

AR-B1651
EBC 3.5", VIA Processor for VIA PLE133T with
VGA(CRT/LVDS), SDRAM PC133, LAN,
Audio, Compact Flash
User' s Guide

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0. PREFACE

0.1 COPYRIGHT NOTICE AND DISCLAIMER

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0.2 WELCOME TO THE AR-B1651 CPU BOARD

This guide introduces the Acrosser AR-B1651 CPU Board.

Use information provided in this manual describes this card's functions and features. It also helps you start, set up and operate your AR-B1651. General system information can also be found in this publication.

0.3 BEFORE YOU USE THIS GUIDE

Please refer to the Chapter 2, "System Setting," in this guide, if you have not already installed this AR-B1651. Check the packing list before you install and make sure the accessories are completely included.

AR-B1651 CD provides the newest information regarding the CPU card. **Please refer to the files of the enclosed utility CD.** It contains the modification and hardware & software information, and adding the description or modification of product function after manual printed.

0.4 RETURNING YOUR BOARD FOR SERVICE

If your board requires any services, contact the distributor or sales representative from whom you purchased the product for service information. If you need to ship your board to us for service, be sure it is packed in a protective carton. We recommend that you keep the original shipping container for this purpose.

You can help assure efficient servicing for your product by following these guidelines:

1. Include your name, address, daytime telephone, facsimile number and E-mail.
2. A description of the system configuration and/or software at the time of malfunction.
3. A brief description of the problem occurred.

0.5 TECHNICAL SUPPORT AND USER COMMENTS

Users comments are always welcome as they assist us in improving the quality of our products and the readability of our publications. They create a very important part of the input used for product enhancement and revision.

We may use and distribute any of the information you provide in any way appropriate without incurring any obligation. You may, of course, continue to use the information you provide.

If you have any suggestions for improving particular sections or if you find any errors on it, please send your comments to Acrosser Technology Co., Ltd. or your local sales representative and indicate the manual title and book number.

Internet electronic mail to: Sales@acrosser.com

acrosser@tp.globalnet.com.tw

0.6 ORGANIZATION

This information for users covers the following topics (see the Table of Contents for a detailed listing):

Chapter 1, "Introduction", provides specifications and packing list.

Chapter 2, "Setting Up System", describes how to adjust the jumpers and the connector settings.

Chapter 3, "CRT/LCD Flat Panel Display", describes the configuration and installation procedure for using LCD and CRT displays.

Chapter 4, "Watchdog Timer", describes watchdog timer setting and trigger.

Chapter 5, "BIOS Console", provides the BIOS settings options.

Appendix A, Memory & I/O Map

Appendix B, Interrupt Request (IRQ)

0.7 STATIC ELECTRICITY PRECAUTIONS

Before removing the board from its anti-static bag, read this section about static electricity precautions.

Static electricity is a constant danger to computer systems. The charge that can build up in your body may be more than sufficient to damage integrated circuits on any PC board. It is, therefore, important to observe basic precautions whenever you use or handle computer components. Although areas with humid climates are much less prone to static build-up, it is always best to safeguard against accidents that may result in expensive repairs.

The following measures should be sufficient to protect your equipment from static discharge:

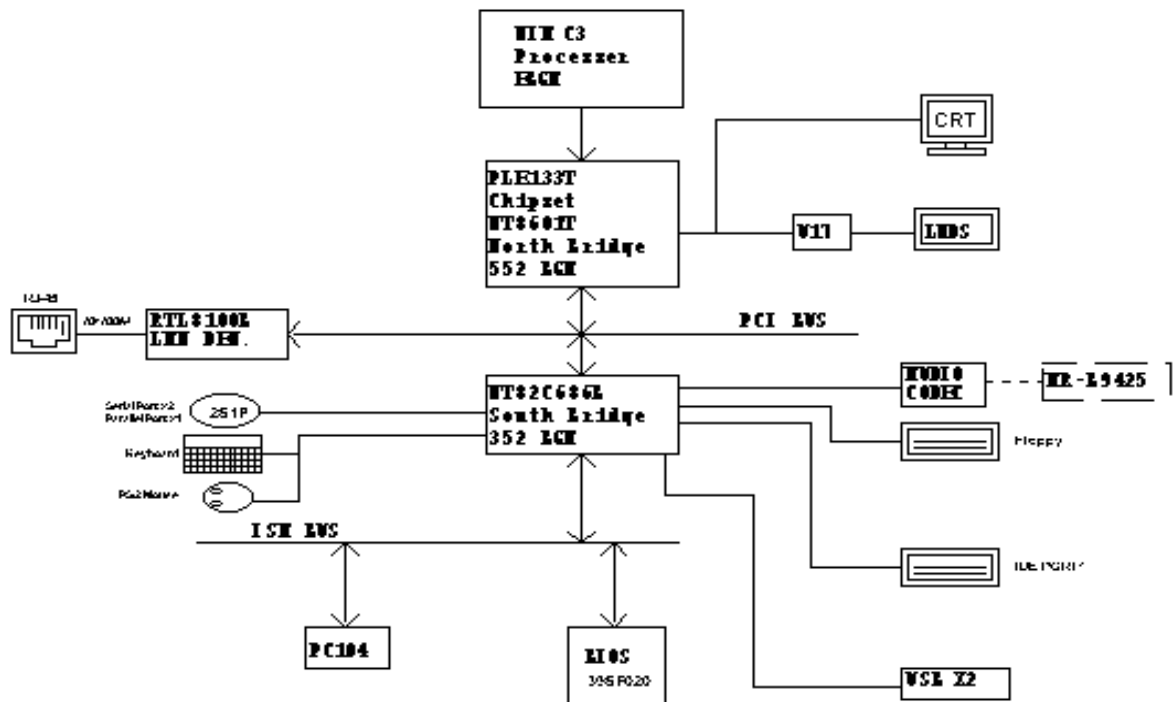
- Touch a grounded metal object to discharge the static electricity in your body (or ideally, wear a grounded wrist strap).
- When unpacking and handling the board or other system components, place all materials on an anti-static surface.
- Be careful not to touch the components on the board, especially the "golden finger" connectors on the bottom of the board.

1. INTRODUCTION

Welcome to the AR-B1651 Single Board Computer. The AR-B1651 board is [EBC board](#), which Low power VIA C3 series Processors with the VIA ® advanced chipset Apollo PLE133T (VT8601T and VT82C686B). This product is designed for the system manufacturers, integrators, or VARs that want to provide all the performance, reliability, and quality at a reasonable price.

In addition, the AR-B1651 provides on chip VGA. The VGA, which provides up to True Color (32 bit) 1024x768, or High Color (16 bit) 1280x1024 resolution. The VGA memory is share main memory (2M, 4M, or 8M). AR-B1651 also has 18-bit LVDS function in the system.

The AR-B1651 is loaded with special on-board features that rival full-size systems. It has one network controller on board, uses RealTek RTL8100B LAN controller, a fully integrated 10/100BASE-TX solution with high performance networking functions. Supports Compact Flash™ Type I interface (AR-B9462). Plus optional support for AC97 3D stereo surround sound with CD-input, AR-B9425 (line-in, line-out and speaker-out, microphone). The AR-B1651 also includes one 144-pin SO-DIMM sockets for up to 512 MB total on-board memory. The AR-B1651 has two on-board serial ports; COM1 with RS232C/RS485, COM2 with RS232C share with touch screen, one USB connectors for 2 USB ports, watchdog timer and tough industrial grade construction. All these features make the AR-B1651 a very "system integrator friendly" solution, perfect for handling applications in the harshest unmanned environments.



AR-B1651 System Block Diagram

1.1 SPECIFICATIONS

- **CPU:** On-board VIA C3 Processor 800MHz or Eden 667 MHz Process<EBGA>
- **DMA channels:** 7
- **Interrupt levels:** 15
- **Chipset:** VIA @ Apollo PLE133T (VT8601T Integrated 2D / 3D graphics accelerator and VT82C686B)
- **RAM memory:** Supports SDRAM PC133, on-board 144-pin SO-DIMM up to 512MB SDRAM memory module
- **VGA Controller:** Embedded VGA controller, Screen Resolution: up to True Color(32 bit)1024x768, or High Color(16 bit) 1280x1024.
- **Display Interface:** CRT – D-SUB 15-pin female connector
LVDS – for 18 bit TFT LCD Panel, 2x13x2.00mm pin-header connector
- **Ultra ATA/33/66/100 IDE Interface:** One PCI Enhance IDE channel. The south bridge VT82C686B supports Ultra ATA/33 IDE interface. To support Ultra ATA66/100 Hard disk, a specified cable must be available.
- **Floppy disk drive interface:** 2.88 MB, 1.44MB, 1.2MB, 720KB, or 360KB floppy disk drive.
- **C. F.:** Supports Compact Flash Type I interface
- **Series ports:** On-board one D-SUB 9-pin male connector for COM1 with RS-232C /RS-485 .On-board one 2x5x2.00mm pin-header connector for COM2 with RS-232C share with Touch Screen
Touch Screen uses 2.0mm 3-pin header connector
- **Parallel Port:** On-board one 2x13x2.00mm pin-header connector for Parallel port, supports SPP/EPP/ECP modes
- **IrDA port:** Supports IrDA (HPSIR) and ASK (Amplitude Shift Keyed) IR port multiplexed on COM2.
- **USB port:** On-board one 2x5x2.00mm pin-header connector for 2 USB ports
- **Audio: onboard AC'97 Codec,** On-board one 2x13x2.00mm pin-header for Audio interface Supports two channel Left/Right Line IN/OUT, and Left/Right speaker out, MIC IN, CD IN.
- **Watchdog timer:** Software programmable 1~63sec.
- **Ethernet:** On-board one Realtek RT8100B, supports 10/100Mbps Base-T with RJ-45 connector built-in LED
- **K/B & Mouse:** On-board PS/2 Keyboard and Mouse connector
- **Power Req.:** +5V 2A and +12V 1A maximum
- **PC Board:** 8 layers, EMI considered
- **Dimensions:** 145mm x 102mm (5.7" x 4")
- **Operating Temperature:** 0° ~ 60

1.2 PACKING LIST

These accessories are included with the system. Before you begin installing your AR-B1651 board, please make sure that the following items have been included inside the AR-B1651 package.

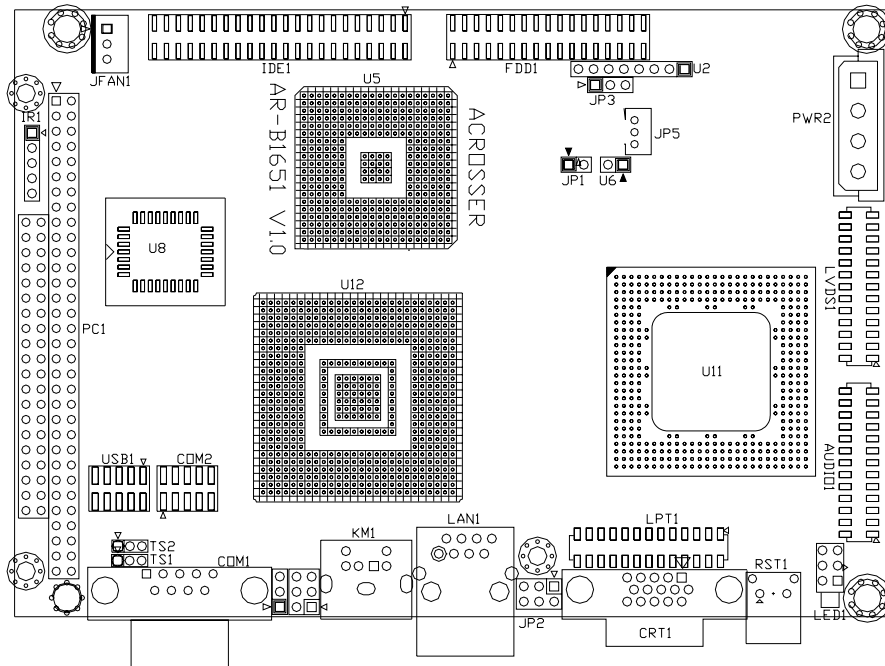
- The quick setup manual
- 1 AR-B1651 CPU board
- 1 Hard disk drive adapter cable for 3.5" hard disk
- 1 Floppy disk drive adapter cable
- 1 Software utility CD
- 1 RS-232 and 1 PS/2 Mouse & Keyboard interface cable mounted on bracket
- 1 Parallel port adapter cable mounted on one bracket

2. SETTING UP SYSTEM

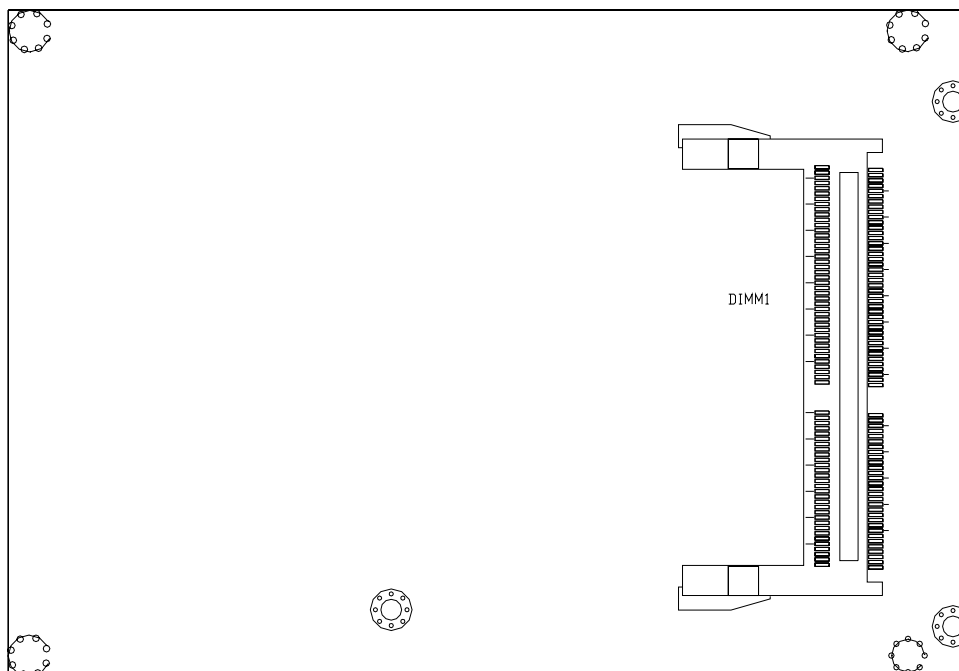
This chapter describes how to install the AR-B1651. At first, the layout of AR-B1651 is shown, and the unpacking information that you should be careful is described.

- Overview
- System Settings

2.1 AR-B1651 OVERVIEW



TOP PLACEMENT



BOTTOM PLACEMENT

2.2 SYSTEM SETTINGS

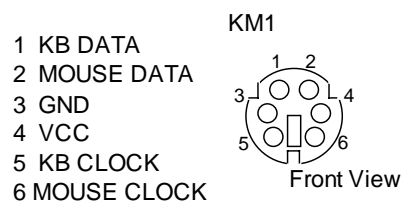
Jumper pins allow you to set specific system parameters. Set them by changing the pin location of the jumper blocks. (A jumper block is a small plastic-encased conductor that slips over the pins.) To change a jumper setting, remove the jumper from its current location with your fingers or small needle-nosed pliers. Place the jumper over the two pins designated for the desired setting. Press the jumper evenly onto the pins. Be careful not to bend the pins.

We will show the locations of the AR-B1651 jumper pins, and the factory-default settings.

CAUTION: Do not touch any electronic components unless you are safely grounded. Wear a grounded wrist strap or touch an exposed metal part of the system unit chassis. The static discharges from your fingers can permanently damage electronic components.

2.2.1 Keyboard & Mouse Connector (KM1)

The KM1 is a 6-pin Mini DIN keyboard & Mouse connector. This keyboard & Mouse connector is PS/2 type connector. This connector is also for a standard IBM-compatible keyboard when used with the included PS/2 keyboard & Mouse adapter cable.



2.2.2 SDRAM SOCKET 144 PIN (DIMM1)

It can assemble 16/32/64/128/256/512MB 144 pin DIMM Module Memory. When you set up 144-pin DIMM Module Memory, AR-B1651 will auto-detect DRAM, and adopt correct save in order to make memory work till the best situation.

Caution: Set up 144-pin DIMM Module Memory, please insert into slot vertical, if the direction is wrong and it leads to failure, please confirm the direction is right.

DRAM Configuration (DIMM1)

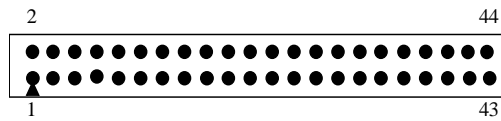


144 pin SO-DIMM

2.2.3 Hard Disk (IDE) Connector (IDE1)

44 Pin Hard Disk Connector (IDE1)

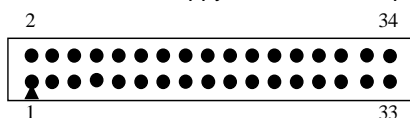
The on-board 44-pin mini-pitched IDE interface is used to let user support either a 3.5" HDD with 44 to 40pin adapter cable.



Pin	Signal	Pin	Signal
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	NOT USED
21	IDEDREQ	22	GROUND
23	-IOW A	24	GROUND
25	-IOR A	26	GROUND
27	IDEIORD YA	28	GROUND
29	-DACKA	30	GROUND
31	AIN T	32	GROUND
33	SA 1	34	Not Used
35	SA 0	36	SA 2
37	CS 0	38	CS 1
39	HD LED A	40	GROUND
41	VCC	42	VCC
43	GROUND	44	Not Used

2.2.4 FDD Port Connector (FDD1)

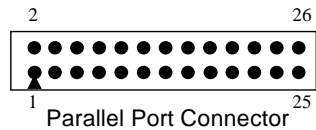
The AR-B1651 provides a 34-pin header type connector for supporting up to two floppy disk drives. To enable or disable the floppy disk controller, please use the BIOS Setup program.



Pin	Signal	Pin	Signal
1-33(odd)	GROUND	18	-DIRECTION
2	DRVEN 0	20	-STEP OUTPUT PULSE
4	NOT USED	22	-WRITE DATA
6	DRVEN 1	24	-WRITE ENABLE
8	-INDEX	26	-TRACK 0
10	-MOTOR ENABLE 0	28	-WRITE PROTECT
12	-DRIVE SELECT 1	30	-READ DATA
14	-DRIVE SELECT 0	32	-SIDE 1 SELECT
16	-MOTOR ENABLE 1	34	DISK CHANGE

2.2.5 Parallel Port Connector (LPT1)

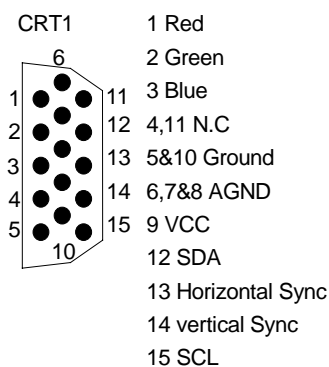
The connector for the parallel port is a 26-pin header connector.



DB-25	Signal	DB-25	Signal
1	-Strobe	14	-Auto Form Feed
2	Data 0	15	-Error
3	Data 1	16	-Initialize
4	Data 2	17	-Printer Select In
5	Data 3	18	Ground
6	Data 4	19	Ground
7	Data 5	20	Ground
8	Data 6	21	Ground
9	Data 7	22	Ground
10	-Acknowledge	23	Ground
11	Busy	24	Ground
12	Paper	25	Ground
13	Printer Select	26	No Used

2.2.6 CRT Connector (CRT1)

VGA1 is a standard 15-pin D-SUB connector commonly used for VGA.



2.2.7 USB Connector (USB1)

The Universal Serial Bus (USB) controller is USB V1.1 and Universal HCI V1.1 compliant. The Universal Serial Bus (USB) standard is a low-to-medium speed interface for the connection of PC peripherals, which gives complete Plug & Play, and hot attach/detach for up to 127 external devices.

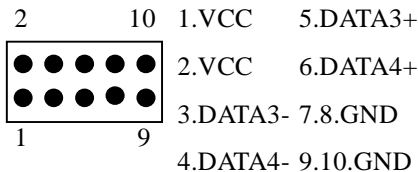
USB is a leading edge technology that allows the user to quickly and easily add a wide range of peripheral devices from printers to keyboards and telephony devices to fax/modems. Universal Host Controller Interface (UHCI) and future support for the Open Host Controller Interface (OHCI) ensure USB compatibility and usability well into the future.

The CPU board supports four Universal Serial Bus ports. An optional external port bracket attaches to the onboard connector via an attached cable. With the optional port bracket installed you can attach USB devices to the

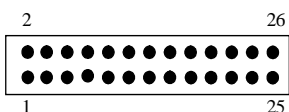
external ports. If the USB ports are installed, the USB Controller line in the Integrated Peripherals section of the CMOS Setup utility must be set to "Enabled". USB ports may also require Operating System support for USB devices.

■ **USB1**

USB1 use an adapter cable to interface with external equipment.



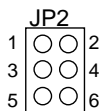
2.2.8 LVDS Header (LVDS1)



PIN (LVDS1)	FUNCTION	PIN (LVDS1)	FUNCTION
1	TXOUT0-	2	GND
3	TXOUT0+	4	GND
5	TXOUT1-	6	VTX5
7	TXOUT1+	8	VTX5
9	TXOUT2-	10	NC
11	TXOUT2+	12	GND
13	TXCLK-	14	GND
15	TXCLK+	16	VTX12
17	TXOUT3-	18	VTX12
19	TXOUT3+	20	GND
21	VTKBP	22	NC
23	VTX5	24	NC
25	VTX5	26	NC

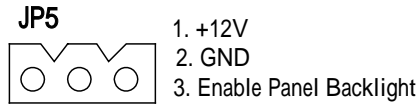
2.2.9 VOLTAGE SELECT (JP2)

LVDS



JUMPER	VOLTAGE	NOTE
1-3 ON	VCC	
2-4 ON		
3-5 ON	VCC3	Factory preset
4-6 ON		

2.2.10 PANEL BACKLIGHT CONNECTOR(JP5)

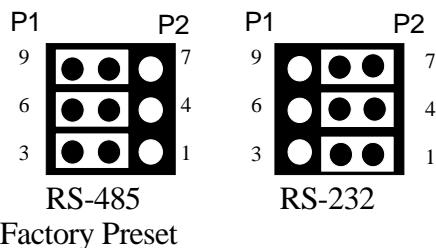
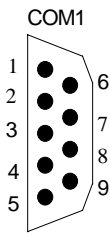


2.2.11 Serial Port (COM1, COM2)

- AR-B1651 is equipped with two serial ports. COM1 is a standard RS-232 interface.
- COM2 use an adapter cable to interface with external equipment.
- When we are configuring P1 or P2, COM1 can also be configured as an RS-232 or RS-485 port.

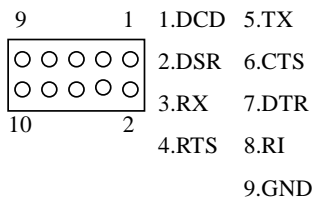
A. COM1

USED RS232 & RS485



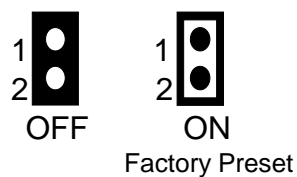
B. COM2

USED RS232

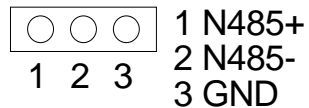


2.2.12 RS-485 Terminator Select (JP1)

When there is only one line, the setting should be left off. If multiple blocks are used on a single line, it should be set to "ON" in order to properly terminate the connection for better transmission of data.

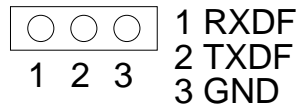


2.2.13 RS-485 Header (JP3)

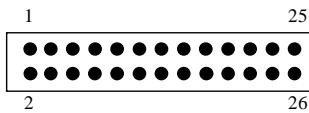


2.2.14 Touch Screen Connector (TS2)

TS2 is a serial port, which is parallel with COM2. It provides another choice when user needs a serial port but need to connect from board directly without connecting through a D-type connector. The typical application is a touch screen panel.



2.2.15 26-Pin Audio Connector (AUDIO1)

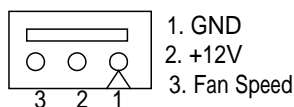


PIN			
1	AUXAL	2	LINEL
3	AUXAR	4	LINER
5	VCC	6	Not Used
7	AUDIOL	8	MICPH
9	AUDIOR	10	PCSPKO
11	GND	12	GND
13	Not Used	14	Not Used
15	GND	16	GND
17	Not Used	18	Not Used
19	Not Used	20	Not Used
21	Not Used	22	Not Used
23	Not Used	24	Not Used
25	GND	26	GND

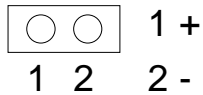
Note: the connector does not contain the GAME (MIDI) port signal. When AR-B1651 audio card is used with this CPU board, the GAME port function is not supported.

2.2.16 CPU Fan Power Connector (JFAN1)

FAN1 is 3-pin header for the CPU fan. The fan must be a 12V fan.

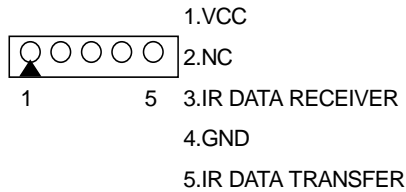


2.2.17 External Buzzer (U6)

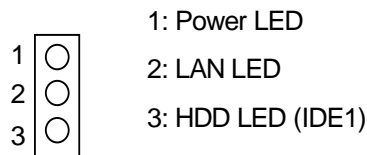


2.2.18 Infrared Connector (IR1)

The Infra-red Header pin assignment is as follows:



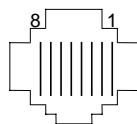
2.2.19 LED (J1)



Power LED: External LED connector for Watchdog status indication.
 LAN LED: External LED connector for 10/100M LAN
 HDD LED (IDE1): External LED connector for primary IDE channel.

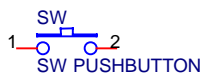
2.2.20 Ethernet RJ-45 Connector (LAN1)

The system supports onboard network connectivity. To utilize this function, install the network driver from the utility diskette, and connect the cable to the following RJ-45 header.



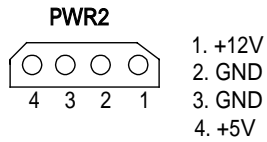
PIN (CN8)	FUNCTION
1	TPTX+
2	TPTX -
3	TPRX+
4	Not Used
5	Not Used
6	TPRX-
7	Not Used
8	Not Used

2.2.21 Reset Button (RST1)



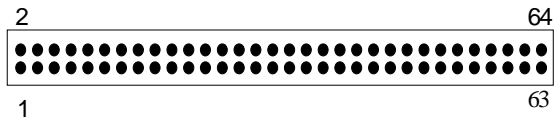
2.2.22 Power Connector (PWR2)

The PWR2 is a 4-pin power connector. It's the standard connector on all Acrosser boards.

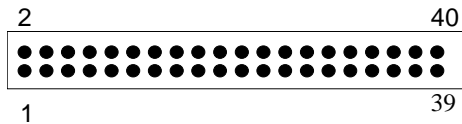


2.2.23 PC/104 Connector (PC1)

(1) 64 Pin PC/104 Connector A&B



(2) 40 Pin PC/104 Connector C&D



Note:

If the content in setting is inconsistent with the CD-ROM, please refer to the setting as the priority.

3. CRT/LCD FLAT PANEL DISPLAY

This chapter describes the configuration and installation procedures for LCD & CRT displays. The following topics are covered:

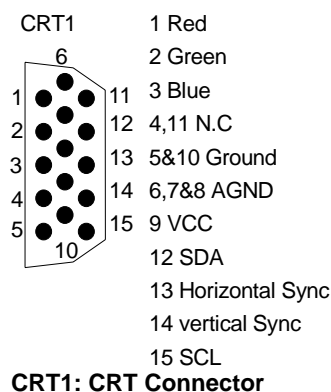
- CRT Connector
- LCD Flat Panel Displays

DON'T SUPPORT EXTERNAL VGA CARD

3.1 CRT CONNECTOR (CRT1)

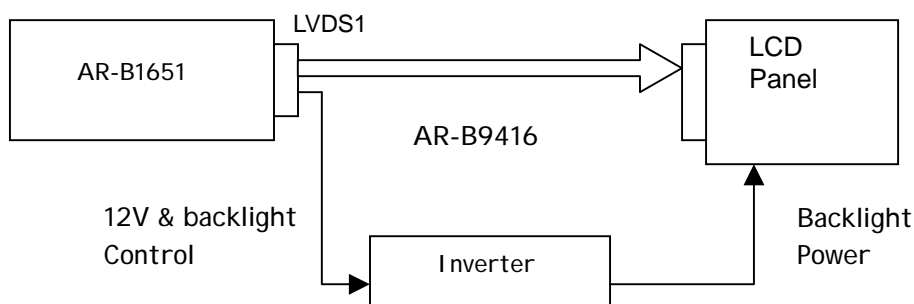
The AR-B1651 supports CRT color monitors. It uses an onboard VGA chipset and you can use the VGA RAM 2.4 or 8 MB. For different VGA display modes, your monitor must possess certain characteristics (the right drivers) to display the mode you want.

To connect to a CRT monitor, an adapter cable has to be connected to the VGA connector. VGA is used to connect with a VGA monitor when you are using the on-board VGA controller as a display adapter. Pin assignments for the VGA connector are as follows:



3.2 LCD FLAT PANEL DISPLAYS

Figure 4-2 shows the connection between AR-B1651 and LCD panel.

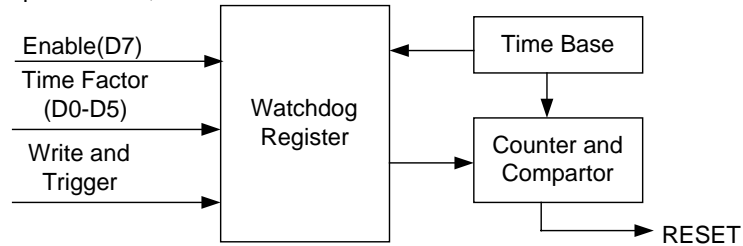


LCD Panel Block Diagram

The VGA BIOS of AR-B1651 support 800X600 resolution TFT display. Connecting AR-B1651 to other LCD needs different LCD BIOS. Please visit our web site (www.acrosser.com) or contact with our technical support department (csd@acrosser.com.tw) for supports of LCD connecting.

4. WATCHDOG TIMER

This section describes the use of Watchdog Timer, including disable, enable, and trigger. AR-B1651 is equipped with a programmable time-out period watchdog timer that occupies I/O port 443H. Users can use simple program to enable the watchdog timer. Once you enable the watchdog timer, the program should trigger it every time before it times out. Watchdog Timer will generate a response (system or IRQ) due to system fails to trigger or disable watchdog timer before preset timer, times out.



Watchdog Block Diagram

4.1 WATCHDOG TIMER SETTING

The watchdog timer is a circuit that maybe be used from your program software to detect crash or hang up. The Watchdog timer is automatically disabled after reset. Once you enabled the watchdog timer, your program should trigger the watchdog timer every time before it times out. After you trigger the watchdog timer, the timer will be set to zero and start to count again. If your program fails to trigger the watchdog timer before times out, it will generate a reset pulse to reset the system or trigger the IRQ 9 signal in order to tell your system that the watchdog time is out.

Please refer to the following table in order to properly program Watchdog function

	D7	D6	D5	D4	D3	D2	D1	D0
1	Enable	Reset	Time period					
0	Disable	IRQ 9						

Users could test watchdog function under 'Debug' program as follows:

```

C:>debug
● O 443 C8H
  Generally, watchdog function would reset system after 8 seconds
● O 443 0H
  Disable watchdog function
  
```

```

C:>debug
● O 443 88H
  Generally, watchdog function would generate IRQ 9 after 8 seconds
● O 443 0H
  Disable watchdog function
  
```

4.2 WATCHDOG TIMER TRIGGER

After you enable the watchdog timer, your program must write the same factor as triggering to the watchdog timer at least once during every time-out period. You can change the time-out period by writing another timer factor to the watchdog register at any time, and you must trigger the watchdog during every new time-out period in next trigger.

5. BIOS CONSOLE

This chapter describes the AR-B1651 BIOS menu displays and explains how to perform common tasks needed to get up and running, and presents detailed explanations of the elements found in each of the BIOS menus. The following topics are covered:

- BIOS Setup Overview
- Advanced CMOS Setup
- Peripheral Setup
- Boot
- BIOS Exit

5.1 BIOS SETUP OVERVIEW

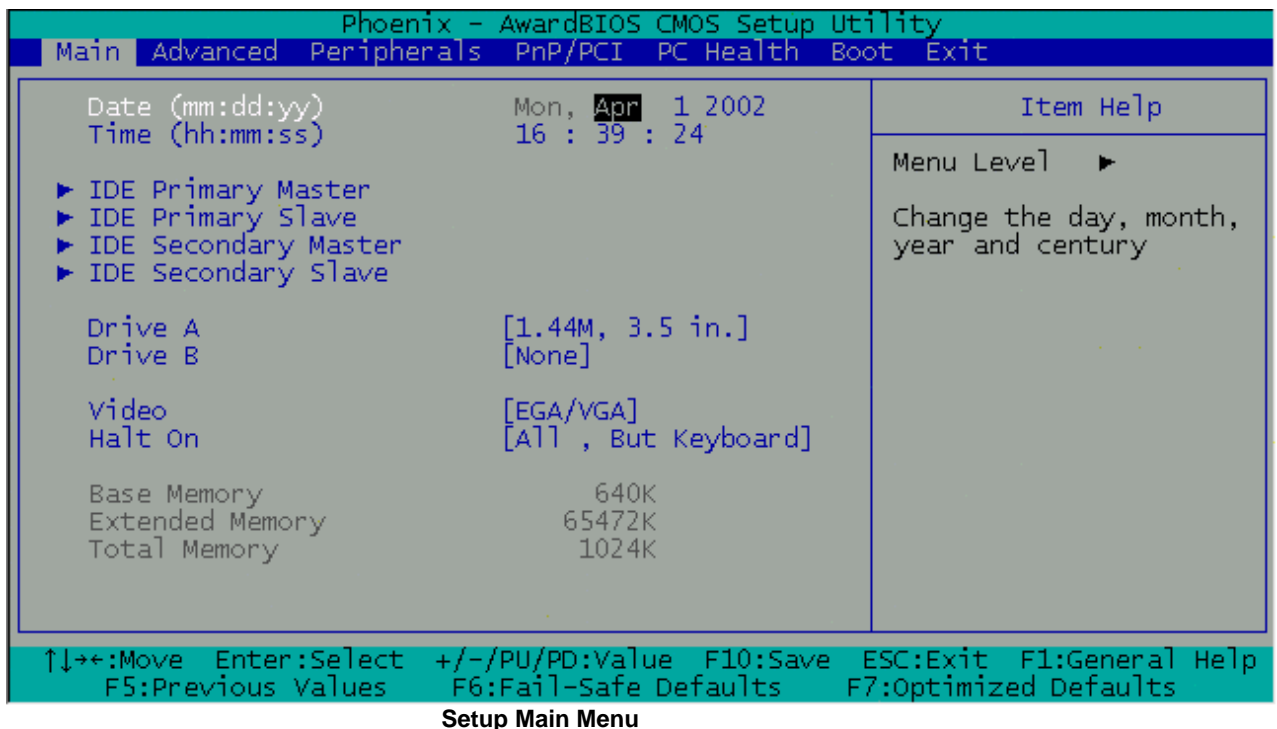
The BIOS is a program used to initialize and set up the I/O system of the computer, which includes the ISA bus and connected devices such as the video display, diskette drive, and the keyboard.

The BIOS provides a menu-based interface to the console subsystem. The console subsystem contains special software, called firmware that interacts directly with the hardware components and facilitates interaction between the system hardware and the operating system.

The BIOS default values ensure that the system will function at its normal capability. In the worst situation the user may have corrupted the original settings set by the manufacturer.

After the computer is turned on, the BIOS will perform diagnostics on the system and display the size of the memory that is being tested. Press the [Del] key to enter the BIOS Setup program, and then the main menu will show on the screen.

The BIOS Setup main menu includes some options. Use the [Up/Down] arrow key to highlight the option that you wish to modify, and then press the [Enter] key to select the option and configure the functions.



The <Main> option allows you to record some basic system hardware configuration and set the system clock and error handling. If the CPU board is already installed in a working system, you will not need to select this option anymore.

Date & Time Setup

Highlight the <Date> field and then press the [Page Up] /[Page Down] or [+]/[-] keys to set the current date. Follow the month, day and year format.

Highlight the <Time> field and then press the [Page Up] /[Page Down] or [+]/[-] keys to set the current date. Follow the hour, minute and second format.

The user can bypass the date and time prompts by creating an AUTOEXEC.BAT file. For information on how to create this file, please refer to the MS-DOS manual.

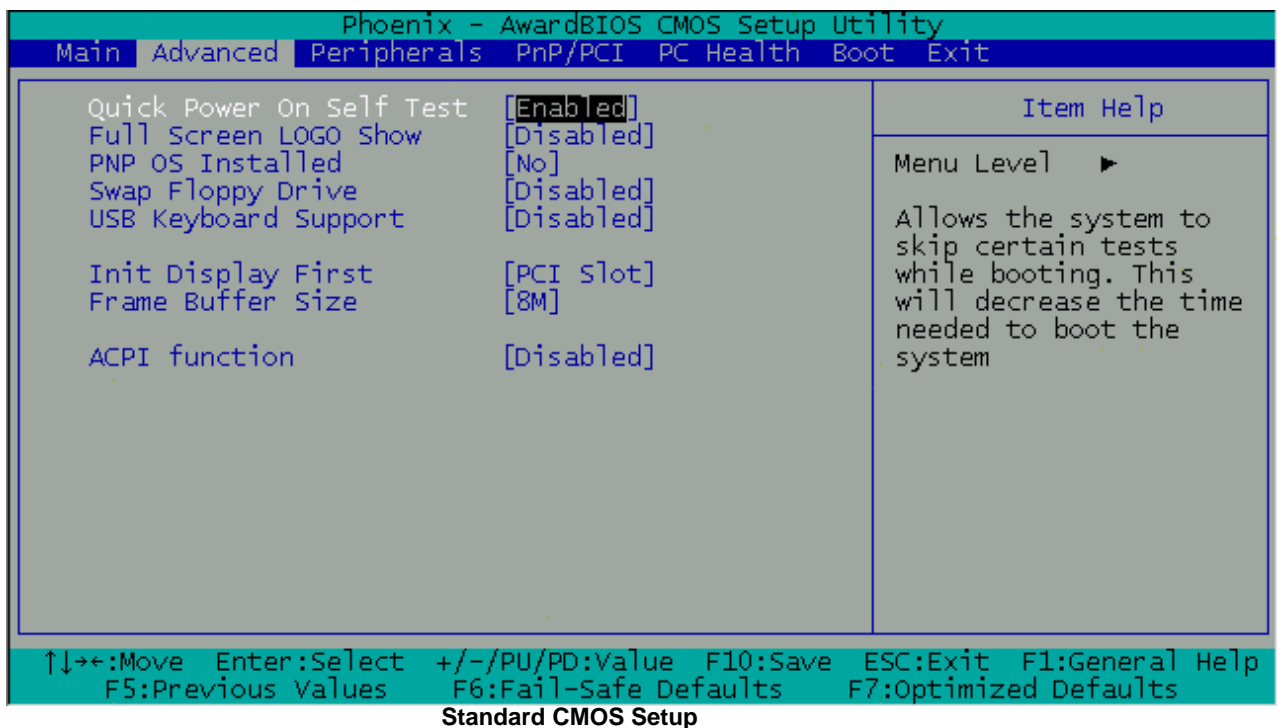
Hard Disk Setup

The BIOS supports various types for user settings, The BIOS supports <Pri Master>, <Pri Slave>, <Sec Master> and <Sec Slave> so the user can install up to two hard disks. For the master and slave jumpers, please refer to the hard disk's installation descriptions and the hard disk jumper settings in section three of this manual.

Floppy Setup

The <Main> option records the types of floppy disk drives installed in the system.

To enter the configuration value for a particular drive, highlight its corresponding field and then select the drive type using the left-or right-arrow key.

5.2 ADVANCED**Quick Power On Self Test [Enabled]**

This field enables the power on test. Configuration options: [Enabled] [Disabled]

Full Screen Logo Show [Disable]

This allows you to enable or disable the full screen logo display feature.

Configuration options: [Disabled] [Enabled]

PNP OS Installed [NO]

Select Yes if the system operating environment is Plug-and-Play aware (e.g., Windows 95).

Swap Floppy Drive [Disabled]

This field is effective only in systems with two floppy drives. Selecting Enabled assigns physical drive B to logical drive A, and physical drive A to logical drive B.

USB Keyboard Support [Disable]

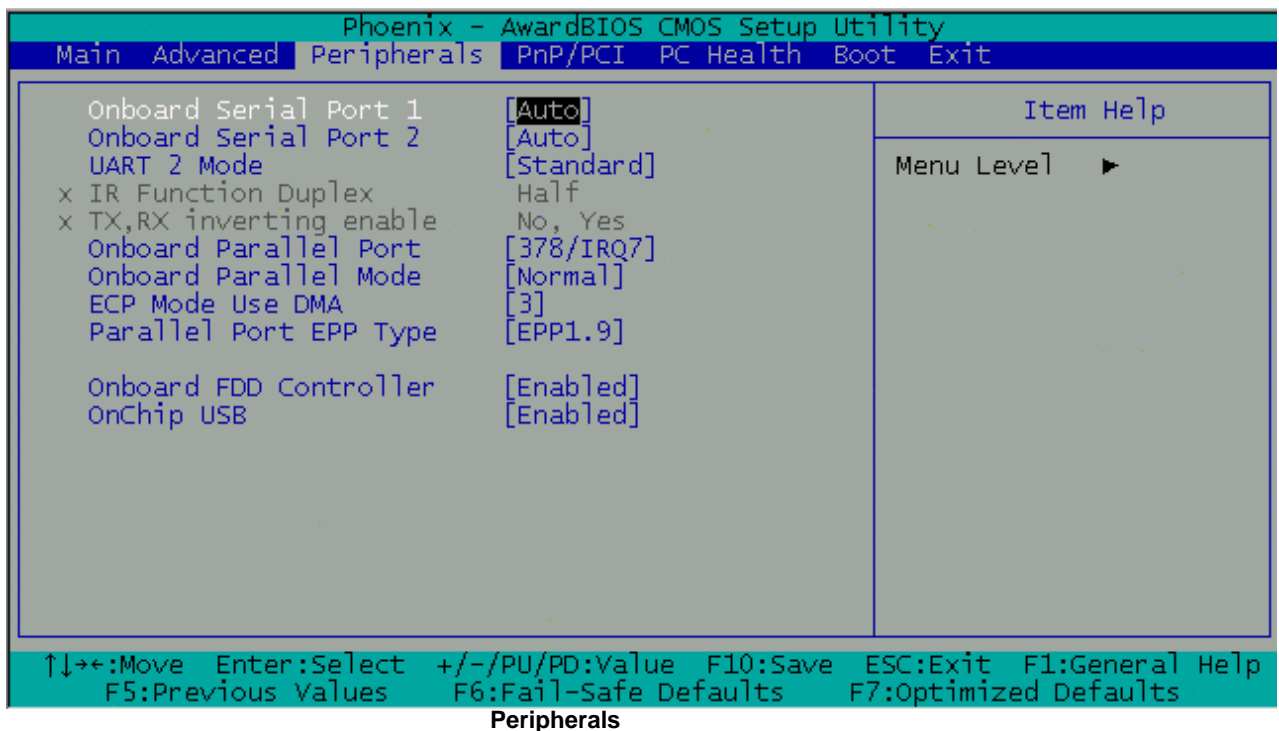
SUPPORT USB KEYBOARD

INIT Display First [PCI SLOT]

Initialize the PCI video display before initializing any other display device on the system. Thus the PCI display becomes the primary display.

Frame Buffer Size [8M]**ACPI Function [Disable]**

This item allows you to Enabled/Disabled the Advanced Configuration and Power Management (ACPI). The settings are Enabled and Disabled .

5.3 PERIPHERALS**Onboard Serial Port 1 [AUTO]**

Choose serial port 1 & 2's I/O address. Do not set port 1 & 2 to the same address except for Disabled orAuto.

Onboard Serial Port 2 [Auto]

Choose serial port 1 & 2's I/O address. Do not set port 1 & 2 to the same address except for Disabled orAuto.

UART 2 MODE [Standard]**Select an operating mode for the second serial port:**

Normal	RS-232C serial port
Standard	RS-232C serial port
IrDA 1.0	Infrared port compliant with IrDA 1.0 specification
IrDA SIR	IrDA-compliant serial infrared port
IrDA MIR	1 MB/sec infrared port
IrDA FIR	Fast Infrared standard
FIR	Fast Infrared standard
MIR 0.57M	0.57-MB/sec infrared port
MIR 1.15M	1.15-MB/sec infrared port
Sharp IR	4-Mb/s data transmission
HPSIR	IrDA-compliant serial infrared port
ASK IR	Amplitude shift keyed infrared port

Onboard Parallel Port [378H/IRQ7]

This field allows you to set the address of the onboard parallel port connector. If you disable this field, the Parallel Port Mode and ECP DMA Select configurations are not available. Configuration options: [Disabled] [378H/IRQ7] [278H/IRQ5]

Onboard Parallel Mode [Normal]

This field allows you to set the operation mode of the parallel port. [Normal] allows normal-speed operation but in one direction only; [EPP] allows bidirectional parallel port operation; [ECP] allows the parallel port to operate in bidirectional DMA mode; [ECP+EPP] allows normal speed operation in a two-way mode. Configuration options: [Normal] [EPP] [ECP] [ECP+EPP]

ECP Mode use DMA [3]

This field allows you to configure the parallel port DMA channel for the selected ECP mode. This selection is available only if you select [ECP] or [ECP+EPP] in Parallel Port Mode above. Configuration options: [1] [3]

Parallel port EPP Type [EPP1.9]

The mode depends on your external device that connects to this port.

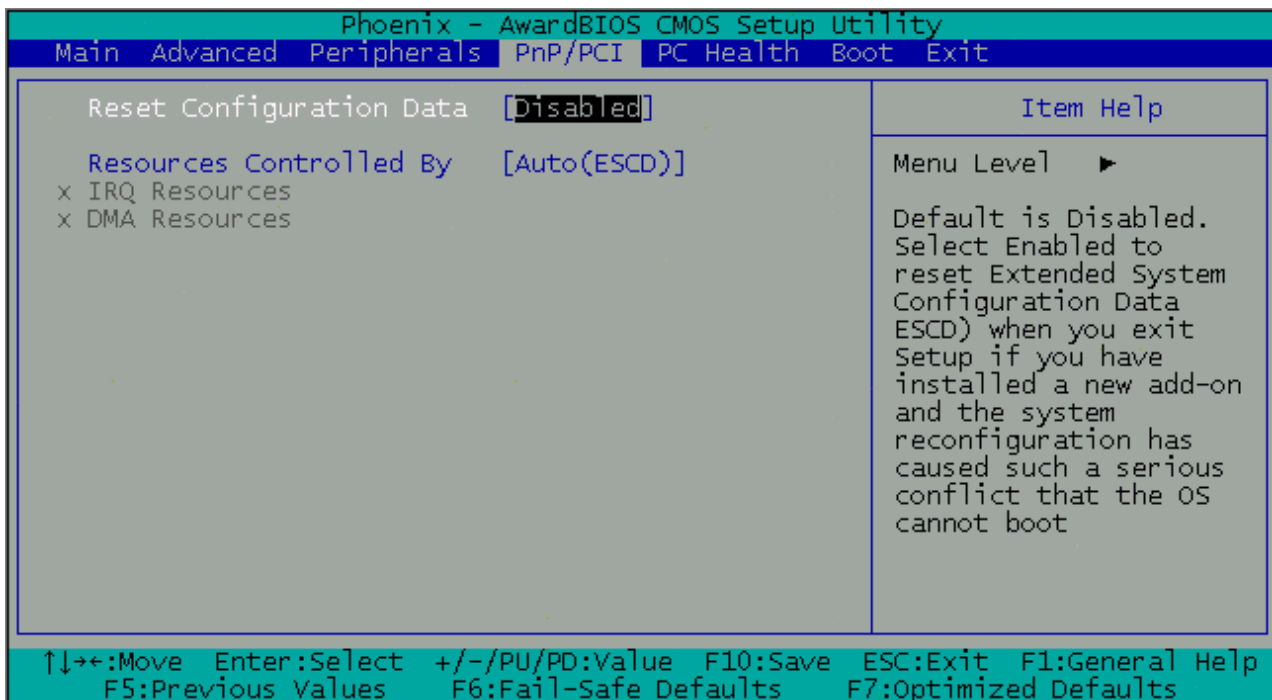
Onboard FDC controller [Enables]

Use the on-board floppy controller

OnChip USB [Enables]

This should be enabled if your system has a USB installed on the system board and you want to use it. Even when so equipped, if you add a higher performance controller, you will need to disable this feature.

5.4 PnP/PCI



PnP/PCI

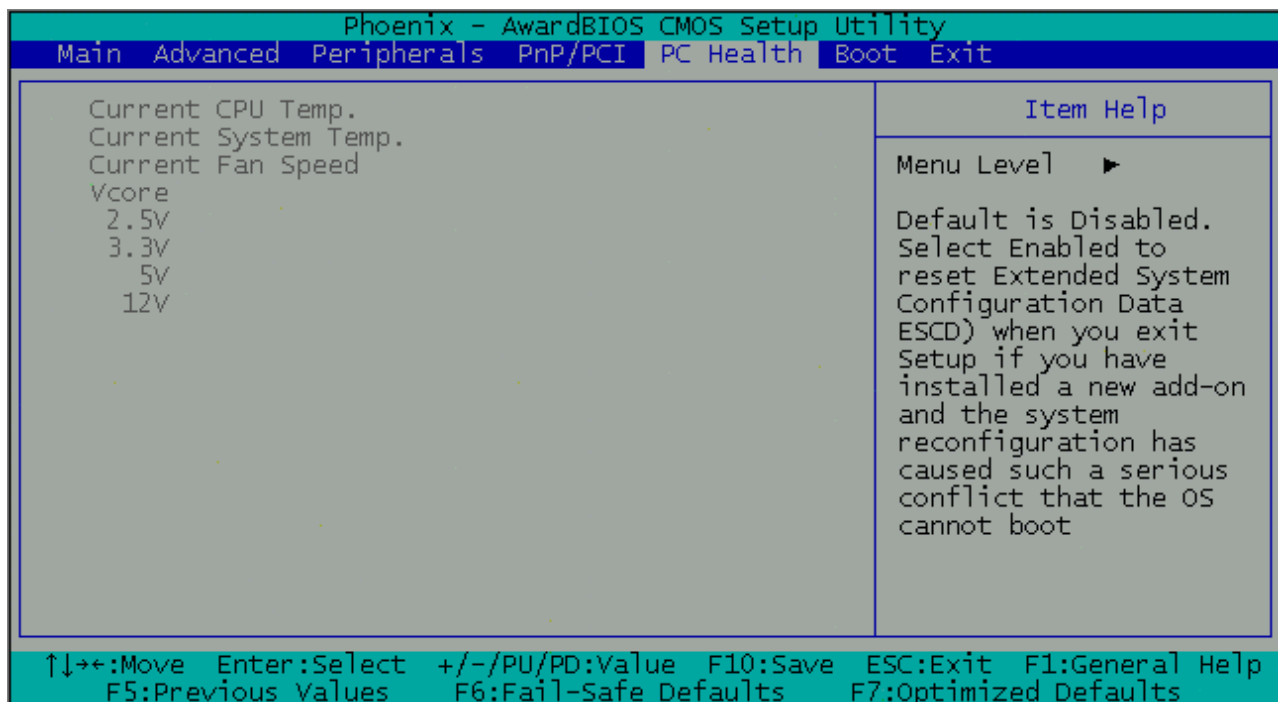
Reset Configuration Data [Disable]

Normally, you leave this field Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the operating system cannot boot.

Resources Controlled By [Auto (ESCD)]

This field sets control over the IRQ resources by the automatic (ESCD) system or manual assignment of IRQ channels. The default enables automatic (ESCD) control. Configuration options: [Auto(ESCD)] [Manual].

5.5 PC HEALTH



PC HEALTH

CURRENT CPU TEMP.

The onboard hardware monitor automatically detects and displays the motherboard and CPU temperatures.

CURRENT SYSTEM TEMP.

The onboard hardware monitor automatically detects and displays the motherboard and System temperatures.

CURRENT FAN SPEED

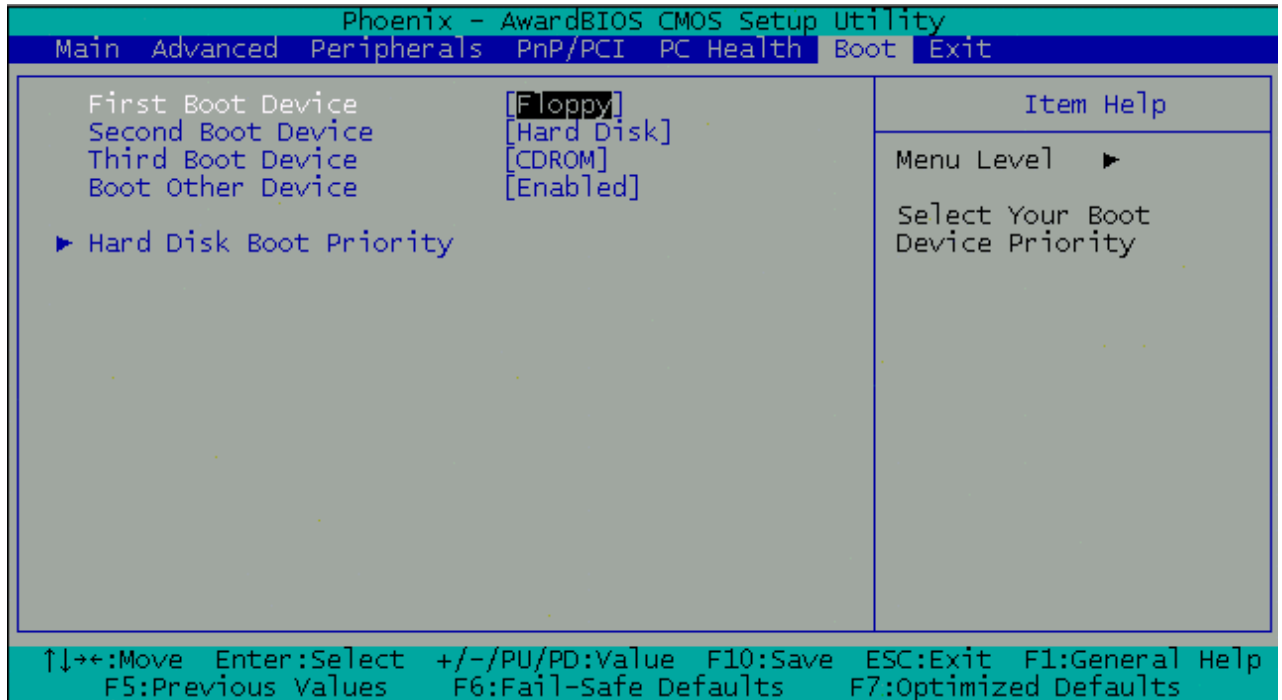
The onboard hardware monitor automatically detects and displays the CPU, chassis, and power fan speeds in rotations per minute (RPM). If any of the fans is not connected to the motherboard, that field shows N/A.

VCORE

VCORE Voltage, +3.3V Voltage, +5V Voltage, +12V Voltage

The onboard hardware monitor automatically detects the voltage output through the onboard voltage regulators.

5.6 BOOT



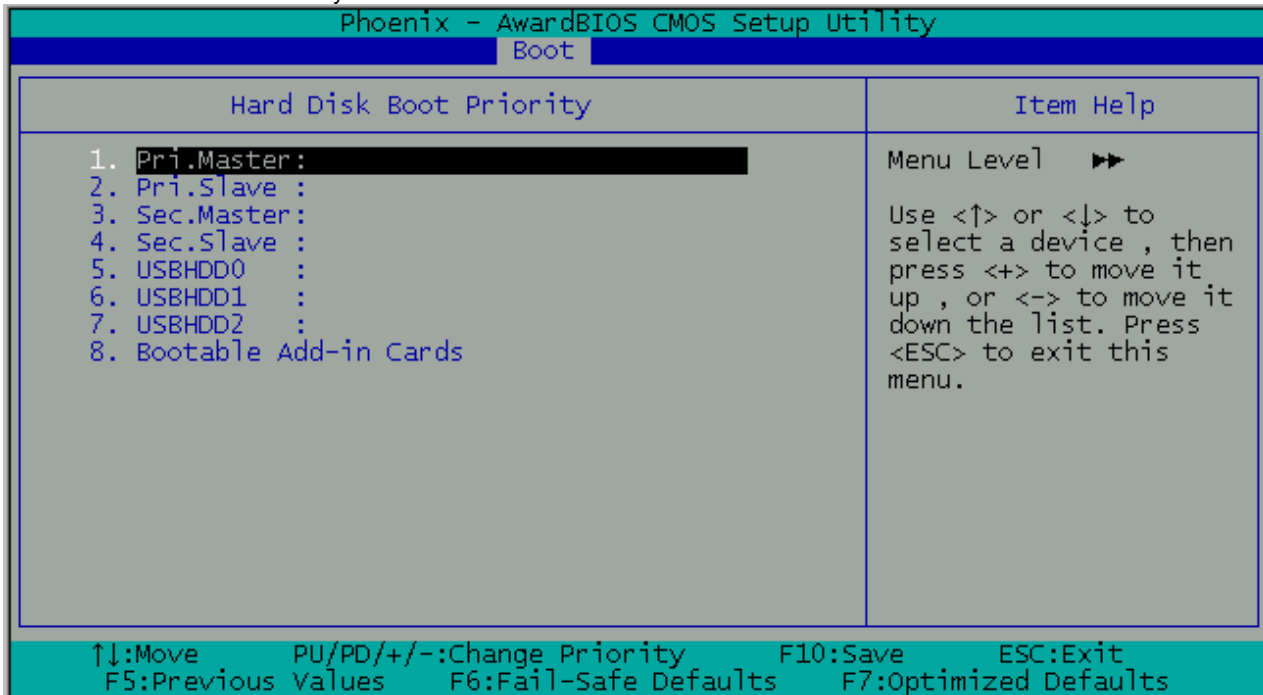
BOOT

First/Second/Third Boot Device

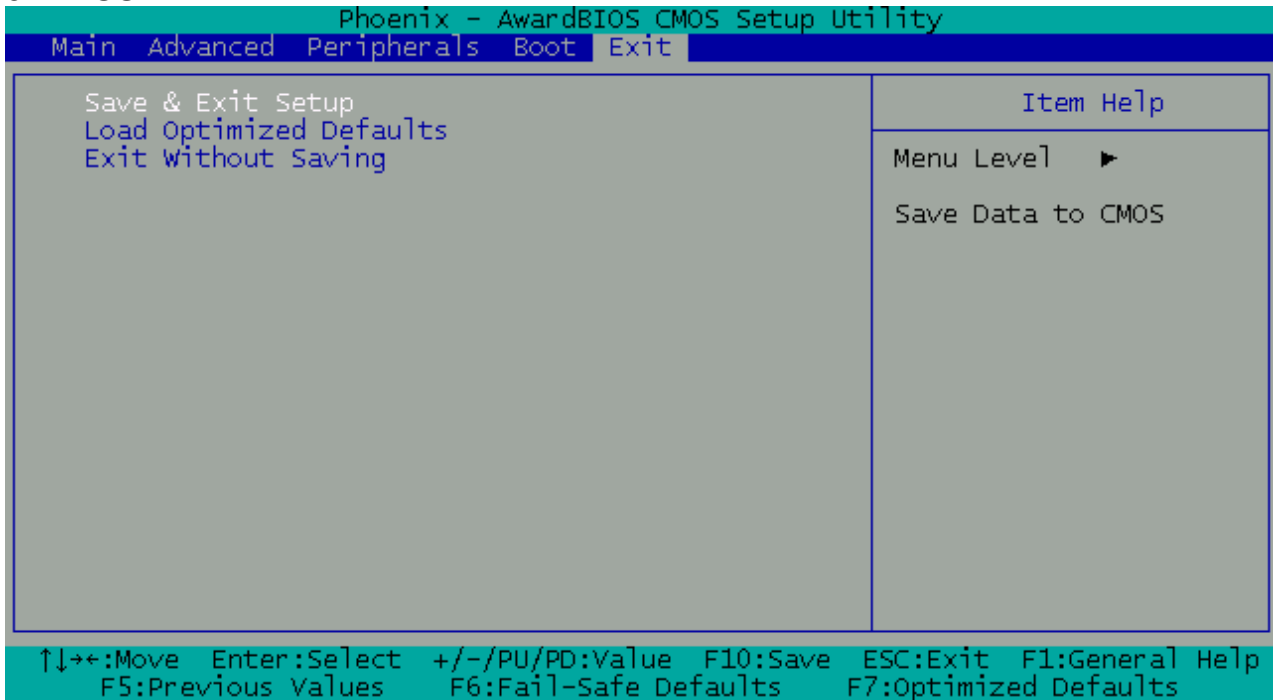
Floppy
 LS120
 HDD-0
 SCSI
 CDROM
 HDD-1
 HDD-2
 HDD-3
 ZIP100
 USB-FDD
 USB-ZIP
 USB-CDROM
 USB-HDD
 LAN
 Disabled

Boot Other Device [Enabled]

Select Your Boot Device Priority



5.7 BIOS EXIT



Exit

When you have made all of your selections from the various menus in the Setup program, save your changes and exit Setup. Select Exit from the menu bar to display the following menu.

Save & Exit Setup

Type "Y" will quit the Setup Utility and save the user setup value to RTC CMOS. Type "N" will return to Setup Utility.

Load Optimized Defaults

Selecting this field loads the factory defaults for BIOS and Chipset Features, which the System automatically detects.

Exit Without Saving

Type "Y" will quit the Setup Utility without saving to RTC CMOS.
Type "N" will return to Setup Utility.

5.8 BIOS UPDATE

The BIOS program instructions are contained within computer chips called FLASH ROMs that are located on your system board. The chips can be electronically reprogrammed, allowing you to upgrade your BIOS firmware without removing and installing chips.

The AR-B1665 provides the FLASH BIOS update function for you to easily to update to a newer BIOS version.

Please follow these operating steps to update to new BIOS:

- Step 1: Turn on your system and don't detect the CONFIG.SYS and AUTOEXEC.BAT files.
- Step 2: Insert the FLASH BIOS diskette into the floppy disk drive.
- Step 3: In the MS-DOS mode, you can type the FLASH826 program.
A:\>FLASH826
- Step 4: Press [ALT+F], The <File> box will show the following message, this message will be highlighted.

BIOS Filename Loading After typing in the File name you must press<ENTER> or press <ESC> to exit.
- Step 5: And then please enter the file name to the <Enter File Name> box. And the <Message> box will show the following notice.

Are you sure to write the BIOS into flash ROM?
- Step 6: Press the <Enter> key to update the new BIOS.
Then the <Message> box will show the <Programming now ...>.
- Step 7: When the BIOS update is successful, the message will show <Flash ROM Update Completed - Pass>.

APPENDIX A. I/O & MEMORY MAP

Memory Map:

MEMORY MAP	ASSIGNMENT
0xA0000-0xBFFF FF	PCI bus
0xA0000-0xBFFF FF	VIA Tech CPU to AGP Controller r
0xA0000-0xBFFF FF	VIATech VT8361/VT8601 Graphics Controller.
0xCC000-0xEFFF FF	PCI bus
0x7800000-0xFF FEFFFF	PCI bus
0xEC000000-0x ED7FFFFFFF	VIA Tech CPU to AGP Controller
0xEC000000-0x ED7FFFFFFF	VIA Tech VT8361/VT8601 Graphics Controller
0xE8000000-0xE BFFFFFFF	VIA Tech CPU to AGP Controller
0xED000000-0x ED01FFFF	VIA Tech VT8361/VT8601 Graphics Controller
0xEC800000-0x ECFFFFFFF	VIA Tech VT8361/VT8601 Graphics Controller
0xED800000-0x ED8000FF	Realtek RTL8139(A) PCI Fast Ethernet Adapter
0x0000-0x9FFFF	System board
0xFFFE0000-0xF FFFFFFF	System board
0xFEE00000-0xF EE0FFFF	System board
0x100000-0xFFFF FFF	System board
0xF0000-0xF3FF F	Motherboard resources
0xF4000-0xF7FF F	Motherboard resources
0xF8000-0xFBFF F	Motherboard resources
0xFC000-0xFFF FF	Motherboard resources

I/O Map:

I/O MAP	ASSIGNMENT
0x0022-0x003F	PCI bus
0x0044-0x0047	PCI bus
0x004C-0x006F	PCI bus.
0x0072-0x007F	PCI bus.
0x0090-0x0091	PCI bus
0x0093-0x009F	PCI bus
0x00A2-0x00BF	PCI bus
0x00E0-0x00EF	PCI bus
0x0100-0x0CF7	PCI bus
0x0D00-0xFFFF	PCI bus
0x03B0-0x03BB	VIA Tech CPU to AGP Controller
0x03B0-0x03BB	VIATechVT8361/VT8601 Graphics Controller
0x03C0-0x03DF	VIA Tech CPU to AGP Controller
0x03C0-0x03DF	VIATechVT8361/VT8601 Graphics Controller
0x0A79-0x0A79	ISAPNP Read Data Port
0x0279-0x0279	ISAPNP Read Data Port
0x0274-0x0277	ISAPNP Read Data Port
0xE000-0xE00F	VIA Bus Master IDE Controller
0x01F0-0x01F7	Primary IDE Channel
0x03F6-0x03F6	Primary IDE Channel
0x0170-0x0177	Secondary IDE Channel
0x0376-0x0376	Secondary IDE Channel
0xE100-0xE11F	VIA USB Universal Host Controller
0xE200-0xE21F	VIA USB Universal Host Controller
0xFE00-0xFEFF	Realtek RTL8139(A) PCI Fast Ethernet Adapter
0x0020-0x0021	Programmable interrupt controller
0x00A0-0x00A1	Programmable interrupt controller
0x0040-0x0043	System timer
0x0000-0x000F	Direct memory access controller
0x0081-0x0083	Direct memory access controller
0x0087-0x0087	Direct memory access controller
0x0089-0x008B	Direct memory access controller
0x008F-0x0091	Direct memory access controller
0x00C0-0x00DF	Direct memory access controller
0x0060-0x0060	PC/AT Enhanced PS/2 Keyboard (101/102-Key)
0x0064-0x0064	PC/AT Enhanced PS/2 Keyboard (101/102-Key)
0x0378-0x037F	Printer Port (LPT1)
0x03F8-0x03FF	Communications Port (COM1)
0x02F8-0x02FF	Communications Port (COM2)
0x03F0-0x03F5	Standard floppy disk controller
0x03F7-0x03F7	Standard floppy disk controller
0x0061-0x0061	System speaker
0x0070-0x0071	System CMOS/real time clock
0x00F0-0x00FF	Numeric data processor

APPENDIX B. INTERRUPT REQUEST (IRQ)

SETTING	HARDWARE USING THE SETTING
00	
01	PC/AT Enhanced PS/2 Keyboard (101/102-Key)
02	
03	Communications Port (COM2)
04	Communications Port (COM1)
05	
06	Standard floppy disk controller
07	
08	System CMOS/real time clock
09	
10	VIA USB Universal Host Controller
10	VIA USB Universal Host Controller
11	Realtek RTL8139(A) PCI Fast Ethernet Adapter
11	VIA Tech VT8361/VT8601 Graphics Controller
12	Logitech PS/2 Port Mouse
13	Numeric data processor
14	Primary IDE Channel
15	

Note:

If the content in Setting is inconsistent with CD-ROM, please refer to the setting as priority.