

# **Users Manual**

*POS 60 Series*

*July 2005 (V1.1)*

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# **CONTENTS**

## **Chapter 1**

### **Introduction**

1.1 About the Products .....	4
1.2 Specification .....	5

## **Chapter 2**

### **Hardware Setup**

2.1 Unpacking POS60 .....	6
2.3 Install the Peripherals .....	7

## **Chapter 3**

### **Driver Installation**

3.1 Install Preparation .....	8
3.2 Touch Driver Installation .....	8

## **Chapter 4**

### **I/O Definition**

4.1 IDE Disk Driver Connector .....	14
4.2 Fan Connector .....	15
4.3 Serial Port .....	15
4.4 Power Connector .....	16
4.5 VGA Connector .....	16
4.6 LCD and Inverter .....	16
4.7 IrDA Interface Port .....	17
4.8 Audio Connector .....	17
4.9 LED .....	17
4.10 Key Board Connector .....	18
4.11 Button .....	18
4.12 Parallel Port .....	18
4.13 USB Ports .....	18
4.14 Cash Drawer .....	19

## **Chapter 5**

### **Jumper Setting**

5.1 Clear CMOS Setup .....	20
5.2 LCD Power Setting .....	21
5.3 COM Port RI and Voltage Selection .....	21
5.4 COM3 Port Selection .....	21

## **Chapter 6**

### **BIOS Setup**

.....	22
-------	----

## **APPENDIX A ADDRESS MAP**

.....	36
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# *Chapter 1*

# Introduction

## 1.1 About the products

First of all we'd like to thanks for adopt the MiniPOS 60 series product.

The design of Solid POS60 series is a compact, extra small foot print and fan-less, providing low cost solution for budget and space saving uses.

The fancy outlook of the system integrated with full functional peripherals such as touch screen, 32keys pad, Dallas I-Button Key and MSR. It's suitable for hospitality and retail application.

The system provide a compact flash slot has the capacity to upgrade up to 1GB which could be used in thin client application accompanying with Win CE or Linux in order to fit software security and maintenance. The smart design and maintains the overhead cost of running the system in the long term helps to increase the return of investment.

The tools free and modular structure is easy to assembly / disassembly the system. To shorten repaired time in maintenance

The system comes equipped with high performance Intel Tualatin, Celeron and Pentium® III, Celeron Processor and advanced high performance multi-mode I/O, designed for the system integrators, or VARs that want to provide all the performance, reliability, and quality at a reasonable price.

In addition, the main board provides Integrated Apollo Pro266T & graphics accelerator in a single chip VIA CLE266.

The main board included an advanced high performance south chip VIA VT8235, super I/O W83697HF and F81216D. Six on chip UART are compatible with the NS16C550 and provide selected power pin to meet multiple peripheral devices. The parallel port and IDE interface are compatible with IBM PC/AT architecture's.

As the LAN controller, uses a REALTEK 8100BL Fast Ethernet Multifunction PCI Controller. The 8100BL is a fully integrated 10/100BASE-TX LAN solution with high performance networking functions and low power features.

## 1.2 Specification

Main Board		
CPU	Celeron 400 / 650MHz	
System Memory	128MB DDR266, Up to 1GB	
Display		
	POS 608	POS 612
TFT LCD Size	8.4"	12.1"
Brightness	180nits	200nits
Resolution	800x600	800x600
Touch Screen	4 / 5 Wire Resistive Type	
Tilt Angle	45° to 90°	
Storage Device		
HDD	1 ( IDE , 3.5" HD )	
Compact Flash	Type II, up to 1GB	
I/O Ports		
Serial	4x COM ( 2x RS232, 1x int., 1x RJ45, w/ DC +5V or +12V )	
Parallel	1 ECP/EPP/SPP	
USB	6 ( 2x int., 4x available ),USB v2.0	
PS2 Mouse	1	
PS2 Keyboard	1	
LAN	1 x RJ45, 10/100 Base-T	
VGA out	1 ( 15 pin DSUB - Dual display function )	
Customer Display	1 ( COM4 - RJ45)	
Cash Drawer	1 x RJ11	
Audio Jack	1, Audio Out	
Audio	AC97 2.0 Compliant, Speaker 2 x 2W	
Others		
Power Supply	Ext. Adapter 12VDC, 8.5A	
Compliance	FCC / CE	
Weight	Approx. 8Kgs	
Dimension	220(W) x 313(L) x 288(H) mm	300(W) x 313(L) x 317(H) mm
Operating Temp.	5°C to 40°C	
Optional Accessory		
i-Button	Dallas Key Reader, K/B or COM Interface	
O/S	MS Win98, 2000, NT, XP, CE, Embedded XP (XPe), CE.NET	
Customer Display	LED / LCD / VFD	
Programmable Keyboard	32 keys Programmable Keyboard	
MSR	ISO STD 2 /3 Tracks, KB or COM Interface	

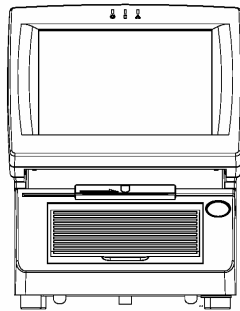
# Chapter 2

## Hardware Set up

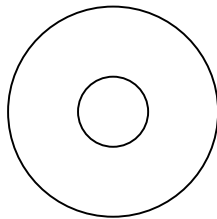
### 2.1 Unpacking the POS60

Check that the following 3 items are presented and in good conditions:

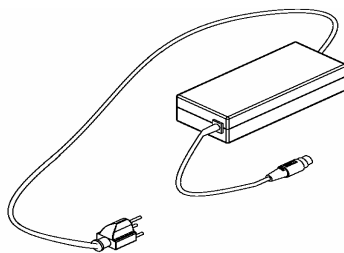
**a. Main Unit**



**b. CD: Quick Guide & Driver Bank**



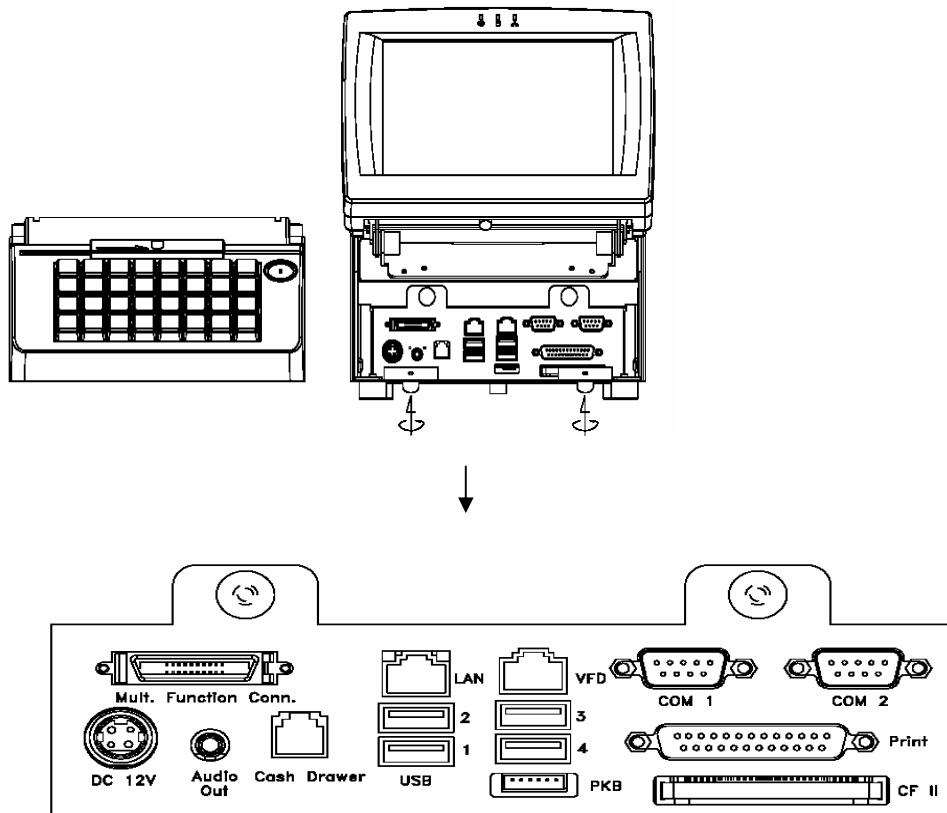
**c. Power Adapter with Power Cord:** Optional USA, Europe, UK or Australia.



If any of these items is missing or damaged, contact the dealer from whom you purchased the product. Save the shipping materials and carton in case you want to ship or store the product in the future.

### 2.2 Install the Peripherals

- a. Remove the front cover by manual screws on bottom of base as following picture.
- b. Install all of peripherals to the I/O ports, then recovery the cover and screw up the manual screws.

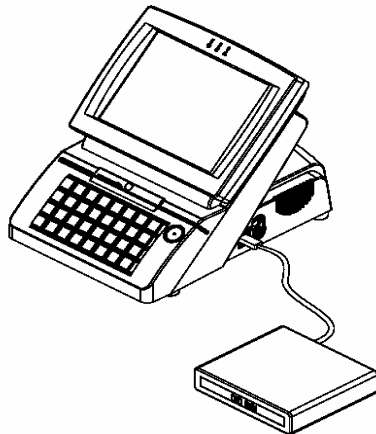


# Chapter 3

## Driver Installation

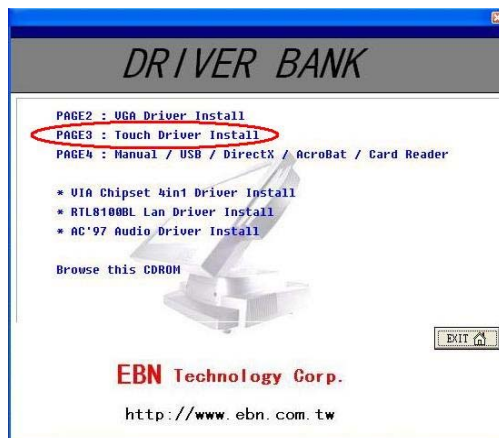
### 3.1 Install Preparation

- Please prepare 1 set of external USB CDROM.
- Connect CDROM to the USB port of right side of system.
- Turn on the system and enter to CMOS Set Up.
- Check and change "the Boot Device" to USB CDROM.
- Enter to boot on procedure.
- Install OS and Driver step by step.

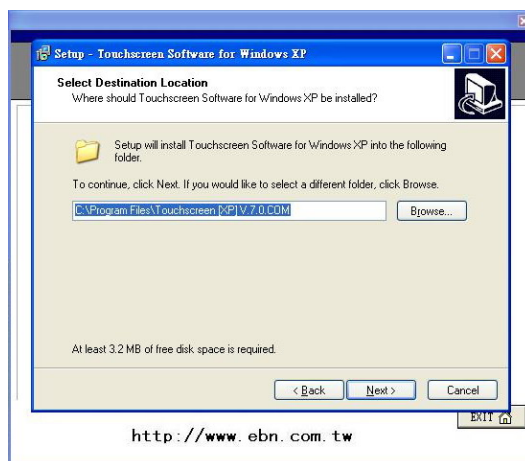
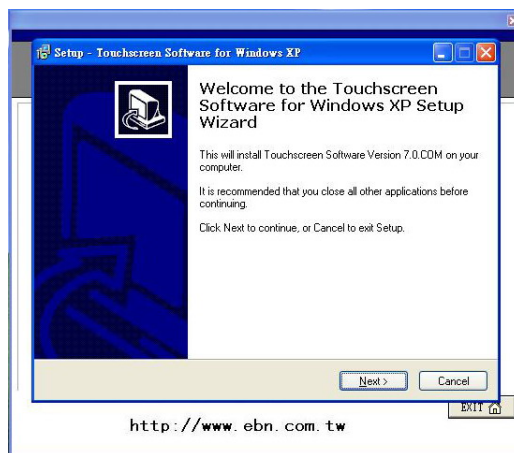


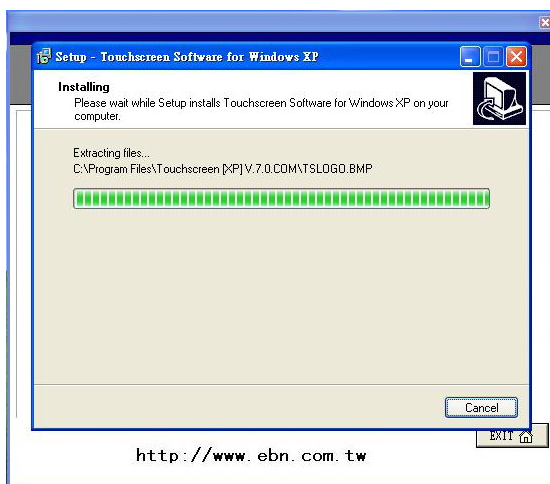
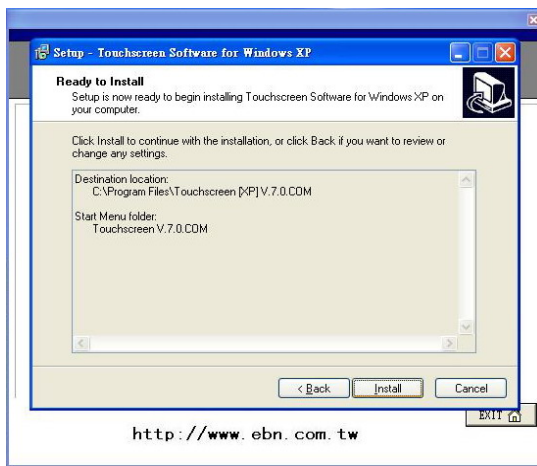
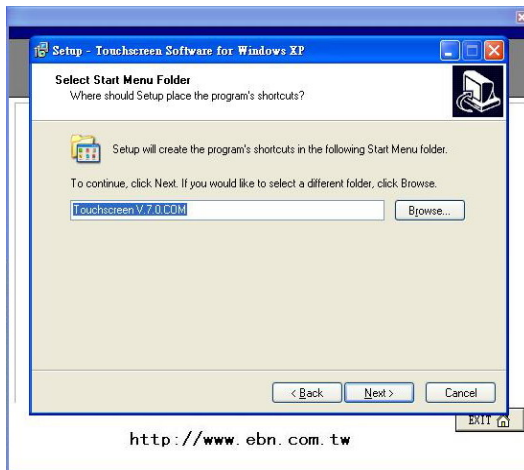
### 3.2 Touch Driver Installation

Here we'd like to list procedure of touch driver as followings, which is based on Win XP as example.

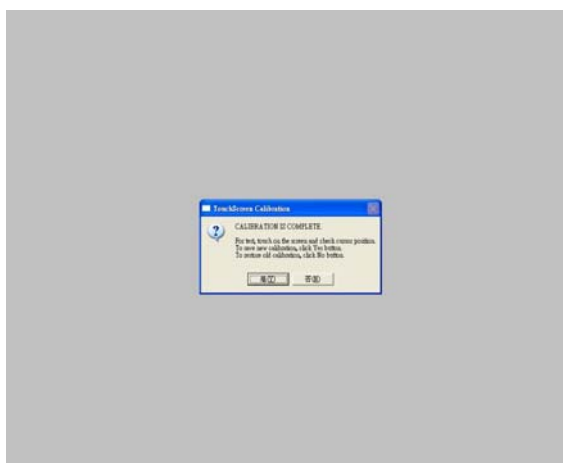










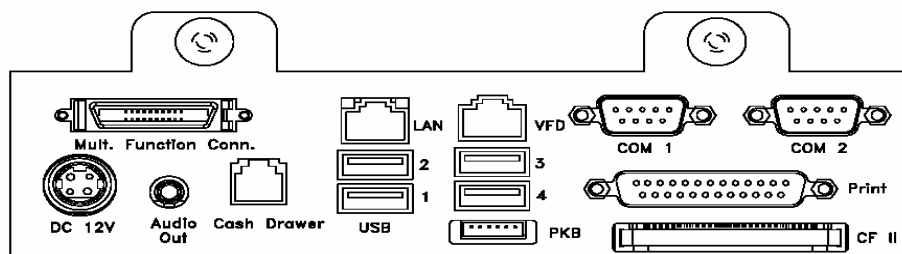




# Chapter 4

## I/O Definition

Please refer the detailed technical information about all of I/O ports as followings.



### 4.1 IDE Disk Drive Connector

You can attach two IDE (Integrated Device Electronics) hard disk drives on one channel. These connectors support Ultra-DMA133 IDE devices.

- **CN5: Primary IDE Connector (Pitch 2.54 mm)**

PIN	Description	PIN	Description
1	RESET#	2	GROUND
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	IDE DREQ	22	GROUND
23	IOW#	24	GROUND
25	IOR#	26	GROUND
27	IDE DRDYA	28	GROUND
29	IDE DACK	30	GROUND
31	INTERRUPT	32	N/C
33	SA1	34	CABLE_80P
35	SA0	36	SA2
37	HDC CS0#	38	HDC CS1#
39	HDD ACTIVE#	40	GROUND

The system includes a slot for a Compact Flash Storage Card in IDE Mode (Using IDE2).

- **CN20: Power Connector**

PIN	Description	PIN	Description
1	GROUND	2	GROUND
3	+12V	4	+5V

- **CN6: Compact Flash Storage Card Socket**

PIN	Description	PIN	Description
1	GROUND	26	CARD DETECT1
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	N/C	33	N/C
9	GROUND	34	IOR#
10	N/C	35	IOW#
11	N/C	36	OBLIGATORY TO PULL HIGH
12	N/C	37	IRQ15
13	VCC	38	VCC
14	N/C	39	MASTER/SLAVE
15	N/C	40	N/C
16	N/C	41	RESET#
17	N/C	42	IORDY
18	A2	43	N/C
19	A1	44	N/C
20	A0	45	ACTIVE#
21	D0	46	PDIAG#
22	D1	47	D8
23	D2	48	D9
24	N/C	49	D10
25	CARD DETECT2	50	GROUND

## 4.2 Fan Connector

The system provides CPU cooling fan connector, chassis fan connector. These connectors can supply 12V/500mA to the cooling fan. In the connector there have a “rotation” pin. The rotation pin is to get the fan’s rotation signal to system. So the system BIOS could recognize the fan speed. Please note only specified fan offers the rotation signal.

- **FAN1: CN11.**

PIN	Description
1	GROUND
2	+12V
3	Rotation Signal

## 4.3 Serial Ports

The system offers four high speed NS16C550 compatible UARTs with Read/Receive 16 byte FIFO.

- **COM1, 2: COM1, 2 10-pin header.**

PIN	DESCRIPTION	PIN	DESCRIPTION
1	DATA CARRIER DETECT (DCD)	6	DATA SET READY (DSR)
2	RECEIVE DATA (RXD)	7	REQUEST TO SEND (RTS)
3	TRANSMIT DATA (TXD)	8	CLEAR TO SEND (CTS)
4	DATA TERMINAL READY (DTR)	9	RING INDICATOR (RI)
5	GROUND	10	N/C

- **COM3: CN14 for VFD.**

PIN	Description
-----	-------------

1	RI
2	RTS
3	CTS
4	GROUND
5	DSR
6	DTR
7	RXD
8	TXD

- **COM4: CN15 for Touch screen.**

PIN	Description
1	DCD
2	RXD
3	TXD
4	DTR
5	DSR
6	RTS
7	CTS
8	RI

#### 4.4 Power Connector

The pin assignments are as following:

- **CN19: Power Connector**

PIN	Description
1	GROUND
2	GROUND
3	GROUND
4	+12V
5	+12V

#### 4.5 VGA Connector

The pin assignments are as following.

- **CN2: 10-pin Connector**

PIN	Description	PIN	Description
1	RED	2	DDCDAT
3	GREEN	4	DDCCLK
5	BLUE	6	GROUND
7	HSYNC	8	GROUND
9	VSYNC	10	GROUND

#### 4.6 LCD & INVERTOR Connector

The pin assignments are as following.

- **CN3: 15-pin Connector for LCD**

PIN	Description
1	GROUND
2	TXOUT0-R
3	TXOUT0+R
4	GROUND
5	TXOUT1-R



6	TXOUT1+R
7	GROUND
8	TXOUT2-R
9	TXOUT2+R
10	GROUND
11	TXCLK0-R
12	TXCLK0+R
13	GROUND
14	GROUND
15	GROUND

## 4.7 IrDA Interface Port

The system built-in an IrDA port which support Serial Infrared (SIR) or Amplitude Shift Keyed IR (ASKIR) interface. When use the IrDA port have to set SIR or ASKIR model in the BIOS's Peripheral Setup's COM2. Then the normal RS-232 COM2 will be disabled.

- **CN13: IrDA connector**

PIN	Description
1	+5V
2	IRRX1
3	IRRX
4	GROUND
5	IRTX

## 4.8 Audio Connector

The pin assignments are as following.

- **AUX1: LINE\_OUT connector**
- **CN10: LINE\_OUT connector**

PIN	Description
1	LINE_OUT_R
2,3	LINE_OUT_GROUND
4	LINE_OUT_L

## 4.9 LED and Power

- **CN4: LAN LED and Power**

PIN	Description
1,2,3	LCD_3.3V/5V
4,5,6	+5V
7,8,9	+12V
10	FPBKLB
11	HDD LED
12	LAN LED
13	POWER LED

## 4.10 Keyboard Connector

- **PS1: Keyboard Connector**

PIN	DESCRIPTION
1	+5V
2	KB CLK
3	KB CLK1
4	KB DATA
5	KB DATA1
6	GROUND

## 4.11 Button

- **CN1: ATX Power button**

PIN	Description
1	Power button
2	GROUND

## 4.12 Parallel Port

The system includes an on-board parallel port (DSUB).

- **CN18**

PIN	DESCRIPTION	PIN	DESCRIPTION
1	STROBE#	2	DATA 0
3	DATA 1	4	DATA 2
5	DATA 3	6	DATA 4
7	DATA 5	8	DATA 6
9	DATA 7	10	ACKNOWLEDGE
11	BUSY	12	PAPER EMPTY
13	PRINTER SELECT	14	AUTO FORM FEED #
15	ERROR#	16	INITIALIZE
17	PRINTER SELECT LN#	18	GROUND
19	GROUND	20	GROUND
21	GROUND	22	GROUND
23	GROUND	24	GROUND
25	GROUND		

## 4.13 USB Port Connectors

The system provides 6 built-in USB2.0 ports for new I/O bus expansion.

- **USB1,2: CN21 Connector**
- **USB3,4: CN9 Connector**
- **USB5,6: CN14 Connector**

USB1/2/3/4/5/6			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	VCC	5	VCC
2	DATA0-	6	DATA0-
3	DATA0+	7	DATA0+
4	GROUND	8	GROUND

## 4.14 Cash Drawer Connectors

- **Cash Drawer: CN12 Connector**

Cash Drawer			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	GROUND	2	DOUT_0
3	DIN_0	4	+12 V
5	N.C	6	GROUND

**Note:**

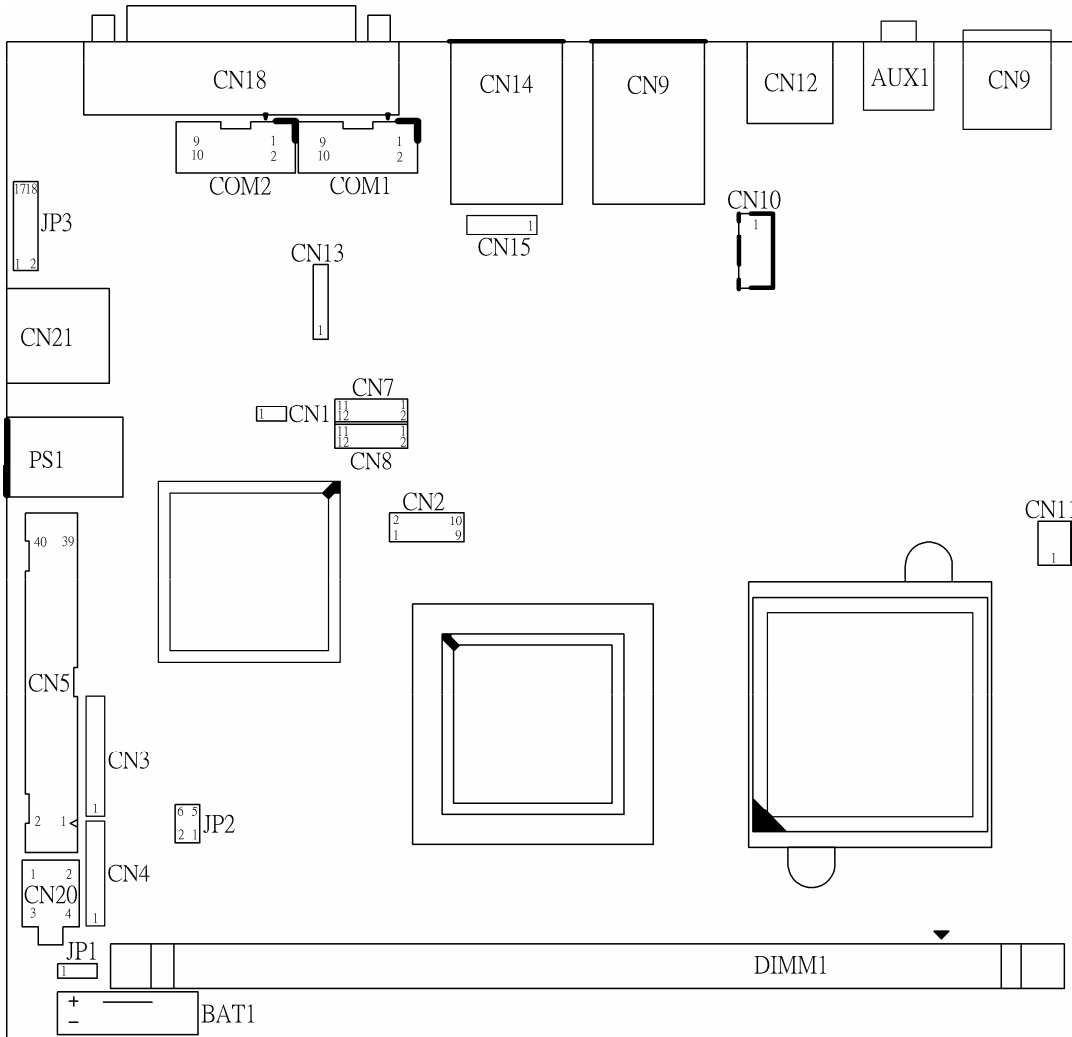
- a. Power pin 12V select by jumper setting on bottom of system.
- b. I/O Address: 280H for Cash Drawer which is controlled by Data bit as DIN0=>Bit0, DOUT0=>Bit4

**Example:**

If like to kick out the drawer, you should command the output Data Bit4 to be 1 on Address 280H of I/O port.

# Jumper Setting

Following main board with connector location, which is indicated hardware setup of system.



## 5.1 Clear CMOS Setup

If you want to clear the CMOS Setup (for example forgot the password you should clear the setup and then set the password again.), you should close the JP1 about 3 seconds, then open again. Set back to normal operation mode. **By the way, the default setting was remarked.**

- **JP1: Clear CMOS Setup**

JP1	Description
2-3	Keep CMOS Setup (Normal Operation)
1-2	Clear CMOS Setup

## 5.2 LCD Power Setting

- **J JP2:** This jumper is for the setting of LCD panel voltage.

JP2	Description
2-4	+3.3V
4-6	+5V

- **JP2:** This jumper is for the setting of LCD panel shift clock.

JP2	Description
1-3	Inverted
3-5	Normal

### 5.3 COM Port RI and Voltage Selection

- **JP3:** is for setting COM1,2,3 RI and Voltage.

JP3	Description
1-2	COM1 RI Pin Use +12V
3-4	COM1 RI Pin Use +5V
5-6	<b>COM1 RI Pin Use RI</b>
7-8	COM2 RI Pin Use +12V
9-10	COM2 RI Pin Use +5V
11-12	<b>COM2 RI Pin Use RI</b>
13-14	COM3 RI Pin Use +12V
15-16	COM3 RI Pin Use +5V
17-18	<b>COM3 RI Pin Use RI</b>

### 5.4 COM3 Port Selection

- **JP4:** is for setting COM3 selection.

JP4	Description
1-3	<b>COM3 RTS Pin Use RTS</b>
3-5	COM3 RTS Pin Use GND
2-4	<b>COM3 CTS Pin Use CTS</b>
4-6	COM3 CTS Pin Use +12V

# *Chapter 6*

## BIOS Setup

### **Introduction**

This chapter discusses the Setup program written in the BIOS. It will give you a step-by-step guidance to configure your system. The user-defined configuration is then stored in battery-backed CMOS RAM, which retains the customized information while the power is off.

### **Starting Setup**

The BIOS is immediately active when you turn on the computer. While the BIOS is in control, the Setup program can be activated in one of two ways:

1. By pressing <Del> immediately after switching the system on, or
2. By pressing the <Del> key when the following message appears at the bottom of the screen during POST (Power On Self-Test):

**DEL: Setup F11: Boot Menu F12: Network boot**

If the message disappears before you respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the "RESET" button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys. If you do not press the keys at the correct time and the system does not boot, an error message will be displayed and you will again be asked to...

**Press F1 to Run SETUP**

**Press F2 to load default values and continue**

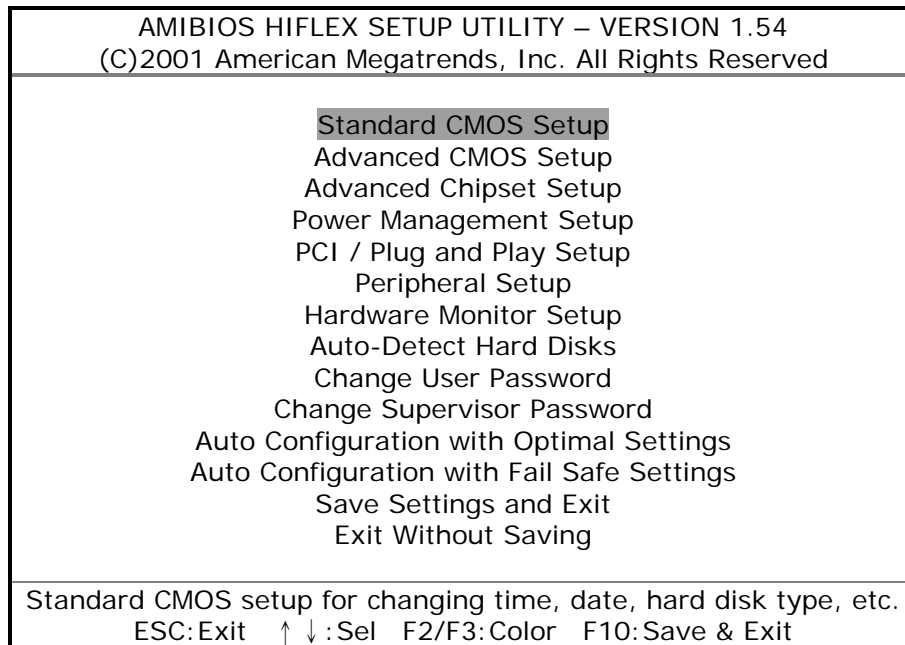
## Using Setup

In general, you can use the arrow keys to highlight items, press <Enter> to select, use the Page Up and Page Down keys to change entries and press <Esc> to quit. The following table provides more details about how to navigate in the Setup program using the keyboard.

Key	Function
Up Arrow	Move to the previous item
Down Arrow	Move to the next item
Move Enter	Move to the item you desired
Pg Up key	Increase the numeric value or make changes
Pg Dn key	Decrease the numeric value or make changes
Esc key	Main Menu -- Quit and save no changes into CMOS Status Page Setup Menu and Option Page Setup Menu -- Exit current page and return to Main Menu
F2/F3 key	BIOS Display Color
F10 key	Save all the CMOS changes and exit

## Main Menu

Once you enter the AMIBIOS™ CMOS Setup Utility, the Main Menu will appear on the screen. The Main Menu allows you to select from several setup functions and two exit choices. Use the arrow keys to go through the items and press <Enter> to accept and enter the sub-menu.



**Figure 1: Main Menu**

Note that a brief description of each highlighted selection appears at the bottom of the screen.

## Setup Items

The main menu includes the following main setup categories. Recall that some systems may not include all entries.

- **Standard CMOS Setup:**  
Standard CMOS Setup to change time, date, hard disk type, etc.
- **Advanced CMOS Setup:**  
Advanced CMOS Setup to configure system options.
- **Advanced Chipset Setup:**  
Advanced Chipset Setup to configure chipset features.
- **Power Management Setup:**  
Power Management Setup to configure power management features.
- **PCI / Plug and Play Setup:**  
Configures PCI / Plug and Play features.
- **Peripheral Setup:**  
Configures peripheral features.
- **Hardware Monitor Setup:**  
Configures hardware monitor features.
- **Auto-Detect Hard Disks:**



Selecting these options allow the user to configure the drive named in the option. Select Auto-Detect Hard Disks to allow AMIBIOS to automatically configure the drive. A list of drive parameters the appears on the screen.

- **Change User Password:**  
Change the user password.
- **Change Supervisor Password:**  
Change the supervisor password.
- **Auto Configuration with Optimal Settings:**  
Load configuration settings that ensure the highest performance.
- **Auto Configuration with Fail Safe Settings:**  
Load fails-Safe configuration settings.
- **Save Settings and Exit:**  
Write the current settings to CMOS and exit.
- **Exit Without Saving:**  
Exit without saving the current settings.

## Standard CMOS Setup

AMIBIOS SETUP – STANDARD CMOS SETUP (C)2001 American Megatrends, Inc. All Rights Reserved									
Date (mm/dd/yyyy): Tue Jun 01, 2004					Base Memory: 639 KB				
Time (hh/mm/ss) : 00:18:10					Extd Memory: 495 MB				
Floppy Drive A: Not Installed									
Floppy Drive B: Not Installed									
	Type	Size	CylIn	Head	WPcom	LBA Sec Mode	Blk Mode	PIO Mode	32Bit Mode
Pri Master:	Auto								On
Pri Slave :	Auto								On
Sec Master:	Auto								On
Sec Slave :	Auto								On
Boot Sector Virus Protection Disabled									
Month: Jan – Dec					ESC: Exit				
↑ ↓ : Sel									
Day: 01 – 31									
PgUp/PgDn: Modify									
Year: 1980 – 2099					F2/F3: Color				

**Figure 2: Standard CMOS Setup**

- **Date (mm/dd/yyyy)**  
Set the system date.
- **Time (hh/mm/ss)**  
Set the system time.

- **Floppy A, B**

Move the cursor to these fields and select the floppy type.

- **Primary/Secondary Master/Slave LBA Mode**

LBA (Logical Block Addressing) is a new IDE HDD access method developed to overcome the 528-megabyte capacity bottleneck. If your IDE hard disk capacity is greater than 528MB, AMIBIOS can enable this LBA mode feature. The option is only for Primary Master IDE LBA mode.

- **Primary/Secondary Master/Slave Block Mode**

If your hard disk drive supports IDE block transfer mode, enable this option for a faster IDE hard disk drive transfer rate. The option is only for Primary Master Block mode.

- **Primary/Secondary Master/Slave PIO Mode**

This option enables Primary Master IDE PIO mode on the IDE, which can set proper cycle timings. The cycle timing between the IDE PIO mode value and IDE cycle timing is shown below:

Mode 0 -> Timing (600ns)	Mode 1 -> Timing (383ns)
Mode 2 -> Timing (240ns)	Mode 3 -> Timing (180ns)
Mode 4 -> Timing (120ns)	Mode 5 -> Timing (60ns)

- **Primary/Secondary Master/Slave 32Bit Mode**

This option enables Primary Master IDE 32-bit data transfers on the IDE data port. If disabled, 16-bit data transfer is used by the BIOS. 32-bit data transfers can only be enabled if IDE prefetch mode is also enabled.

- **Boot Sector Virus Protection**

When this option is enabled, AMIBIOS issues a warning when any program or virus issues a Disk Format command or attempts to write to the boot sector of the hard disk drive. The settings are Disabled, Enabled.

- **Base/Extd Memory**

Displays the amount of conventional/extended memory detected during boot up.

## Advanced BIOS Features

AMIBIOS SETUP – ADVANCED CMOS SETUP (C)2001 American Megatrends, Inc. All Rights Reserved		
<b>Quick Boot</b>	<b>Enabled</b>	Available Options: Disabled > Enabled
1st Boot Device	Disabled	
2nd Boot Device	Disabled	
3rd Boot Device	Disabled	
Try Other Boot Devices	Yes	
Boot From Lan Support	Disabled	
S.M.A.R.T. for Hard Disks	Disabled	
BootUP Num-Lock	On	
Floppy Drive Swap	Disabled	
Floppy Drive Seek	Disabled	
PS/2 Mouse Support	Enabled	
System Keyboard	Absent	
Primary Display	VGA/EGA	
Password Check	Setup	
Boot To OS/2	No	
CPU MicroCode Updation	Enabled	
CPU Serial Number	Disabled	
L1 Cache	Enabled	
L2 Cache	Enabled	
System BIOS Cacheabled	Disabled	
C000 32K Shadow	Cached	
C800 16K Shadow	Disabled	
CC00 16K Shadow	Disabled	
D000 16K Shadow	Disabled	
D400 16K Shadow	Disabled	ESC:Exit ↑ ↓:Sel
D800 16K Shadow	Disabled	PgUp/PgDn:Modify
DC00 16K Shadow	Disabled	F2/F3:Color

**Figure 3: Advance CMOS Setup**

- **Quick Boot**

When Quick Boot is selected, DRAM testing function will be disabled.

- **1st Boot Device**

This option sets the type of device for the first boot drives that the AMIBIOS attempts to boot from after AMIBIOS POST completes. The settings are Disabled, IDE-0, IDE-1, IDE-2, IDE-3, Floppy, ARMD-FDD, ARMD-HDD, CDROM, and SCSI.

- **2nd Boot Device**

This option sets the type of device for the second boot drives that the AMIBIOS attempts to boot from after AMIBIOS POST completes. The settings are Disabled, IDE-0, IDE-1, IDE-2, IDE-3, Floppy, ARMD-FDD, ARMD-HDD, and CDROM.

- **3rd Boot Device**

This option sets the type of device for the third boot drives that the AMIBIOS attempts to boot from after AMIBIOS POST completes. The settings are Disabled, IDE-0, IDE-1, IDE-2, IDE-3, Floppy, ARMD-FDD, ARMD-HDD, and CDROM.

- **Try Other Boot Devices**

Set this option to Yes to instruct AMIBIOS to attempt to boot from any other drive in the system if it cannot find a boot drive among the drives specified in the 1st Boot Device, 2nd Boot Device, 3rd Boot Device, 4th Boot Device options. The settings are Yes or No.

- **S.M.A.R.T. for Hard Disks**

Self-Monitoring, Analysis and Reporting Technology. This option can help the BIOS to warn the user of a possible device failure and give the user a chance to back up the device before the failure actually happens. The settings are Auto, Disabled, Enabled.

- **Boot Up Num-Lock**

When this option is selected, Num Lock is turned off when the system is powered on so the user can use the arrow keys on both the numeric keypad and the keyboard.

- **Floppy Drive Swap**

Set this option to Enabled to permit drives A: and B: to be swapped. Configuration options: Enabled or Disabled.

- **Floppy Drive Seek**

Set this option to Enabled to specify that floppy drive A: will perform a Seek operation at system boot. The settings are Enabled or Disabled.

- **PS/2 Mouse Support**

When this option is enabled, BIOS supports a PS/2- type mouse.

- **System Keyboard**

This option does not specify if a keyboard is attached to the computer. Rather, it specifies if error messages are displayed if a keyboard is not attached. This option permits you to configure workstation with no keyboard. The settings are Absent, Present.

- **Primary Display**

Select this option to configure the type of monitor attached to the computer. The settings are Monochrome, Color 40x25, Color 80x25, VGA/PGA/EGA, or Not Install.

- **Password Check**

This item allows you Setup/Always Password Check.

- **Boot To OS/2**

Set this option to Enabled if running OS/2 operating system and using more than 64MB of system memory on the motherboard. The settings are Disabled or Enabled.

- **L1 Cache**

The option Disabled/Enabled the internal cache memory in the processor.

- **L2 Cache**

The option Disabled/Enabled the secondary cache memory.

- **System BIOS Cacheable**

When this option is set to enabled, the System ROM area from F0000-FFFFF is copied (shadowed) to the RAM for faster execution.

- **C000,32k Shadow**

When this option is set to enabled, the Video ROM area from C0000-C7FFF is copied (shadowed) to the RAM for faster execution.

Disabled: The contents of the video ROM are not copied to the RAM.

Cached: The contents of the video ROM area from C0000h – C7FFFh are copied from the ROM to the RAM and can be written to or read from the cache memory.

Enabled: The contents of the video ROM area from C0000h – C7FFFh are copied (shadowed) from the ROM to the RAM for faster execution.

- **C800,16k Shadow**

These options enable shadowing of the contents of the ROM area named in the option title. The settings are Enable Disable, Cached. The ROM area that is not used by ISA adapter cards will be allocated to PCI adapter cards.

- **CC00,16k Shadow**

These options enable shadowing of the contents of the ROM area named in the option title. The settings are Enable Disable, Cached. The ROM area that is not used by ISA adapter cards will be allocated to PCI adapter cards.

- **D000,16k Shadow**

These options enable shadowing of the contents of the ROM area named in the option title. The settings are Enable Disable, Cached. The ROM area that is not used by ISA adapter cards will be allocated to PCI adapter cards.

- **D400,16k Shadow**

These options enable shadowing of the contents of the ROM area named in the option title. The settings are Enable Disable, Cached. The ROM area that is not used by ISA adapter cards will be allocated to PCI adapter cards.

- **D800,16k Shadow**

These options enable shadowing of the contents of the ROM area named in the option title. The settings are Enable Disable, Cached. The ROM area that is not used by ISA adapter cards will be allocated to PCI adapter cards.

- **DC00,16k Shadow**

These options enable shadowing of the contents of the ROM area named in the option title. The settings are Enable Disable, Cached. The ROM area that is not used by ISA adapter cards will be allocated to PCI adapter cards.

## Advanced Chipset Features

AMIBIOS SETUP – ADVANCED CHIPSET SETUP (C)2001 American Megatrends, Inc. All Rights Reserved		
***** DRAM Timing *****		Available Options: Disabled > Enabled
Configure SDRAM Timing by SPD	Enabled	
SDRAM Frequency		
Auto		
SDRAM CAS# Latency	2.5	
SDRAM Bank Interleave		
Disabled		
SDRAM Command Rate	2T	
Memory Hole	Disabled	
Auto Precharge for TLB/WB	Disabled	
Write Recovery time	2T	
AGP Mode	4x	
AGP Read Synchronization	Disabled	
AGP Fast Write	Disabled	
AGP Aperture Size	64MB	
AGP Master 1 W/S Write	Disabled	
AGP Master 1 W/S Read	Disabled	
PCI Delay Transaction	Enabled	
USB Controller	6 USB Ports	
USB Device Legacy Support	Disabled	
V-Link Data 2X Support	Disabled	
		ESC: Exit ↑ ↓ : Sel PgUp/PgDn: Modify F2/F3: Color

**Figure 4: Advanced Chipset Setup**

- **Configure SDRAM Timing by SPD**

This sets the optimal timings for items "SDRAM Refresh", "SDRAM Cycle time", "CAS# Latency", "RAS to CAS delay" and "SDRAM RAS# Precharge", depending on the memory modules that you are using.

- **SDRAM Frequency**

This field displays the capability of the memory modules that your system memory frequency.

- **SDRAM CAS# Latency**

This controls the latency between the SDRAM read command and the time that the data actually becomes available.

- **AGP Aperture Size**

This feature allows you to select the size of mapped memory for AGP graphic data.

- **USB Controller**

Select Enabled if your system contains a Universal Serial Bus (USB) controller and you have USB peripherals.

- **USB Device Legacy Support**

This motherboard support Universal Serial Bus (USB) devices. If detected, USB controller legacy mode will be enabled. If not detected, USB controller legacy mode will be disabled.

The Choice: Enabled, Disabled

## Integrated Peripherals

AMIBIOS SETUP – POWER MANAGEMENT SETUP (C)2001 American Megatrends, Inc. All Rights Reserved		
ACPI Aware O/S	Yes	Available Options: No > Yes
ACPI Standby State	S1/POS	
USB Device wakeup Function	Enabled	
Re-Call VGA BIOS at S3 Resuming	Enabled	
Power Management/APM	Enabled	
Video Power Down Mode	Disabled	
Hard Disk Power Down Mode	Disabled	
Standby Time Out (Minute)	Disabled	
Suspend Time Out (Minute)	Disabled	
Display Activity	Ignore	
IRQ3	Monitor	
IRQ4	Monitor	
IRQ5	Ignore	
IRQ7	Monitor	
IRQ9	Ignore	
IRQ10	Ignore	
IRQ11	Ignore	
IRQ13	Ignore	
IRQ14	Monitor	
IRQ15	Ignore	
System Thermal	Disabled	
Thermal Active Temperature	65°C/149°F	
Thermal Slow Clock Ratio	50%-56.25%	
Power Button Function	ON/Off	
Restore on AC/Power Loss	Last State	
Resume On Ring	Disabled	
Resume On LAN	Disabled	
Resume On PME#	Disabled	
Resume On RTC Alarm	Disabled	
RTC Alarm Date	15	
RTC Alarm Hour	12	
RTC Alarm Minute	30	ESC:Exit ↑ ↓:Sel
RTC Alarm Second	30	PgUp/PgDn:Modify
Power Type Select	ATX	F2/F3:Color

**Figure 5: Power Management Setup**

- **ACPI Aware O/S**  
This feature is switch of ACPI function (S1).
- **USB Device Wakeup Function**  
This option set to "Enabled", using USB Device can wake up system, when system entry to S3 mode.
- **Power Management/APM**  
Set this option to Enabled to run APM (Advanced Power Management).
- **Video Power Down Mode**  
Set this option to Enabled to allow the Video adapter and Monitor to be powered down by BIOS.

- **Hard Disk Power Down Mode**  
Set this option to Enabled to allow the IDE drive to be powered down by BIOS.
- **Standby Time Out (Minute)**  
This option specifies the length of a period of system inactivity while in Full power on state. When this length of time expires, the computer enters Standby power state.
- **Suspend Time Out (Minute)**  
This option specifies the length of a period of system inactivity while in Standby state. When this length of time expires, the computer enters Suspend power state.
- **Power Button Function**  
This option specifies how the power button mounted externally on the computer chassis is used.
- **Resume On Ring**  
Ring Resume From Soft Off
- **Resume On LAN**  
LAN Resume From Soft Off
- **Resume On PME#**  
PME# Resume From Soft Off
- **Resume On RTC Alarm**  
When this option is set enabled, system will set time according to your setting and then wake up from soft off mode.
- **RTC Alarm Date**  
You can set time for date.
- **RTC Alarm Hour**  
You can set time for hour.
- **RTC Alarm Minute**  
You can set time for minute.
- **RTC Alarm Second**  
You can set time for second.



## Power Management Setup

AMIBIOS SETUP – PCI / PLUG AND PLAY SETUP (C)2001 American Megatrends, Inc. All Rights Reserved		
Plug and Play Aware O/S	No	Available Options: No > Yes
OnChip VGA Frame Buffer Size	16MB	
PCI Latency Timer (PCI Clocks)	32	
Primary Graphics Adapter	PCI	
Boot Device Select	CRT+LCD	
LCD Expansion Support	Enabled	
LCD Panel Type	1 800x600	
PCI IDE Bus Master	Enabled	
Off Board PCI IDE Card	Auto	
Off Board PCI IDE Primary IRQ	Disabled	
Off Board PCI IDE Secondary IRQ	Disabled	
		ESC: Exit ↑ ↓ : Sel PgUp/PgDn: Modify F2/F3: Color

**Figure 6: PCI / Plug and Play Setup**

- **Plug and Play Aware O/S**

If enable, BIOS will configure only PnP ISA boot devices (i.e. all PnP ISA cards which has boot flag set). And PnP aware OS will configure all other devices. If disable, BIOS will configure all devices.

- **PCI Latency Timer (PCI Clocks)**

This option specifies the latency timings (in PCI clocks) for PCI devices installed in the PCI expansion slots. The settings are 32, 64, 96, 128, 160, 192, 224, or 248.

- **PCI VGA Palette Snoop**

If enable, PCI will allow VGA palette signals to go to the ISA bus.

## PNP/PCI Configurations

AMIBIOS SETUP – PERIPHERAL SETUP		
(C)2001 American Megatrends, Inc. All Rights Reserved		
On Board Serial Port 3	3E8h	Available Options: Disabled > 3E8h 2E8h 2E0h 3E0h
Serial Port 3 IRQ	11	
On Board Serial Port 4	2E8h	
Serial Port 4 IRQ	10	
On Board Serial Port 5	2E0h	
Serial Port 5 IRQ	11	
On Board Serial Port 6	3E0h	ESC:Exit ↑ ↓ :Sel PgUp/PgDn:Modify F2/F3:Color
Serial Port 6 IRQ	10	
On Board Serial Port 1	3F8/COM1	
On Board Serial Port 2	2F8/COM2	
Serial Port 2 Mode	Normal	
IR Pin Select	IRRX/IRIX	
On Board Parallel Port	378	
Parallel Port Mode	Normal	
EPP Version	N/A	
Parallel Port IRQ	7	
Parallel Port DMA Channel	N/A	
On Board IDE	Both	
On Board AC'97 Audio	Enabled	
Digital I/O Address	280h	

**Figure 7: Peripheral Setup**

- **On Board Serial Port 1/2/3/4/5/6**

This option specifies the base I/O port address of serial port. The settings are Auto (AMIBIOS automatically determines the correct base I/O port address), Disabled, 3F8h, 2F8h, 2E8h, or 3E8h.

- **On Board Parallel Port**

This option specifies the base I/O port address of parallel port on the motherboard. The settings are Disabled, 378h, 278h, or 3BCh.

- **Parallel Port Mode**

This option specifies the parallel port mode. The settings are Normal, Bi-Dir, EPP, and ECP.

Normal: The normal parallel port mode is used.

Bi-Dir: Use this setting to support bi-directional transfers on the parallel port.

EPP: The parallel port can be used with devices that adhere to the Enhanced. Parallel Port (EPP) specification. EPP uses the existing parallel port signals to provide asymmetric bi-directional data transfer driven by the host device.

ECP: The parallel port can be used with devices that adhere to the Extended. Capabilities Port (ECP) specification. ECP uses the DMA protocol to achieve data transfer rates up to 2.5 Megabits per second. ECP provides symmetric bi-directional communication.

- **Parallel Port IRQ**

This option specifies the IRQ used by the parallel port. The settings are Auto, (IRQ) 5, (IRQ) 7.

- **Parallel Port DMA Channel**

This option is only available if the setting for the Parallel Port Mode option is ECP. This option sets the DMA channel used by the parallel port. The settings are DMA Channel 0, 1, or 3.

- **On Board IDE**

This option specifies the IDE channel used by the onboard IDE controller  
The settings are Disabled, Primary, and Secondary.

## PC Health Status

AMIBIOS SETUP – HARDWARE MONITOR SETUP		
(C)2001 American Megatrends, Inc. All Rights Reserved		
Chassis Intrusion	Disabled	Available Options: > Disabled Enabled
Smart Fan Function	Disabled	
-= System Hardware Monitor =-		
Vcore	1.456 V	
+ 3.3V	3.376 V	
+ 5.0V	4.911 V	
+12.0V	11.746 V	
+ 2.5V	2.537 V	
Vtt	1.232 V	
CPU Fan Speed	5718 RPM	
System Fan Speed	0 RPM	
CPU Temperature	41°C/105°F	
System Temperature	37°C/98°F	
		ESC:Exit ↑ ↓:Sel PgUp/PgDn:Modify F2/F3: Color

**Figure 8: Hardware Monitor Setup**

This setup helps users monitor the EBN-370 board on board system voltage and fan speed. The function is implemented by on board W83697HF chip. The voltage monitoring will cover V core, +3.3V, +5V,+12V, +2.5V and Vtt. And there is one fan connector for CPU fan.

## APPENDIX A

### ADDRESS MAP

#### IO Address Map

I/O address Range	Description
000-CF7	DMA Controller
040-043	System timer
060-060	Keyboard Controller
061-061	System speaker
064-064	Keyboard Controller
070-071	Real time Clock
081-08F	DMA Controller
0C0-0DF	DMA Controller
0F0-0FF	Numeric data processor
170-177	Secondary IDE Channel
1F0-1F7	Primary IDE Channel
280	Cash Drawer
2E0-2E7	Serial Port 5
2E8-2EF	Serial Port 4
2F8-2FF	Serial Port 2
376-376	Secondary IDE Channel
378-37F	Parallel Printer Port 1
3B0-3DF	AGP Controller
3E0-3E7	Serial Port 6
3E8-3EF	Serial Port 3
2F8-2FF	Serial Port 2
3F2-3F7	Diskette Controller
3F6-3F6	Primary IDE Channel`
3F8-3FF	Serial Port 1

#### 1st MB Memory Address Map

Memory address	Description
00000-9FFFF	System memory
A0000-BFFFF	VGA buffer
C0000-C7FFF	VGA BIOS
F0000-FFFFF	System BIOS
1000000-	Extend BIOS

#### IRQ Mapping Table

IRQ0	System Timer	IRQ8	RTC clock
IRQ1	Keyboard	IRQ9	USB
IRQ2	Cascade to IRQ Controller	IRQ10	COM4/6
IRQ3	COM2	IRQ11	COM3/5
IRQ4	COM1	IRQ12	PS/2 mouse
IRQ5	LAN	IRQ13	FPU
IRQ6	FDC	IRQ14	Primary IDE
IRQ7	Printer	IRQ15	Secondary IDE

### DMA Channel Assignments

Channel	Function
0	Available
1	Available
2	Floppy disk (8-bit transfer)
3	Available
4	Cascade for DMA controller 1
5	Available
6	Available
7	Available