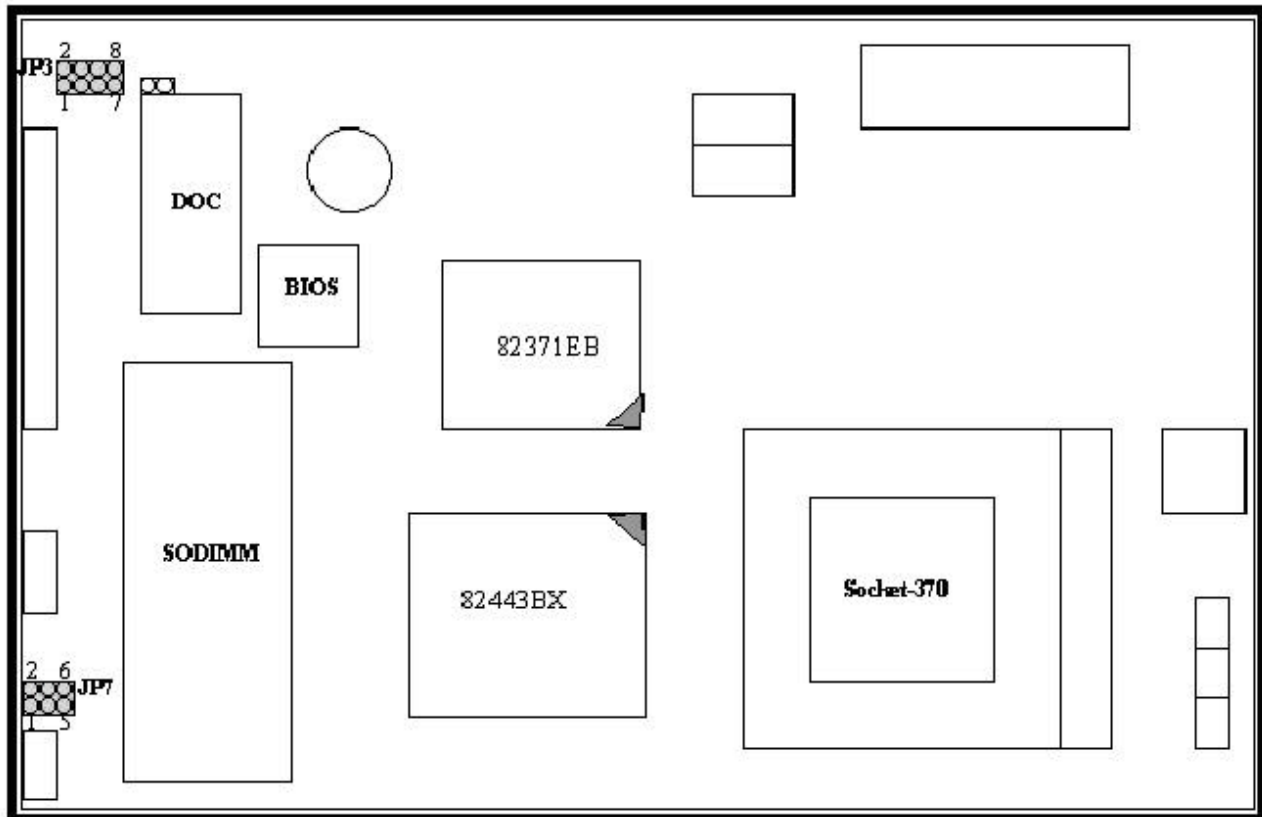
This section gives the definitions and shows the positions of jumpers, headers and connectors. All of the configuration jumpers on PPAP-100W are in the proper position. The default settings set by factory are marked with a star (★).

### **2.10.2.1 Jumpers**

In general, jumpers on the single board computer are used to select options for certain features. Some of the jumpers are user-configurable, which allows system enhancement. The others are for testing purpose only and should not be altered. To select any option, cover the jumper cap over (Short) or remove (NC) it from the jumper pins according to the following instructions. Here NC stands for "Not Connected". (Please refer to **Fig. 2-34** for detail jumper positions)



**Fig.2-34 PPAP-100W Jumper Locations**



#### **Disk-On-Chip Jumper Setting (JP3)**

1-2	3-4	5-6	7-8	Memory address Window
Short	NC	NC	NC	D0000-D1FFF
NC	Short	NC	NC	D2000-D3FFF
NC	NC	Short	NC	D4000-D5FFF
NC	NC	NC	Short	D6000-D7FFF

#### **Watch-Dog Timer Jumper Setting (JP7)**

5-6	3-4	1-2	Time-Out Interval (TWD)
Short	Short	Short	0.5 Sec.
Short	Short	NC	1 Sec.

Short	NC	Short	2 Sec.
Short	NC	NC	4 Sec.
NC	Short	Short	8 Sec.
NC	Short	NC	16 Sec.
NC	NC	Short	32 Sec.
NC	NC	NC	64 Sec.

### **2.10.2.2 Connectors**

I/O peripheral devices and Flash disk will be connected to these interface connectors or DOC socket located on this single board computer.

Connector	Function	Remark
JP1	System Reset Header	
JP6	LED Indicator	
JP9	ATX Power Control Button	
JP10	Chassis Fan 1 Monitor Header	
JP11	Chassis Fan 2 Monitor Header	
JP12	CPU Fan Monitor Header	
CN1	COM 1	
CN2	ATX Power Connector	
CN3	COM 2	
CN4	Pitch 2.0mm 44-pin Hard Drive Connector	
CN5	Dual RJ-45 Ethernet Ports	
CN7	Dual USB Ports	
CN8	2.5"/3.5" Hard Drive Power Connector	
CN9	AD/DC Adaptor Power Input Jack	
CN10	ATX Power Control Connector	Connect to backplane
CN11	I <sup>2</sup> C External Interface	
CN12	Compact flash Socket for IDE Interface	On solder side

### **Pin Assignments of Connectors**

#### **JP1: Reset Header**

Pin No.	Signal Description
1	Reset
2	Ground

#### **J06: LED Indicators**

Pin No.	Signal Description	Type
1	Link A	Yellow LED
2	GPO0	Yellow LED
3	Active A	Yellow LED
4	GPO8	Yellow LED
5	10/100 A	Yellow LED
6	GPO24	Yellow LED



7	Link B	Yellow LED
8	GPO25	Yellow LED
9	Active B	Yellow LED
10	GPO26	Yellow LED
11	10/100 B	Yellow LED
12	GPO27	Yellow LED
13	HDD LED	Red LED
14	GPO28	Yellow LED
15	Power LED	Green LED
16	GPO29	Yellow LED
17	Ground	Wire/Cable
18	5VSB	Wire/Cable
19	SW ON	Wire/Cable
20	System H/W Reset	Wire/Cable

#### **JP9: ATX Power Button**

Pin No.	Signal Description
1	Power Button Control Signal
2	Ground

#### **JP10/JP11/JP12: Chassis/CPU Fan Header**

Pin No.	Signal Description
1	Pull-Up 5V (Reserved for sense signal)
2	+12V
3	Ground

#### **CN4: IDE Interface Connector**

Pin No.	Signal Description	Pin No.	Signal Description
1	Reset #	2	Data 7
3	Data 7	4	Data 8
5	Data 6	6	Data 9
7	Data 5	8	Data 10
9	Data 4	10	Data 11
11	Data 3	12	Data 12
13	Data 2	14	Data 13
15	Data 1	16	Data 14
17	Data 0	18	Data 15
19	Ground	20	N/C
21	DMA REQ	22	Ground
23	IOW #	24	Ground
25	IOR #	26	Ground
27	IOCHRDY	28	Pull-Down
29	DMA ACK #	30	Ground
31	INT REQ 14	32	CS16
33	DAI	34	N/C
35	DA0	36	DA2
37	CS1	38	CS3
39	HDD Active #	40	Ground

41	+5V	42	+5V
43	Ground	44	Ground

#### **CN7: External USB Interface Connector**

Pin No.	Signal Description
1	OC0
2	P0-
3	P0+
4	Ground
5	OC1
6	P1-
7	P1+
8	Ground

#### **CN1/CN3 : Serial Port 1/2 Connector (2 x 5 Shrouded Header)**

Pin No.	Signal Description
1	Data Carrier Detect (DCD)
2	Receive Data (RXD)
3	Transmit Data (TXD)
4	Data Terminal Ready (DTR)
5	Ground (GND)
6	Data Set Ready (DSR)
7	Request to Send (RTS)
8	Clear to Send (CTS)
9	Ring Indicator (RI)
10	No Connection

#### **CN8: Hard Disk Power Connector**

Pin No.	Signal Description
1	+12V
2	GND
3	GND
4	VCC (+5V)

#### **CN9: AC/DC Adaptor Power Input**

Pin No.	Signal Description
1	+5V
2	+12V
3	+5V
4	+12V
5	Ground

### CN11: SM-Bus Interface

Pin No.	Signal Description
1	+5V
2	SMB-Data
3	SMB-CLK
4	Ground

### CN12: Compact Flash Socket

Pin No.	Signal Description	Pin No.	Signal Description
1	Ground	26	CD1
2	D3	27	D11
3	D4	28	D12
4	D5	29	D13
5	D6	30	D14
6	D7	31	D15
7	CS1	32	CS3
8	A10	33	VS1
9	Output Enable	34	IOR
10	A9	35	IOW
11	A8	36	Write Enable
12	A7	37	IRQ
13	+5V	38	+5V
14	A6	39	CSEL
15	A5	40	VS2
16	A4	41	Reset
17	A3	42	IORDY
18	A2	43	DREQ
19	A1	44	DACK
20	A0	45	VD2
21	D0	46	VD1
22	D1	47	D8
23	D2	48	D9
24	CS16	49	D10
25	CD2	50	Ground

### CN10: ATX Power Control

Pin No.	Signal Description
1	Power OK
2	5v Standby
3	Power On
4	Ground

## 2.11 Installing a Different Processor

### Installing CPU

1. Lift the handling lever of CPU socket outwards and upwards to the other end.
2. Align the processor pins with holes on the socket. Make sure that the notched corner or

dot mark (pin 1) of the CPU corresponds to the socket's bevel end. Then press the CPU gently until it fits into place. If this operation is not easy or smooth, don't do it forcibly. You need to check and rebuild the CPU pin uniformly.

3. Push down the lever to lock processor chip into the socket.
4. Follow the installation guide of cooling fan or heat sink to mount it on CPU surface and lock it on the socket 370.
5. Be sure to follow particular CPU speed and voltage type to adjust the jumper settings properly.

## **Removing CPU**

1. Unlock the cooling fan first.
2. Lift the lever of CPU socket outwards and upwards to the other end.
3. Carefully lift up the existing CPU to remove it from the socket.
4. Follow the steps of installing a CPU to change to another one or place handling bar to close the opened socket.



### **2.11.1 Configuring Processor Speed**

The system was designed to self-detect its CPU speed. So it does not require any system adjustment.

## *2.12 Installing Memory*

This PPAP-100W provides one 144-pin SODIMM socket. The maximum memory size is 128MB. Normally, the SODIMM used could be either 3.3V EDO (Extended Data Out) memory with speed less than 70ns or 3.3V SDRAM (Synchronized DRAM) with speed less than 100ns (-10). If you adopt 100MHz system clock, you need to use SODIMM with speed less than 80ns (-8). It is better to use PC100-compliant memory chip on your system.

For system compatibility and stability, don't use memory module without brand. You can also use the single or double-side SODIMM without parity check and ECC function.

Watch out the contact and lock integrity of memory module with socket, it will impact on the system reliability. Follow normal procedure to install your DRAM module into memory socket. Before locking, make sure that the module has been fully inserted into card slot.

**NOTE:** For maintaining system stability, don't change any of DRAM parameters in BIOS setup to upgrade your system performance except for getting technical information.

## *2.13 Using a Client Computer*

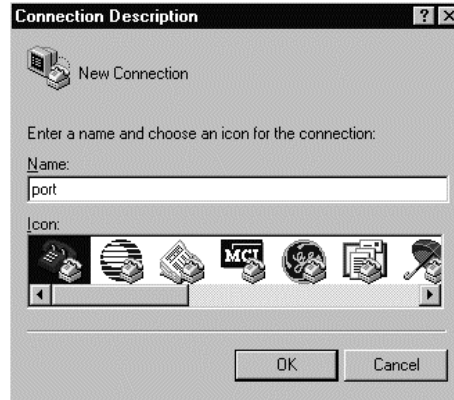


### **2.13.1 Connecting Using HyperTerminal**

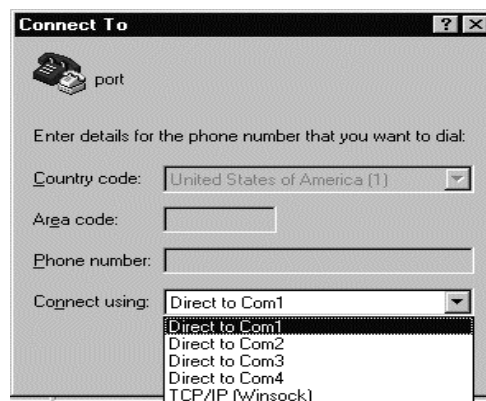
If users use a headless PNA-1800, which should have no mouse/keyboard and VGA output

connected to it. The console may be used to communicate with PNA-1800  
If users would like to use console to access PNA-1800, using HyperTerminal will be one of many good choices. It can be set up by following the steps below:

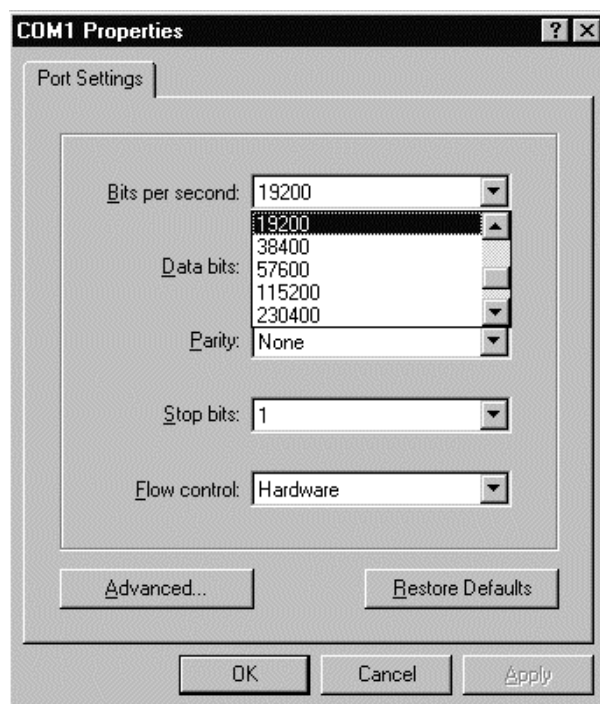
1. Execute HyperTerminal under C:\Program Files\Accessories\HyperTerminal
2. Enter a name to create new dial



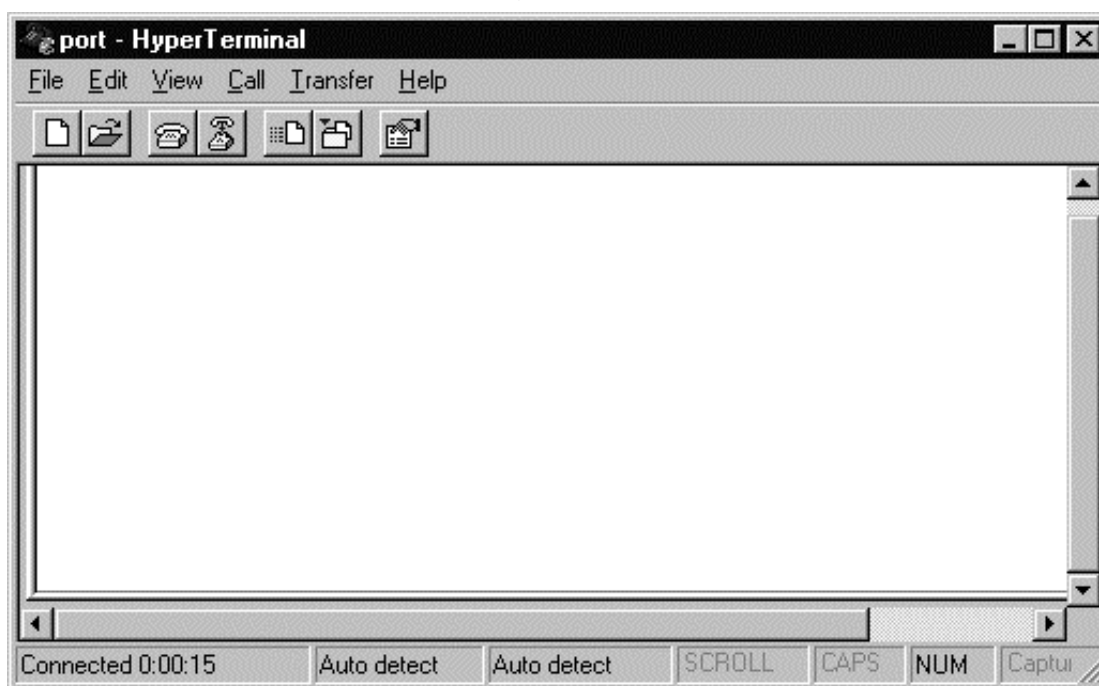
3. For the connection settings, make it Direct to Com1.



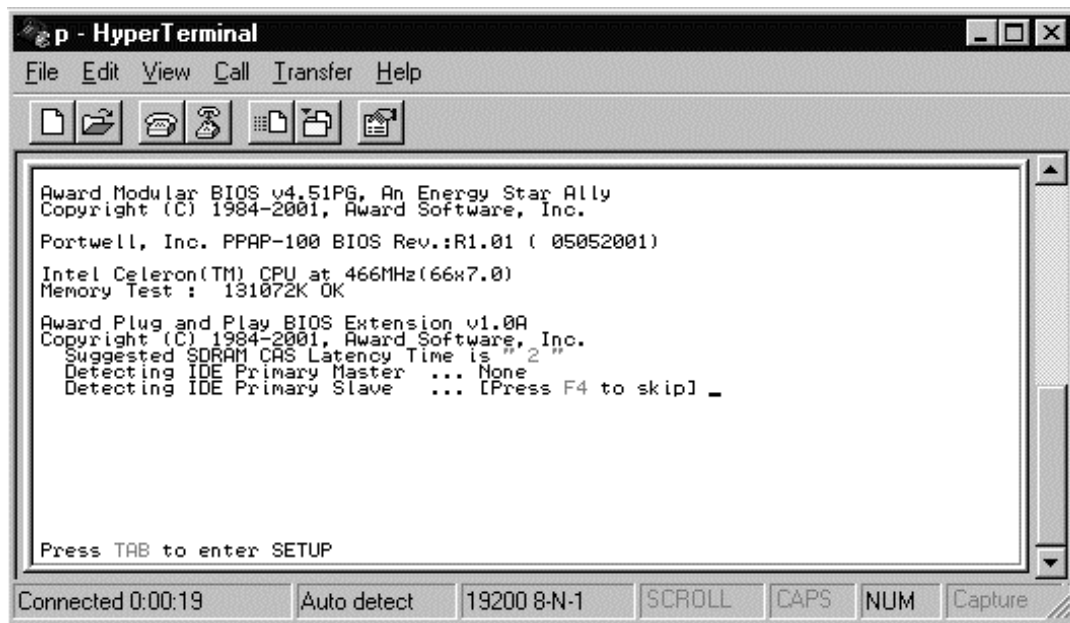
4. Please make the port settings to Baud rate 19200 , Parity None , Data bits 8, Stop bits 1.



5. Turn on the power of raid, after following screen was shown



6. You can then see the boot up information of PNA-1800



The screenshot shows a HyperTerminal window titled "p - HyperTerminal". The menu bar includes File, Edit, View, Call, Transfer, and Help. Below the menu is a toolbar with icons for file operations and communication. The main text area displays the following boot information:

```
Award Modular BIOS v4.51PG, An Energy Star Ally  
Copyright (C) 1984-2001, Award Software, Inc.  
Portwell, Inc. PPAP-100 BIOS Rev.:R1.01 ( 05052001)  
Intel Celeron(TM) CPU at 466MHz(66x7.0)  
Memory Test : 131072K OK  
Award Plug and Play BIOS Extension v1.0A  
Copyright (C) 1984-2001, Award Software, Inc.  
Suggested SDRAM CAS Latency Time is "2"  
Detecting IDE Primary Master ... None  
Detecting IDE Primary Slave ... [Press F4 to skip] _  
  
Press TAB to enter SETUP
```

At the bottom of the window, there is a status bar with the following information: Connected 0:00:19, Auto detect, 19200 8-N-1, SCROLL, CAPS, NUM, and a Capture button.

7. This is the end of this section. If the terminal did not port correctly, please check the previous steps.

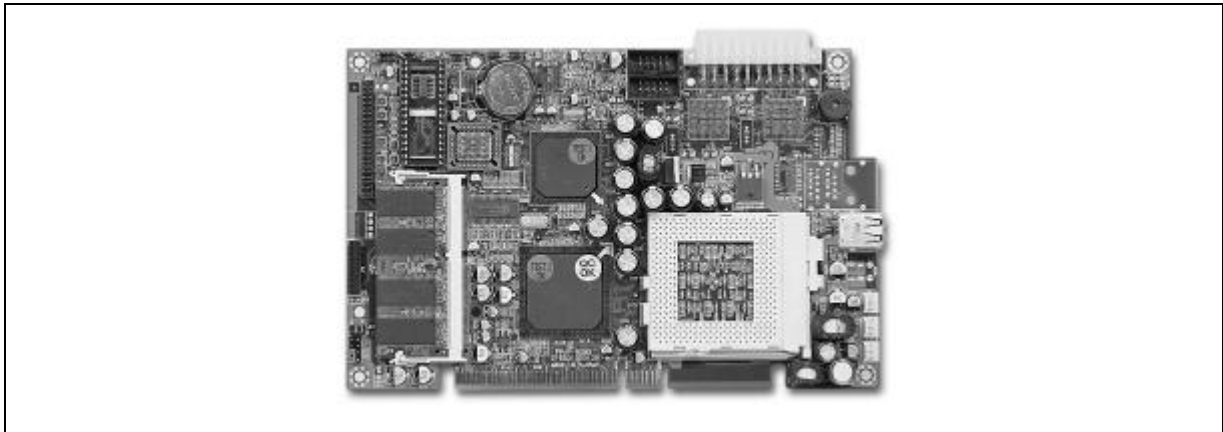
## Chapter 3      Operation Guides

### 3.1    *Brief Guide for PPAP-100W*

The PPAP-100W all-in-one half-sized network appliance system board is designed to fit a high performance Celeron™ and Pentium® III based processor and compatible for high-end computer system application. It is made to meet today's demanding pace, and keep complete compatibility with hardware and software designed for the IBM PC/AT. It's beneficial to build up a high performance and high data availability system for VARs, or system integrators.

This single board computer can run with Intel® FC-PGA Celeron™ (100MHz system bus only) or Intel® FC-PGA Pentium® III processors (100MHz system bus only), and 144-pin SDRAM up to 128MB DRAM. The enhanced on-board PCI IDE interface support 2 drives up to PIO mode 4 timing and Ultra DMA/33 synchronous mode feature. The on-board Super I/O Chipset integrates only two serial ports, which are driven by two high performance 16C550-compatible UARTs to provide 16-byte send/receive FIFOs. Besides, the two Universal Serial Bus ports provide high-speed data communication between peripherals and PC.

The on-board 32-pin DIP socket supports M-system Disk-On-Chip Flash disk up to 288MB. A built-in Watch-dog Timer function helps to monitor your system status. The on-board Flash ROM is used to make the BIOS update easier. An AC/DC adaptor power input jack is provided for AT mode operation. The high precision Real Time Clock/calendar is built to support Y2K for accurate scheduling and storing configuration information. All of these features make PPAP-100W excellent in stand-alone applications.



**Fig. 3-1**

### **System Architecture**

The following illustration of block diagram will show you how PPAP-100W gives you a highly integrated system solution. The most up-to-date system architecture of PPAP-100W, includes two main VLSI chips, 82443BX Host Bridge and 82371EB PIIX4E, to support FC-PGA Celeron/Pentium processor, SODIMM, PCI bus interface, USB port, SMBus communication, and Ultra DMA/33 IDE Master. The on-board super I/O chip, W83977ATF, supports two UARTs.

PPAP-100W built-in Socket 370 to support Intel® FC-PGA Celeron™/Pentium® III processor (both for 100MHz system bus only) for high performance and cost-effective application. The Intel® Celeron™ processor is the next addition to the P6 micro architecture processor product



lines. The Intel® Celeron™ processor, like the Intel Pentium Pro and Intel Pentium II processor, features a Dynamic Execution micro-architecture and also executes MMX technology instructions for enhanced media and communication performance. However, the FC-PGA Coppermine-256 (Pentium® III) processor provides twice the Celeron™ L2 Cache.

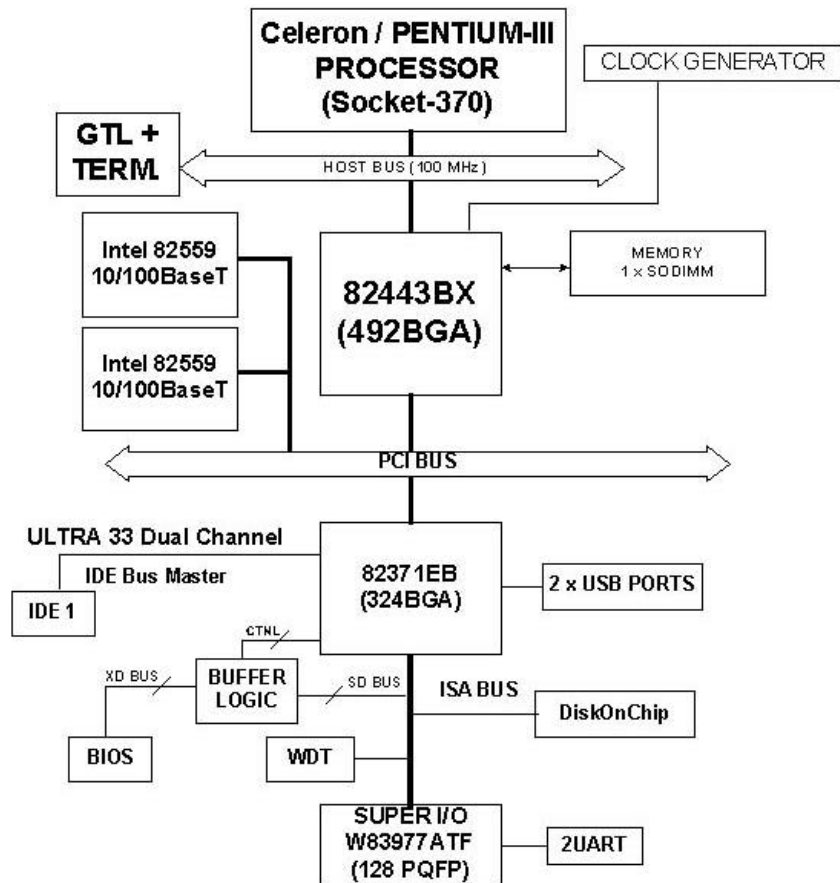
The North Bridge 82443BX provides a completely integrated solution for the system controller and data path components in a Celeron™ processor system. It provides a 64-bit GTL+ based host bus interface, optimized 64-bit DRAM interface with ECC to support two 3.3V DIMMs at the maximum bus frequency of 100 MHz, and 32-bit PCI bus interface to support on-board PCI device.

The South Bridge, 82371EB PCI ISA IDE Xcelerator (PIIX4), provides a highly integrated multifunction PCI-to-ISA bridge solution for the best industry application. It supports 1-channel dedicated Ultra DMA-33 IDE master interface, full Plug-and-Play compatibility, and Advanced Programmable Interrupt Controller (APIC) interface on PPAP-100W. It also supports 2-port Universal Serial Bus (USB) and PCI 2.1 Compliance operation. In addition, it also provides XD-bus via buffer logic control to support BIOS read/write access and South Bridge internal Real-time Clock (RTC) to maintain date and time of a system.

The Super I/O chip W83977ATF integrates two high-speed serial ports. In PPAP-100W, it contains Watch-dog Timer (WDT) enabled by jumper setting and Disk-On-Chip (DOC) for M-system Flash disk. Besides, an advanced feature is used on PPAP-100W to support detection of CPU temperature.

The two on-board Ethernet devices, powered by Intel® 82559 10/100 Base-T Fast Ethernet Controller supports Fast Ethernet interface through RJ-45 port.

All detailed operating relations are shown in **Fig. 3-2** PPAP-100W System Block Diagram.



**Fig.3-2 PPAP-100W System Block Diagram**

## 3.2 Installing LAN Port Card

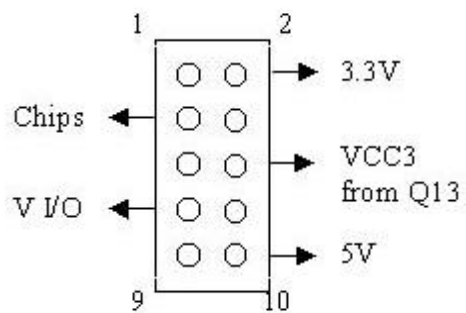
The following table indicates the settings of PNA-N106B/C.

### Jumper Setting for PNA-N106B/C

1. LAN Device Select: JP3,JP5,JP6,JP8,JP9,JP11

	Jumper	Device Loc.	Function	
			Enable	Disable
Front	JP5	U1	1-2(Short)	2-3(Short)
	JP6	U3	1-2(Short)	2-3(Short)
	JP9	U5	1-2(Short)	2-3(Short)
Back	JP3	U7	1-2(Short)	2-3(Short)
	JP8	U9	1-2(Short)	2-3(Short)
	JP11	U30	1-2(Short)	2-3(Short)

2. LAN Chips & V I/O voltage Select: JP1



	Chip	VI/O
3.3V	1-3 & 2-4	x
VCC3	3-5 & 4-6	x
5V	x	7-9 & 8-10

Default ✂ 3-5 Short & 4-6 Short

### 3. JP2

2-3 Short --> for Intel® PCI to PCI Bridge

1-2 Short --> for Hinet PCI to PCI Bridge