NuPRO-861

Full-Size SBC

User's Manual



Recycled Paper

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Product Model			
Environment	OS: Computer Brand: M/B: CPU: Chipset: BIOS: Video Card: NIC: Other:		
Detail Description			
Suggestions for ADLINK			

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1

Introduction

The NuPRO-861 series combines the high performance and exceptional value of the Intel® 855GME chipset with a full-featured, new generation, industrial SBC. The Intel® advanced 855GME chipset support socket 478-pins Intel® Pentium® M processor of 1.30GHz and up to 1.80GHz, that memory base on the FSB 400/533MHz operation supports DDR SDRAM interface. In the meantime, the 855GME chipset integrated the LVDS, DVI & VGA function. The NuPRO-861 system memory size can be up to 2GB DDR memory, onboard Intel® 82541 Gigabit Ethernet controller (supporting 10/100/1000 Base-TX Ethernet), optional Audio card and with 2 COM ports, besides the NuPRO-861 with 4 internal USB2.0 ports and a VGA, CompactFlash™ type II connector. They are for ATM, CTI and high-end applications.

The 82801DB I/O Controller Hub (ICH4) employs the Intel® Accelerated Hub Architecture to make a direct connection from the graphics and memory to the integrated Ethernet controller, the IDE controllers (ATA/33 or ATA/66 or ATA/100), four USB ports that are supported USB 1.1/2.0 standard meets the performance, stability and reliability requirements.

The industrial SBC - NuPRO-861 is suitable and valuable for all the industry applications, which also well support with the Windows® 98 / 2000 / XP / NT and Linux® operation system.

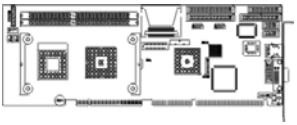
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1.1 Unpacking Checklist

1. Take out the NuPRO-861 series unit from the carton box, check if the unit is properly secure in the plastic bag.

2. Check the contents of the carton box:

◆ Industrial board



◆ Installation guide



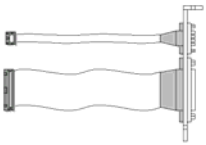
◆ ATA-66/100 HDD ribbon cable



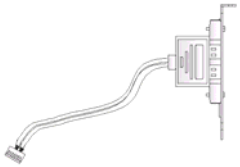
◆ Floppy ribbon cable



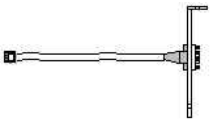
◆ Print & COM1 ribbon cable



◆ USB cable (1 Set)
(for USB2.0)



◆ COM2 ribbon cable

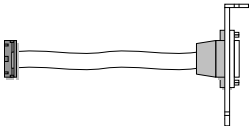


◆ KB & MS Y type cable



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◆ VGA round cable



◆ ATX control round cable
(4-pins to 4-pins)



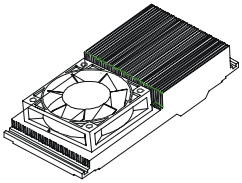
◆ KB extend to BP round cable
(5-pins to 6-pins)



◆ Driver CD



◆ Low profile heat sink with fan



Note: The package of the NuPRO-861 OEM version non-standard configuration may vary in function or contents according to different configuration requests

CAUTION: This board must be protected from static discharge and physical shock. Never remove any of the socketed parts except at a static-free workstation. Use the anti-static bag shipped with the product to handle the board. Wear a wrist strap grounded through one of the system's ESD Ground jacks while servicing system components.

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1.2 Features

Graphic and Ethernet

The NuPRO-861 is base on the Intel® 855GME chipset, offers users integrated LVDS, graphic, and gigabit Ethernet.

- Enhanced integrated LVDS & graphics:
  - 400 / 533 MHz FSB support
  - LVDS resolution up to 1600 x 1200 UXGA
  - Onboard LVDS, DVI interface & CRT VGA connector
- Built-in Gigabit Ethernet:
  - Onboard Intel® Gigabit Ethernet controller
  - Support 10 / 100 / 1000 Base-TX Ethernet
- Memory:
  - DDR-SDRAM 266 / 333
  - 2 x 184-pins DIMM socket, with support ECC
  - Up to 2.0GB memory (max.)
- I/O Connectivity - ICH4:
  - Four Hi-Speed USB2.0 ports
  - Onboard AC97 Audio pin header (IP-ALCS20 Audio card by option)

Ultra ATA/66/100

The ICH4 provides two channel Ultra ATA/66/100 Bus Master IDE controller, that support Ultra ATA/66/100 protocols - perfect for demanding applications such as real-time video, multimedia, and high performance operating system. A new IDE cable is required for Ultra ATA/66/100. This cable is an 80-conductor cable; however the connectors are backwards compatible with ATA/33.

Hardware Monitoring

Hardware monitoring allows the user to monitor various aspects of their systems operations and status. The features include CPU temperature, voltage and RPM of fan. Moreover, the NuPRO-861 with jumper can adjust the fan speed.

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I/O Shield Connector

The SBC is equipped with an I/O bracket. Please use the appropriate I/O shield.

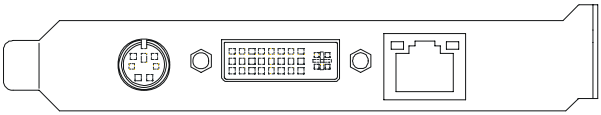


Figure 1: I/O back panel layout

NuPRO-861 Series Overview

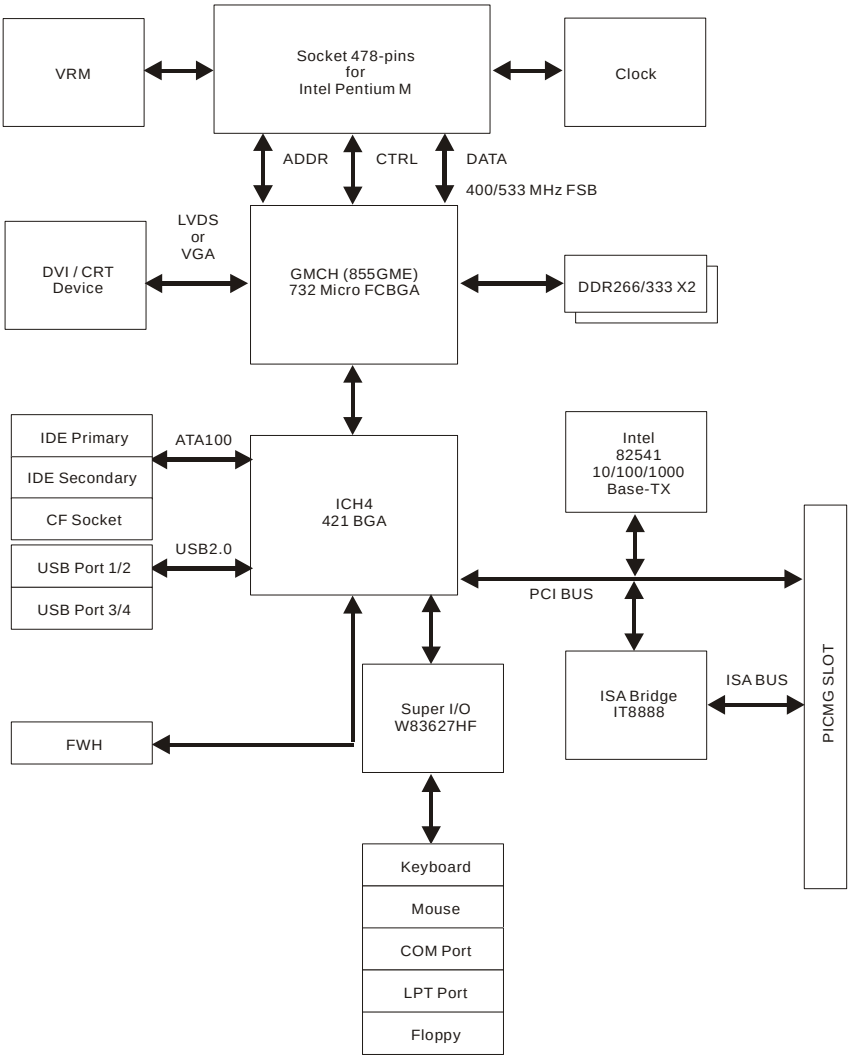
Function	NuPRO-861
◆ Chipset	Intel® 855GME
◆ LVDS function	⊙
◆ DVI function	⊙
◆ VGA function	⊙
◆ Gigabit Ethernet function	⊙
◆ 40-pins EIDE interface	2
◆ Type II CF socket	1
◆ Parallel port	1
◆ Serial ports	2
◆ USB 2.0 ports (by USB cable)	4
◆ Fan connector	2

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1.3 Functional Block

The following topics provide an overview of the NuPRO-861 main features as shown in the functional block diagram below and also the main board.

Functional Block Diagram



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Figure 2: Functional Block Diagram

1.4 Specifications

- **Processor:**
- Intel® Pentium® M processor with socket 478-pins package
- Processor operating at 1.3GHz and up to 1.8GHz
  - System bus frequency at 400/533MHz FSB

- **Chipset:**
  - Intel® 855GME + ICH4 AGPset

- **DRAM Module:**
- 2 x 184-pins DIMM socket
- For DDR 266 / 333 memory
  - Support DDR SDRAM up to 2GB (max.)

- **LVDS / DVI & VGA:**
- Intel® 855GME Chipset integrated LVDS & Graphic controller
- Onboard one DVI & 16-pins CRT VGA connectors

- **Gigabit Ethernet:**
- Intel® 82541 Ethernet controller
  - For 10 / 100 / 1000 Base-TX Ethernet
  - Onboard one RJ-45 Ethernet connector

- **External Connector:**
- 1 x type II CompactFlash™ connector
- (If user uses the CF card, it will occupy the IDE2 master.)
- 1 x 5-pins extend to Backplane for external KB connector

- **Onboard I/O:**
  - On-Chip I/O integrated with Keyboard, Mouse, Parallel and Serial,
  - Fast IR and Power-ON controller

- **Onboard PCI / IDE:**
  - Intel® ICH4 south bridge controller
  - PCI rev2.2 Compliant
  - ACPI Compliant Power Management
  - PCI Bus IDE Port with PIO / Ultra DMA-100 x 2 (Up to four Devices)

- **Rear I/O Connectors:**
- RJ-45 Ethernet connector
- D-Sub DVI connector
- PS/2 Mouse and PS/2 style Keyboard

- **Internal I/O Connectors (pin-header):**

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- 1 x 16-pins CRT VGA port
- 2 x Serial ports for RS-232
- 4 x USB2.0 connectors (USB cable with bracket)

- **BIOS:**
  - Award Plug and Play BIOS

- **Form Factor:**
  - 13.3” x 4.8” (338 x 122mm)

- **Weight:**
  - 0.84lb (380g)

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2

Installation

2.1 System Installation

CPU Installation

Carefully follow the steps below to install the CPU:

1. Check and confirm that the jumpers are correctly set for the CPU being installed (figure 3).
2. Lift the releasing lever of the Socket 478.
3. Align the pins of the CPU with the pinholes of the Socket 478. Be sure to pay attention to the orientation of the CPU.

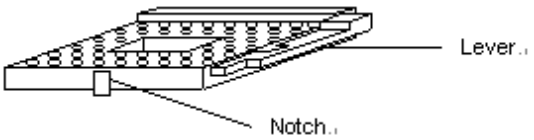


Figure 3: CPU Socket

4. Push down the CPU into the Socket 478.
5. Push down the release lever and lock it against the key hook.
6. Hook the hole in ZIF clip for the CPU cooling fan onto the notch on the socket 478.
7. Place the CPU cooling fan on top of the CPU surface.

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8. Push down the opposite side of the ZIF clip and hook it.
9. Slide the head of the clip to left and lock it.

10. Connect the cooling fan cable to the socket as shown below. Be careful not to place the cable on the CPU cooling fan.

Removing a CPU:

1. Before removing the CPU, turn off the NuPRO-861 Series power; then wait for about 20 minutes until the heat radiation plate of the cooling fan and the CPU cools down.

2. To remove the CPU, lift the releasing lever of the Socket 478.

CAUTION: The CPU and the heat radiation plate are hot. They may cause burns.

To remove the CPU, reverse the installation steps.

Heat Sink & Retention Module Installation

Make sure there is good contact between the processors and the heat sinks & fan. Insufficient contact, incorrect types of heat sinks, fans, thermal compound used, or improper amount of thermal compound applied on the CPU die can cause the processors to overheat, which may cause the system to crash.

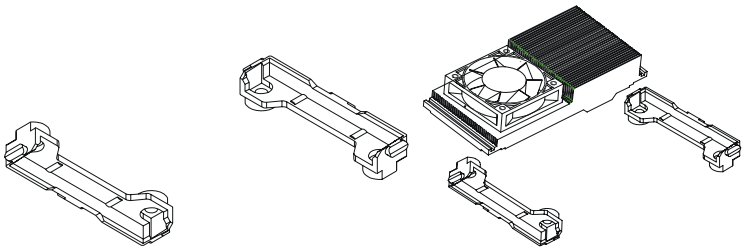


Figure 4: Heat Sink & Retention Module Installation

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Memory Module Installation

Figure 5 illustrates the notch marks and what they should look like on the DIMM memory module.

DIMMs have 184-pins and two notches matching the onboard DIMM socket. DIMM modules are installed by placing the chip firmly into the socket at a 90-degree angle and pressing straight down (figure 6) until it fits tightly into the DIMM socket.

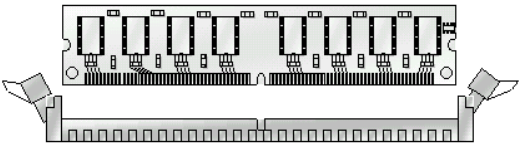


Figure 5: DIMM Memory and 184-pins Socket

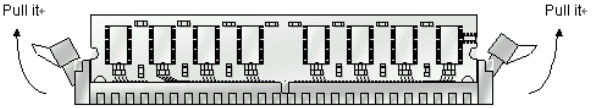


Figure 6: Memory Installation

Carefully follow the steps below to install the DIMMs:

1. To avoid generating static electricity and damaging the DIMM, ground yourself by touching a grounded metal surface or using a ground scrap before touching the DIMM.

2. Do not touch the connector of the DIMM. Dirt residues may cause malfunctions.

3. Hold the DIMM with its notch to the front side of the NuPRO-861 Series and insert it completely into the socket. A DIMM should be inserted into the inner socket first. Guide the hole on each end of the DIMM over the retaining post at each end of the DIMM socket.

4. If installing two DIMMs, install the second DIMM using the same procedure as above.

5. Do not forcefully insert the DIMM if it does not go in smoothly. Remove the DIMM completely and try again.

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6. Make sure the DIMM is properly installed and locked by the tabs on both sides of the socket.

Removing a DIMM:

To remove the DIMM, use fingers or a small screwdriver to carefully push away the plastic tabs that secure the DIMM at each end. Lift it out of the socket.

> **Make sure the DIMM is stored in an anti-static bag which must be of the same size and manufacture of memory modules.**

Setting Jumpers and DIP Switches

There are jumpers and DIP-switches on the Embedded Board of the NuPRO-861 Series. You can set the jumpers to make the necessary operations.

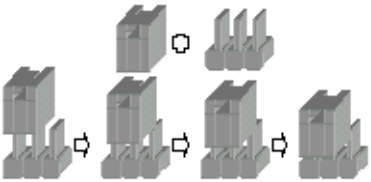


Figure 7: Jumper Connector

For three-pin jumpers (Figure 7), the jumper setting is 1-2 when the jumper connects pins 1 and 2. The setting is 2-3 when pins 2 and 3 are connected and so on. The pins are numbered “1“ and “3“ on the circuit board for identification purposes. Also, pin 1 has a thick line surrounding the jumper.

To move a jumper from one position to another, use needle-nose pliers or tweezers to pull the pin cap off the pins and move to the required position.

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2.2 Board Layout

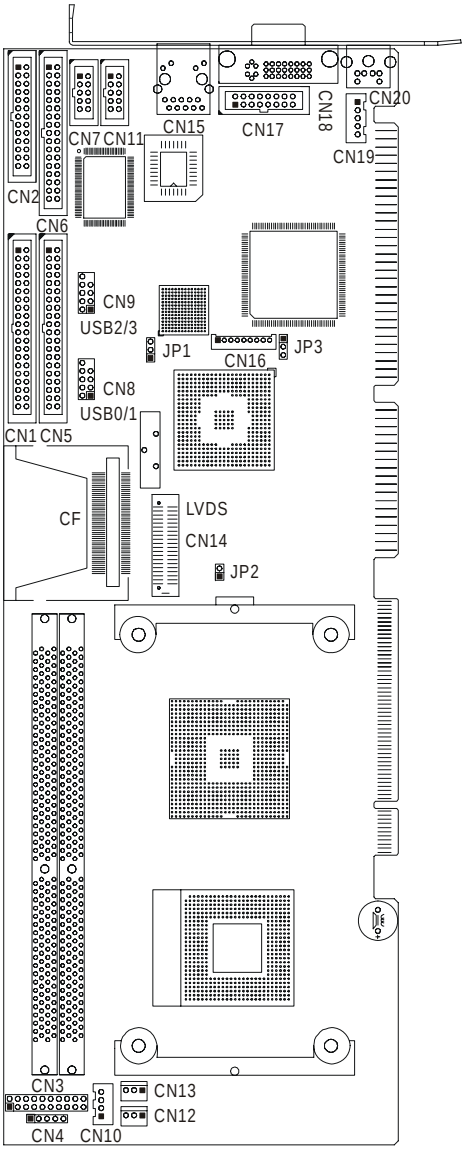


Figure 8: Jumper and Connector Locations

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2.3 Jumper setting

Jumper Location Description:

Use the information in the following table to change the jumpers and the DIP switches.

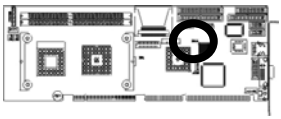
Jumpers	Functions
JP1	Clear CMOS Setting Select
JP2	CPU Type Setting Select
JP3	Watchdog Timer Setting Select

A description on setting the jumpers to enable/disable or change functions To set up the correct configuration is . All jumpers' location please refer to jumper location diagram.

1. Clear CMOS Setting Select: JP1

Function	JP1
Normal (Default)	1-2
Clear CMOS	2-3

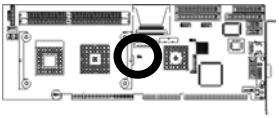
Location



2. CPU Type Setting Select: JP2

Function	JP2
CPU FSB 400 MHz (Default)	1-2 On
CPU FSB 533 MHz	1-2 Off

Location

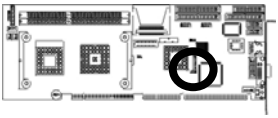


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3. Watchdog Timer Setting Select: JP3

Function	JP3
NMI	1-2
Reset System (Default)	2-3

Location:



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2.4 Connectors Description

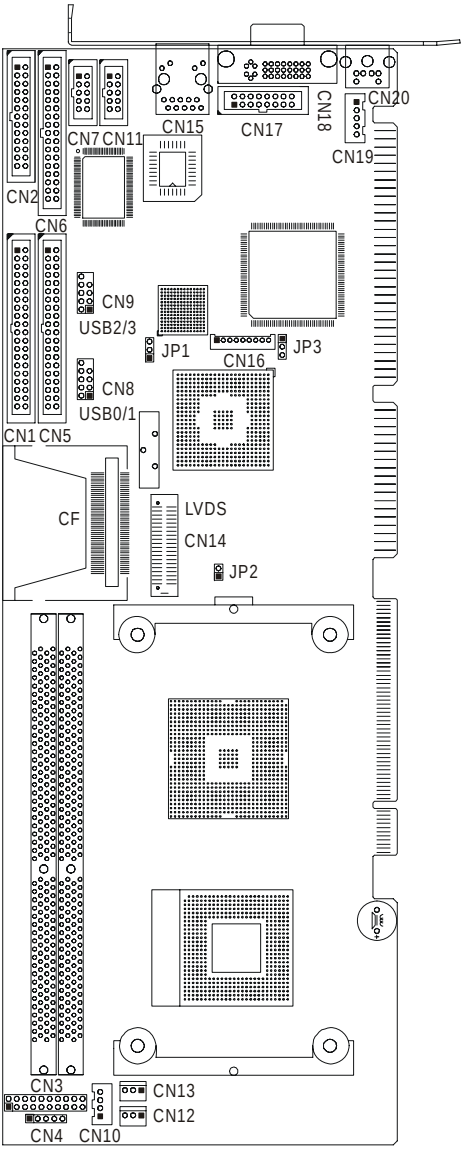


Figure 9: Connector Location

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Table for Connector's Location Description:

Use the information in the following table to change the connector.

Connectors	Functions
CN1	Secondary IDE Connector
CN2	Parallel Port Connector
CN3	System Panel Indicate Connector
CN4	IrDA Connector
CN5	Primary IDE Connector
CN6	Floppy Disk Connector
CN7	COM1 RS-232 Serial Port Connector
CN8	USB 0/1 (Pin-Header) Connector
CN9	USB 2/3 (Pin-Header) Connector
CN10	ATX Control Power Connector
CN11	COM2 RS-232 Serial Port Connector
CN12	System Fan Power Connector
CN13	CPU Fan Power Connector
CN14	18/24 Bits LVDS Panel Interface
CN15	Gigabit Ethernet RJ-45 Connector
CN16	Audio Port Connector
CN17	CRT VGA Port Connector
CN18	DVI Port Connector
CN19	External Keyboard Connector
CN20	PS/2 Keyboard & Mouse Connector
CF	Type II CompactFlash Connector

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Secondary IDE Connector (40-pins 2.54mm Pitch Pin-Header with Housing): CN1

Pin	Assignment	Pin	Assignment
1	Reset IDE	2	Ground
3	Host Data 7	4	Host Data 8
5	Host Data 6	6	Host Data 9
7	Host Data 5	8	Host Data 10
9	Host Data 4	10	Host Data 11
11	Host Data 3	12	Host Data 12
13	Host Data 2	14	Host Data 13
15	Host Data 1	16	Host Data 14
17	Host Data 0	18	Host Data 15
19	Ground	20	NC
21	DRQ 1	22	Ground
23	Host IOW	24	Ground
25	Host IOR	26	Ground
27	IOCHRDY	28	Host ALE
29	DACK 1	30	Ground
31	IRQ 15	32	No Connect
33	Address 1	34	Ground
35	Address 0	36	Address 2
37	Chip Select 0	38	Chip Select 1
39	Activity	40	Ground

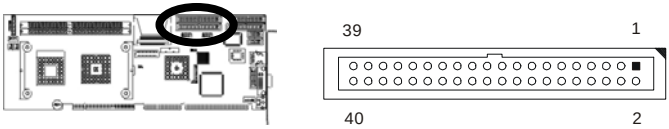


Figure 10: Secondary IDE Connector

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Parallel Port Connector (26-pins 2.54mm Pitch Pin-Header with Housing): CN2

Pin	Assignment	Pin	Assignment
1	Line Printer Strobe	2	Auto Feed
3	PD 0, Parallel Data 0	4	Error
5	PD 1, Parallel Data 1	6	Initialize
7	PD 2, Parallel Data 2	8	Select
9	PD 3, Parallel Data 3	10	Ground
11	PD 4, Parallel Data 4	12	Ground
13	PD 5, Parallel Data 5	14	Ground
15	PD 6, Parallel Data 6	16	Ground
17	PD 7, Parallel Data 7	18	Ground
19	ACK, Acknowledge	20	Ground
21	Busy	22	Ground
23	Paper Empty	24	Ground
25	Select	26	NC

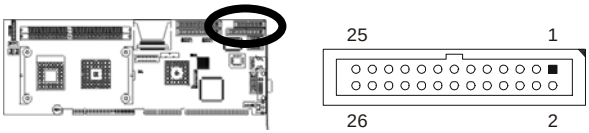


Figure 11: Parallel Port Connector

System Panel Indicate Connector: CN3

Pin	Assignment	Pin	Assignment
PWR LED		**SPEAKER**	
1	+5V	2	SPKR
3	NC	4	BUZZ
5	PWRLED (Ground)	6	NC
KEYLOCK		8	+5V
7	KEYLOCK	**RESET**	
9	Ground	10	RESET
ATX Control		12	Ground
11	Ground	**HDD LED**	
13	NC	14	HDDLED

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15	ATX PWRON	16	+5V
17	5VSB	**PWR ON**	
19	---	18	PWRBT+ (Dual 5V)
		20	PWRBT- (Ground)

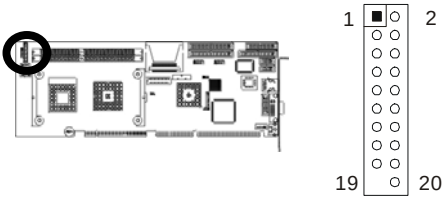


Figure 12: System Panel Indicate Connector

IrDA Connector (5-pins Pin-Header): CN4

Pin	Assignment
1	+5V
2	FIRTX
3	IRRX
4	Ground
5	IRTX

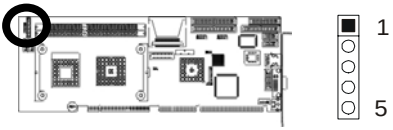


Figure 13: IrDA Connector

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Primary IDE Connector (40-pins 2.54mm Pitch Pin-Header with Housing): CN5

Pin	Assignment	Pin	Assignment
1	Reset IDE	2	Ground
3	Host Data 7	4	Host Data 8
5	Host Data 6	6	Host Data 9
7	Host Data 5	8	Host Data 10
9	Host Data 4	10	Host Data 11
11	Host Data 3	12	Host Data 12
13	Host Data 2	14	Host Data 13
15	Host Data 1	16	Host Data 14
17	Host Data 0	18	Host Data 15
19	Ground	20	NC
21	DRQ 0	22	Ground
23	Host IOW	24	Ground
25	Host IOR	26	Ground
27	IOCHRDY	28	Host ALE
29	DACK 0	30	Ground
31	IRQ 14	32	No Connect
33	Address 1	34	Ground
35	Address 0	36	Address 2
37	Chip Select 0	38	Chip Select 1
39	Activity	40	Ground

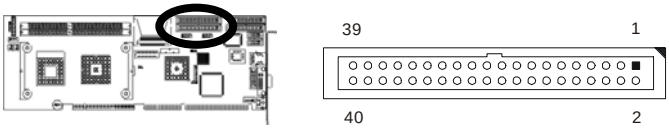


Figure 14: Primary IDE Connector

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Floppy Disk Connector (34-pins 2.54mm Pitch Pin-Header with Housing): CN6

Pin	Assignment	Pin	Assignment
1	Ground	2	Drive Density Selection
3	Ground	4	NC
5	Ground	6	NC
7	Ground	8	Index
9	Ground	10	Motor Enable 0
11	Ground	12	Drive Select 1
13	Ground	14	Drive Select 0
15	Ground	16	Motor Enable 1
17	Ground	18	Direction
19	Ground	20	Step
21	Ground	22	Write Data
23	Ground	24	Write Gate
25	Ground	26	Track 00
27	Ground	28	Write Protect
29	Ground	30	Read Data
31	Ground	32	Head Select
33	Ground	34	Diskette Change

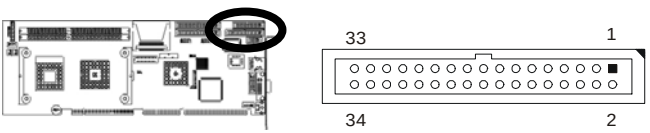
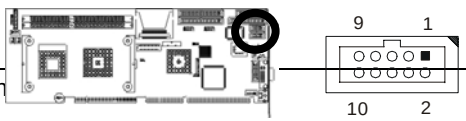


Figure 15: Floppy Disk Connector

COM1 RS-232 Serial Port Connector (10-pins Pin-Header): CN7

Pin	Assignment	Pin	Assignment
1	DCD	2	DSR
3	RXD	4	RTS
5	TXD	6	CTS
7	DTR	8	RI
9	Ground	10	Ground



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Figure 16: COM1 RS-232 Serial Port Connector

USB 0/1 Connector (9-pins Pin-Header): CN8

Pin	Assignment	Pin	Assignment
1	VCC	2	VCC
3	USB0N	4	USB1N
5	USB0P	6	USB1P
7	Ground	8	Ground
9	---	10	NC

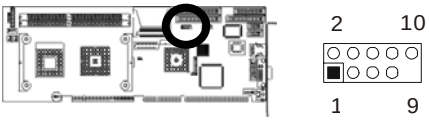


Figure 17: USB 0/1 Connector

USB 2/3 Connector (9-pins Pin-Header): CN9

Pin	Assignment	Pin	Assignment
1	VCC	2	VCC
3	USB2N	4	USB3N
5	USB2P	6	USB3P
7	Ground	8	Ground
9	---	10	NC

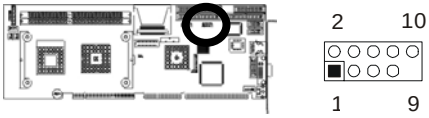


Figure 18: USB 2/3 Connector

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ATX Control Power Connector: CN10

Pin #	Assignment
1	NC
2	5VSB
3	ATX_PWRON
4	Ground

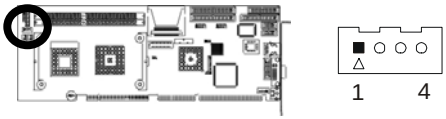


Figure 19: ATX Control Power Connector

COM2 RS-232 Serial Port Connector (10-pins Pin-Header): CN11

Pin	Assignment	Pin	Assignment
1	DCD	2	DSR
3	RXD	4	RTS
5	TXD	6	CTS
7	DTR	8	RI
9	Ground	10	Ground

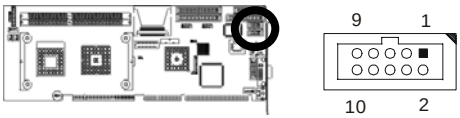


Figure 20: COM2 RS-232 Serial Port Connector

System fan power connector: CN12

Pin #	Assignment
1	Ground
2	VCC
3	Fan Status Signal

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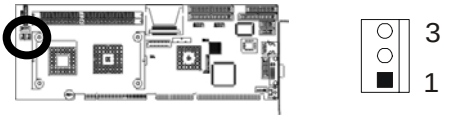


Figure 21: System Fan Power Connector

CPU fan power connector: CN13

Pin #	Assignment
1	Ground
2	VCC
3	Fan Status Signal

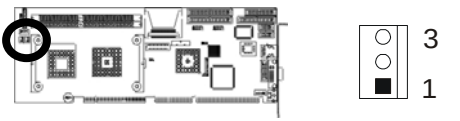


Figure 22: CPU fan power connector

18/24 Bits LVDS Panel Interface (40-pins Male): CN14

Pin	Assignment	Pin	Assignment
1	NC	2	NC
3	Ground	4	Ground
5	YAM0	6	YAM1
7	YAP0	8	YAP1
9	Ground	10	Ground
11	YAM2	12	CLKAM
13	YAP2	14	CLKAP
15	Ground	16	Ground
17	YAM3	18	YBM0
19	YAP3	20	YBP0
21	Ground	22	Ground
23	YBM1	24	YBM2
25	YBP1	26	YBP2
27	Ground	28	Ground
29	CLKBM	30	YBM3
31	CLKBP	32	YBP3

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33	NC	34	+12V
35	NC	36	+12V
37	NC	38	PVCC
39	BKL	40	PVCC

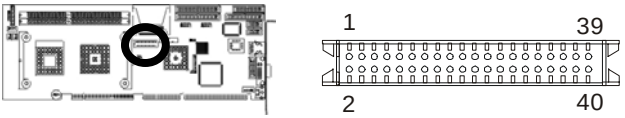


Figure 23: 18/24 Bits LVDS Panel Interface

Gigabit Ethernet RJ-45 Connector (RJ-45 Phone–Jack): CN15

Pin	Assignment	Pin	Assignment
1	0P	10	3N
2	0N	11	LINK1000#
3	1P	12	LINK100#
4	1N	13	LINK#
5	Ground	14	ACT#
6	Ground	15	CH1
7	2P	16	CH2
8	2N	17	NPTH1
9	3P	18	NPTH2

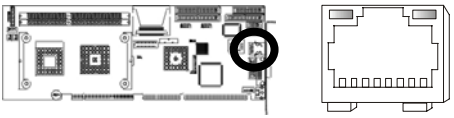


Figure 24: Gigabit Ethernet RJ-45 Connector

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Audio Port Connector (9-pins Pin-Header): CN16

Pin	Assignment
1	+12V
2	3.3V
3	AC_SYNC
4	AC_SDOUT
5	Ground
6	AC_BCLK
7	Ground
8	AC_RST#
9	AC_SDIN0

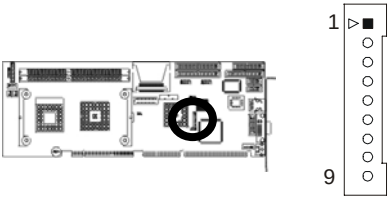


Figure 25: Audio Port Connector

CRT VGA Port Connector (16-pins Pin-Header): CN17

Pin	Assignment	Pin	Assignment
1	Red	2	VCC
3	Green	4	Ground
5	Blue	6	NC
7	---	8	Data
9	Ground	10	HSync
11	Ground	12	VSync
13	Ground	14	Clock
15	Ground	16	NC

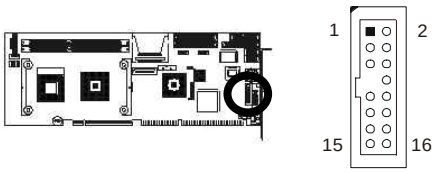


Figure 26: CRT VGA Port Connector

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DVI Port Connector (30-pins Pin-Header): CN18

Pin	Assignment	Pin	Assignment
1	TX2-	16	HPDET
2	TX2+	17	TX0-
3	Ground	18	TX0+
4	NC	19	Ground
5	NC	20	NC
6	DATA	21	NC
7	CLOCK	22	Ground
8	CRT_VS	23	TXC+
9	TX1-	24	TXC-
10	TX1+	25	CRT_RED
11	Ground	26	CRT_GREEN
12	NC	27	CRT_BLUE
13	NC	28	CRT_HS
14	DVI_5V	29	Ground
15	Ground	30	Ground

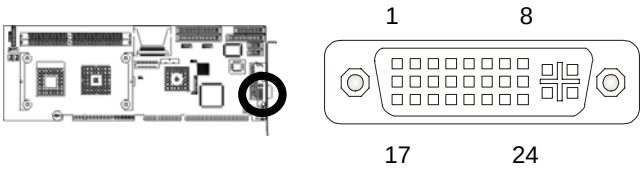


Figure 27: DVI Port Connector

External Keyboard Connector (5-pins Pin-Header): CN19

Pin	Assignment	Pin	Assignment
1	Keyboard CLOCK	2	Keyboard DATA
3	NC	4	Ground
5	VCC (5V)		

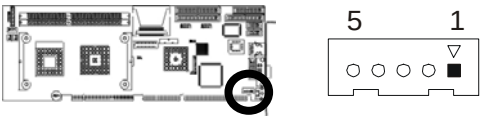


Figure 28: External Keyboard Connector

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PS/2 Keyboard & Mouse Connector (6-pins Mini Din): CN20

Pin	Assignment	Pin	Assignment
1	Keyboard DATA	2	Mouse DATA
3	Ground	4	VCC
5	Keyboard CLOCK	6	Mouse CLOCK

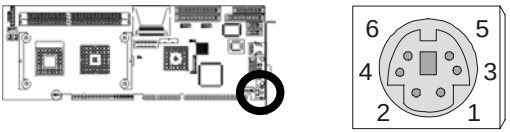


Figure 29: PS/2 Keyboard & Mouse Connector

Type II CompactFlash Connector: CF

Pin	Assignment	Pin	Assignment
1	Ground	2	D3
3	D4	4	D5
5	D6	6	D7
7	CS#1	8	Ground
9	Ground	10	Ground
11	Ground	12	Ground
13	VCC	14	Ground
15	Ground	16	Ground
17	Ground	18	A2
19	A1	20	A0
21	D0	22	D1
23	D2	24	NC
25	NC	26	NC
27	D11	28	D12
29	D13	30	D14
31	D15	32	CS#3
33	NC	34	IOR#
35	IOW#	36	VCC
37	INTS	38	VCC
39	CSEL#	40	NC
41	IDERST#	42	IORDY
43	NC	44	VCC

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45	IDEACTS#	46	DET
47	D8	48	D9
49	D10	50	Ground
51	Ground	52	Ground
53	NC	54	NC
55	NC	56	NC
57	NC	58	NC

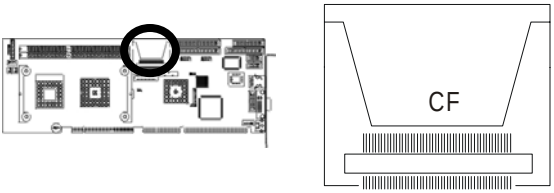


Figure 30: Type II CompactFlash Connector: CF

2.5 Optional IP-ALCS20 Audio Card

Thank you for choosing IP-ALCS20 Audio Card. Instructions on connecting the connector and the phone jack for audio functions are detailed below.

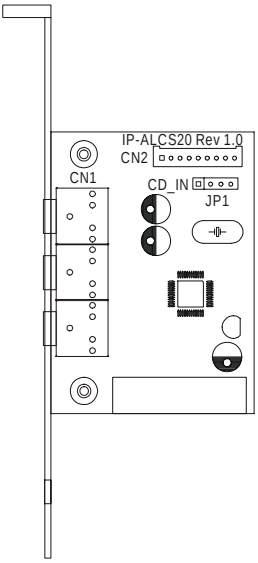
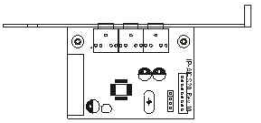


Figure 31: Board Location

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1. Check the contents of the packing:

   - IP-ALCS20 Audio Card



   - Audio 9-pins round cable



2. Audio Card Descriptions of Connector:

Connectors	Functions
JP1	CD_IN Connector
CN1	Audio Line_In, Line_Out, MIC Phone Jack
CN2	Audio Signal Connector

3. Description of Connector

CD_IN Connector: JP1

Pin	Assignment
1	Left
2	Ground
3	Ground
4	Right

Audio Line_In, Line_Out, MIC Phone Jack: CN1

Pin	Assignment
1	Line_In
2	Line_Out
3	MIC

Audio Signal Connector (9-pins): CN2

Pin	Assignment
1	+12V
2	3.3V
3	AC_SYNC

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4	AC_SDOUT
5	Ground
6	AC_BCLK
7	Ground
8	AC_RST#
9	AC_SDIN0

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3

Award BIOS Setup

3.1 BIOS Instructions

Award's ROM BIOS provides a built-in Setup program, which allows the user to modify the basic system configuration and hardware parameters. The modified data will be stored in a battery-backed CMOS, so that data will be retained even when the power is turned off. In general, the information saved in the CMOS RAM will stay unchanged unless there is a configuration change in the system, such as hard drive replacement or a device is added.

It is possible for the CMOS battery to fail, which would cause data loss in the CMOS only. If this does happen the BIOS settings would need to be reconfigured.

3.2 Main Menu

Once the user enters into the AwardBIOS™ CMOS Setup Utility, the main menu will appear on the screen. The main menu allows the user to select from several setup functions and two exit choices. Use the arrow keys to select the items and press <Enter> to accept and enter the sub-menu.

Phoenix - AwardBIOS CMOS Setup Utility

➢Standard CMOS Feature	➢Frequency/Voltage Control
➢Advanced BIOS Feature	Load Fail-Safe Defaults
➢Advanced Chipset Feature	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

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Esc: Quit ↑↓→←: Select Item F10: Save & Exit Setup
Time, Date, Hard Disk Type….

Note: A brief description of each highlighted selection appears at the bottom of the screen.

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

Standard CMOS Features:
Use this menu for basic system configuration. Please refer to section 3.3 for further information.

Advanced BIOS Features:
Use this menu to set the Advanced Features available on the system. Please refer to section 3.5 for further information.

Advanced Chipset Features:
Use this menu to change the values in the chipset registers and to optimize the system's performance. Please refer to section 3.6 for further information.

Integrated Peripherals:
Use this menu to specify the settings for integrated peripherals. Please refer to section 3.7 for further information.

Power Management Setup:
Use this menu to specify the settings for power management. Please refer to section 3.8 for further information.

PnP / PCI Configuration:
This entry appears if the user's system supports PnP / PCI. Please refer to section 3.9 for further information.

PC Health Status:
Use this menu to view the system temperature, speed and voltage status. Please refer to section 3.10 for further information.

Frequency / Voltage Control:
Use this menu to specify the settings for frequency/voltage control. Please refer to section 3.11 for further information.

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Load Fail-Safe Defaults:
Use this menu to load the BIOS default values for the minimal/stable performance for the system to operate. Please refer to section 3.12 for further information.

Load Optimized Defaults:
Use this menu to load the BIOS default values that are factory settings for optimal performance system operations. While Award has designed the custom BIOS to maximize performance, the user can change these defaults to meet their needs. Please refer to section 3.13 for further information.

Supervisor / User Password:
Use this menu to set User and Supervisor Passwords. Please refer to section 3.14 for further information.

Save & Exit Setup:
Save CMOS value changes to CMOS and exit setup. Please refer to section 3.15 for further information.

Exit Without Save:
Abandon all CMOS value changes and exit setup. Please refer to section 3.15 for further information.

3.3 Standard CMOS Features

The items in Standard CMOS Setup Menu are divided into 10 categories. Each category includes none, one, or more than one setup items. Use the arrow keys to highlight the item, then use the <PgUp> or <PgDn> keys to select the value required of each item.

Standard CMOS Features

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Date (mm:dd:yy): Time (hh:mm:ss):	Mon, Aug 4 2003 16:19:20	Item Help _____ __
➢ IDE Primary Master		
➢ IDE Primary Slave	13579 MB	Menu Level ➢
➢ IDE Secondary Master	None	
➢ IDE Secondary Slave	None	Change the day, month, year and century
	None	
Drive A		
Drive B	1.44M, 3.5 in.	
	None	
Video		
Halt On	EGA/VGA	
	No Errors	
Based Memory		
Extended Memory	640K	
Total Memory	515072K	
	516096K	

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

Date: Options Month/DD/YYYY
Set the system date. Note that the 'Day' automatically changes when the date is set.

Time: Options HH : MM : SS
Set the system time.

IDE Primary Master: Options are in its sub menu (described in section 3.4)
Press <Enter> to enter the sub menu of detailed options.

IDE Primary Slave: Options are in its sub menu (described in section 3.4)
Press <Enter> to enter the sub menu of detailed options.

IDE Secondary Master: Options are in its sub menu (described in section 3.4)
Press <Enter> to enter the sub menu of detailed options.

IDE Secondary Slave: Options are in its sub menu (described in section 3.4)
Press <Enter> to enter the sub menu of detailed options.

Drive A / Drive B: Options None 360K, 5.25in/1.2M, 5.25in/720K, 3.5in/1.44M, 3.5in/2.88M, 3.5in
Select the type of floppy disk drive installed in the system.
Video: Options EGA/VGA/CGA 40/CGA 80/MONO

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Select the default video device.

Halt On: Options All Errors/No Errors/All, but Keyboard/All, but Diskette/All, but Disk/Key
Select the situation in which the user wants the BIOS to stop the POST process and notify the user.

Base Memory: Option N/A
Displays the amount of conventional memory detected during boot up.

Extended Memory: Option N/A
Displays the amount of extended memory detected during boot up.

Total Memory: Option N/A
Displays the total memory available on the system.

3.4 IDE Adaptors

The IDE adapters control the hard disk drive. Use a separate sub menu to configure each hard disk drive.

Phoenix - AwardBIOS CMOS Setup Utility
IDE Primary Master

IDE HDD Auto-Detection	Press Enter	Item Help
IDE Primary Master	Auto	
Access Mode	Auto	Menu Level ➢➢
Capacity	13579 MB	To auto-detect the HDD's size, head... on this channel
Cylinder	26310	
Head	16	
Precomp	0	
Landing Zone	26309	
Sector	63	

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

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IDE HDD Auto-Detection: Options Press Enter
Press Enter to auto-detect the HDD on this channel. If detection is successful, it

fills the remaining fields on this menu.

IDE Primary Master: Options: None, Auto, and Manual

Selecting “Manual” allows the user to set the remaining fields on this screen. "User Type" allows the user to select the number of cylinders, heads, etc. Note: PRECOMP=65535 means NONE.

Access Mode: Options: CHS, LBA, Large, and Auto

Choose the access mode for this hard disk

Capacity: Options Auto Display your disk drive size
Disk drive capacity (Approximate). Note that this size is usually slightly larger than the size of a formatted disk given by a disk-checking program.

The following options are selectable only if the ‘IDE Primary Master’ item is set to ‘Manual’

Cylinder: Options Min = 0, Max = 65535
Set the number of cylinders for this hard disk.

Head: Options Min = 0, Max = 255
Set the number of read/write heads

Precomp: Options Min = 0, Max = 65535
**** **Warning**: Setting a value of 65535 indicates no hard disk

Landing zone: Options Min = 0, Max = 65535
****

Sector: Options Min = 0, Max = 255
Number of sectors per track

3.5 Advanced BIOS Features

This section allows the user to configure their system for basic operation. The user can also select the system’s default speed, boot-up sequence, keyboard operation, shadowing, and security.

➢CPU Feature	Press Enter	Item Help
➢Hard Disk Boot Priority	Press Enter	
Virus Warning	Enabled	
CPU L1 & L2 Cache	Enabled	Menu Level ➢
Quick Power On Self Test	Enabled	
First Boot Device	Floppy	
Second Boot Device	Hard Disk	
Third Boot Device	LS-120	
Boot Other Device	Enabled	
Swap Floppy Drive	Disabled	
Boot Up Floppy Seek	Enabled	
Boot Up NumLock Status	On	
Gate A20 Option	Fast	
Security Option	Setup	
Console Redirection	Disabled	
X Baud Rate	19200	
Agent Commect via	NULL	
Agent wait time (min)	1	
Agent after boot	Enabled	

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

CPU Feature:

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CPU Feature

Thermal Management	Thermal Monitor 1	Item Help
		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

Thermal Management:

It allows the user to select the thermal Monitor.

Options: Thermal monitor1.

Hard Disk Boot Priority:

Press Enter and It shows Bootable add-in Card.

Virus Warning:

Allows the user to choose the VIRUS Warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempts to write data

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into this area, BIOS will show a warning message on the screen and an alarm will sound.

Enabled - Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector or hard disk partition table.
Disabled - No warning message will appear when anything attempts to access the boot sector or hard disk partition table.

CPU L1& L2 Cache:
These two categories speed up memory access. However, this is dependant on the CPU/chipset design.
Enabled - Enable cache
Disabled - Disable cache

Quick Power On Self Test:
This category speeds up Power On Self Test (POST) after powering up the computer. If it is set to Enable, the BIOS will shorten or skip some check items during POST.
Enabled - Enable quick POST
Disabled - Normal POST

First/Second/Third Boot Device:
The BIOS attempts to load the operating system from the devices in the sequence selected in these items.
Options: Floppy, LS/ZIP, Hard Disk, CDROM, LAN and Disabled.

Boot Other Device:
When enabled, the system searches all other possible locations for an operating system if it fails to find one in the devices specified under the first, second, and third boot devices.
Options: Enabled, Disabled

Swap Floppy Drive:
If the system has two floppy drives, the user can swap the logical drive name assignments.
Options: Enabled, Disabled

Boot Up Floppy Seek:
Seeks for disk drives during boot up. Disabling speeds boot up.
Options: Enabled, Disabled.

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Boot Up NumLock Status:
Select power on state for NumLock.
Options: On, Off

Gate A20 Option:
Select if chipset or keyboard controller should control GateA20.
Normal - A pin in the keyboard controller controls GateA20
Fast - Lets chipset control GateA20

Security Option:
Select whether the password is required every time the system boots or only when entering setup.
System - The system will not boot and access to Setup will be denied if the incorrect password is entered at the prompt.
Setup - The system will boot, but access to Setup will be denied if the incorrect password is entered at the prompt.

Note: To disable security, select PASSWORD SETTING at Main Menu. The user will then be prompted to enter the password. Do NOT type anything and press <Enter>. This will disable security. Once the security is disabled, the system will boot and Setup can be accessed freely.

Console Redirection:
This item allows the user to redirect console.
Options: Enabled - Redirect console via Com Port.
Disabled - Redirect console when keyboard absent.

Baud Rate:
This item specifies baud rate of console redirection.
Options: 9600, 19200, 38400, 57600, 115200.

Agent Connect Via:
Select Null let agent connect directly.
Options: NULL.

Agent Wait Time (min):
Select the time to allow agent connects when timeout.
Options: 1, 2, 4, 8.
Agent After Boot:
This item allows the user to keep agent running after OS boot.
Options: Enabled, Disabled.

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3.6 Advanced Chipset Features

This section allows the user to configure the system based on the specific features of the installed chipset. This chipset manages bus speeds and access to system memory resources, such as DRAM and the external cache. It also coordinates communications between the conventional ISA bus and the PCI bus. These items should never need to be altered. The default settings have been chosen because they provide the best operating conditions for the user's system. The only time the user may consider making any changes is when the user discovers that data was being lost while using the system.

Phoenix - AwardBIOS CMOS Setup Utility
Advanced Chipset Features

DRAM Timing Selectable	By SPD	Item Help
X CAS Latency Time	2.5	
X Active To Precharge Delay	6	
X DRAM RAS# To CAS# Delay	3	Menu Level ➢
X DRAM RAS# Precharge	3	
DRAM Data Integrity Mode	Non-ECC	
MGM Core Frequency	Auto Max 266MHz	
System BIOS Cacheable	Enabled	
Video BIOS Cacheable	Disabled	
Memory Hole At 15M-16M	Disabled	
Delayed Transaction	Enabled	
Delay Prior To Thermal	16 Min	
AGP Aperture Size (MB)	64	
** On-Chip VGA Setting **		
On-Chip VGA	Enabled	
On-Chip Frame Buffer Size	32MB	
Boot Display	VBIOS Default	
Pannel Number	1	

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

DRAM Timing Selectable:

Select the operating system that is selecting DRAM timing, so select SPD for setting SDRAM timing by SPD.

Options: Manual, By SPD.

CAS Latency Time:

When synchronous DRAM is installed, the number of clock cycles of CAS latency depends

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on the DRAM timing.

Options: 2, 2.5

Active To Precharge Delay:

Select the operating system that is active to precharge delay.

Options: 5, 6, 7.

DRAM RAS# To CAS# Delay:

This field allows the user to insert a timing delay between the CAS and RAS strobe signals, used when DRAM is written to, read from, or refreshed. Fast gives faster performance; and Slow allows for a more stable performance. This field applies only when synchronous DRAM is installed in the system.

Options: 2, 3.

DRAM RAS# Precharge:

If an insufficient number of cycles are allowed for the RAS to accumulate its charge before DRAM refresh, the refresh may be incomplete and the DRAM may fail to retain data. Fast gives faster performance; and Slow allows for a more stable performance. This field applies only when synchronous DRAM is installed in the system.

Options: 2, 3.

DRAM Data Integrity Mode:

This item shows the user whether the DRAM has an ECC function or not.

Options: Non-ECC, ECC.

MGM Core Frequency:

This item allows the user to determine the MGM core frequency.

Options: Auto Max 266MHz, 400/266/133/200MHz,
400/200/100/200MHz, 400/200/100/133MHz,
400/266/133/267MHz, 400/333/166/250MHz,
Auto Max 400/333.

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.

Options: Enabled, Disabled.

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.

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Options: Enabled, Disabled.

Memory Hole At 15M-16M:

The user 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 would have normally discussed their memory requirements.

Options: Enabled, Disabled.

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 2.2.

Options: Enabled, Disabled.

Delay Prior To Thermal:

Selecting this item allows delay prior to thermal time.

Options: 4Min, 8Min, 16Min and 32Min.

AGP Aperture Size (MB):

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.

Options: 4, 8, 16, 32, 64, 128 and 256.

****On-Chip VGA Setting****

On-Chip VGA:

This item allows the user to control the on-chip VGA.

Options: Enabled, Disabled.

On-Chip Frame Buffer Size:

This item allows the user to control the on-chip frame buffer size.

Options: 1M, 4M, 8M, 16M and 32M.

Boot Display:

This item allows the user to select the boot display device.

Options: VBIOS Default, CRT, LFP and CRT+LEP.

Panel Number:

This item allows the user to select the panel resolution.

Options: 1 to 8

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3.7 Integrated Peripherals

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Integrated Peripherals

➢ Onboard IDE Device	Press Enter	Item Help
➢ Onboard Device	Press Enter	
➢ SuperIO Device	Press Enter	Menu Level ➢
Onboard Lan Boot ROM	Disabled	If your IDE hard drive supports block mode select Enabled for automatic detection of the optimal number of block read/write per sector the drive can support
Onboard Serial Port 3	3E8	
Serial Port 3 Use IRQ	IRQ10	
Onboard Serial Port 4	2E8	
Serial Port 4 Use IRQ	IRQ11	

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

Onboard IDE Device:

Onboard IDE Device

On-Chip Primary PCI IDE	Enabled	Item Help
IDE Primary Master PIO	Auto	
IDE Primary Slave PIO	Auto	Menu Level ➢
IDE Primary Master UDMA	Auto	If your IDE hard drive supports block mode select Enabled for automatic detection of the optimal number of block read/write per sector the drive can support
IDE Primary Slave UDMA	Auto	
On-Chip 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

OnChip Primary/Secondary PCI IDE:
The integrated peripheral controller contains an IDE interface with support for two IDE channels. Select “Enabled” to activate each channel separately.

Options: Enabled, Disabled.

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IDE Primary/Secondary Master/Slave PIO:
The four IDE PIO (Programmed Input/Output) fields allows the user 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.

Options: Auto, Mode 0, Mode 1, Mode 2, Mode 3, and Mode 4.

IDE Primary/Secondary Master/Slave UDMA:

Ultra DMA/33 implementation is possible only if the 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 the hard drive and the system software both support Ultra DMA/33, select "Auto" to enable BIOS support.

Options: Auto, Disabled.

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.

Options: Enabled, Disabled

Onboard Device:

Onboard Device

USB Controller	Enabled	Item Help
USB 2.0 Controller	Enabled	
USB Keyboard Support	Disabled	
USB Mouse Support	Disabled	
AC97 Audio	Auto	Menu Level ➢
Init Display First	PCI Slot	

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

USB / USB 2.0 Controller:

Select "Enabled" if the system contains a Universal Serial Bus (USB) / USB 2.0 controller and the user has USB peripherals.

Options: Enabled, Disabled.

USB Keyboard Support:

Select "Enabled" if the system contains a Universal Serial Bus (USB) controller and the user has a USB keyboard.

Options: Enabled, Disabled.

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USB Mouse Support:
Select “Enabled” if the user’s system contains a Universal Serial Bus (USB) controller and have a USB mouse.

Options: Enabled, Disabled.

AC97 Audio:
This item allows the user to decide to auto or disable the chipset family to support AC97 Audio.

Options: Auto, Disabled.

Init Display First:
This item allows the user to decide to active whether PCI Slot or on-chip VGA first.

Options: PCI Slot, Onboard.

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SuperIO Device:

SuperIO Device

Power ON Function	BUTTON ONLY	Item Help
X Hot Key Power ON	Ctrl-F1	
Onboard FDC Controller	Enabled	
Onboard Serial Port 1	3F8/IRQ4	Menu Level ➢
Onboard Serial Port 2	2F8/IRQ3	
UART Mode Select	Normal	
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

Power On Function:
This item can be used to select operating Power On the system.
Options: Button Only, Hot Key

KB Power ON Password:
This item can be used to limit operating KB Power On system.
Options: Enter

Hot Key Power ON:
This item can be used to select operating Hot Key to Power On system.
Options: Ctrl-F1 to Ctrl-F12.

Onboard FDC Controller:
Select “Enabled” if the system has a floppy disk controller (FDC) installed on the system board. If the user installs an in FDC or the system has no floppy drive, select Disabled in this field.
Options: Enabled, Disabled.

Onboard Serial Port 1/Port 2:
Select an address and corresponding interrupt for the first and second serial ports.
Options: 3F8/IRQ4, 2E8/IRQ3, 3E8/IRQ4, 2F8/IRQ3, Disabled, and Auto.

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UART Mode Select:
This item allows the user to select UART mode.
Options: IrDA, ASKIR, and Normal.

RxD, TxD Active:
This item allows the user to determine the active of RxD, TxD.
Options: “Hi, Hi”, “Lo, Lo”, “Lo, Hi” and “Hi, Lo”.

IR Transmission delay:
This item allows the user to enable/disable IR transmission delay.
Options: Enabled, Disabled.

UR2 Duplex Mode:
This item allows the user to select the IR half/full duplex function.
Options: Half, Full.

Use IR Pins:
This item allows the user to select IR transmission routes, one is RxD2m, TxD2 (COM Port) and the other is IR-Rx2Tx2.
Options: IR-Rx2Tx2, RxD2, and TxD2.

Onboard Parallel Port:
This item allows the user to determine access onboard parallel port controller with a particular I/O address.
Options: 3BC/IRQ7, 378/IRQ7, 278/IRQ5, and Disabled.

Parallel Port Mode:
Select an operating mode for the onboard parallel (printer) port. Select Normal, Compatible, or SPP unless it is certain that the hardware and software the user uses both support one of the other available modes.
Options: SPP, EPP, ECP and ECP+EPP.

EPP Mode Select:
Select EPP port type 1.7 or 1.9.
Options: EPP1.7, 1.9.

ECP Mode Use DMA:
Select a DMA channel for the parallel port for use during ECP mode.
Options: 3, 1.

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PWRON After PWR-Fail:
This item allows the user to power on the system after power failure.
Options: Off, On, and Former-Sts.
Onboard Lan Boot ROM:
Select “Enabled” if the system has a LAN device installed on the system board.
Options: Enabled, Disabled.

Onboard Serial Port 3/Port4:
Select an address for the third and forth serial ports.

Serial Port 3/Port 4 Use IRQ:
Select an IRQ for the third and forth serial ports.

3.8 Power Management Setup

The Power Management Setup allows the user to configure the system to most effectively save energy while operating in a manner consistent with the individual’s computer operating style.

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Power Management Setup

ACPI Function	Enabled	Item Help
Power Management	User Define	
Video Off Method	DPMS	Menu Level ➢
Video Off In Suspend	Yes	
Suspend Type	Stop Grant	
Suspend Mode	Disabled	
HDD Power Down	Disabled	
CPU THER-Throttling	50.0%	
Wake-Up by PCI card	Disabled	
** 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	
PCI PIRQ [A-D]#	Disabled	

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

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ACPI Function:
This item allows you to enable or disable the Advanced Configuration and Power Management(ACI).

The choice: Enabled, Disabled.

Power Management:
This category allows you to select the type (or degree) of power saving and is directly related to the following modes:

1. HDD Power Down
2. Doze Mode
3. Suspend Mode

Min. Power Saving:
Minimum power management. Doze Mode=1 hr Standby Mode=1 hr, Suspend Mode=1 hr, and HDD Power Down=15 min.

Max. Power Saving:
Maximum power management - **ONLY AVAILABLE FOR SL CPU's**. Doze Mode=1min, Standby Mode=1 min, Suspend Mode=1 min, and HDD Power Down=1 min.

User Defined:
Allows the user to set each mode individually. When not disabled, each of the ranges are from 1 min to 1 hr except for HDD Power Down, which ranges from 1 min to 15 min and disable.

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:
Initial display power management signaling.

Video Off In Suspend:

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This determines the manner in which the monitor is blanked.

Options: Yes, No.

Suspend Type:

Select the Suspend Type.

Options: PWRON Suspend, Stop Grant.

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Suspend Mode:
When “Enabled” and after the set time of system inactivity. All devices except the CPU will be shut off.

Options: Enabled, Disabled.

HDD Power Down:
When “Enabled” and after the set time of system inactivity, the hard disk drive will be powered down while all other devices remain active.

Options: Enabled, Disabled.

CPU THER-Throttling:
Select the CPU THRM-Throttling rate.

Options: 12.5%, 25.0%, 37.5%, 50.0%, 62.5%, 75.0%, and 87.5%.

Wake-Up by PCI Card:
An input signal from PME on the PCI card awakens the system from a soft off state.

Options: Enabled, Disabled.

PM Events:
PM events are I/O events where 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 power down mode.

Primary IDE 0
Primary IDE 1
Secondary IDE 0
Secondary IDE 1
FDD, COM, LPT Port
PCI PIRQ [A-D] #

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3.9 Plug and Play / PCI Configurations

This section describes how to configure the PCI bus system. PCI, or **P**ersonal **C**omputer **I**nterconnect, is a system which allows I/O devices to operate at speeds close to the speed the CPU uses when communicating with its own special components. This section covers some very technical items and it is strongly recommended that only experienced users make any changes to the default settings.

Phoenix - AwardBIOS CMOS Setup Utility
PnP/PCI Configurations

	PNP OS Installed	No	Item Help
	Reset Configuration Data	Disabled	
	Resources Controlled By	Auto (ESCD)	Menu Level ➢
X	IRQ Resources	Press Enter	
X	DMA Resources	Press Enter	
	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 OS Installed:
Select Yes if using a Plug and Play capable operating system.
Select No. if the user requires the BIOS to configure non. Boot devices.

Reset Configuration Data:
The common practice is to leave this field Disabled. Select “Enabled” to reset Extended System Configuration Data (ESCD) when exiting from Setup if a new add-on has been installed and the system reconfiguration has caused such a serious conflict that the operating system cannot boot.
Options: Enabled, Disabled.

Resources Controlled By:
This allows the user to automatically configure all the boot and Plug and Play-compatible devices. If Auto is selected, all the interrupt request (IRQ) and DMA assignment fields disappear, as the BIOS automatically assigns them.

IRQ/DMA Resources:
When resources are controlled manually, assign each system interrupt a type, depending on the type of device using the interrupt.

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PCI/VGA Palette Snoop:
Leave this field at “Disabled”.
Options: Enabled, Disabled.

3.10 PC Health Status

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PC Health Status

CPU Warning Temperature	Disabled	Item Help
SYS Temperature	24°C / 75°F	
CPU Temperature	40°C / 104°F	Menu Level ➢
SYSFAN	3283RPM	
CPU FAN	5152RPM	
VDIMM (V)	2.48V	
VCORE (V)	1.71V	
+3.3	3.24V	
+ 5 V	4.81V	
+12 V	11.73V	
-12 V	-11.78V	
- 5 V	-5.04V	
VBAT (V)	3.02V	
5VSB (V)	5.04V	
Shutdown Temperature	Disabled	

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

CPU Warning Temperature:
This item will prevent CPU from overheating.
Options: 50°C /122°F to 70°C /158°F, Disabled.

SYS Temperature:
Shows the current system temperature.

CPU Temperature:
Shows the current CPU temperature.

SYSFAN:
Shows the current system fan operating speed.

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CPUFAN:
Shows the current CPU fan operating speed.

VDIMM (V)
Shows the voltage level of the DRAM.

VCORE (V)
Shows the voltage level of CPU (Vcore).

+3.3V/+5V/+12V/-12V/-5V/5VSB(V):
Shows the voltage of +5V/+12V/-12V/-5V.

VBAT (V)
Shows the voltage level of the battery.

Shutdown Temperature:
This item allows the user to set up the CPU shutdown Temperature. This item is only effective under Windows® 98 ACPI mode.

Options: Disabled, 60°C / 140°F, 65°C / 149°F, 70°C / 159°F, and 75°C / 167°F.

3.11 Frequency/Voltage Control

Phoenix - AwardBIOS CMOS Setup Utility
Frequency/Voltage Control

Auto Detect PCI CLK	Enabled	Item Help
Spread Spectrum Modulated	Disabled	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

Auto Detect PCI CLK:
When “Enabled”, this item will auto detect if the PCI slot have devices and will send clock signal to PCI devices. When disabled, it will send the clock signal to PCI slot.

Options: Enabled, Disabled.

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Spread Spectrum Modulated:
This item allows the user to enable or disable the Spread Spectrum Modulated.
Options: Disabled, -0.25%, -0.50%, and -0.75%.

3.12 Load Fail-Safe Defaults

When <Enter> is pressed on this item a confirmation dialog box will appear with a message similar to:

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

Pressing 'Y' loads the BIOS default values for the most stable, minimum - performance system operations.

3.13 Load Optimized Defaults

When <Enter> is pressed on this item a confirmation dialog box will appear with a message similar to:

Load Optimized Defaults (Y/N)? N

Pressing 'Y' loads the default values that are factory settings for optimal performance system operations.

3.14 Supervisor/User Password Setting

The user can set either supervisor, user password, or both. The differences between are:

Set Supervisor Password: can enter and change the options of the setup menus.

Set User Password: only enter but do not have the right to change the options of the setup menus. When this function is selected, the following message will

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appear in the middle of the screen prompting the user to create a password.

ENTER PASSWORD:

Type the password, up to eight characters in length, and press <Enter>. The password typed will now clear any previously entered password from CMOS memory. The user will then be asked to confirm the password. Type the password again and press <Enter>. The user may also press <Esc> to abort the selection.

To disable a password, press <Enter> when prompted to enter the password. A message will appear to confirm that the password will be disabled. Once the password is disabled, the system will boot and Setup can be entered into freely.

PASSWORD DISABLED.

When a password has been enabled, there will be a prompt for the password every time the user enters into Setup. This prevents an unauthorized person from changing any part of the system configuration.

When a password is enabled, an option exists where the BIOS can request a password every time the system is rebooted. This would prevent any unauthorized access to the computer.

The user can determine when the password is required within the BIOS Features Setup Menu and its Security option (see Section 3). If the Security option is set to “System”, the password will be required both at boot and at entry to Setup. If set to “Setup”, prompting only occurs when trying to enter Setup.

3.15 Exit Selecting

Save & Exit Setup

Pressing <Enter> on this item will prompt for confirmation:

Save to CMOS and EXIT (Y/N)? Y

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Pressing “Y” stores the selections made in the menus in CMOS – a special section of memory that stays on after turning the system off. The next time the computer is booted, BIOS will configure the system according to the Setup

selections stored in CMOS. After saving the values the system is restarted again.

Exit Without Saving

Pressing <Enter> on this item will prompt for confirmation:

Quit without saving (Y/N)? Y

This allows the user to exit Setup without saving any changes made in CMOS. The previous selections remain in effect. This exits the Setup utility and restarts the computer.

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Warranty Policy

Thank you for choosing ADLINK. To understand your rights and enjoy all the after-sales services we offer, please read the following carefully.

1. Before using ADLINK's products please read the user manual and follow the instructions exactly. When sending in damaged products for repair, please attach an RMA application form which can be downloaded from: http://rma.adlinktech.com/policy/.
2. All ADLINK products come with a limited two-year warranty, one year for products bought in China.
    - The warranty period starts on the day the product is shipped from ADLINK's factory.
    - Peripherals and third-party products not manufactured by ADLINK will be covered by the original manufacturers' warranty.
    - For products containing storage devices (hard drives, flash cards, etc.), please back up your data before sending them for repair. ADLINK is not responsible for any loss of data.
    - Please ensure the use of properly licensed software with our systems. ADLINK does not condone the use of pirated software and will not service systems using such software. ADLINK will not be held legally responsible for products shipped with unlicensed software installed by the user.
    - For general repairs, please do not include peripheral accessories. If peripherals need to be included, be certain to specify which items you sent on the RMA Request & Confirmation Form. ADLINK is not responsible for items not listed on the RMA Request & Confirmation Form.
3. Our repair service is not covered by ADLINK's guarantee in the following situations:
    - Damage caused by not following instructions in the User's Manual.
    - Damage caused by carelessness on the user's part during product transportation.
    - Damage caused by fire, earthquakes, floods, lightening, pollution, other acts of God, and/or incorrect usage of voltage transformers.
    - Damage caused by inappropriate storage environments such as with high temperatures, high humidity, or volatile chemicals.
    - Damage caused by leakage of battery fluid during or after change of batteries by customer/user.

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- Damage from improper repair by unauthorized ADLINK technicians.
- Products with altered and/or damaged serial numbers are not entitled to our service.
- This warranty is not transferable or extendible.
- Other categories not protected under our warranty.

4. Customers are responsible for all fees necessary to transport damaged products to ADLINK.

For further questions, please e-mail our FAE staff: service@adlinktech.com

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