PCI-855VE2M

Socket478 Pentium M

PCI Bus Half-Size CPU Card

User's Manual

Version 1.0

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Manual Rev 1.0: May 28, 2004

This operation manual is meant to assist both Embedded Computer manufacturers and end users in installing and setting up the system. The information contained in this document is subject to change without any notice.

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Questions		
Product Model		
Environment to Use	□OS : _____ □Computer Brand : _____ □M/B : □CPU : □Chipset : □BIOS : □Video Card : □Network Interface Card : □Other :	
Challenge Description		
Suggestions for NEATEK		

TABLE OF CONTENTS

CHAPTER 3 SOFTWARE UTILITIES

CHAPTER 4 AWARD BIOS SETUP

1

Introduction

This chapter gives you the information for PCI-855VE2M. It also outlines the System specification.

Section includes:

● About This Manual

● System Specifications

● Safety precautions

Experienced users can skip to chapter 2 on page 2-1 for Quick Start.

1-1. ABOUT THIS MANUAL

Thank you for purchasing our PCI-855VE2M Socket 478 Pentium M Half Size Card enhanced with VGA / 2LAN, which is fully PC / AT compatible. PCI-855VE2M provides faster processing speed, greater expandability and can handle more task than before. This manual is designed to assist you how to install and set up the system. It contains four chapters. The user can apply this manual for configuration according to the following chapters :

Chapter 1 Introduction
This chapter introduces you to the background of this manual, and the specification for this system. Final part of this chapter will indicate you how to avoid damaging this Embedded Card.

Chapter 2 Hardware Configuration
This chapter outlines the component location and their functions. In the end of this chapter, you will learn how to set jumper and how to configure this card to meet your own needs.

Chapter 3 Software Utilities
This chapter contains helpful information for proper installations of the VGA utility, LAN utility, sound utility, and BIOS update. It also describes the Watchdog timer configuration.

Chapter 4 Award BIOS Setup
This chapter indicates you how to set up the BIOS configurations.

Appendix A Expansion Bus
This Appendix introduces you the expansion bus for PCI Bus and EPCI Bus.

Appendix B Technical Summary
This section gives you the information about the Technical maps.

Appendix C Trouble Shooting
This section outlines the error messages and offers you the methods to solve the problems.

1-2. SYSTEM SPECIFICATION

● **CPU (mPGA 478) :**
Intel® Pentium® M processor in mPGA478 socket
Available at 1.3~ 1.8GHz
System bus frequency at 400MHz/533MHz
Auto detect voltage regulator

● **SYSTEM CHIPSET :**
Intel® 855GME chipset

● **MEMORY :**
Supports up to 1GB DDR SDRAM.
One 200-pin DDR SO-DIMM sockets on board

● **CACHE :**
Built-in CPU

● **REAL-TIME CLOCK / CALENDAR :**
256-byte battery backed CMOS RAM.
Hardware implementation to indicate century rollover

● **BIOS :**
Phoenix-AwardBIOS™ for plug & play function
Memory size with 4 MB, with VGA BIOS

● **KEYBOARD/MOUSE CONNECTOR :**
Mini DIN connector, selectable for Keyboard, PS/2 Mouse, or Y-Cable
One additional 5-pin External keyboard connector

● **UNIVERSAL SERIAL BUS :**
Universal Serial Bus Connector on board
Supports up to two USB 2.0 ports.

● **BUS SUPPORT :**
PCI Bus
External EPCI Bus
Compact Flash Bus

● **DISPLAY :**
   Built in Intel 855GME, support CRT, DVO.

● **IDE INTERFACE :**
   One IDE ports support up to four IDE devices.
   Supports UDMA 33/66/100.

● **FLOPPY DISK DRIVER INTERFACE :**
   Supports up to two Floppy Disk Drives, 3.5" and 5.25".

● **LAN INTERFACE :**
   Dual ports.
   LAN 1: Intel® 82562ET 10/100 Mbps Ethernet.
   LAN 2: Intel® 825540EM (10/100/1000).
   Supports Wake-on-LAN with ATX power.

● **SERIAL PORT :**
   Two high speed 16550 Compatible UARTs with Send / Receive 16 Byte
   FIFOs. COM1 for RS232; COM2 for RS232/422/485.

● **PARALLEL PORT :**
   One port supports SPP / ECP / EPP Function.

● **HARDWARE MONITORING FUNCTION :**
   Monitor Voltage, CPU Temperature and Cooling Fan.

● **IRDA PORT :**
   One 5-pin Infrared connector
   Supports IrDA v1.0 SIR protocol.

● **LED INDICATOR :**
   HDD LED, Power LED.

● **DMA CONTROLLER :**
   82C37 x 2

● **DMA CHANNELS :**
   7

● **INTERRUPT CONTROLLERS :**
   82C59 x 2

● **INTERRUPT LEVELS :**
   15

● **OPERATING TEMPERATURE :**
   0 to 60°C (32°F to 140°F)

● **INPUT POWER REQUIREMENT :**
   ATX power: +5V, +12V.
   AT power:

● **BOARD DIMENSION :**
   185mm x 122mm (7.28" x 4.8")

● **BOARD NET WEIGHT :**
   230 grams (0.51 lb)

1-3. SAFETY PRECAUTIONS

Follow the messages below to avoid your systems from damage:

1. Avoid your system from static electricity on all occasions.

2. Prevent electric shock. Don't touch any components of this card when the card is power-on. Always disconnect power when the system is not in use.

3. Disconnect power when you change any hardware devices. For instance, when you connect a jumper or install any cards, a surge of power may damage the electronic components or the whole system.

2

HARDWARE CONFIGURATION
*** QUICK START ***

Helpful information describes the jumper & connector settings, and component locations.

Section includes:

● Jumper & Connector Quick Reference Table

● Component Locations

● Configuration and Jumper settings

● Connector's Pin Assignments

2-1. JUMPER & CONNECTOR QUICK REFERENCE TABLE

CPU Speed Selection …………………………………..	JP17
COM Port Connector ....…..................….……	COM1, COM2
COM1 Port RI/Voltage Selection …………………….	JP6
COM2 Port RI/Voltage Selection …………………….	JP7
RS232/422/485 (COM2) Selection ....……	JP8
Keyboard/ Mouse Connector ....…......……………..	DIN1
Keyboard/Mouse Selection …………………………….	JP4
Reset Connector ....…...................………	JPANEL (9,11)
Hard Disk Drive LED Connector ....…..........……	JPANEL (5,7)
ATX Power Button ……………………………………..	JPANEL (10,12)
External Speaker Connector ...…….....................………	JPANEL (1,3)
Power LED Connector …………….................…………	JPANEL (4,6,8)
KeyLock Connector …………………………………….	JPANEL (13,14)
IrDA Connector ……………………………………..	JPANEL (17,18,19,20)
Clear CMOS Data Selection …………………………	JP10
CPU Fan Connector ………………………………….	JCFAN1
System Fan Connector ……………………………….	JSFAN1
VGA Connector …....…........…….………………….	VGA
Hard Disk Drive Connector …..........…….….......……	IDE1
Floppy Disk Drive Connector …..........…….…......……	FDD1
Printer Connector …...................……..…….….......……	PRNT1
Universal Serial Bus Connector ….............…........….…	USB1
LAN Connector …...…..................….…….…...…..…	LAN1, LAN2
GigaLAN (LAN2) Enable/Disable Selection …………..	JP5
ATX Power Connector ………………………………….	PW1
5VSB Connector ……………………………………	JP3
AT/ATX & Reset/NMI/Clear Watchdog Selection ……	JP2
PCI 3.3V Voltage Selection …………….……………..	JP9
Inverter Connector ……………………………………	JP14
LVDS Connector …………………………………….	CNT3
LVDS Voltage Selection …………………………….	JP12
Reserved Pin ………………………………………….	JP1, JP13,

2-2. COMPONENT LOCATIONS
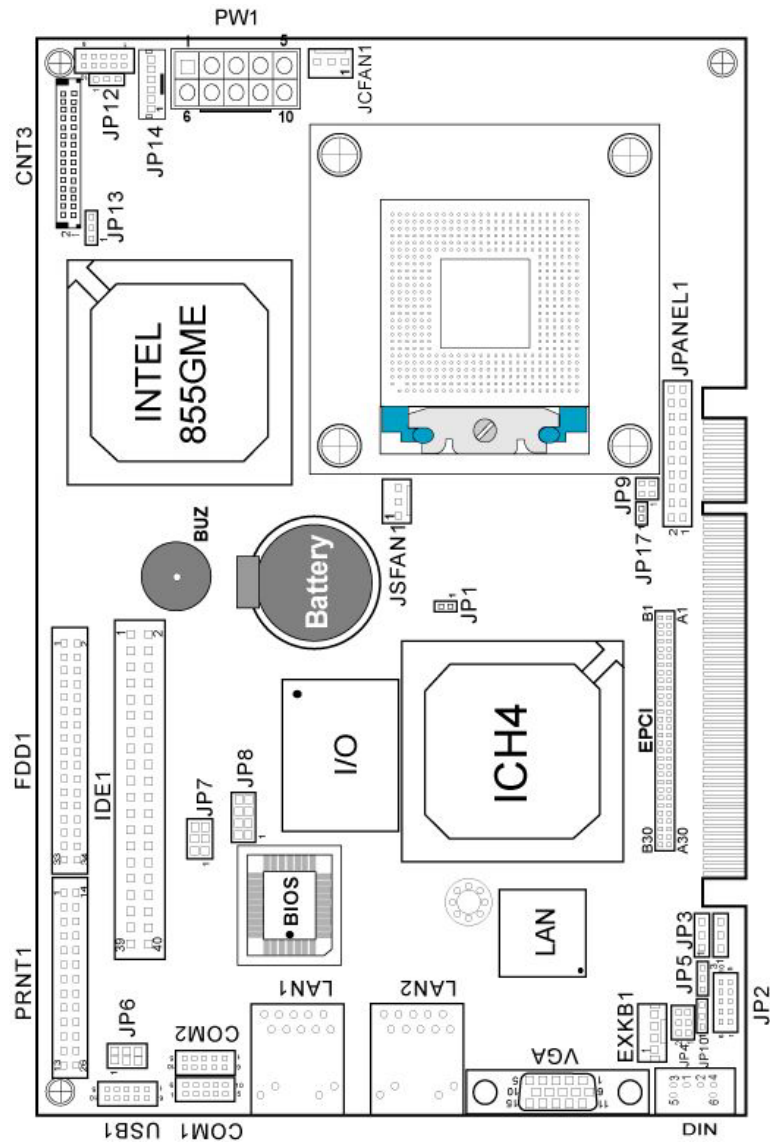
PCI-855VE2M Connector, Jumper and Component locations

2-3. HOW TO SET THE JUMPERS

You can configure your board by setting jumpers. Jumper is consists of two or three metal pins with a plastic base mounted on the card, and by using a small plastic "cap", Also known as the jumper cap (with a metal contact inside), you are able to connect the pins.   So you can set-up your hardware configuration by "open" or "close" pins.

The jumper can be combined into sets that called jumper blocks. When the jumpers are all in the block, you have to put them together to set up the hardware configuration. The figure below shows how this looks like.

JUMPERS AND CAPS

2 Pin Jumper   3 Pin Jumper   Jumper Block   Jumper Cap
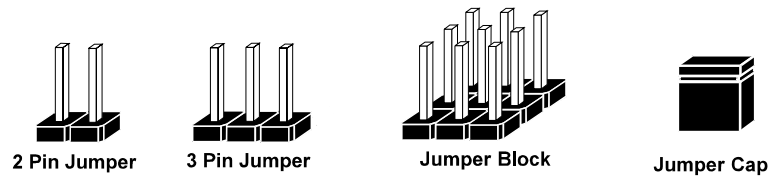
If a jumper has three pins (for examples, labelled PIN1, PIN2, and PIN3), You can connect PIN1 & PIN2 to create one setting and shorting. You can either connect PIN2 & PIN3 to create another setting. The same jumper diagrams are applied all through this manual. The figure below shows what the manual diagrams look and what they represent.

JUMPER DIAGRAMS

Jumper Cap
looks like this

2 pin Jumper
looks like this

3 pin Jumper
looks like this
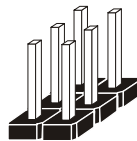
Jumper Block
looks like this
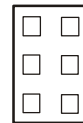
JUMPER SETTINGS

2 pin Jumper close(enabled)
Looks like this

1

3 pin Jumper
2-3 pin close(enabled)
Looks like this

1
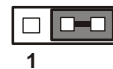
Jumper Block
1-2 pin close(enabled)
Looks like this

1   2
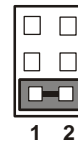
2-4. CPU SPEED SELECTION

JP17 : CPU Speed Selection
The selections are as follows:

SELECTION	JUMPER SETTINGS	JUMPER ILLUSTRATION
100MHz	Closed	1 ▢▬▬ JP17
133MHz	Open	1 ▢▢ JP17

2-5. COM PORT CONNECTOR

COM1 : COM1 Connector
COM1 is fixed as RS-232.
The pin assignment is as follows :

PIN	ASSIGNMENT
1	NDCDA
2	NSINA
3	NSOUTA
4	NDTRA
5	GND
6	NDSRA
7	NRTSA
8	NCTSA
9	NRIA
10	NC
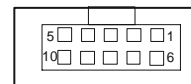
COM1

COM2 : COM2 Connector

The COM2 is selectable as RS-232/422/485.

The pin assignment is as follows :

PIN	ASSIGNMENT		
	RS-232	**RS-422**	**RS-485**
1	DCD	TX-	TX-
2	RX	TX+	TX+
3	TX	RX+	RX+
4	DTR	RX-	RX-
5	GND	GND	GND
6	DSR	RTS-	NC
7	RTS	RTS+	NC
8	CTS	CTS+	NC
9	RI	CTS-	NC
10	NC	NC	NC
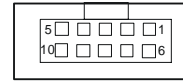
COM2

2-6. COM1 RI & VOLTAGE SELECTION

JP6 : COM1 RI & Voltage Selection
The selections are as follows:
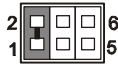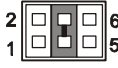
SELECTION	JUMPER SETTINGS	JUMPER ILLUSTRATION
RI	1-2	
VCC12	3-4	
VCC	5-6	

***Manufacturing Default – RI.

2-7. COM2 RI & VOLTAGE SELECTION

JP7 : COM2 RI & Voltage Selection
The selections are as follows:

SELECTION	JUMPER SETTINGS	JUMPER ILLUSTRATION
RI	1-2	JP7
VCC12	3-4	JP7
VCC	5-6	JP7
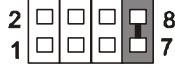
***Manufacturing Default – RI.

2-8. RS232/422/485 (COM2) SELECTION

JP8 : RS-232/422/485 (COM2) Selection
This connector is used to set the COM2 function.
The jumper settings are as follows :

COM 2 Function	Jumper Settings (pin closed)	Jumper Illustrations
RS-232	7-8	2 □□□■ 8 1 □□□■ 7 JP8
RS-422	1-2,3-4	2 ■■□□ 8 1 ■■□□ 7 JP8
RS-485	3-4,5-6	2 □■■□ 8 1 □■■□ 7 JP8

*** Manufactory default --- RS-232.

2-9. KEYBOARD OR PS/2 MOUSE CONNECTOR

DIN : Keyboard or PS/2 Mouse Connector
DIN connector can support keyboard, Y-cable, or PS/2 Mouse, user may select the right device to used on "Keyboard or PS/2 Mouse Selection". The pin assignments are as follows :

PIN	ASSIGNMENT	
	Keyboard	**PS/2 Mouse**
1	KBDATA	MSDATA
2	MSDATA	MSDATA
3	GND	GND
4	VCC	VCC
5	KBCLK	MSCLK
6	MSCLK	MSCLK
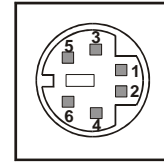
DIN

2-10. KEYBOARD OR PS/2 MOUSE SELECTION

JP4 : Keyboard or PS/2 Mouse Selection
For Y-Cable user, please set the jumper same as AT keyboard.
The jumper settings are as follows:

DEVICE TYPE	JUMPER SETTING (pin closed)	JUMPER ILLUSTRATION
KEYBOARD	3-5 4-6	**JP4**
PS/2 MOUSE	1-3 2-4	**JP4**

*** Manufactory default -- AT Keyboard

2-11. EXTERNAL KEYBOARD CONNECTOR

EXKB1 : External Keyboard Connector
The pin assignment is as follows :

PIN	ASSIGNMENT
1	L_KCLK
2	L_KDAT
3	GND
4	PS2V5

2-12. RESET CONNECTOR

JPAENL (9,11) : Reset Connector.
The pin assignment is as follows :

PIN	ASSIGNMENT
9	GND
11	RST_SW
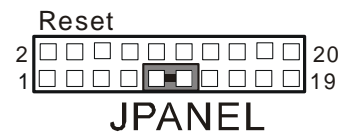
2-13. HARD DISK DRIVE LED CONNECTOR

JPAENL (5,7) : Hard Disk Drive LED Connector
The pin assignment is as follows :

PIN	ASSIGNMENT
5	VCC3_3
7	HDD_LED
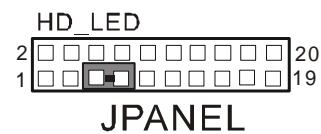
2-14. ATX POWER BUTTON

JPANEL (10,12) : ATX Power Button
The pin assignment is as follows :

PIN	ASSIGNMENT
10	PWB_ICHJ
12	PWB_SIOJ
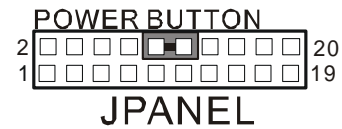
2-15. EXTERNAL SPEAKER CONNECTOR

JPANEL (1,3) : External Speaker Connector
The pin assignment is as follows :

PIN	ASSIGNMENT
1	SPK3
3	SPK_VCC
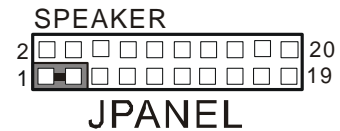
2-16. POWER LED CONNECTOR

JPAENL (4,6,8) : Power LED Connector
The pin assignment is as follows:

PIN	ASSIGNMENT
4	VCC
6	VCC
8	GND
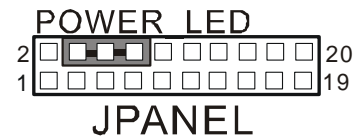
2-17. KEYLOCK CONNECTOR

JPAENL (13,14) : Keylock Connector
The pin assignment is as follows:

PIN	ASSIGNMENT
13	KEYLOCK
14	GND
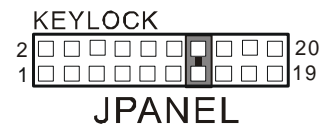
2-18. IRDA CONNECTOR

JPANEL(17,18,19,20): IrDA (Infrared) Connector
The pin assignments are as follows:

PIN	ASSIGNMENT
17	VCC
18	GND
19	IRTX2
20	IRRX2
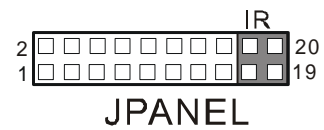
2-19. CPU FAN CONNECTOR

JCFAN1 : CPU Fan connector
The pin assignment is as follows:

PIN	ASSIGNMENT
1	GND
2	+12V
3	FAN1

2-20. SYSTEM FAN CONNECTOR

JSFAN1 : System Fan connector
The pin assignment is as follows:

PIN	ASSIGNMENT
1	GND
2	+12V
3	FAN0

JSFAN1
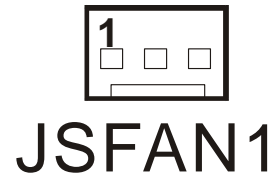
2-21. CLEAR CMOS DATA SELECTION

JP10 : Clear CMOS Data Selection
The selections are as follows :

FUNCTION	JUMPER SETTING (pin closed)	JUMPER ILLUSTRATION
Clear CMOS	2-3	JP10
Normal	1-2	JP10

*** Manufacturing Default is set as Normal.

Note: To clear CMOS data, user must power-off the computer and set the jumper to
"Clear CMOS" as illustrated above.   After five to six seconds, set the jumper
back to "Normal" and power-on the computer.

2-22. VGA CONNECTOR

VGA : VGA CRT Connector
The pin assignments are as follows:

PIN	ASSIGNMENT
1	RED
2	GREEN
3	BLUE
4	NC
5	GND
6	GND
7	GND
8	GND
9	VCC
10	GND
11	NC
12	VGA DDA
13	HSYNC
14	VSYNC
15	VGA DDC CLK
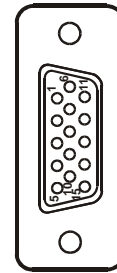
VGA

2-23. HARD DISK DRIVE CONNECTOR

IDE1: Hard Disk Drive Connector
The pin assignments are as follows:
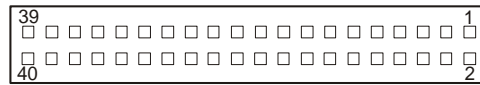
IDE1

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	IDERST	2	GND
3	PDD7	4	PDD8
5	PDD6	6	PDD9
7	PDD5	8	PDD10
9	PDD4	10	PDD11
11	PDD3	12	PDD12
13	PDD2	14	PDD13
15	PDD1	16	PDD14
17	PDD0	18	PDD15
19	GND	20	NC
21	PDREQ	22	GND
23	PDIOW#	24	GND
25	PDIOR#	26	GND
27	PIORDY	28	PULL LOW
29	PDDACK#	30	GND
31	IRQ14	32	NC
33	PDA1	34	P66 DETECT
35	PDA0	36	PDA2
37	PDCS#1	38	PDCS#3
39	IDEACTP#	40	GND

2-24. FLOPPY DISK DRIVE CONNECTOR

FDD1 : Floppy Disk Drive Connector
You can use a 34-pin daisy-chain cable to connect two-FDDs. On one end of this cable is a 34-pin flat cable to attach the FDD on the board, and the other side is attaches two FDDs.
The pin assignments are as follows :

FDD1
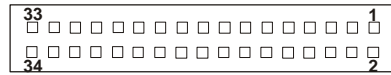
PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	GND	2	RWC#
3	GND	4	NC
5	GND	6	DS1#
7	GND	8	INDEX
9	GND	10	MOA#
11	GND	12	DSB#
13	GND	14	DSA#
15	GND	16	MOB#
17	GND	18	DIR#
19	GND	20	STEP#
21	GND	22	WD#
23	GND	24	WE#
25	GND	26	TRK0#
27	GND	28	WP#
29	NC	30	RDATA#
31	GND	32	HEAD#
33	NC	34	DSKCHG

2-25. PRINTER CONNECTOR

PRNT1 : Printer Connector
As to link the Printer to the card, you need a cable to connect both DB25
connector and parallel port.
The pin assignments are as follows :

PRNT1

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	STB	14	AFD#
2	PDR0	15	ERROR#
3	PDR1	16	PAR_INIT#
4	PDR2	17	SLIN#
5	PDR3	18	GND
6	PDR4	19	GND
7	PDR5	20	GND
8	PDR6	21	GND
9	PDR7	22	GND
10	ACK#	23	GND
11	BUSY	24	GND
12	PE	25	GND
13	SLCT	26	NC

2-26. UNIVERSAL SERIAL BUS CONNECTOR

USB1: Universal Serial Bus Connector
The pin assignments are as follows:

PIN	ASSIGNMENT
1	VCC
2	USBC0N
3	USBC0P
4	GND
5	GND
6	VCC
7	USBC1N
8	USBC1P
9	GND
10	GND
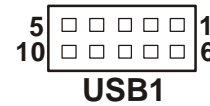
2-27. LAN CONNECTOR

LAN1: LAN Connector
The pin assignments are as follows:

PIN	ASSIGNMENT
1	TX+
2	TX-
3	RX+
4	ISOLATED GND
5	ISOLATED GND
6	RX-
7	ISOLATED GND
8	ISOLATED GND
9	LED – SP LED
10	PULL HI
11	LED – LI LED
12	LED – ACT LED
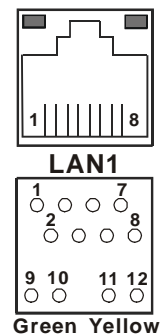
✎ The green LED detect power link, and the Yellow
LED is used to detect data active transfer signal.

LAN2: LAN Connector
The pin assignments are as follows:

PIN	ASSIGNMENT
1	1MDI_0+
2	1MDI_0-
3	1MDI_1+
4	1MDI_1-
5	2V5SB_LAN
6	GND
7	1MDI_2+
8	1MDI_2-
9	1MDI_3+
10	1MDI_3-
11	1SPEED100J
12	1SPEED1000J
13	1LINK
14	1ACT
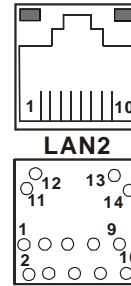
2-28. GIGALAN (LAN2) ENABLE/DISABLE SELECTION

JP5 : GigaLAN (LAN2) Enable/Disable Selection.
The selections are as follows:

FUNCTION	JUMPER SETTING (pin closed)	JUMPER ILLUSTRATION
Enable	1-2	JP5
Disable	2-3	JP5

***Manufacturing Default is set as Enable.

2-29. ATX POWER CONNECTOR

PW1 : ATX Power Connector
The pin assignments are as follows:
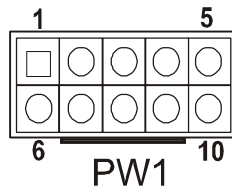
PIN	ASSIGNMENT
1	VCC
2	VCC
3	GND
4	GND
5	VCC12
6	V5SB
7	VCC
8	GND
9	PS_ON
10	GND

2-30. 5VSB CONNECTOR

JP3 : ATX Power Signal Connector
The pin assignments are as follows:
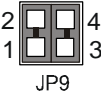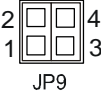
PIN	ASSIGNMENT
1	+5V SB
2	GND
3	PS_ON
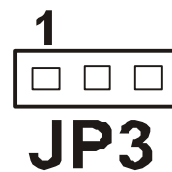
2-31. PCI 3.3V VOLTAGE SELECTION

JP9 : PCI 3.3V Voltage Selection.
The selections are as follows:

FUNCTION	JUMPER SETTING (pin closed)	JUMPER ILLUSTRATION
3.3V from PCI	1-2 3-4	
3.3V from mainboard	open	

2-32. INVERTER CONNECTOR

JP14 : Inverter Connector
The pin assignment is as follows:
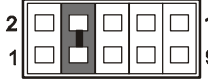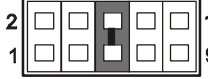
PIN	ASSIGNMENT
1	12VSAFE
2	GND
3	VCC
4	NC
5	SAFE5V
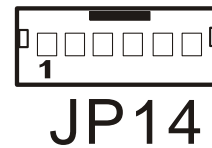
2-33. AT/ATX & RESET/NMI/CLEAR WATCHDOG SELECTION

JP2 : AT/ATX & Reset/NMI/Clear Watchdog Selection
The selections are as follows:

FUNCTION	JUMPER SETTING (pin closed)	JUMPER ILLUSTRATION
RESET	1-2	JP2
NMI	3-4	JP2
CLEAR WATCHDOG	5-6	JP2
AT	1-2	JP2
SMI	9-10	JP2

***Manufacturing Default is set as open.

⌨ User may select to use the Reset or NMI watchdog. NMI, also known as Non-Maskable Interrupt, is used for serious conditions that demand the processor's immediate attention, it cannot be ignored by the system unless it is shut off specifically. To clear NMI command, user should short the "Clear Watchdog" pin via push button.

2-34. LVDS CONNECTOR

CNT3 : LVDS Connector.

The pin assignments are as follows:
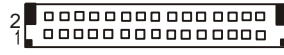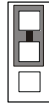
CNT3

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	LCD_VCC	2	GND
3	ZCM	4	ZCP
5	GND	6	Z2M
7	Z2P	8	GND
9	Z1M	10	Z1P
11	GND	12	GND
13	Z0P	14	Z0M
15	GND	16	YCP
17	YCM	18	GND
19	Y2P	20	Y2M
21	GND	22	Y1P
23	Y1M	24	GND
25	Y0P	26	Y0M
27	GND	28	GND
29	LCD_VCC	30	LCD_VCC

2-35. LVDS PANEL VOLTAGE SELECTION

JP12 : LVDS Panel Voltage Selection.

The selections are as follows:

SELECTION	JUMPER SETTING	JUMPER ILLUSTRATION
LVDS_VCC3	2-3	1 ▢ ▦ ▦ JP12
LVDS_VCC5	1-2	1 ▦ ▦ ▢ JP12

3

SOFTWARE UTILITIES

This chapter comprises the detailed information of VGA driver, LAN driver, and Flash BIOS update. It also describes how to install the watchdog timer configuration.

Section includes:

● VGA Driver Utility

● Flash BIOS Update

● LAN Driver Utility

● Intel® Chipset Software Installation Utility

● USB2.0 Chipset Software Installation Utility

3-1. INTRODUCTION

Enclosed with our PCI-855VE2M package is our driver utility, which may comes in a form of a CD ROM disc or floppy diskettes.   For CD ROM disc user, you will only need some of the files contained in the CD ROM disc, please kindly refer to the following chart:

Filename (Assume that CD ROM drive is D:)	Purpose
D:\VGA	Intel 855GME For VGA driver installation
D:\AWDFLASH	For BIOS update utility
D:\LAN	For LAN Driver installation
D:\UTILITY	Intel® Chipset Software Installation Utility For Win 98SE,ME, 2000, XP
D:\USB 2.0	USB 2.0 Software Installation Utility For Win 98SE, 2000, ME, XP

✍ User should remember to install the Utility right after the OS fully installed.

3-2. VGA DRIVER UTILITY

The VGA interface embedded with our PCI-855VE2M can support a wide range of display. You can display CRT, LVDS simultaneously with the same mode.

1. Win 9X program
2. Win NT4.0 program
3. Win 2000 program
4. Win XP program
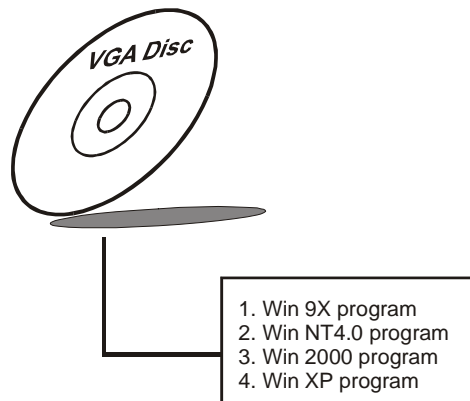
3-2-1. Installation of VGA Driver:

To install the VGA Driver, simply follow the following steps:

1. Place insert the Utility Disk into Floppy Disk Drive A/B or CD ROM drive.
2. Under Windows 9X/NT4.0/2000/XP system, go to the directory where VGA driver is located.
3. Click **Setup.exe** file for VGA driver installation.
4. Follow the instructions on the screen to complete the installation.
5. Once installation is completed, shut down the system and restart in order for the changes to take effect.

3-3. FLASH BIOS UPDATE

3-3-1. System BIOS Update:

Users of PCI-855VE2M can use the program "Awdflash.exe" contained in the Utility Disk for system BIOS and VGA BIOS update.

3-3-2. To update VGA BIOS for LCD Flat Panel Display:

As PCI-855VE2M user, you have to update the VGA BIOS for your specific LCD flat panel you are going to use. For doing this, you need two files. One is the "Awdflash.exe" file and the other is the VGA BIOS for ATI Rage Mobility M6 file for LCD panel display. Both file must be provided by the vendor or manufacturer. When you get these two files ready, follow the following steps for updating your VGA BIOS:

1. Install "Awdflash.exe" from Utility Disk to Drive C.
2. Insert the VGA BIOS file you have obtained from the vendor.
   Type the path to Awdflash.exe and execute the VGA BIOS update with file H15bxxxx.bin
3. C:\UTIL\AWDFLASH>AWDFLASH   H15bxxxx.bin
4. The screen will display as the table fount on the next page:

```
FLASH MEMORY WRITER v7.XX
(C) Award Software 2001 All Rights Reserved

Flash Type – SST 49LF004A   /3.3V
File Name to Program:   H20bxxxx.bin
Checksum:   XXXXX

Error Message:   Do You Want To Save BIOS (Y/N)
```

If you want to save up the original BIOS, enter "Y" and press < Enter >. If you choose "N", the following table will appear on screen.

```
FLASH MEMORY WRITER v7.XX
(C) Award Software 2001 All Rights Reserved

Flash Type – SST 49LF004A   /3.3V
File Name to Program:   H20bxxxx.bin
Checksum:   XXXXX

Error Message :   Are You Sure To Program (Y/N)
```

Select "Y", and the BIOS will be renewed. When you are refreshing the BIOS, do not turn off or reset the system, or you will damage the BIOS. After you have completed all the programming, the screen displays the table below:

```
FLASH MEMORY WRITER v7.XX
(C) Award Software 2001 All Rights Reserved

Flash Type – SST 49LF004A   /3.3V
File Name to Program:   H20bxxxx.bin
Checksum:   XXXXX

Reset System or Power off to
accomplish update process!

F1: Reset   F10: Exit
```

Please reset or power off the system, and then the Flash BIOS is fully implemented.

3-4. LAN DRIVER UTILITY

3-4-1. Introduction

PCI-855VE2M is enhanced with LAN function that can support various network adapters.   Installation programs for LAN drivers are listed as follows:


```
1. Win 98/2000/XP program
2. Linux program
```
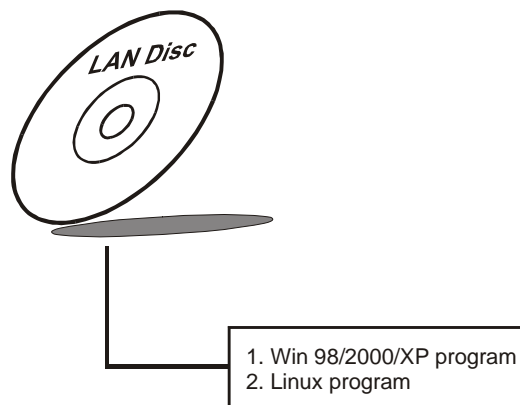
For more details on Installation procedure, please refer to Readme.txt file found on LAN DRIVER UTILITY.

3-5. INTEL® CHIPSET SOFTWARE INSTALLATION UTILITY

3-5-1. Introduction

The Intel® Chipset Software Installation Utility installs to the target system the Windows* INF files that outline to the operating system how the chipset components will be configured.   This is needed for the proper functioning of the following features:

- Core PCI and ISAPNP Services
- AGP Support
- IDE/ATA33/ATA66/ATA100 Storage Support
- USB Support
- Identification of Intel® Chipset Components in Device Manager

3-5-2. Installation of Utility for Windows 98SE/ME/2000/XP

The Utility Pack is to be installed only for Windows 98SE, Windows ME, Windows 2000 and XP program.
It should be installed right after the OS installation, kindly follow the following steps:

1. Place insert the Utility Disk into Floppy Disk Drive A/B or CD ROM drive.
2. Under Windows 98SE/ME/2000/XP system, go to the directory where Utility Disc is located.
3. Click **Setup.exe** file for utility installation.
4. Follow the instructions on the screen to complete the installation.
5. Once installation is completed, shut down the system and restart in order for the changes to take effect.

3-6. USB2.0 SOFTWARE INSTALLATION UTILITY

3-6-1. Installation of Utility for Windows 98SE/ 2000/XP

Intel USB 2.0 Enhanced Host Controller driver can only be used on Windows 98SE, Windows 2000 and Windows XP on Intel Desktop boards. It should be installed right after the OS installation, kindly follow the following steps:

1. Place insert the Utility Disk into Floppy Disk Drive A/B or CD ROM drive.
2. Under Windows 98SE, 2000, and XP system, go to the directory where Utility Disc is located.
3. Start the "System" wizard in control panel. (Click Start/Settings/Control Panel).
4. Select "Hardware" and click "Device Manager " button.
5. Double Click "USB Root Hub".
6. Select "Driver".
7. Click "Install" to install the driver.
8. Follow the instructions on the screen to complete the installation.
9. Click "Finish" after the driver installation is complete.

4

AWARD BIOS SETUP

This chapter shows how to set up the Award BIOS.

Section includes:

- Introduction

- Entering Setup

- The Standard CMOS Features

- The Advanced BIOS Features

- The Advanced Chipset Features

- Integrated Peripherals

- Power Management Setup

- PNP/PCI Configuration

- PC Health Status

- Frequency Control

- Load Fail-Safe Defaults

- Load Optimized Defaults

- Password Setting

- Save and Exit Setup

- Exit Without Saving

4-1. INTRODUCTION

This chapter will show you the function of the BIOS in managing the features of your system. The PCI-855VE2M M Half Size CPU Card is equipped with the BIOS for system chipset from Award Software Inc. This page briefly explains the function of the BIOS in managing the special features of your system. The following pages describe how to use the BIOS for system chipset Setup menu.

Your application programs (such as word processing, spreadsheets, and games) rely on an operating system such as DOS or OS/2 to manage such things as keyboard, monitor, disk drives, and memory.

The operating system relies on the BIOS (Basic Input and Output system), a program stored on a ROM (Read-only Memory) chip, to initialize and configure your computer's hardware. As the interface between the hardware and the operating system, the BIOS enables you to make basic changes to your system's hardware without having to write a new operating system.

The following diagram illustrates the interlocking relationships between the system hardware, BIOS, operating system, and application program:
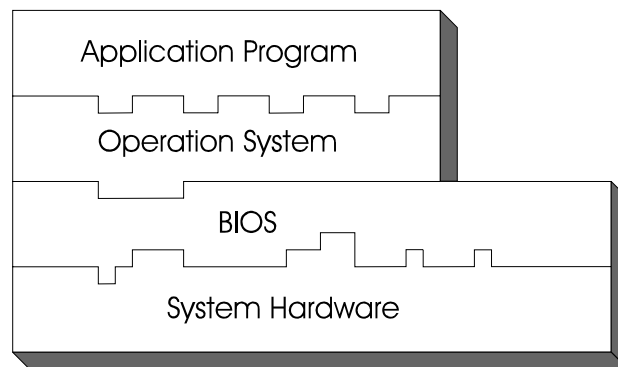
4-2. ENTERING SETUP

When the system is powered on, the BIOS will enter the Power-On Self Test (POST) routines and the following message will appear on the lower screen:

PRESS <DEL> TO ENTER SETUP, ESC TO SKIP MEMORY TEST

As long as this message is present on the screen you may press the <Del> key (the one that shares the decimal point at the bottom of the number keypad) to access the Setup program. In a moment, the main menu of the Award SETUP program will appear on the screen:

Phoenix - AwardBIOS CMOS Setup Utility

►Standard CMOS Features	►Frequency Control
►Advanced BIOS Features	Load Fail-Safe Defaults
►Advanced Chipset Features	Load Optimized Defaults
►Integrated Peripherals	Set Supervisor Password
►Power Management Setup	Set User Password
►PnP/PCI Configurations	Save & Exit Setup
►PC Health Status	Exit Without Saving
Esc : Quit F10 : Save & Exit Setup	↑↓→← : Select Item
Time, Date, Hard Disk Type ….	

Setup program initial screen

You may use the cursor the up/down keys to highlight the individual menu items. As you highlight each item, a brief description of the highlighted selection will appear at the bottom of the screen.

4-3. THE STANDARD CMOS FEATURES

Highlight the〝STANDARD CMOS FEATURES〞and press the <ENTER> key and the screen will display the following table:

Phoenix - AwardBIOS CMOS Setup Utility
Standard CMOS Features

Date (mm:dd:yy)	Wed, Jan 1 2003	Item Help
Time (hh:mm:ss)	22 : 58 : 59	
		Menu Level ►
► IDE Primary Master	[None]	
► IDE Primary Slave	[None]	Change the internal
► IDE Secondary Master	[None]	clock.
► IDE Secondary Slave	[None]	
Drive A	[None]	
Drive B	[None]	
Video	[EGA/VGA]	
Halt On	[All, But Keyboard]	
Base Memory	640K	
Extended Memory	490496K	
Total Memory	491520K	

↑↓→←: Move   Enter: Select   +/-/PU/PD:Value   F10:Save   ESC:Exit   F1:General Help
F5: Previous Values   F6: Fail-Safe Defaults   F7:Optimized Defaults

CMOS Setup screen

In the above Setup Menu, use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.

Date:
< Month >, < Date > and <Year >. Ranges for each value are in the CMOS Setup Screen, and the week-day will skip automatically.

Time:
< Hour >, < Minute >, and < Second >. Use 24 hour clock format, i.e., for PM numbers, add 12 to the hour. For example: 4: 30 P.M. You should enter the time as 16:30:00.

IDE Primary Master / Slave:
IDE Secondary Master / Slave:

The BIOS can automatically detect the specifications and optimal operating mode of almost all IDE hard drives. When you select type AUTO for a hard drive, the BIOS detect its specifications during POST, every time system boots.

If you do not want to select drive type AUTO, other methods of selecting drive type are available:

1. Match the specifications of your installed IDE hard drive(s) with the preprogrammed values for hard drive types 1 through 45.

2. Select USER and enter values into each drive parameter field.

3. Use the IDE HDD AUTO DETECTION function in Setup.

Here is a brief explanation of drive specifications:

Type: The BIOS contains a table of pre-defined drive types. Each defined drive type has a specified number of cylinders, number of heads, write precompensation factor, landing zone, and number of sectors. Drives whose specifications do not accommodate any predefine type are classified as type USER.

- Size: Disk drive capacity (approximate). Note that this size is usually greater than the size of a formatted disk given by a disk-checking program.

- Cyls: number of cylinders.

- Head: number of heads.

- Precomp: write precompensation cylinders.

- Landz: landing zone.

- Sector: number of sectors.

- Mode: Auto, Normal, Large or LBA.

    Auto: The BIOS automatically determines the optimal mode.

    ▪ Normal: Maximum number of cylinders, heads, sectors supported are 1024, 16 and 63.

    ▪ Large: For drives that do not support LBA and have more than 1024 cylinders.

▪ LBA (Logical Block Addressing): During drive accesses, the IDE controller transforms the data address described by sector, head and cylinder number into a physical block address, significantly improving data transfer rates. For drives greater than 1024 cylinders.

DRIVE A AND DRIVE B:

Select the type of floppy disk drive installed in your system. The available options are 360KB 5.25in, 1.2KB 5.25in, 720KB 3.5in, 1.44MB 3.5in, 2.88MB 3.5in and None.

VIDEO:

This category selects the type of video adapter used for the primary system monitor.   Although secondary monitors are supported, you do not have to select the type in Setup.   Available Options are as follows:

EGA/VGA	Enhanced Graphics Adapter/Video Graphics Array. For EGA, VGA, SEGA, SVGA or PGA monitor adapters.
CGA 40	Color Graphics Adapter, power up in 40 column mode.
CGA 80	Color Graphics Adapter, power up in 80 column mode.
MONO	Monochrome adapter, includes high resolution monochrome adapters.

HALT ON:

This category allows user to choose whether the computer will stop if an error is detected during power up. Available options are "All errors", "No errors", "All, But keyboard", "All, But Diskette", and "All But Disk/Key".

BASE MEMORY:

Displays the amount of conventional memory detected during boot up.

EXTENDED MEMORY:

Displays the amount of extended memory detected during boot up.

TOTAL MEMORY:

Displays the total memory available in the system.

HARD DISK ATTRIBUTES:

Type	Cylinders	Heads	V-P comp	LZone	Sect	Capacity
1	306	4	128	305	17	10
2	615	4	300	615	17	20
3	615	6	300	615	17	30
4	940	8	512	940	17	62
5	940	6	512	940	17	46
6	615	4	65535	615	17	20
7	642	8	256	511	17	30
8	733	5	65535	733	17	30
9	900	15	65535	901	17	112
10	820	3	65535	820	17	20
11	855	5	65535	855	17	35
12	855	7	65535	855	17	49
13	306	8	128	319	17	20
14	733	7	65535	733	17	42
15	000	0	0000	000	00	00
16	612	4	0000	663	17	20
17	977	5	300	977	17	40
18	977	7	65535	977	17	56
19	1024	7	512	1023	17	59
20	733	5	300	732	17	30
21	733	7	300	732	17	42
22	733	5	300	733	17	30
23	306	4	0000	336	17	10
24	977	5	65535	976	17	40
25	1024	9	65535	1023	17	76
26	1224	7	65535	1223	17	71
27	1224	11	65535	1223	17	111
28	1224	15	65535	1223	17	152
29	1024	8	65535	1023	17	68
30	1024	11	65535	1023	17	93
31	918	11	65535	1023	17	83
32	925	9	65535	926	17	69
33	1024	10	65535	1023	17	85
34	1024	12	65535	1023	17	102
35	1024	13	65535	1023	17	110
36	1024	14	65535	1023	17	119
37	1024	2	65535	1023	17	17
38	1024	16	65535	1023	17	136
39	918	15	65535	1023	17	114
40	820	6	65535	820	17	40
41	1024	5	65535	1023	17	42
42	1024	5	65535	1023	26	65
43	809	6	65535	852	17	40
44	809	6	65535	852	26	61
45	776	8	65335	775	33	100
47			AUTO			

Award Hard Disk Type Table

4-4. THE ADVANCED BIOS FEATURES

Choose the 〝ADVANCED BIOS FEATURES〞 in the main menu, the screen shown as below.

Phoenix - AwardBIOS CMOS Setup Utility
Advanced BIOS Features

		Item Help
Virus Warning	[Disabled]	
CPU L1 & L2 Cache	[Enabled]	
Quick Power On Self Test	[Enabled]	Menu Level ▶
First Boot Device	[CDROM]	
Second Boot Device	[HDD-0]	Allows you to choose
Boot Up Floppy Seek	[Enabled]	the VIRUS warming
Boot Up NumLock Status	[On]	feature for IDE Hard
Typematic Rate Setting	[Disabled]	Disk boot sector
x Typematic Rate (Chars/Sec)	6	protection. If this
x Typematic Delay (Msec)	250	function is enabled and
Security Option	[Setup]	someone attempt to
OS Select For DRAM > 64MB	[Non-OS2]	write data into this area,
		BIOS will show a
		warning message on
		screen and alarm beep

↑↓→←: Move   Enter: Select   +/-/PU/PD:Value   F10:Save   ESC:Exit   F1:General Help
F5: Previous Values   F6: Fail-Safe Defaults   F7:Optimized Defaults

BIOS Features Setup Screen

The "BIOS FEATURES SETUP" allow you to configure your system for basic operation.   The user can select the system's default speed, boot-up sequence, keyboard operation, shadowing and security.

A brief introduction of each setting is given below.

VIRUS WARNING :
This item allows you to choose the Virus Warning feature for IDE Hard Disk boot sector protection.   If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and alarm beep.

CPU L1 & L2 CACHE :
This item allows you to enable L1 & L2 cache.

QUICK POWER ON SELF-TEST:
This item allows you to speed up Power On Self Test (POST) after power-up the computer. When enabled, the BIOS will shorten or skip some check items during POST.

FIRST/SECOND/ BOOT DEVICE:
The BIOS attempt to load the operating system from the devices in the sequence selected in these items.

BOOT UP FLOPPY SEEK:
You may enable / disable this item to define whether the system will look for a floppy disk drive to boot at power-on, or proceed directly to the hard disk drive.

BOOT UP NUMLOCK STATUS:
Select power on state for NumLock.

TYPEMATIC RATE SETTING:
Enable this item if you wish to be able to configure the characteristics of your keyboard. Typematic refers to the way in which characters are entered repeatedly if a key is held down. For example, if you press and hold down the "A" key, the letter "a" will repeatedly appear on your screen on your screen until you release the key.   When enabled, the typematic rate and typematic delay can be selected.

TYPEMATIC RATE (CHARS/SEC):
This item sets the number of times a second to repeat a key stroke when you hold the key down.

TYPEMATIC DELAY (MSEC):
The item sets the delay time after the key is held down before it begins to repeat the keystroke.

SECURITY OPTION:

This category allows you to limit access to the system and Setup, or just to Setup.

System	The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt.
Setup	The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt.

✍ To disable security, select PASSWORD SETTING at Main Menu and then you will be asked to enter password. Do not type anything and just press <Enter>, it will disable security. Once the security is disabled, the system will boot and you can enter Setup freely.

OS SELECT FOR DRAM >64MB :

Select the operating system that is running with greater than 64MB or RAM on the system. You may choose OS2 or Non-OS2.

4-5. ADVANCED CHIPSET FEATURES

Choose the 〝ADVANCED CHIPSET FEATURES〞 from the main menu, the screen shown as below.

Phoenix - AwardBIOS CMOS Setup Utility
Advanced Chipset Features

DRAM Data Integrity Mode	Non-ECC	Item Help
System BIOS Cacheable	[Enabled]	
Video BIOS Cacheable	[Disabled]	
Memory Hole At 15M-16M	[Disabled]	Menu Level ▶
Delayed Transaction	[Enabled]	
AGP Aperture Size (MB)	[64]	
** On-Chip VGA Setting **		
On-Chip VGA	[Enabled]	
On-Chip Frame Buffer Size	[32MB]	
Boot Display	[CRT+LFP]	
Panel Type	[800 x 600 18bits]	
PCI SERR# NMI	[Disabled]	

↑↓→←: Move   Enter: Select   +/-/PU/PD:Value   F10:Save   ESC:Exit   F1:General Help
F5: Previous Values   F6: Fail-Safe Defaults   F7:Optimized Defaults

Chipset Features Setup Screen

This parameter allows you to configure the system based on the specific features of the installed chipset. The chipset manages bus speed and access to system memory resources, such as DRAM and the external cache.

It also coordinates communications between conventional ISA bus and the PCI bus. It must be stated that these items should never need to be altered. The default settings have been chosen because they provide the best operating conditions for the system. The only time you might consider making any changes would be if you discovered that data was being lost while using your system.

DRAM DATA INTEGRITY MODE:

Select Parity or ECC (error-correcting code), according to the type of installed DRAM.

SYSTEM BIOS CACHEABLE:

Selecting Enabled allows caching of the system BIOS ROM at F0000h-FFFFFh, resulting in better system performance.   However, if any program writes to this memory area, a system error may result.

VIDEO BIOS CACHEABLE:

Select Enabled allows caching of the video BIOS, resulting in better system performance.   However, if any program writes to this memory area, a system error may result.

MEMORY HOLE AT 15M-16M:

You can reserve this area of system memory for ISA adapter ROM.   When this area is reserved, it cannot be cached.   The user information of peripherals that need to use this area of system memory usually discusses their memory requirements.

DELAYED TRANSACTION:

The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles.   Select Enabled to support compliance with PCI specification version 2.1.

AGP APERTURE SIZE:

This field determines the effective size of the Graphic Aperture used for a particular GMCH configuration.   It can be updated by the GMCH-specific BIOS configuration sequence before the PCI standard bus enumeration sequence takes place.   If it is not updated then a default value will select an aperture of maximum size.

4-6. INTEGRATED PERIPHERALS

Choose ﹁INTEGRATED PERIPHERALS﹂ from the main setup menu, a display will be shown on screen as below:

Phoenix - AwardBIOS CMOS Setup Utility
Integrated Peripherals

▶ OnChip IDE Device	[Press Enter]	Item Help
▶ Onboard Device	[Press Enter]	
▶SuperIO Device	[Press Enter]	Menu Level ▶
Watch Dog Timer Select	[Disabled]	

↑↓→←: Move Enter: Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values   F6: Fail-Safe Defaults   F7:Optimized Defaults

Integrated Peripherals Setup Screen

By moving the cursor to the desired selection and by pressing the <F1> key, the all options for the desired selection will be displayed for choice.

♧ If bios setup menu item supports USB device boot, it will cause Win9x detects the same storages twice when the system is rebooted, and USB HDD will fail. Note: this cause just happen under Win9x, the phenomenon is a limitation.

VIA ONCHIP IDE DEVICE:

The options for these items are found in its sub menu. By pressing the <ENTER> key, you are prompt to enter the sub menu of the detailed options as shown below:

Phoenix – Award CMOS Setup Utility
VIA OnChip IDE Device

		Item Help
OnChip Primary PCI IDE	[Enabled]	
IDE Primary Master PIO	[Auto]	
IDE Primary Slave PIO	[Auto]	
IDE Primary Master UDMA	[Auto]	Menu Level ►
IDE Primary Slave UDMA	[Auto]	
OnChip Secondary PCI IDE	[Enabled]	
IDE Secondary Master PIO	[Auto]	
IDE Secondary Slave PIO	[Auto]	
IDE Secondary Master UDMA	[Auto]	
IDE Secondary Slave UDMA	[Auto]	
IDE HDD Block Mode	[Enabled]	

↑↓→←:Move   Enter: Select   +/-/PU/PD:Value   F10:Save   ESC:Exit   F1:General Help
   F5: Previous Values   F6:Fail-Safe Defaults   F7:Optimized Defaults

Descriptions on each item above are as follows:

1. **OnChip Primary PCI IDE**
   The integrated peripheral controller contains an IDE interface with support for two IDE channels. Select Enabled to activate each channel separately.

2. **Primary Master/Slave PIO**
   Secondary Master/Slave PIO
   The four IDE PIO fields allow you to set a PIO mode (0-4) for each of the four IDE devices that the onboard IDE interface supports.   Modes 0 through 4 provide successively increased performance.   In Auto mode, the system automatically determines the best mode for each device.

3. **Primary Master/Slave UDMA**
   Secondary Master/Slave UDMA
   Ultra DMA/33 implementation is possible only if your IDE hard drive supports it and the operating environment includes a DMA driver (Windows 95 OSR2 or a third-party IDE bus master driver).   If you

hard drive and your system software both support Ultra DMA/33, select Auto to enable BIOS support.

4.   IDE HDD Block Mode

Block mode is also called block transfer, multiple commands, or multiple sector read/write. If your IDE hard drive supports block mode (most new drives do), select Enabled for automatic detection of the optimal number of block read/writes per sector the drive can support.

ONBOARD DEVICE:

The options for these items are found in its sub menu. By pressing the <ENTER> key, you are prompt to enter the sub menu of the detailed options as shown below:

Phoenix – Award CMOS Setup Utility
Onboard Device

USB Controller	[Enabled]	Item Help
USB 2.0 Support	[Enabled]	
USB Keyboard Support	[Disabled]	
USB Mouse Support	[Disabled]	Menu Level ►
Onboard LAN	[Enabled]	
Init Display First	[Onboard]	

↑↓→←:Move   Enter: Select   +/-/PU/PD:Value   F10:Save   ESC:Exit   F1:General Help
  F5: Previous Values   F6:Fail-Safe Defaults   F7:Optimized Defaults

Descriptions on each item above are as follows:

1.   USB Controller

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.

2.   USB Keyboard Support

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

3.   USB Mouse Support

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

4.   Init Display First

This item allows you to decide to active whether PCI Slot or on-chip VGA first.

SUPER IO DEVICE:

The options for these items are found in its sub menu. By pressing the <ENTER> key, you are prompt to enter the sub menu of the detailed options as shown below:

Phoenix – Award CMOS Setup Utility
SuperIO Device

Onboard FDC Controller	[Enabled]	Item Help
Onboard Serial Port 1	[3F8/IRQ4]	
Onboard Serial Port 2	[2F8/IRQ3]	
UART Mode Select	[Normal]	Menu Level ▶
X RxD, TxD Active	Hi, Lo	
X IR Transmission Delay	Enabled	
X UR2 Duplex Mode	Half	
X Use IR Pins	IR-Rx2Tx2	
Onboard Parallel Port	[378/IRQ7]	
Parallel Port Mode	[SPP]	
X EPP Mode Select	EPP1.7	
X ECP Mode Use DMA	3	
PWRON After PWR-Fail	[Off]	

↑↓→←:Move   Enter: Select   +/-/PU/PD:Value   F10:Save   ESC:Exit   F1:General Help
   F5: Previous Values   F6:Fail-Safe Defaults   F7:Optimized Defaults

Descriptions on each item above are as follows:

1. **Onboard FDC Controller**
   Select Enabled if the system has a floppy disk controller (FDC) installed on the system board and you wish to use it.   If you install and-in FDC or the system has no floppy drive, select Disabled.

2. **Onboard Serial Port 1/2**
   Select an address and corresponding interrupt for the first and second serial ports.

3. **UART Mode Select**
    This item allows you to select UART mode.

4. **RxD, TxD Active**
    This item allows you to determine the active of RxD, TxD.

5. **IR Transmission Delay**
   This item allows you to enable/disable IR transmission delay.

6. **UR2 Duplex Mode**
   This item allows you to select the IR half/full duplex function.

7.   Use IR Pins

This item allows you to select IR transmission routes, one is RxD2m, TxD2 (COM Port) and the other is IR-Rx2Tx2

8.   Onboard Parallel Port

This item allows you to determine access onboard parallel port controller with which I/O address.

9.   Parallel Port Mode

Select an operating mode for the onboard parallel (printer) port. Select *Normal, Compatible,* or *SPP* unless you are certain your hardware and software both support one of the other available modes.

10.   EPP Mode Select

Select EPP port type 1.7 or 1.9.

11.   ECP Mode Use DMA

Select a DMA channel for the parallel port for use during ECP mode.

12.   PWRON After PWR-Fail

This item allows you to select if you want to power on the system after power failure. The choice: Off, On, Former-Sts.

4-7. POWER MANAGEMENT SETUP

Choose 〝POWER MANAGEMENT SETUP〞 option on the main menu, a display will be shown on screen as below :

Phoenix - AwardBIOS CMOS Setup Utility
Power Management Setup

ACPI Function	[Enabled]	Item Help
Power Management	[User Define]	
Video Off Method	[DPMS]	
Video Off In Suspend	[Yes]	
MODEM Use IRQ	[3]	
Suspend Mode	[Disabled]	
Power-Supply Type	[ATX]	Menu Level ►
Soft-Off by PWR-BTTN	[Instant-Off]	
Wake-Up by PCI card	[Enabled]	
Wake-Up On LAN	[Enabled]	
Resume by Alarm	[Disabled]	
x Date (of Month) Alarm	0	
x Time (hh:mm:ss) Alarm	0 : 0 : 0	
** Reload Global Timer Events **		
Primary IDE 0	[Disabled]	
Primary IDE 1	[Disabled]	
Secondary IDE 0	[Disabled]	
Secondary IDE 1	[Disabled]	
FDD, COM, LPT Port	[Disabled]	

↑↓→←: Move   Enter: Select   +/-/PU/PD:Value   F10:Save   ESC:Exit   F1:General Help
F5: Previous Values   F6: Fail-Safe Defaults   F7:Optimized Defaults

Power Management Setup Screen

The "Power Management Setup" allows the user to configure the system to the most effectively save energy while operating in a manner consistent with your own style of computer use.

ACPI SUSPEND TYPE:
This item allows the user to set the ACPI suspend type to be used.

POWER MANAGEMENT:
This item allows you to select the Power Management mode.

VIDEO OFF OPTION:

When enabled, this feature allows the VGA adapter to operate in a power saving mode.

Always On	Monitor will remain on during power saving modes.
Suspend --> Off	Monitor blanked when the systems enters the Suspend mode.
Susp,Stby --> Off	Monitor blanked when the system enters either Suspend or Standby modes.
All Modes --> Off	Monitor blanked when the system enters any power saving mode.

VIDEO OFF METHOD:

This determines the manner in which the monitor is blanked.

V/H SYNC+Blank	This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.
Blank Screen	This option only writes blanks to the video buffer.
DPMS	Select this option if your monitor supports the Display Power Management Signalling (DPMS) standard of the Video Electronics Standards to select video power management values.

MODEM USE IRQ:

This item enable you to name the interrupt request (IRQ) line assigned to the modem (if any) on your system. Activity of the selected IRQ always awakens the system.

SUSPEND MODE:

When enabled and after the set time of system inactivity, all devices except the CPU will be shut off.

SOFT-OFF BY PWR-BTTN:

Pressing the power button for more than 4 seconds forces the system to enter the Soft-Off state when the system has "hung". The choices are Delay 4 Sec and Instant-Off.

WAKE-UP BY PCI CARD:

An input signal from PME on the PCI card awakens the system from a soft off state.

RESUME BY ALARM:

When *Enabled,* your can set the date and time at which the RTC (real-time clock) alarm awakens the system from Suspend mode.

PM EVENTS:

PM events are I/O events whose occurrence can prevent the system from entering a power saving mode or can awaken the system from such a mode. In effect, the system remains alert for anything, which occurs to a device which is configured as *Enabled*, even when the system is in a power down mode. (1) **Primary IDE 0** (2) **Primary IDE 1** (3) **Secondary IDE 0** (4) **Secondary IDE 1** (5) **FDD, COM, LPT Port**

4-8. PNP/PCI CONFIGURATION

Choose 〝PNP/PCI CONFIGURATION〞 from the main menu, a display will be shown on screen as below:

Phoenix - AwardBIOS CMOS Setup Utility
PnP/PCI Configurations

Reset Configuration Data	[Disabled]	Item Help
		Menu Level ►
Resources Controlled By	[Auto (ESCD)]	
x IRQ Resources	Press Enter	
		Select Yes if you are using a Plug and Play capable operating system Select No if you need the BIOS to configure non-boot devices
PCI/VGA Palette Snoop	[Disabled]	

↑↓→←: Move   Enter: Select   +/-/PU/PD:Value   F10:Save   ESC:Exit   F1:General Help
F5: Previous Values   F6: Fail-Safe Defaults   F7:Optimized Defaults

PNP/PCI Configuration Setup Screen

The PNP/PCI Configuration Setup describes how to configure PCI bus system. PCI, also known as Personal Computer Interconnect, is a system, which allows I/O devices to operate at speeds nearing the speed of the CPU itself uses when communicating with its own special components.

This section covers technical items, which is strongly recommended for experienced users only.

RESET CONFIGURATION DATA:

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 configuration has caused such a serious conflict that the operating system cannot boot.

RESOURCE CONTROLLED BY:

The Award Plug and Play Bios can automatically configure all of the booth and Plug and Play-compatible devices. However, this capability means absolutely nothing unless you are using a Plug and Play operating system such as Windows 95. By choosing "manual", you are allowed to configure the *IRQ Resources and DMA Resources*.

IRQ RESOURCES:

The options for these items are found in its sub menu. By pressing the <ENTER> key, you are prompt to enter the sub menu of the detailed options as shown below:

Phoenix – Award CMOS Setup Utility
IRQ Resources

		Item Help
IRQ-3 assigned to	[PCI Device]	
IRQ-4 assigned to	[PCI Device]	
IRQ-5 assigned to	[PCI Device]	
IRQ-7 assigned to	[PCI Device]	Menu Level ▶
IRQ-9 assigned to	[PCI Device]	
IRQ-10 assigned to	[PCI Device]	Legacy ISA for devices
IRQ-11 assigned to	[PCI Device]	compliant with the
IRQ-12 assigned to	[PCI Device]	original PC AT bus
IRQ-14 assigned to	[PCI Device]	specification, PCI/ISA
IRQ-15 assigned to	[PCI Device]	PnP for devices
		compliant with the Plug
		and Play standard
		whether designed for
		PCI or ISA bus
		architecture

↑↓→←:Move   Enter: Select   +/-/PU/PD:Value   F10:Save   ESC:Exit   F1:General Help
F5: Previous Values   F6:Fail-Safe Defaults   F7:Optimized Defaults

Descriptions on each item above are as follows:

13. IRQ-n Assigned to:

You may assign each system interrupt a type, depending on the type of device using the interrupt.

4-9. PC HEALTH STATUS

Choose 〝PC HEALTH STATUS〞 from the main menu, a display will be shown on screen as below:

Phoenix - AwardBIOS CMOS Setup Utility
PC Health Status

Current Warning Temperature	[Disabled]	Item Help
Current CPU Temperature	48℃/118℉	Menu Level ▶
Current SYSTEM Fan Speed	0 RPM	
Current CPU Fan Speed	4856 RPM	
Vcore	1.31V	
Vccp	1.02V	
3.3 V	3.29V	
+ 5 V	4.81V	
+12 V	11.61V	
-12 V	-12.28V	
- 5 V	- 5.90V	
VBAT (V)	3.13V	

↑↓→←: Move   Enter: Select   +/-/PU/PD:Value   F10:Save   ESC:Exit   F1:General Help
F5: Previous Values   F6: Fail-Safe Defaults   F7:Optimized Defaults

PC Health Status Setup Screen

The PC Health Status Setup allows you to select whether to choose between monitoring or to ignore the hardware monitoring function of your system.

CURRENT WARNING TEMPERATURE:
Select the combination of lower and upper limits for the CPU temperature. If the CPU temperature extends beyond either limit, any warning mechanism programmed into your system will be activated.

CURRENT CPU TEMPERATURE:
This item shows you the current CPU temperature.

CURRENT SYSTEM FAN SPEED:
This item shows you the current System FAN speed.

CURRENT CPU FAN SPEED:
This item shows you the current CPUFAN speed.

VCORE:
This item shows you the current system voltage.

3.3V / +5V / +12V / -12V / -5V:
Show you the voltage of 3.3V/+5V/+12V/-12V/-5V.

4-10. FREQUENCY CONTROL

Choose 〝FREQUENCY CONTROL〞 from the main menu, a display will be shown on screen as below:

Phoenix - AwardBIOS CMOS Setup Utility
Frequency Control

Auto Detect PCI Clk	[Enabled]	Item Help
Spread Spectrum	[Enabled]	
		Menu Level ►

↑↓→←: Move   Enter: Select   +/-/PU/PD:Value   F10:Save   ESC:Exit   F1:General Help
F5: Previous Values   F6: Fail-Safe Defaults   F7:Optimized Defaults

Frequency Control Setup Screen

This setup menu allows you to specify your settings for frequency control.

AUTO DETECT PCI CLK:
This item allows you to enable or disable auto detect PCI Clock.

SPREAD SPECTRUM:
When the system clock generator pulses, the extreme values of the pulse generate excess EMI. Enabling pulse spectrum spread modulation changes the extreme values from spikes to flat curves, thus reducing EMI.

This benefit may in some cases be outweighed by problems with timing-critical devices such as a clock-sensitive SCSI device.

4-11. LOAD FAIL-SAFE DEFAULTS

By pressing the <ENTER> key on this item, you get a confirmation dialog box with a message similar to the following:

Load Fail-Safe Defaults (Y/N) ? N

To use the BIOS default values, change the prompt to "Y" and press the <Enter > key. CMOS is loaded automatically when you power up the system.

4-12. LOAD OPTIMIZED DEFAULTS

When you press <Enter> on this category, you get a confirmation dialog box with a message similar to the following:

Load Optimized Defaults (Y/N) ? N

Pressing "Y" loads the default values that are factory setting for optimal performance system operations.

4-13. PASSWORD SETTING

User is allowed to set either supervisor or user password, or both of them. The difference is that the supervisor password can enter and change the options of the setup menus while the user password can enter only but do not have the authority to change the options of the setup menus.

TO SET A PASSWORD

When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

```
Enter Password:
```

Type the password up to eight characters in length, and press < Enter >. The password typed now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press the < Enter > key. You may also press < Esc > to abort the selection and not enter a password.

✍ User should bear in mind that when a password is set, you will be asked to enter the password everything you enter CMOS setup Menu.

TO DISABLE THE PASSWORD

To disable the password, select this function (do not enter any key when you are prompt to enter a password), and press the <Enter> key and a message will appear at the center of the screen:

```
PASSWORD DISABLED!!!
Press any key to continue...
```

Press the < Enter > key again and the password will be disabled.   Once the password is disabled, you can enter Setup freely.

4-14. SAVE & EXIT SETUP

After you have completed adjusting all the settings as required, you must remember to save these setting into the CMOS RAM. To save the settings, select "SAVE & EXIT SETUP" and press <Enter>, a display will be shown as follows:

Phoenix - AwardBIOS CMOS Setup Utility

►Standard CMOS Features	►Frequency Control
►Advanced BIOS Features	Load Fail-Safe Defaults
►Advanced Chipset Features	Load Optimized Defaults
►Integrated Peripherals	Set Supervisor Password
►Power Management	word
►PnP/PCI Configura	etup
►PC Health Status	Saving

Save to CMOS and EXIT Y/N)? Y

Esc : Quit   ↑↓→← : Select Item
F10 : Save & Exit Setup

Save Data to CMOS

When you confirm that you wish to save the settings, your system will be automatically restarted and the changes you have made will be implemented. You may always call up the setup program at any time to adjust any of the individual items by pressing the <Del> key during boot up.

4-15. EXIT WITHOUT SAVING

If you wish to cancel any changes you have made, you may select the "EXIT WITHOUT SAVING" and the original setting stored in the CMOS will be retained. The screen will be shown as below:

Phoenix - AwardBIOS CMOS Setup Utility

►Standard CMOS Features	►Frequency Control
►Advanced BIOS Features	Load Fail-Safe Defaults
►Advanced Chipset Features	Load Optimized Defaults
►Integrated Peripherals	Set Supervisor Password
►Power Management	word
►PnP/PCI Configura	etup
►PC Health Status	Saving

Quit Without Saving (Y/N)? N

Esc : Quit   ↑↓→← : Select Item
F10 : Save & Exit Setup

Abandon all Datas

Appendix - A
EXPANSION BUS

This appendix indicates the pin assignments.

Section includes:

● PCI BUS Pin Assignment

● PPCI BUS Pin Assignment

● Compact Flash Card Connector Pin Assignment

PCI BUS PIN ASSIGNMENT

Like ISA-BUS connector, the PCI-BUS edge connector is also divided into two sets: one consists of 98-pin; the other consists of 22-pin.
The pin assignments are as follows :
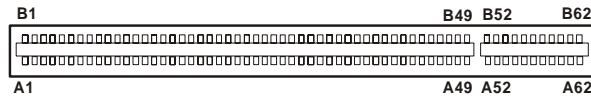
	B		A		B		A
PIN	ASSIGNMENT	PIN	ASSIGNMENT	PIN	ASSIGNMENT	PIN	ASSIGNMENT
B1	-12V	A1	TRST#	B31	+3.3V	A31	AD18
B2	TCK	A2	+12V	B32	AD17	A32	AD16
B3	GND	A3	TMS	B33	C/BE2#	A33	+3.3V
B4	TDO	A4	TDI	B34	GND	A34	FRAME#
B5	+5V	A5	+5V	B35	IRDY#	A35	GND
B6	+5V	A6	INTA#	B36	+3.3V	A36	TRDY#
B7	INTB#	A7	INTC#	B37	DEVSEL#	A37	GND
B8	INTD#	A8	+5V	B38	GND	A38	STOP#
B9	REQ3#	A9	CLKC	B39	LOCK#	A39	+3.3V
B10	REQ1#	A10	+5V(I/O)	B40	PERR#	A40	SDONE
B11	GNT3#	A11	CLKD	B41	+3.3V	A41	SB0#
B12	GND	A12	GND	B42	SERR#	A42	GND
B13	GND	A13	GND	B43	+3.3V	A43	PAR
B14	CLKA	A14	GNT1#	B44	C/BE1#	A44	AD15
B15	GND	A15	RST#	B45	AD14	A45	+3.3V
B16	CLKB	A16	+5V(I/O)	B46	GND	A46	AD13
B17	GND	A17	GNT0#	B47	AD12	A47	AD11
B18	REQ0#	A18	GND	B48	AD10	A48	GND
B19	+5V(I/O)	A19	REQ2#	B49	GND	A49	AD09
B20	AD31	A20	AD30	B52	AD08	A52	C/BE0#
B21	AD29	A21	+3.3V	B53	AD07	A53	+3.3V
B22	GND	A22	AD28	B54	+3.3V	A54	AD06
B23	AD27	A23	AD26	B55	AD05	A55	AD04
B24	AD25	A24	GND	B56	AD03	A56	GND
B25	+3.3V	A25	AD24	B57	GND	A57	AD02
B26	C/BE3#	A26	GNT2#	B58	AD01	A58	AD00
B27	AD23	A27	+3.3V	B59	+5V(I/O)	A59	+5V(I/O)
B28	GND	A28	AD22	B60	ACK64#	A60	REQ64#
B29	AD21	A29	AD20	B61	+5V	A61	+5V
B30	AD19	A30	GND	B62	+5V	A62	+5V

EPCI CONNECTOR

You will find a EPCI connector in our PCI-855VE2M.
The pin assignments are as follows:

B30   **EPCI**   B1

A30   A1

PIN	ASSIGNMENT	PIN	ASSIGNMENT
A1	GND	B1	GND
A2	AD0	B2	AD1
A3	AD2	B3	AD3
A4	AD4	B4	AD5
A5	AD6	B5	AD7
A6	AD8	B6	AD9
A7	AD10	B7	AD11
A8	VCC	B8	VCC
A9	AD12	B9	AD13
A10	AD14	B10	AD15
A11	AD16	B11	AD17
A12	AD18	B12	AD19
A13	AD20	B13	AD21
A14	AD22	B14	AD23
A15	VCC	B15	VCC
A16	AD24	B16	AD25
A17	AD26	B17	AD27
A18	AD28	B18	AD29
A19	AD30	B19	AD31
A20	PIRQ#B	B20	PAR
A21	PP CLK	B21	IRDY#
A22	ID SEL	B22	TRDY#
A23	CBE#0	B23	CBE#1
A24	CBE#2	B24	CBE#3
A25	PGNT#4	B25	PREQ#4
A26	SERR#	B26	PERR#
A27	PIRQ#A	B27	PCI_RST#
A28	STOP#	B28	PLOCK#
A29	DEVSEL#	B29	FRAME#
A30	GND	B30	GND

☛ The EPCI expansion connector of this Card is designed based on PCI Bus Master.

COMPACT FLASH CARD CONNECTOR PIN ASSIGNMENT

The pin assignments of Compact Flash Card connector are stated below.

PIN	ASSIGNMENT	PIN	Assignment
1	GND	26	-CD1
2	D03	27	D111
3	D04	28	D121
4	D05	29	D131
5	D06	30	D141
6	D07	31	D151
7	-CS0	32	-CS11
8	A102	33	-VS1
9	-ATASEL	34	-IORD
10	A092	35	-IOWR
11	A082	36	-WE3
12	+3.3V	37	INTRQ
13	VCC	38	VCC
14	A062	39	-CSEL
15	A052	40	-VS2
16	A042	41	-RESET
17	A032	42	IORDY
18	A02	43	-INPACK
19	A01	44	-REG3
20	A00	45	-DASP
21	D00	46	-PDIAG
22	D01	47	D081
23	D02	48	D091
24	-IOCS16	49	D101
25	-CD2	50	GND

Appendix - B
TECHNICAL SUMMARY

This section introduce you the maps concisely.

Section includes:

- Block Diagram

- Interrupt Map

- RTC & CMOS RAM Map

- Timer & DMA Channels Map

- I / O & Memory Map

BLOCK DIAGRAM
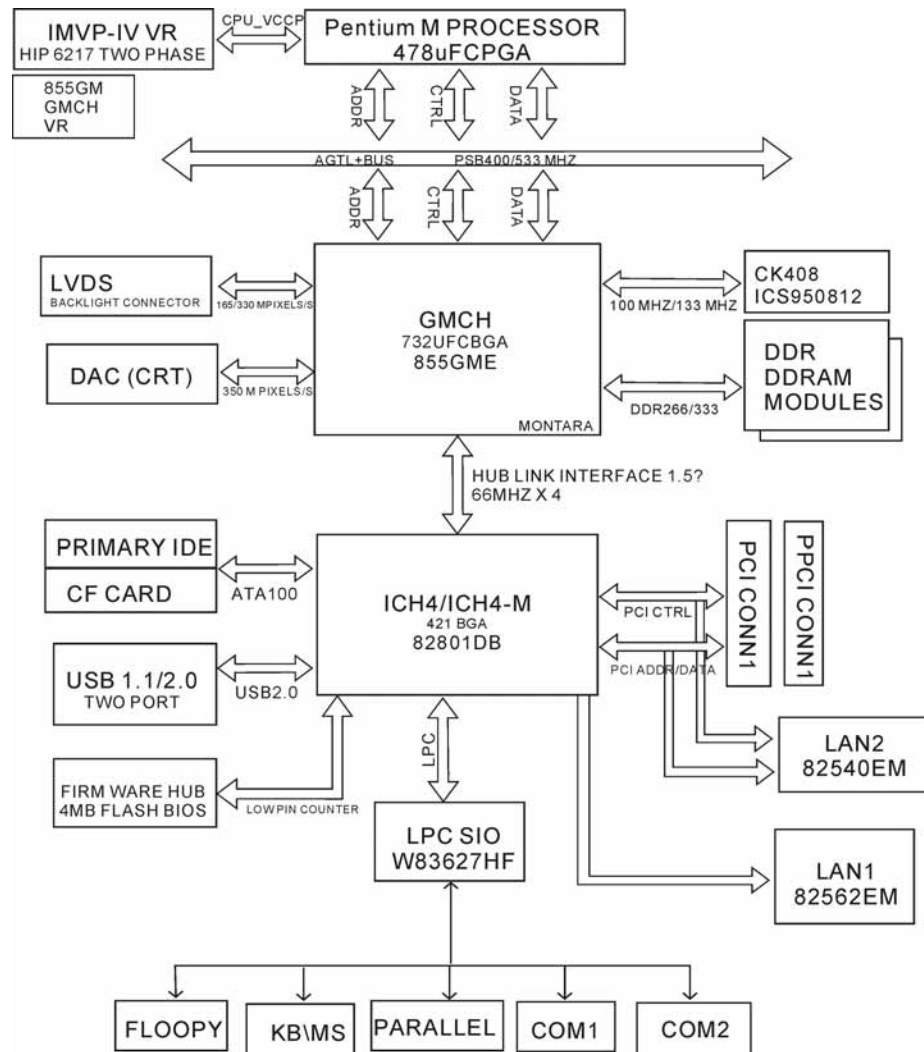
INTERRUPT MAP

IRQ	ASSIGNMENT
0	System TIMER
1	Keyboard
2	Cascade
3	Serial port 2
4	Serial port 1
5	Available
6	Floppy
7	Parallel port 1
8	RTC clock
9	Available
10	Available
11	Available
12	PS/2 Mouse
13	Math coprocessor
14	IDE1
15	IDE2

RTC & CMOS RAM MAP

CODE	ASSIGNMENT
00	Seconds
01	Second alarm
02	Minutes
03	Minutes alarm
04	Hours
05	Hours alarm
06	Day of week
07	Day of month
08	Month
09	Year
0A	Status register A
0B	Status register B
0C	Status register C
0D	Status register D
0E	Diagnostic status byte
0F	Shutdown byte
10	Floppy Disk drive type byte
11	Reserve
12	Hard Disk type byte
13	Reserve
14	Equipment byte
15	Base memory low byte
16	Base memory high byte
17	Extension memory low byte
18	Extension memory high byte
30	Reserved for extension memory low byte
31	Reserved for extension memory high byte
32	Date Century byte
33	Information Flag
34-3F	Reserve
40-7f	Reserved for Chipset Setting Data

TIMER & DMA CHANNELS MAP

<u>**Timer Channel Map**</u> **:**

Timer Channel	Assignment
0	System timer interrupt
1	DRAM Refresh request
2	Speaker tone generator

<u>**DMA Channel Map**</u> **:**

DMA Channel	Assignment
0	Available
1	Available
2	Floppy
3	Available
4	Cascade
5	Available
6	Available
7	Available

I/O & MEMORY MAP

Memory Map :

MEMORY MAP	ASSIGNMENT
0000000-009FFFF	System memory used by DOS and application
00A0000-00BFFFF	Display buffer memory for VGA/ EGA / CGA / MONOCHROME adapter
00C0000-00DFFFF	Reserved for I/O device BIOS ROM or RAM buffer.
00E0000-00EFFFF	Reserved for PCI device ROM
00F0000-00FFFFF	System BIOS ROM
0100000-FFFFFFFF	System extension memory

I/O Map :

I/O MAP	ASSIGNMENT
000-01F	DMA controller (Master)
020-021	Interrupt controller (Master)
022-023	Chipset controller registers I/O ports.
040-05F	Timer control regsiters.
060-06F	Keyboard interface controller (8042)
070-07F	RTC ports & CMOS I/O ports
080-09F	DMA register
0A0-0BF	Interrupt controller (Slave)
0C0-0DF	DMA controller (Slave)
0F0-0FF	Math coprocessor
1F0-1F8	Hard Disk controller
278-27F	Parallel port-2
2B0-2DF	Graphics adapter controller
2F8-2FF	Serial port-2
360-36F	Net work ports
378-37F	Parallel port-1
3B0-3BF	Monochrome & Printer adapter
3C0-3CF	EGA adapter
3D0-3DF	CGA adapter
3F0-3F7	Floppy disk controller
3F8-3FF	Serial port-1

Appendix - C
TROUBLE SHOOTING

This section outlines the errors may occur when you operate the system.   It also gives you the suggestions on solving the problems.

Section includes:

● Trouble Shooting for Error Messages

● Trouble Shooting for POST Code

TROUBLE SHOOTING FOR ERROR MESSAGES

The following information gives you the error messages and the trouble-shooting. Please adjust your systems according to the messages below. And make sure all the components and connectors are in proper position and firmly attached. If the errors still encountered, please contact with your distributor for maintenance.

POST BEEP :

Currently there are two kinds of beep codes in BIOS. One code indicates that a video error has occurred and the BIOS cannot initialize the video screen to display any additional information. This beep code consists of a single long beep followed by two short beeps. The other code indicates that your DRAM error has occurred. This beep code consists of a single long beep repeatedly.

CMOS BATTERY HAS FAILED :

This message informs you that the CMOS battery is no longer functional. The user should replace it.

CMOS CHECKSUM ERROR :

This message informs you that the CMOS is incorrect. This error may have caused by a weak battery.   Check the battery and replace if necessary.

DISK BOOT FAILURE, INSERT SYSTEM DISK AND PRESS ENTER :

No boot device was found.   This could mean that either a boot drive was not detected or the drive does not contain proper system boot files. Insert a system disk into Drive A: and press < Enter >. If you assumed the system would boot from the hard drive, make sure the controller is inserted correctly and all cables are properly attached.   Also make sure the disk is formatted as a boot device. Then reboot the system.

DISKETTE DRIVES OR TYPES MISMATCH ERROR - RUN SETUP :

Type of diskette drive installed in the system is different from the CMOS definition. Run Setup to reconfigure the drive type correctly.

DISPLAY SWITCH IS SET INCORRECTLY :

Display switch on the motherboard can be set to either monochrome or color. This indicates the switch is set to a different setting than indicated in Setup. Determine which setting is correct, and then either turn off the system and change the jumper, or enter Setup and change the VIDEO selection.

DISPLAY TYPE HAS CHANGED SINCE LAST BOOT :

Since last powering off the system, the display adapter has been changed. You must configure the system for the new display type.

EISA CONFIGURATION CHECKSUM ERROR
PLEASE RUN EISA CONFIGURATION UTILITY :

The EISA non-violatile RAM checksum is incorrect or cannot correctly read the EISA slot. This can indicate either the EISA non-volatile memory has become corrupt or the slot has been configured incorrectly. Also be sure the card is installed firmly in the slot.

EISA CONFIGURATION IS NOT COMPLETE
PLEASE RUN EISA CONFIGURATION UTILITY :

The slot configure information stored in the EISA non-volatile memory is incomplete.
Note: When either of these errors appear, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

ERROR ENCOUNTERED INITIALIZING HARD DRIVE :

Hard drive cannot be initialized. Be sure the adapter is installed correctly and all cables are correctly and firmly attached. Also be sure the correct hard drive type is selected in Setup.

ERROR INITIALIZING HARD DISK CONTROLLER :

Cannot initialize controller. Make sure the cord is correctly and firmly installed in the bus. Be sure the correct hard drive is selected in Setup. Also check to see if any jumper needs to be set correctly on the hard drive.

FLOPPY DISK CNTRLR ERROR OR NO CNTRLR PRESENT :

Cannot find or initialize the floppy drive controller. Make sure the controller is installed correctly and firmly. If there are no floppy drives installed, be sure the Diskette Drive selection in Setup is set to NONE.

INVALID EISA CONFIGURATION
PLEASE RUN EISA CONFIGURATION UTILITY :

The non-volatile memory containing EISA configuration information was programmed incorrectly or has become corrupt. Re-run EISA configuration utility to correctly program the memory.

Note: When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

KEYBOARD ERROR OR NO KEYBOARD PRESENT :

Cannot initialize the keyboard. Make sure that the keyboard is properly attached and no keys being pressed during the boot.

If you are purposely configuring the system without a keyboard, set the error halt condition in Setup to HALT ON ALL, BUT KEYBOARD. This will cause the BIOS to ignore the missing keyboard and continue the boot.

MEMORY ADDRESS ERROR AT ... :

Indicates a memory address error at a specific location. You can use this location along with the memory map for your system to find and replace the bad memory chips.

MEMORY PARITY ERROR AT ... :

Indicates a memory parity error at a specific location. You can use this location along with the memory map for your system to find and replace the bad memory chips.

MEMORY SIZE HAS CHANGED SINCE LAST BOOT :

Memory has been added or removed since the last boot. In EISA mode use Configuration Utility to reconfigure the memory configuration. In ISA mode enter Setup and enter the new memory size in the memory fields.

MEMORY VERIFY ERROR AT ... :
> Indicates an error verifying a value already written to memory. Use the location along with your system's memory map to locate the bad chip.

OFFENDING ADDRESS NOT FOUND :
> This message is used in conjunction with the I/O CHANNEL CHECK and RAM PARITY ERROR messages when the segment that has caused the problem cannot be isolated.

OFFENDING SEGMENT :
> This message is used in conjunction with the I/O CHANNEL CHECK and RAM PARITY ERROR messages when the segment that has caused the problem has been isolated.

PRESS A KEY TO REBOOT :
> This will be displayed at the bottom screen when an error occurs that requires you to reboot. Press any key and the system will reboot.

PRESS F1 TO DISABLE NMI, F2 TO REBOOT :
> When BIOS detects a Non-maskable Interrupt condition during boot, this will allow you to disable the NMI and continue to boot, or you can reboot the system with the NMI enabled.

RAM PARITY ERROR – CHECKING FOR SEGMENT :
> Indicates a parity error in Random Access Memory.

Should be Empty But EISA Board Found
PLEASE RUN EISA CONFIGURATION UTILITY :
> A valid board ID was found in a slot that was configured as having no board ID.
> Note: When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

Should Have EISA Board But Not Found
PLEASE RUN EISA CONFIGURATION UTILITY :
> The board installed is not responding to the ID request, or no board ID has been found in the indicated slot.
> Note: When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

Slot Not Empty :
Indicates that a slot designated as empty by the EISA Configuration Utility actually contains a board.

SYSTEM HALTED, (CTRL-ALT-DEL) TO REBOOT :
Indicates the present boot attempt has been aborted and the system must be rebooted.   Press and hold down the CTRL and ALT keys and press DEL.

Wrong Board in Slot
PLEASE RUN EISA CONFIGURATION UTILITY :
The board ID does not match the ID stored in the EISA non-volatile memory.
Note: When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

FLOPPY DISK(S) FAIL (80) :
Unable to reset floppy subsystem.

FLOPPY DISK(S) FAIL (40) :
Floppy type dismatch.

Hard Disk(S) Fail (80) :
Hard Disk Drive reset failed.

Hard Disk(S) Fail (40) :
Hard Disk Drive controller diagnostics failed.

Hard Disk(S) Fail (20) :
Hard Disk Drive initialization error.

Hard Disk(S) Fail (10) :
Unable to recalibrate fixed disk.

Hard Disk(S) Fail (08) :
Sector Verify failed.

Keyboard is locked out – Unlock the key :
BIOS detect the keyboard is locked. P17 of keyboard controller is pulled low.

Keyboard error or no keyboard present :
    Cannot initialize the keyboard. Make sure the keyboard is attached correctly and no keys are being pressed during the boot.

Manufacturing POST loop :
    System will repeat POST procedure infinitely while the P15 of keyboard controller is pull low.   This is also used for M/B burn in test.

BIOS ROM checksum error – System halted :
    The checksum of ROM address F0000H-FFFFFH is bad.

Memory test fail :
    BIOS reports the memory test fail if the onboard memory is tested error.

TROUBLE SHOOTING FOR POST CODES

The lists below indicate you the post codes. Please follow the instruction to adjust your system. If the error still occurred, please contact with your distributor for maintenance.

CFh **:** Test CMOS R/W functionality.

C0h **:** Early chipset initialization
- Disable shadow RAM
- Disable L2 cache (socket 7 or below)
- Program basic chipset registers

C1h **:** Detect memory
- Auto-detection of DRAM size, type and ECC
- Auto-detection of L2 cache (socket 7 or below)

C3h **:** Expand compressed BIOS code to DRAM.

C5h **:** Call chipset hook to copy BIOS black to E000 & F000 shadow RAM.

0h1 **:** Expand the Xgroup codes locating in physical address 1000:0

02h **:** Reserved.

03h **:** Initial Superio_Early_Init switch.

04h **:** Reserved.

05h **:** 1. Blank out screen
2. Clear CMOS error flag

06h **:** Reserved

07h **:** 1. Clear 8042 interface
2. Initialize 8042 self-test

08h : 1. Test special keyboard controller for Winbond 977 series Super
      I/O Chips.
    2. Enable keyboard interface.

09h : Reserved

0Ah : 1. Disable PS/2 mouse interface (optional)
    2. Auto detect ports for keyboard & mouse followed by a port &
      interface swap (optional).
    3. Reset keyboard for Winbond 977 series Super I/O chips.

0Bh : Reserved

0Ch : Reserved

0Dh : Reserved

0Eh : Test F000h segment shadow to see whether it is R/W-able or not.
If test fails, keep beeping the speaker.

0Fh : Reserved

10h : Auto detect flash type to load appropriate flash R/W codes into the
run time area in F000 for ESCD and DMI support.

11h : Reserved

12h : Use walking 1's algorithm to check out interface in CMOS
circuitry.   Also set real-time clock power status, and then check
for override.

13h : Reserved

14h : Program chipset default values into chipset.   Chipset default
values are MODBINable by OEM customers.

15h : Reserved

16h : Initial Early_Init_Onboard_Generator switch.

17h **:**   Reserved

18h **:**   Detect CPU information including brand, SMI type (Cyrix or Intel)
and CPU level (586 or 686).

19h **:**   Reserved

1Ah **:**   Reserved

1Bh **:**   Initial interrupts vector table.   If no special specified, all H/W
interrupts are directed to SPURIOUS_INIT_HDLR & S/W
interrupts to SPURIOUS_soft_HDLR.

1Ch **:**   Reserved

1Dh **:**   Initial EARLY_PM_INIT switch

1Eh **:**   Reserved

1Fh **:**   Load keyboard matrix (notebook platform)

20h **:**   Reserved

21h **:**   HPM initialization (notebook platform)

22h **:**   Reserved

23h **:**   1. Check validity of RTC value:
e.g. a value of 5Ah is an invalid value for RTC minute.
2. Load CMOS settings into BIOS stack. If CMOS checksum
fails, use default value instead.
3. Prepare BIOS resource map for PCI & PnP use.   If ESCD is
valid, take into consideration of the ESCD's legacy information.
4. Onboard clock generator initialization.   Disable respective
clock resource to empty PCI & DIMM slots.
5. Early PCI initialization:
   -Enumerate PCI bus number
   -Assign memory & I/O resource
   -Search for a valid VGA device & VGA BIOS, and put it into
    C000:0.

24h **:** Reserved

25h **:** Reserved

26h **:** Reserved

27h **:** Initialize INT 09 buffer

28h **:** Reserved

29h **:** 1. Program CPU internal mtrr (P6 & PII) for 0-640K memory address.
2. Initialize the APIC for Pentium class CPU.
3. Program early chipset according to CMOS setup.
   Example: onboard IDE controller.
4. Measure CPU speed.
5. Invoke video BIOS.

2Ah **:** Reserved

2Bh **:** Reserved

2Ch **:** Reserved

2Dh **:** 1. Initialize multi-language
2. Put information on screen display, including Award title, CPU type, CPU speed …

2Eh **:** Reserved

2Fh **:** Reserved

30h **:** Reserved

31h **:** Reserved

32h **:** Reserved

33h **:** Reset keyboard except Winbond 977 series Super I/O chips.

34h **:** Reserved

35h **:** Reserved

36h **:** Reserved

37h **:** Reserved

38h **:** Reserved

39h **:** Reserved

3Ah **:** Reserved

3Bh **:** Reserved

3Ch **:** Test 8254

3Dh **:** Reserved

3Eh **:** Test 8259 interrupt mask bits for channel 1.

3Fh **:** Reserved

40h **:** Test 8259 interrupt mask bits for channel 2.

41h **:** Reserved

42h **:** Reserved

43h **:** Test 8259 functionality.

44h **:** Reserved

45h **:** Reserved

46h **:** Reserved

47h **:** Initialize EISA slot

48h   :   Reserved

49h   :   1. Calculate total memory by testing the last double word of each
            64K page.
            2. Program writes allocation for AMD K5 CPU.

4Ah   :   Reserved

4Bh   :   Reserved

4Ch   :   Reserved

4Dh   :   Reserved

4Eh   :   1. Program MTRR of M1 CPU
            2. Initialize L2 cache for P6 class CPU & program CPU with
               proper cacheable range.
            3. Initialize the APIC for P6 class CPU.
            4. On MP platform, adjust the cacheable range to smaller one in
               case the cacheable ranges between each CPU are not identical.

4Fh   :   Reserved

50h   :   Initialize USB

51h   :   Reserved

52h   :   Test all memory (clear all extended memory to 0)

53h   :   Reserved

54h   :   Reserved

55h   :   Display number of processors (multi-processor platform)

56h   :   Reserved

57h   :   1. Display PnP logo
            2. Early ISA PnP initialization
               -Assign CSN to every PnP device.

58h **:**   Reserved

59h **:**   Initialize the combined Trend Anti-Virus code.

5Ah **:**   Reserved

5Bh **:**   (Optional Feature)
        Show message for entering AWDFLASH.EXE from FDD
        (optional)

5Ch **:**   Reserved

5Dh **:**   1. Initialize Init_Onboard_Super_IO switch.
        2. Initialize Init_Onboard_AUDIO switch.

5Eh **:**   Reserved

5Fh **:**   Reserved

60h **:**   Okay to enter Setup utility; i.e. not until this POST stage can users
        enter the CMOS setup utility

61h **:**   Reserved

62h **:**   Reserved

63h **:**   Reserved

64h **:**   Reserved

65h **:**   Initialize PS/2 Mouse

66h **:**   Reserved

67h **:**   Prepare memory size information for function call:
        INT 15h ax=E820h

68h **:**   Reserved

69h **:**   Turn on L2 cache.

6Ah **:** Reserved

6Bh **:** Program chipset registers according to items described in Setup and Auto-configuration table.

6Ch **:** Reserved

6Dh **:** 1. Assign resources to all ISA PnP devices.
2. Auto assign ports to onboard COM ports if the corresponding item in Setup is set to "AUTO".

6Eh **:** Reserved

6Fh **:** 1. Initialize floppy controller.
2. Set up floppy related fields in 40:hardware.

70h **:** Reserved

71h **:** Reserved

72h **:** Reserved

73h **:** (Optional Feature)
Enter AWDFLASH.EXE if:
- AWDFLASH is found in floppy drive.
- ALT+F2 is pressed

74h **:** Reserved

75h **:** Detect & install all IDE devices: HDD, LS120, ZIP, CDROM…..

76h **:** Reserved

77h **:** Detect serial ports and parallel ports

78h **:** Reserved

79h **:** Reserved

7Ah **:** Detect and install co-processor

7Bh **:**   Reserved

7Ch **:**   Reserved

7Dh **:**   Reserved

7Eh **:**   Reserved

7Fh **:**   1. Switch back to text mode if full screen logo is supported.
    -If errors occur, report errors and wait for keys
    -If no errors occur or F1 key is pressed to continue:
        *Clear EPA or customization logo.

80h **:**   Reserved

81h **:**   Reserved

82h **:**   1. Call chipset power management hook.
    2. Recover the text fond used by EPA logo (not for full screen logo).
    3. If password is set, ask for password.

83h **:**   Save all data in stack back to CMOS.

84h **:**   Initialize ISA PnP boot devices.

85h **:**   1. USB final initialization.
    2. NET PC: Build SYSID structure.
    3. Switch screen back to text mode.
    4. Setup ACPI table at top of memory.
    5. Invoke ISA adapter ROMs.
    6. Assign IRQs to PCI devices.
    7. Initialize APM.
    8. Clear noise of IRQs.

86h **:**   Reserved

87h **:**   Reserved

88h **:** Reserved

89h **:** Reserved

90h **:** Reserved

91h **:** Reserved

92h **:** Reserved

93h **:** Read HDD boot sector information for Trend Anti-Virus code.

94h **:** 1. Enable l2 cache.
2. Program boot up speed.
3. Chipset final initialization.
4. Power management final initialization.
5. Clear screen and display summary table
6. Program K6 write allocation.
7. Program P6 class write combining.

95h **:** 1. Program daylight saving.
2. Update keyboard LED and typematic rate.

96h **:** 1. Build MP table.
2. Build and update ESCD.
3. Set CMOS century to 20h or 19h.
4. Load CMOS time into DOS timer tick.
5. Build MSIRQ routing table.

FFh **:** Boot attempt (INT 19h)