User's Manual

Version 1.0

3301136A

3.5" Intel Ultra-low Voltage Celeron or Low Voltage PIII Embeded Single Board Computer with CRT/LCD, 4 serial ports , single Intel 82562ET Fast Ethernet, AC97 3D Audio, Mini space PCI , Compact Flash Type I/II

Part Number: 3301136

Warning

Single Board Computers and their components contain very delicate Integrated Circuits (IC). To protect the Single Board Computer and its components against damage from static electricity, you should always follow the following precautions when handling it :

1. Please install the heat sink on the CPU and chipset before starting to operate the board.
2. Disconnect your Single Board Computer from the power source when you want to work on the inside
3. Hold the board by the edges and try not to touch the IC chips, leads or circuitry
4. Use a grounded wrist strap when handling computer components.
5. Place components on a grounded antistatic pad or on the bag that came with the Single Board Computer, whenever components are separated from the system

Replacing the lithium battery

Incorrect replacement of the lithium battery may lead to a risk of explosion!

The lithium battery must be replaced with an identical battery or a battery type recommended by the manufacturer.

Do not throw lithium batteries into the trashcan. It must be disposed of in accordance with local regulations concerning special waste.

Table of Contents

Specifications

General Specifications

- **CPU** : Intel Ultra Low Voltage Celeron 400MHz to Low Voltage PentiumIII 933MHz processor with FSB 100/133 MHz EBGA package.
- **Chipset** : Intel 815E with Integrated VGA AGP 2X Graphics core and Intel ICH2
- **BIOS** : AWARD Flash BIOS , FWH 4MB
- **Green Function** : power saving supported in BIOS. DOZE / STANDBY / SUSPEND modes, ACPI & APM
- **L2 Cache** : Integrated on CPU (256 KB / 512 KB)
- **DRAM Memory** : Onboard SODIMM socket up to 512MB of SDRAM
- **Mini PCI** : supports single slot Mini PCI Type III.
- **Enhanced IDE with UltraDMA** : supports single port and up to 2 ATAPI devices, Ultra DMA transfer 33 MB/sec.
- **Real-time Clock** : built-in chipset with lithium battery backup. CMOS data backup of BIOS setup and BIOS default.
- **Watchdog Timer** : 256 levels timer generate RESET .

High Speed Multi I/O

- **Chipset** : Winbond 83627HF
- **Serial Ports** : Three high speed RS-232C ports (COM1,COM3, COM4). One high speed RS-232C/422/485 port COM2 (jumper selectable). Both with 16C550 compatible UART.
- **USB** : 4 onboard USB ports Ver 1.1.
- **SIR Interface** : onboard IrDA TX/RX port (on COM4)
- **Floppy Disk Drive Interface** : 2 floppy disk drives, 3½ " (720 KB, 1.44 MB or 2.88 MB).
- **Bi-directional Parallel Port** : SPP, EPP and ECP mode.
- **Keyboard and Mouse Connectors** : external PS/2 KB/Mouse port (2-in-1 mini DIN)
- **Audio Chipset**: Intel ICH2 AC97 2.0 compliant, Multistream Direct Sound and Direct Sound 3D acceleration. (Line-in, CD Audio in, MIC in, Speaker out)

Network Interface Controller

- **Chipset** : Single Intel 82562ET, 10/100 Mbps
- **Connector** : external RJ-45 with LEDs on connector

Display Controller

Flat Panel / CRT (3301136AVL)

- **Chipset:** Intel 82815E integrated 2D/3D Video Accelerator, supporting 2x AGP and 128-bit engine
- **Display Memory:** Shared Memory by Intel Dynamic Video Memory Technology
- **Display Type:** CRT, TMDS
- **CRT:** up to 1280 x 1024 @ 24 bpp
- **TMDS:** DVI Transmitter up to 165MHz

Flat Panel / CRT (3301136AVLS)

- **Chipset:** SMI Lynx3DM+ SMI 722, 128-bit GUI 3D engine
- **Display Memory:** 8MB on-die SGRAM
- **Display Type:** CRT and Flat Panel (MONO, DSTN, TFT), Dual Display
- **CRT:** up to 1280x1024 @ 24bpp
- **LCD Interface:** TTL 24-bit, LVDS 24-bit
- **TV-out:** support NTSC, PAL format

SSD Interfaces

- **Compact Flash Card (CFC)**
  - **Compact Flash Socket :** supports Type I/II CFC
  - **Capacity** : up to 1GB CFC

Environmental and Power (3301136AVLS/C400 and 256MB SDRAM)

- **Power Requirements** : +5 V @ 2.23 A (typical);(Ultra Low Voltage Embedded Intel Celeron 400 MHz and 256MB SDRAM)
- **Board Dimensions** : 145mm x 102mm
- **Board Weight :** 0.176kg
- **Operating Temperature** : 0 to 60˚C (32 to 140˚F)
- **Operating Humidity** : 0%~90%

Packing list

Before you begin installing your single board computer, please make sure that the following materials have been shipped:

> 1 x 3301136A 3.5" Embedded Intel Ultra Low Voltage Celeron and Low Voltage PIII SBC

> 1 x Quick Installation Guide	4041061200100
> 1 x CD-ROM (for driver used)	4311013300210

Optional :

> 1 x Cable Kits contains the followings:	6910606120000
Content	Part No.
. 1 x Parallel Port Cable	3432091000000
. 1 x UltraDMA 33 IDE Flat Cable	3432061000370
. 1 x Serial Port Cable(3 in one)	3432021000120
. 1 x Audio Cable	3431011000000
. 1 x FDD Cable	3432031000010
. 1 x USB Cable	3431122000050
. DC +12V to DC +5V Power Module	6721127110010
. 1 x ATX Power Cable	3442002000240

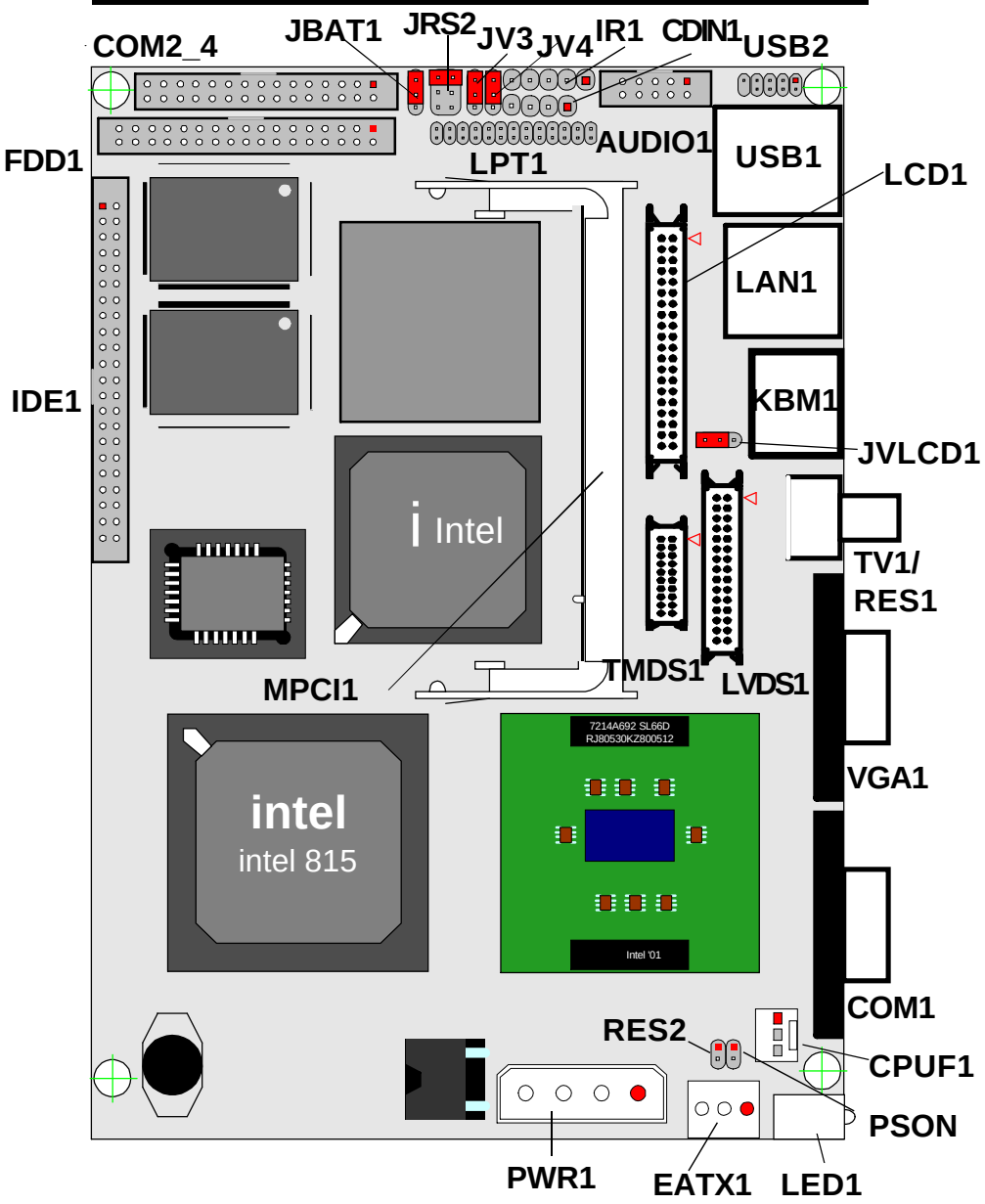
Ordering Codes

3301136A
3.5" Intel Celeron Ultra Low Voltage 400MHz with one SODIMM up to 512 MB SDRAM , SMI 722 CRT/LCD/TV, Fast Ethernet , Audio

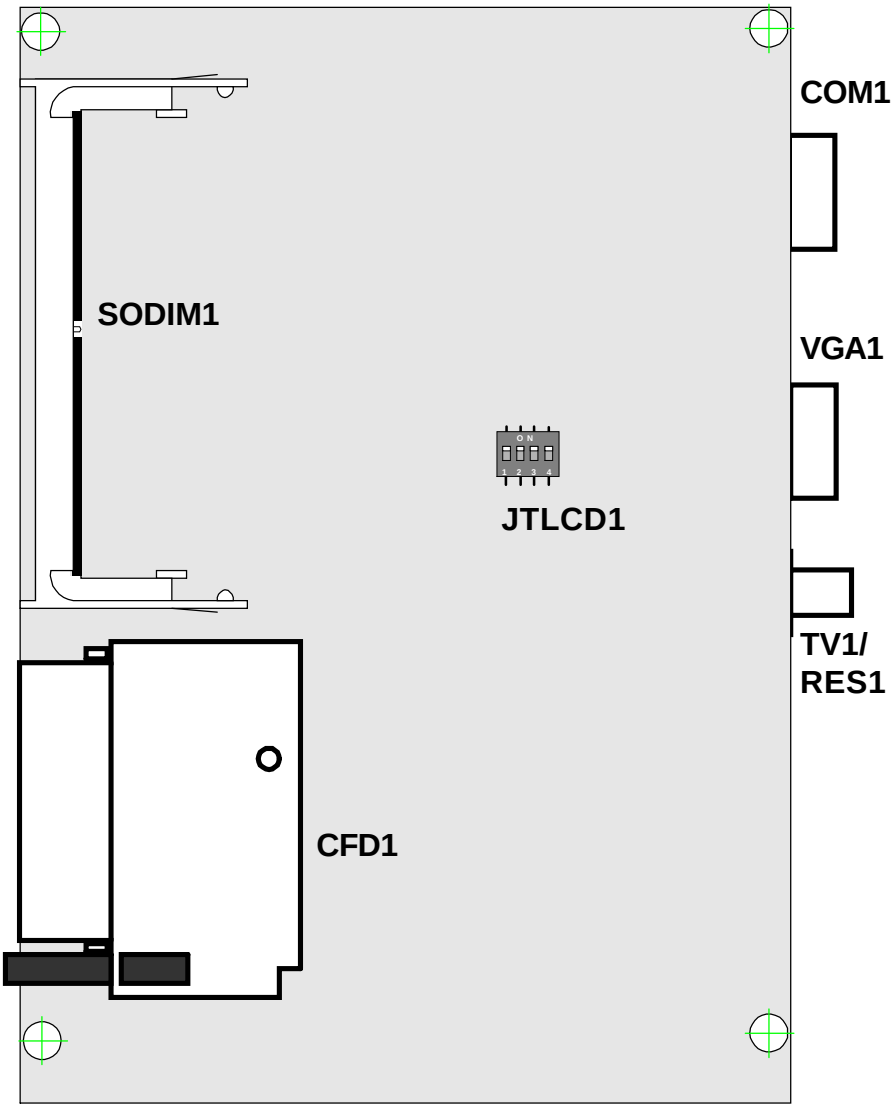
3301136B
Same as above but VGA is integrated in Intel 815E, support CRT/DVI(TMDS)

OEM options (CPU)
Ultra Low Voltage Celeron 650MHz with 100MHz FSB and 256KB L2 Cache
Ultra Low Voltage PIII 800MHz with 133MHz FSB and 512KB L2 Cache
Ultra Low Voltage PIII 933MHz with 133MHz FSB and 512KB L2 Cache

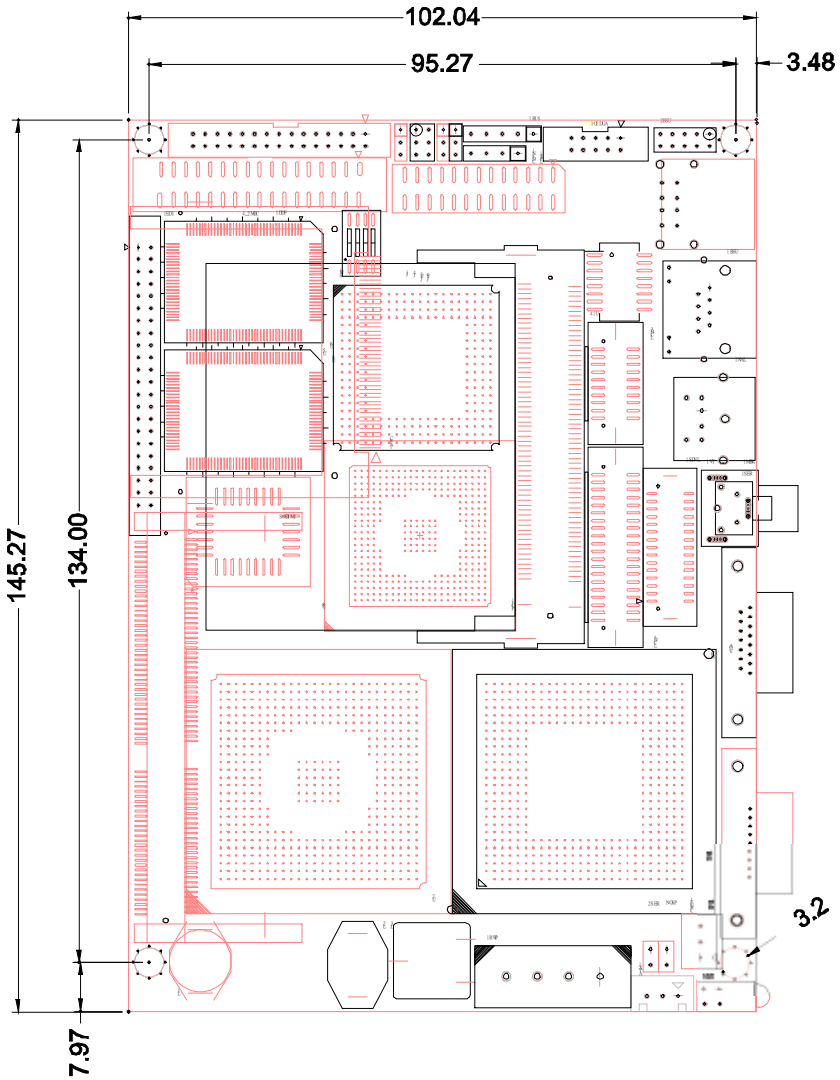
Board Layout Fornt Side



Board Layout Rear Side



Board Dimension



Unit: mm

Jumper/Connector Quick Reference

Jumpers

Label	Function
JBAT1	Clear CMOS
JRS2	COM2 RS-232C / 422 / 485 Selection
JV3~4	COM2 Power Source Special Support
JVLCD1	LVDS Voltage selection

Jumper/Connector Quick Reference

Connectors

Label	Function
EATX1	ATX Feature Connector
AUDIO1	Audio Interface Port
CDIN1	CDROM Audio Interface
CFD1	Compact Flash Connector (rear side)
COM1	RS-232 Serial Port 1
COM2_4	Serial Port COM2 ~ COM4
CPUF1	CPU FAN1 Connector
FDD1	Floppy Disk Driver Connector
IDE1	Primary IDE Connector
KBM1	PS/2 Keyboard and Mouse
LAN1	10/100M LAN1 Connector
LCD1	18bit/24bit TTL Flat Panel Connector (DF 13 40Pin) (3301136AVLS)
LVDS1	24bit LVDS Panel Connetor (DF 13 30Pin) (3301136AVLS)
TMDS1	DVI connector (3301136AVL)
LED1	POWER/HDD LED
LPT1	Parallel Port
MPCI1	Mini PCI TYPE III Connector
PSON1	ATX Soft Power Switch
PWR1	4P Power Connector
RES1	Reset push button(same position as TV1, 3301136AVLS including)
RES2	Reset Connector
IR1	Infrared (IR) Connector
SODIMM1	SDRAM Socket 1/2 144-pin (rear side)
JTLCD1	LCD Panel Type Selection
TV1	TV-OUT Connector
USB1	USB Port 0,1
USB2	USB Port 2,3
VGA1	CRT SVGA Connector

CMOS Jumper Settings

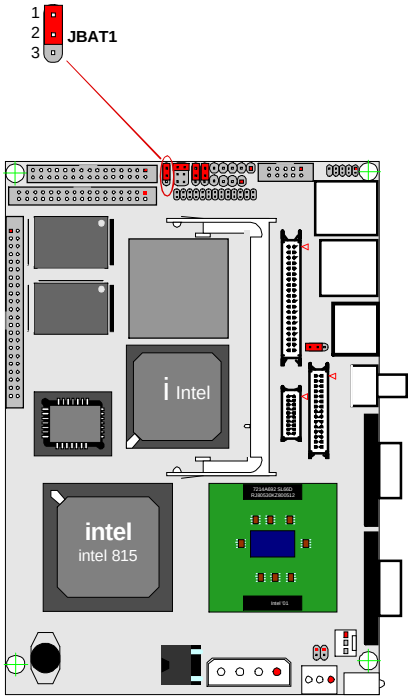
CMOS Operation (JBAT1)

Type : JBAT1: onboard 3-pin header

If the 3301136A refuses to boot due to inappropriate CMOS settings here is how to proceed to clear (reset) the CMOS to its default values.

CMOS Setup Status	(JBAT1)	JBAT1
Normal Operation	1-2	ON
Clear CMOS	2-3	ON

default setting 1-2 ON



Serial Port Selection (RS232C/422/485)

RS-422/485 Mode on COM2

Type : JRS2: onboard 6-pin(2*3) header

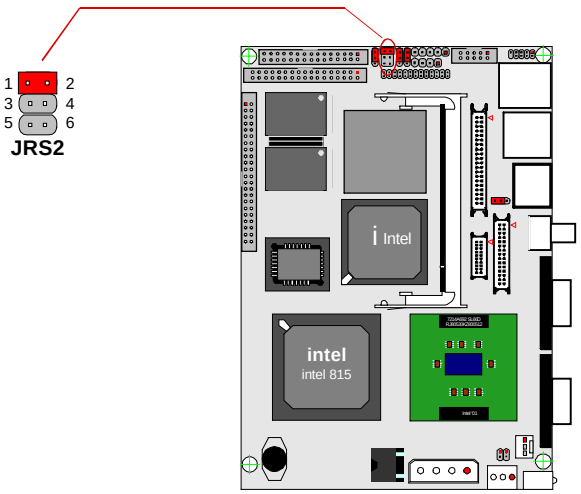
JRS2 Selection	1-2	3-4	5-6
RS-232C	ON	OFF	OFF
RS-422	OFF	ON	OFF
RS-485	OFF	OFF	ON

default setting RS-232C

The onboard COM2 port can be configured to operate in RS-422 or RS-485 modes. RS-422 modes differ in the way RX/TX is being handled. Jumper JRS2 switches between RS-232C or RS-422/485 mode. All of the RS-232C/ 422/485 modes are available on COM2.

COM2

Pin Defined:	RS-232C	RS-422	RS-485
Pin1 :	DCD	Tx+	RTx+
Pin2 :	RXD	Tx-	RTx-
Pin8 :	CTS	Rx+	x
Pin9 :	RI	Rx-	x



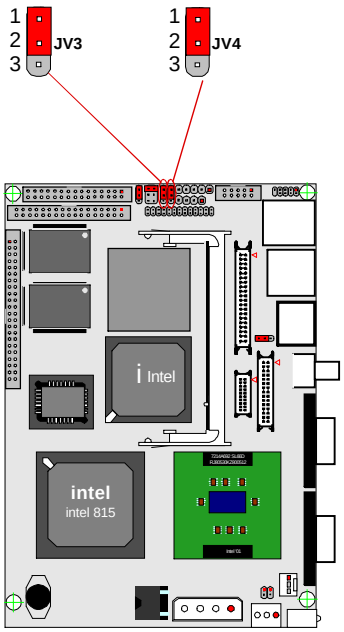
COM2 Power Source Special Support

COM2 Power Source Select : JV3~JV4

Type : JV3~JV4: onboard 2*3-pin header

It could be selected by JV3 and JV4 for that system provides power source +5V and +12V from COM2 .

Mode	JV3	JV4
Standard	1-2	1-2
12V on Pin9	2-3	1-2
5V on Pin1	1-2	2-3
5V on Pin1 ,12V on Pin9	2-3	2-3
default setting	Standard	



Compact Flash Disk

The interface of Compact Flash socket is designated to use IDE2.

Attention!

Installation Instructions

Compact Flash card is "**NOT HOT-SWAPPABLE**". If the CF card is swapped in the condition of system power-on, it will damage the CF card.

1. Make sure the Single Board Computer is powered OFF.
2. Plug the Compact Flash TypeI/II device into its socket. Verify the direction is correct on Secondary IDE which is located in the **back** of SBC.
3. Powre up the system

For more information on Compact Flash disk, visit Pretec Web site at

http:// www.pretec.com

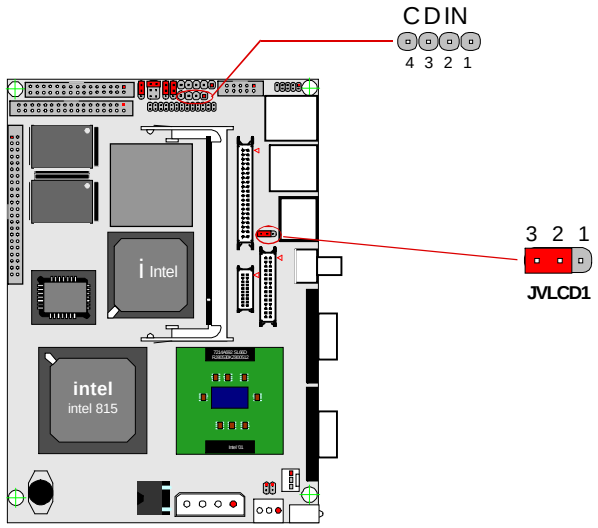
where you can find the utilities manual, data sheets and application notes. In addition, you can find the latest Compact Flash disk utilities.

LVDS Panel Voltage Selection

Jumper : **JVLCD1**
Type : onboard 4-port mini switch

The voltage of LVDS panel could be selected by JLCD1 in 5V or 3.3V.

JLCD1	Mode
1-2	+5V
2-3	+3.3V
Default setting	+3.3V



CDIN Connector

Connector : CDIN1

Type : onboard 4-pin header

Pin	Description	Pin	Description
1	CD Left	2	GND
3	GND	4	CD Right

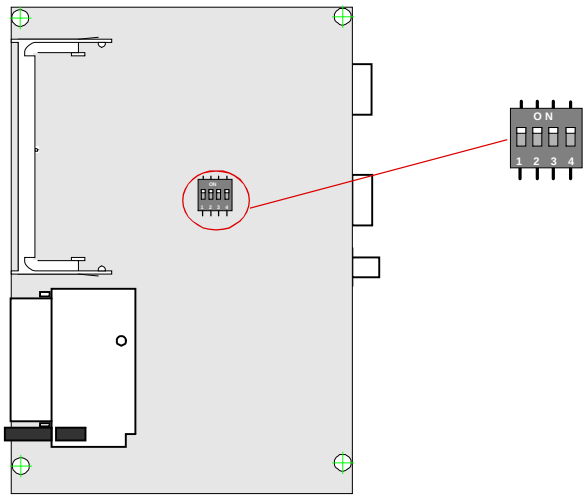
Flat Panel Configuration

Flat Panel Type Switch (JTLCD1)

The 3301136A/VLS provides a hardware switch to configure your onboard VGA controller for usage with a variety of flat panel types.

Switch : **JTLCD1**
Type : onboard 4-port mini switch

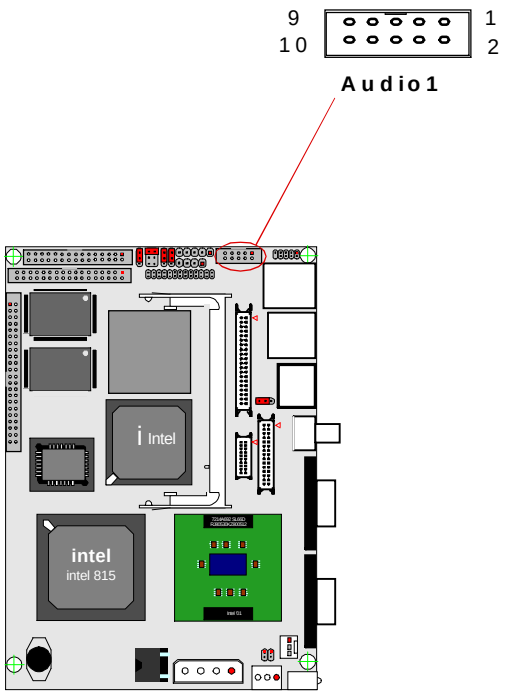
Panel Type	SW-1	SW-2	SW-3	SW-4
640 x 480 TFT	ON	ON	ON	ON
640 x 480 DSTN	OFF	ON	ON	ON
800 x 600 TFT (Default)	ON	OFF	ON	ON
800 x 600 DSTN	OFF	OFF	ON	ON
1024 x 768 TFT	ON	ON	OFF	ON
1024 x 768 DSTN	OFF	ON	OFF	ON
1280 x 1024 TFT	ON	OFF	OFF	ON



Audio Interface

Connector : **Audio1**
Type : Onboard 10-pin header

Pin	Description	Pin	Description
1	LINE IN LEFT	2	LINE IN RIGHT
3	GND	4	GND
5	MIC	6	NC
7	GND	8	GND
9	SPEAKER LEFT	10	SPEAKER RIGHT



Flat Panel VGA (3301136AVLS Version)

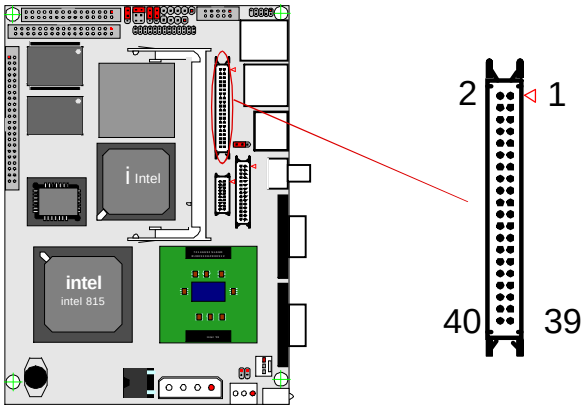
Flat Panel VGA (LCD) : LCD1

Connector : **LCD1**
Type : DF13 40-pin

3301136AVLS only

LCD1:18bit/24bit TTL Flat Panel Connector

Pin	Description	Pin	Description
1	+5V	2	+5V
3	GND	4	GND
5	+3.3V	6	+3.3V
7	N/C	8	GND
9	FPD0(B0)	10	FPD1(B1)
11	FPD2(B2)	12	FPD3(B3)
13	FPD4(B4)	14	FPD5(B5)
15	FPD6(B6)	16	FPD7(B7)
17	FPD8(G0)	18	FPD9(G1)
19	FPD10(G2)	20	FPD11(G3)
21	FPD12(G4)	22	FPD13(G5)
23	FPD14(G6)	24	FPD15(G7)
25	FPD16(R0)	26	FPD17(R1)
27	FPD18(R2)	28	FPD19(R3)
29	FPD20(R4)	30	FPD21(R5)
31	FPD22(R6)	32	FPD23(R7)
33	GND	34	GND
35	SHFCLK	36	FLM
37	M/DE	38	LP
39	GND	40	ENABLK



Flat Panel VGA (3301136AVLS Version)

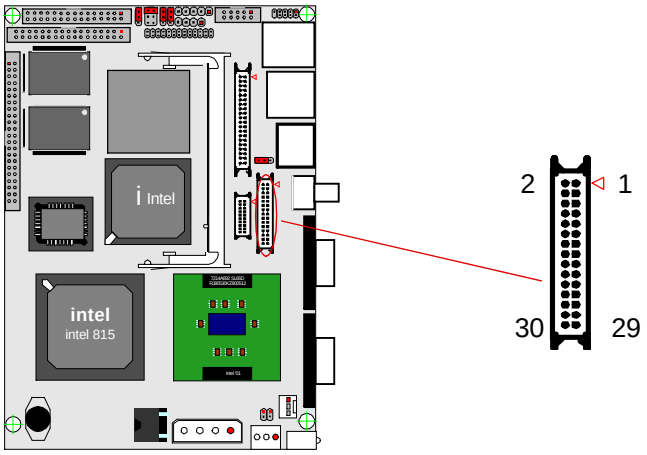
Flat Panel VGA (LCD) : LVDS1

Connector : **LVDS1**
Type : DF13 30-pin

3301136AVLS only.

Single pixel 18bit/24bit Flat Panel Connector

Pin	Description	Pin	Description
1	VDD	2	VDD
3	TX1CLK+	4	N/C
5	TX1CLK-	6	N/C
7	GND	8	GND
9	TX0+	10	N/C
11	TX0-	12	N/C
13	GND	14	GND
15	TX1+	16	N/C
17	TX1-	18	N/C
19	GND	20	GND
21	TX2+	22	N/C
23	TX2-	24	N/C
25	GND	26	GND
27	TX3+	28	N/C
29	TX3-	30	N/C



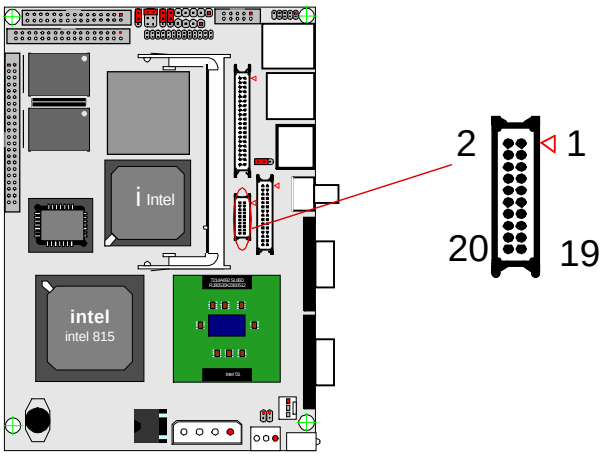
Flat Panel VGA (3301136AVL Version)

Flat Panel VGA (LCD/DVI) : TMDS1

Connector : **TMDS1**
Type : DF13 20-pin

TMDS1 : DVI Connector (3301136AVL is DVI Output)

Pin	Description	Pin	Description
1	+5V	2	+5V
3	TX0+	4	TXC+
5	TX0+	6	TXC-
7	GND	8	GND
9	TX1+	10	DCC CLK
11	TX1-	12	DDC Data
13	GND	14	GND
15	TX2+	16	HTPLG
17	TX2-	18	N/C
19	GND	20	N/C

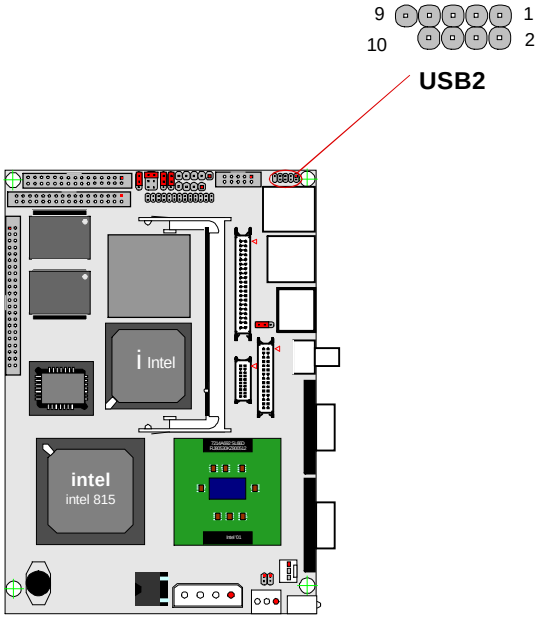


USB Connector

Connector : USB2

Type:onboard Two 10-pin pin headers

Pin	Description	Pin	Description
1	+5V	2	+5V
3	USBD0-	4	USBD1-
5	USBD0+	6	USBD1+
7	GND	8	GND
9	GND	10	NC

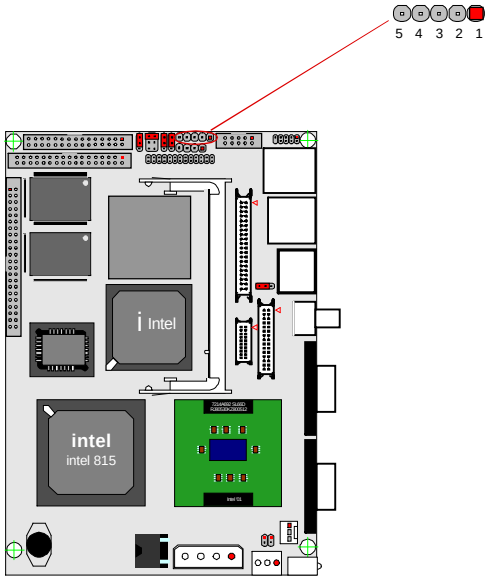


Infrared (IR)

Connector : **IR1**

Type : onboard 5-pin header

Pin	Description	Pin	Description
1	+5V	2	NC
3	IRRX	5	GND
5	IRTX		



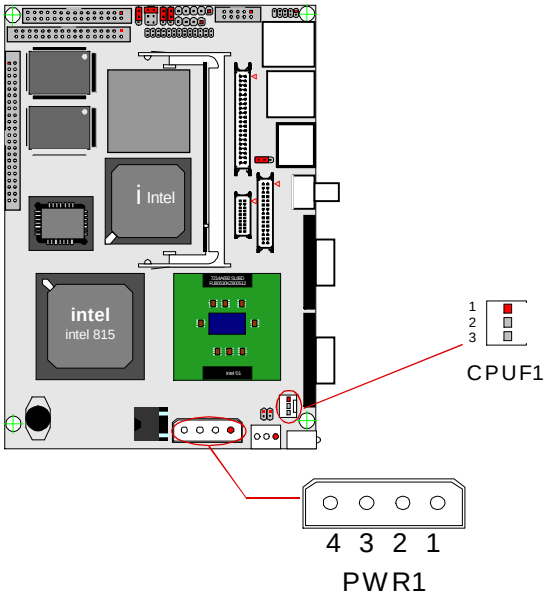
Power Connector

Power Connector : PWR1

Connector : **PWR1**

Type : PWR1: onboard 4P connector

Pin	Description	Pin	Description
1	+12V	2	GND
3	GND	4	+5V



CPU Fan

CPU Fan Connector : CPUF1

Connector : **CPUF1**

Type : CPUF1: onboard 3-pin connector

Pin	Description	Pin	Description
1	FAN_DEC	2	+5V
3	GND		

ATX Soft Power Switch

Connector : **PSON1**

Type : PSON: Power button connector for ATX

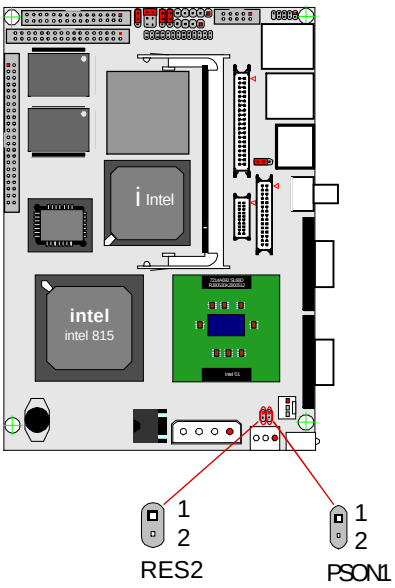
Pin	Description	Pin	Description
1	5VSB	2	PWR_BTN

Reset Connector

Connector : **RES2**

Type : RES2: reset switch connector for reboot

Pin	Description	Pin	Description
1	Reset	2	GND



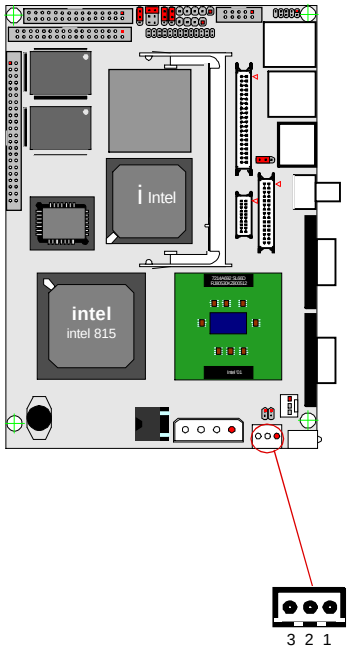
ATX Feature Connector

ATX Feature Connector : EATX1

Connector :**EATX1**

Type : EATX1: onboard 3-pin connector

	Pin	Description	Pin	Description
	1	PS_ON	2	GND
	3	+5VSB		

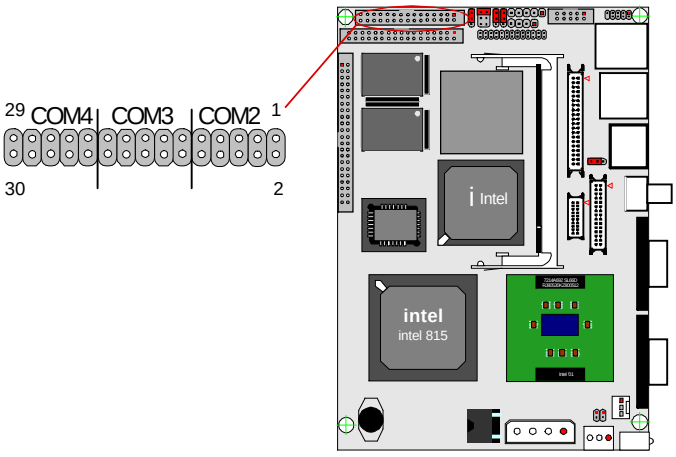


COM2/COM3/COM4 Connector

Connector : **COM2_4**

Type : onboard 30-pin connector

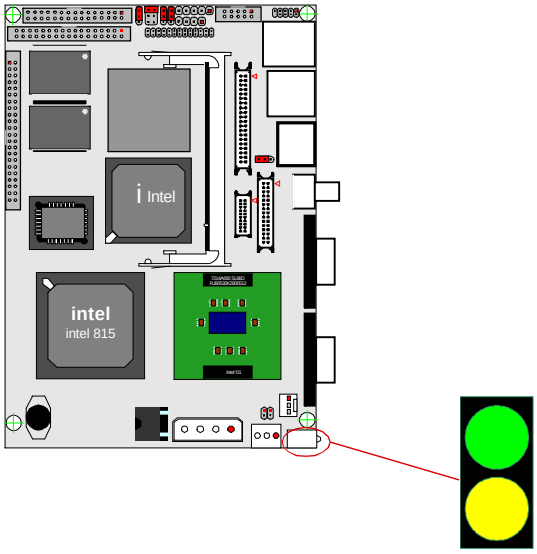
	Pin	Description	Pin	Description
COM2	1	DCD2(422TXD+/485DATA+)	2	RXD2(422TXD-/485DATA-)
	3	TXD2	4	DTR2
	5	GND	6	DSR2
	7	RTS2	8	CTS2(422RXD+)
	9	RI(422RXD-)	10	N/C
COM3	11	DCD3	12	RXD3
	13	TXD3	14	DTR3
	15	GND	16	DSR3
	17	RTS3	18	CTS3
	19	RI3	20	N/C
COM4	21	DCD4	22	RXD4
	23	TXD4	24	DTR4
	25	GND	26	DSR4
	27	RTS4	28	CTS4
	29	RI4	30	N/C



LED Indicator

Connector : **LED1**

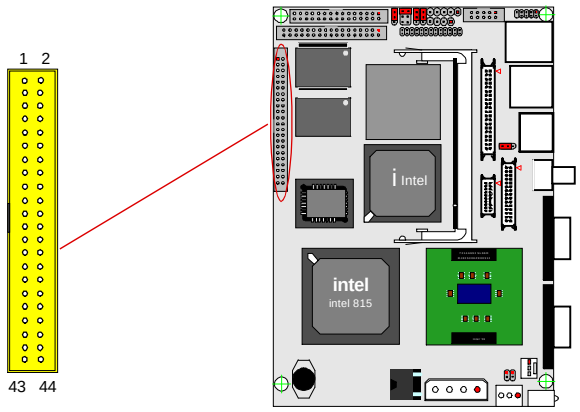
	LED	Description	Status
	Power	Power On/Standby	Green
	HDD	Hard Disk	Yellow



IDE Connector

Connector : **IDE1**
Type : One onboard 44-pin box headers, primary IDE

Pin	Description	Pin	Description
1	#RESET	2	GND
3	D7	4	D8
5	D6	6	D9
7	D5	8	D10
9	D4	10	D11
11	D3	12	D12
13	D2	14	D13
15	D1	16	D14
17	D0	18	D15
19	GND	20	NC
21	REQ	22	GND
23	#IOW	24	GND
25	#IOR	26	GND
27	#IORDY	28	IDESEL
29	#DACK	30	GND
31	IRQ	32	NC (-IOCS16)
33	ADDR1	34	CBLID
35	ADDR0	36	ADDR2
37	#CS0	38	#CS1(#HD SELET1)
39	#ACT	40	GND
41	Vcc	42	Vcc
43	GND	44	NC

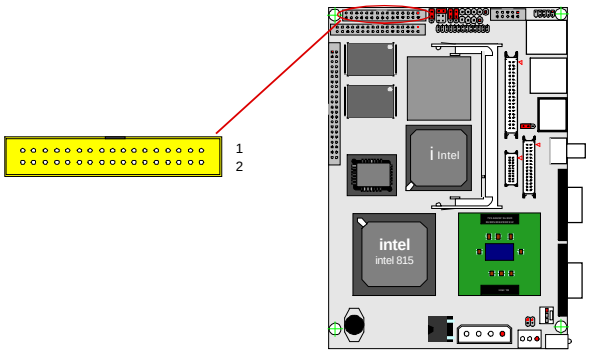


Interface Connectors HDD, FDD

Floppy Disk Drive Connector

Connector : **FDD1**
Type : onboard 34-pin box header

Pin	Description	Pin	Description
1	GND	2	DRIVE DENSITY SELECT 0
3	GND	4	NC
5	GND	6	DRIVE DENSITY SELECT 1
7	GND	8	#INDEX
9	GND	10	#MOTOR ENABLE A
11	GND	12	#DRIVER SELECT B
13	GND	14	#DRIVER SELECT A
15	GND	16	#MOTOR ENABLE B
17	GND	18	#DIRECTION
19	GND	20	#STEP
21	GND	22	#WRITE DATA
23	GND	24	#WRITE GATE
25	GND	26	#TRACK 0
27	GND	28	#WRITE PROTECT
29	GND	30	#READ DATA
31	GND	32	#HEAD SELECT
33	GND	34	#DISK CHANGE



Interrupt Request (IRQ)

IRQ Address	Description
0	System timer
1	Standard 101/102-Key or Microsoft Natural Keyboard
2	Programmable interrupt controller
3	Communications Port (COM2)
4	Communications Port (COM1)
5	IRQ Holder for PCI Steering
5	Realtek AC'97 Audio
5	Intel(R) PRO/100 VE Network Connection
5	Intel(R) 82801BA/BAM USB Universal Host Controller - 2442
5	Intel(R) 82801BA/BAM SMBus Controller - 2443
6	Standard Floppy Disk Controller
7	Printer Port (LPT1)
8	System CMOS/real time clock
9	Intel(R) 82815 Graphics Controller
9	Intel(R) 82801BA/BAM USB Universal Host Controller - 2444
9	IRQ Holder for PCI Steering
10	Communications Port (COM3)
11	Communications Port (COM4)
12	PS/2 Compatible Mouse Port
13	Numeric data processor
14	Primary Ultra ATA Controller
14	Intel(R) 82801BA Ultra ATA Storage Controller - 244B
15	Secondary Ultra ATA Controller
15	Intel(R) 82801BA Ultra ATA Storage Controller - 244B

Direct Memory Access (DMA)

DMA	Description
2	Standard Floppy Disk Controller
4	Direct memory access controller

Ports Input/Output (IO)

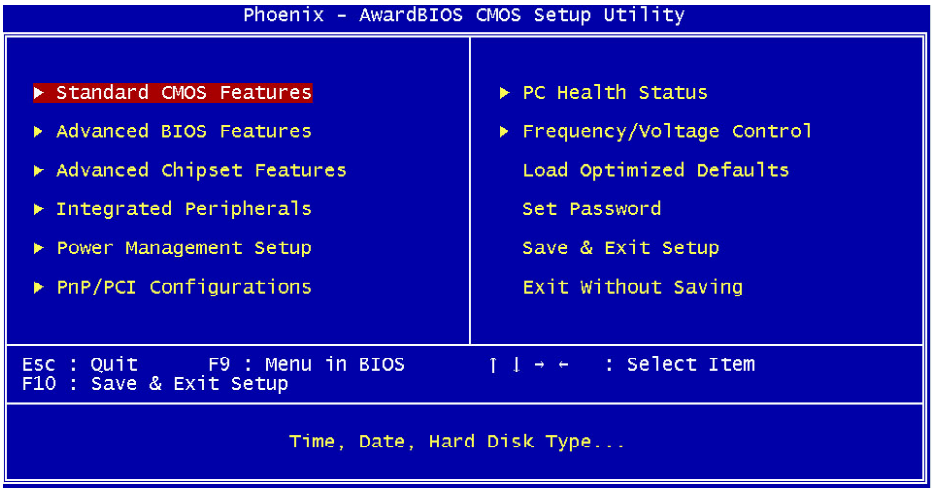
I/O Address	Description
0020 - 0021	Programmable interrupt controller
0040 - 0043	System timer
0060 - 0060	Standard 101/102
0061 - 0061	System speaker
0064 - 0064	Standard 101/102
0070 - 0071	System CMOS/real time clock
0081 - 0083	Direct memory access controller
0087 - 0087	Direct memory access controller
0089 - 008B	Direct memory access controller
008F - 0091	Direct memory access controller
00A0 - 00A1	Programmable interrupt controller
00C0 - 00DF	Direct memory access controller
00F0 - 00FF	Numeric data processor
0170 - 0177	Intel(R) 82801BA Ultra ATA Storage Controller
0170 - 0177	Secondary Ultra ATA Controller
01F0 - 01F7	Intel(R) 82801BA Ultra ATA Storage Controller
01F0 - 01F7	Primary Ultra ATA Controller
02E8 - 02EF	Communications Port (COM4)
02F8 - 02FF	Communications Port (COM2)
0000 - 000F	Direct memory access controller
0376 - 0376	Intel(R) 82801BA Ultra ATA Storage Controller
0376 - 0376	Secondary Ultra ATA Controller
0378 - 037F	Printer Port (LPT1)
03B0 - 03BB	Intel(R) 82815 Graphics Controller
03C0 - 03DF	Intel(R) 82815 Graphics Controller
03E8 - 03EF	Communications Port (COM3)
03F0 - 03F5	Standard Floppy Disk Controller
03F6 - 03F6	Intel(R) 82801BA Ultra ATA Storage Controller
03F6 - 03F6	Primary Ultra ATA Controller
03F7 - 03F7	Standard Floppy Disk Controller
03F8 - 03FF	Communications Port (COM1)
0400 - 04BF	PCI bus
04D0 - 04D1	PCI bus
0500 - 050F	Intel(R) 82801BA/BAM SMBus Controller
0778 - 077B	Printer Port (LPT1)
0CF8 -0CFF	PCI bus
C000 - C03F	Intel(R) PRO/100 VE Network Connection

C000 - CFFF	Intel(R) 82801BA PCI Bridge
D000 - D01F	Intel(R) 82801BA/BAM USB Universal Host Controller
D800 - D81F	Intel(R) 82801BA/BAM USB Universal Host Controller
DC00 - DCFF	Realtek AC 97 Audio
E000 - E03F	Realtek AC 97 Audio
F000 - F00F	Intel(R) 82801BA Ultra ATA Storage Controller
F000 - F007	Primary Ultra ATA Controller
F008 - F00F	Secondary Ultra ATA Controller

AWARD BIOS Setup

The SBC uses the Award PCI/ISA BIOS ver 6.0 for the system configuration. The Award BIOS setup program is designed to provide the maximum flexibility in configuring the system by offering various options which could be selected for end-user requirements. This chapter is written to assist you in the proper usage of these features.

To access AWARD PCI/ISA BIOS Setup program, press <Del> key. The Main Menu will be displayed at this time.



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

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.

Advanced BIOS Features
Use this menu to set the Advanced Features available on your system.

Advanced Chipset Features
Use this menu to change the values in the chipset registers and optimize your system's performance.

Integrated Peripherals
Use this menu to specify your settings for integrated peripherals.

Power Management Setup
Use this menu to specify your settings for power management.

PnP / PCI Configuration
This entry appears if your system supports PnP / PCI.

PC Health Status
This entry helps you to monitor the status of PC.

Frequency/Voltage Control
Use this menu to specify your settings for frequency/voltage control.

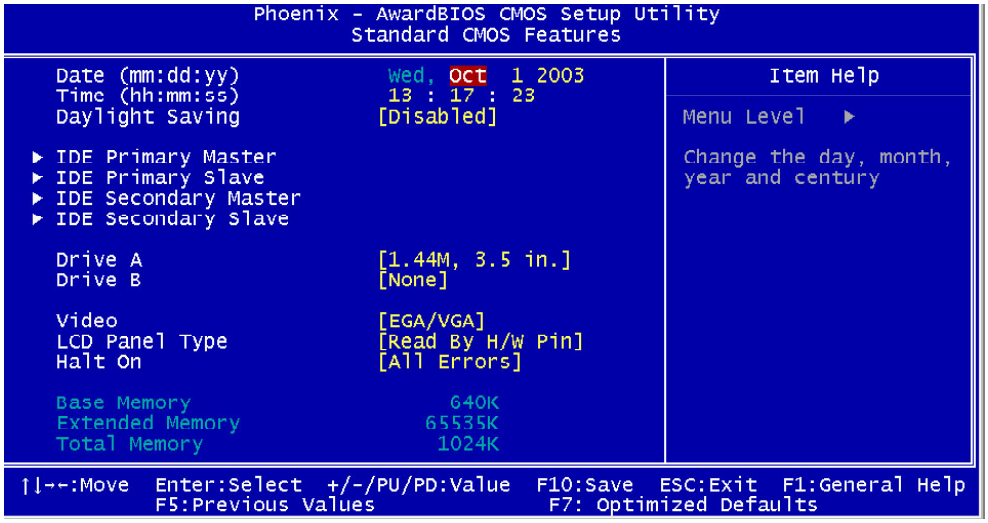
Load Optimized Defaults
Use this menu to load the BIOS default values that are factory settings for optimal performance system operations. While Award has designed the custom BIOS to maximize performance, the factory has the right to change these defaults to meet their needs.

Set Password
Use this menu to set User and Supervisor Passwords.

Save & Exit Setup
Save CMOS value changes to CMOS and exit setup.

Exit Without Save
Abandon all CMOS value changes and exit setup.

Standard CMOS Setup



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

Date
The BIOS determines the day of the week from the other date information; this field is for information only.

Time
The time format is based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00. Press the « or (key to move to the desired field . Press the PgUp or PgDn key to increment the setting, or type the desired value into the field.

IDE Primary Master/Slave
IDE Secondary Master/Slave
Options are in sub menu (see page 30)

Drive A, B
Select the correct specifications for the diskette drive(s) installed in the computer.

None :	No diskette drive installed
360K ;	5.25 in 5-1/4 inch PC-type standard drive
1.2M ;	5.25 in 5-1/4 inch AT-type high-density drive
720K ;	3.5 in 3-1/2 inch double-sided drive
1.44M ;	3.5 in 3-1/2 inch double-sided drive
2.88M ;	3.5 in 3-1/2 inch double-sided drive

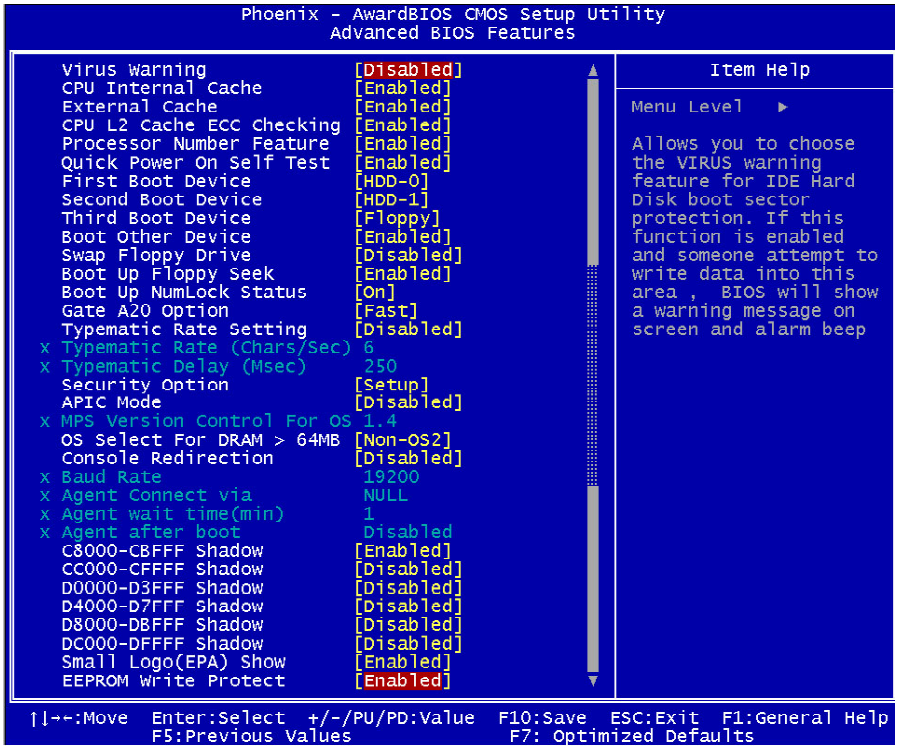
Video Select the type of primary video subsystem in your computer. The BIOS usually detects the correct video type automatically. The BIOS supports a secondary video subsystem, but you do not select it in Setup.

LCD Panel Type Select the type of LCD.

Halt On During the power-on self-test (POST), the computer stops if the BIOS detects a hardware error. You can tell the BIOS to ignore certain errors during POST and continue the boot-up process. These are the selections:

No errors	POST does not stop for any errors.
All errors	If the BIOS detects any non-fatal error, POST stops and prompts you to take corrective action.
All, But Keyboard	POST does not stop for a keyboard error, but stops for all other errors.
All, But Diskette	POST does not stop for diskette drive errors, but stops for all other errors.
All, But Disk/Key	POST does not stop for a keyboard or disk error, but stops for all other errors.

BIOS Features Setup



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

Virus Warning
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 beep.

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 Internal Cache/External Cache
These two categories speed up memory access. However, it depends on CPU/chipset design. Enabled : Enable cache, Disabled : Disable cache

CPU L2 Cache ECC Checking
This item allows you to enable/disable CPU L2 Cache ECC checking.
The choice: Enabled, Disabled.

Processor Number Feature
This feature appears when a a Pentium III processor is installed. It enables you enables you to control whether the Pentium III's serial number can be read by external programs. The choice : Enabled. Disabled

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

First/Second/Third/Other Boot Device
The BIOS attempts to load the operating system from the devices in the sequence selected in these items. The choices are : Floppy, LS/ZIP, HDD, SCSI, CDROM, Disabled.

Swap Floppy Drive
If the system has two floppy drives, you can swap the logical drive name assignments. The choice: Enabled/Disabled.

Boot Up Floppy Seek
Seeks disk drives during boot up. Disabling speeds boot up.
The choice: Enabled/Disabled.

Boot Up NumLock Status
Select power on state for NumLock. The choice: Enabled/Disabled.

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

Typematic Rate Setting
Key strokes repeat at a rate determined by the keyboard controller. When enabled, the typematic rate and typematic delay can be selected.
The choice: Enabled/Disabled.

Security Option
Select whether the password is required every time the system boots or only when you enter 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.

Note 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.

APIC Mode
Select

OS Select For DRAM > 64MB
Select the operating system that is running with greater than 64MB of RAM on the system.The choice: Non-OS2, OS2.

Console Redirection
Console Redirection capability allows a system with no keyboard and no video hardware to transmit video and keyboard data to a host system via the serial port.

Video BIOS Shadow
Enabled this copies the video BIOS from ROM to RAM. effectively enhancing performance, and reducing the amount of upper memory available by 32KB (the C0000~C7FFF area of memory between 640 KB and 1 MB is used).

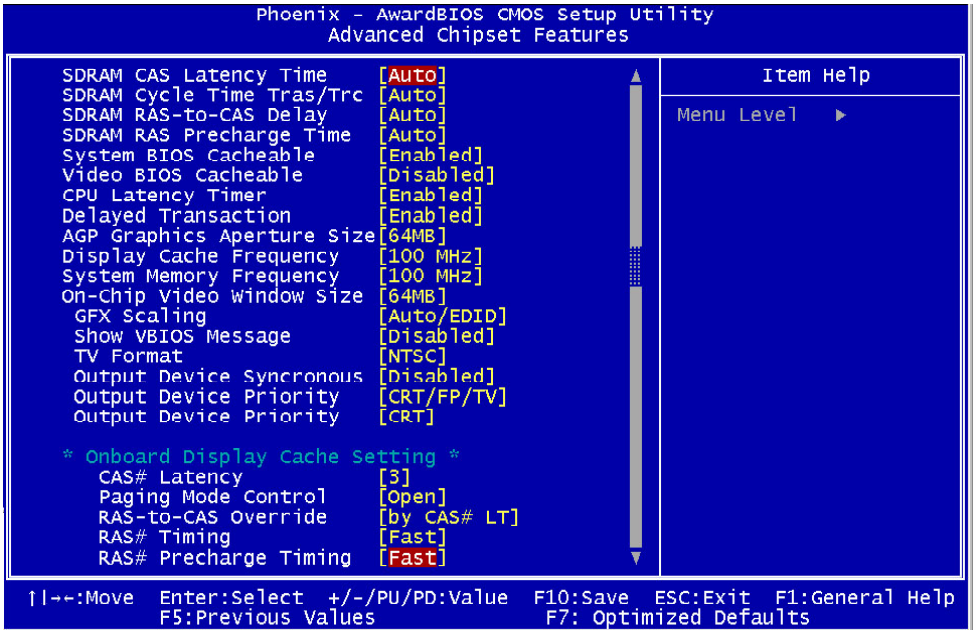
C8000-CBFFF Shadow
Enabling any of the C8000~CBFFF segments allows components to move their firmware into these upper memory segments. However your computer can lock-up doing so, because some devices don't like being shadowed at those particular 16 KB segments of upper memory.

Small Logo(EPA) Show
[Enabled]: If you want to show your logo, please enable it.
[Disabled]: When this item disabled, logo(EPA) will not show on screen.

EEPROM Write Protect
All the configuration data is stored in a type of nonvolatile memor chip called an EEPROM. When it's enabled, it disables all writes to the configuration EEPROM. This locks your current configuration against accidenatal or unauthorized changes.

Note - In Windows 95, double click 'Computer' within Device Manager and select 'Memory'. This will tell you what segments (if any) are being shadowed For DOS you can use MSD.EXE to see what segments are claimed.
CC000-CFFFF - D0000-D3FFF - D4000-D7FFF - D8000-DBFFF and
DC000-DFFFF - Same as above.

Chipset Features Setup



DRAM Settings
The first chipset settings deal with CPU access to dynamic random access memory (DRAM). The default timings have been carefully chosen and should only be altered if data is being lost. Such a scenario might well occur if your system had mixed speed DRAM chips installed so that greater delays may be required to preserve the integrity of the data held in the slower memory chips.

SDRAM CAS Latency Time
When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing.

SDRAM Cycle Time Tras/Trc
Select the number of SCLKs for an access cycle

SDRAM RAS-to-CAS Delay
This field let's you 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 gives more stable performance. This field applies only when synchronous DRAM is installed in the system.

SDRAM RAS Precharge Time
If an insufficient number of cycles is 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 givesmore stable performance. This field applies only when synchronous DRAM is installed in the system.

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.

CPU latency Timer
When enabled this item, the CPU cycle will only be deferred after it has been held in a "Snoop Stall" for 31 clocks and another ADS# has arrived. When disabled, the CPU cycle will be deferred immediatedly after the GMCH receives another ADS#.

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 Graphics Aperture Size
This fielf 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.

Display Cache Frequency
You can use this item to select the frequency of the display cache.

System Memory Frequency
You can use this item to select the operating frequency for the main system.

On-Chip Video Window Size
Select the on-chip video window size for VGA drives use.

Onboard Display Cache Setting
Setting the onboard display cache timing

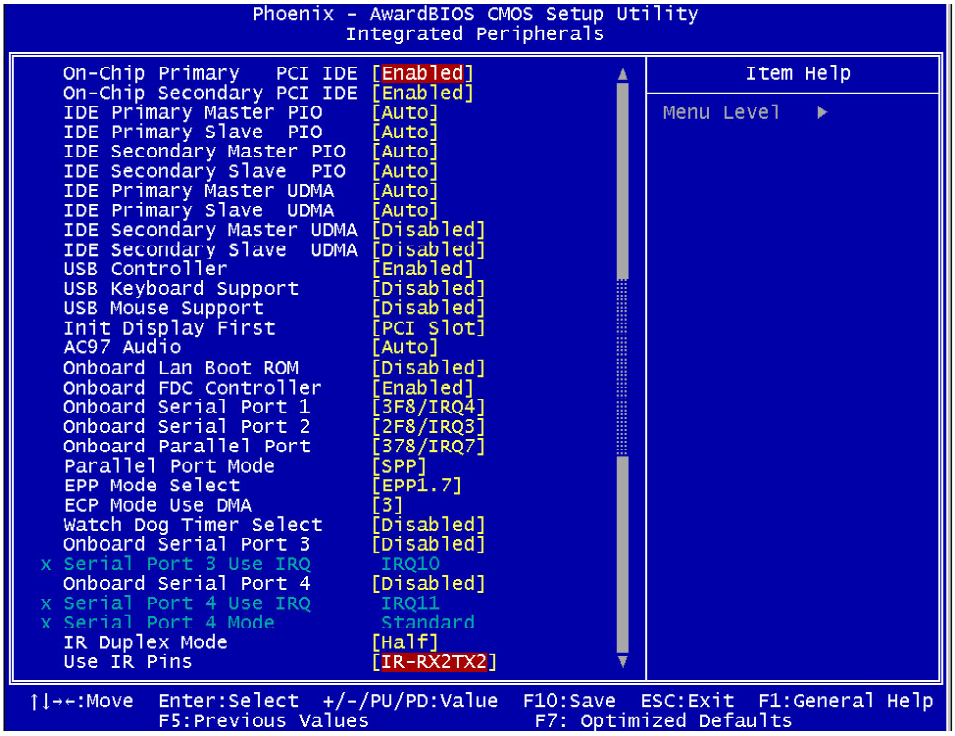
CAS#Latency
Select the local memory clock periods

Paging Mode Control
Select the paging mode control

RAS-to-CAS Override
Select the display cache clock periods control

RAS# Timing
This item controls RAS# active to Protegra, and refresh to RAS# active delay (in local memory clocks).

RAS# Precharge Timing
This item controls RAS# precharge (in local memory clocks).



↑↓→←: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.

Primary & Secondary Master/Slave PIO
These four PIO fields let you set a PIO mode (0-4) for each of four IDE devices. When under "Auto" mode, the system automatically set the best mode for each device

Primary & Secondary Master/Slave UDMA
When set to "Auto" mode, the system will detect if the hard drive supports

Ultra DMA mode.

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

USB Keyboard Support
Select "Enable" if your system contains a Universal Serial Bus (USB) controller and you have USB keyboard.

Init Display First
This item allows you to decide to activate whether PCI slot or on-chip VGA first

AC97 Audio
AC97 Audio selection.

Onboard LAN Boot ROM
The default setting is "Disabled" that to shorten the booting time.

Onboard FDC Controller
Select "Enabled" to activate the on-board FDD
Select "Disabled" to activate an add-on FDD

Onboard Serial Port 1 & 2
Select an address and corresponding interrupt for the first/second serial port. The default value for the first serial port is "3F8/IRQ4" and the second serial port is "2F8/IRQ3".

Onboard Parallel Port Port
Select an address and corresponding interrupt for the parallel port.

EPP Mode Select
You can use this feature to choose which version of EPP to use. For better performance, use EPP 1.9. But if you are facing connection issues, try setting it to EPP 1.7. Most of the time, EPP 1.9 will work perfectly well.

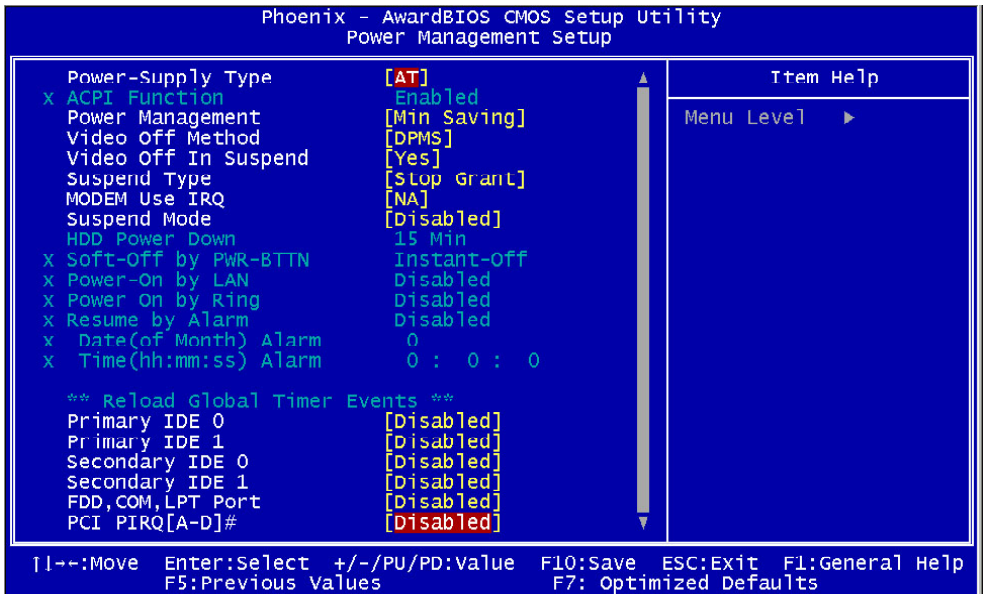
ECP Mode Use DMA
By default, the parallel port uses DMA Channel 3 when it is in ECP mode. This works fine in most situations.

Watch Dog Timer Select
The system board supports the Watchdog Timer function allowing your application to regularly clear the system at the set time interval. If the system hangs or fails to function, it will reset at the set time interval so that your system will continue to operate. You may set the time interval in 10s, 20s, 30s, 40s, 1 Min, 2 Min, 4 Min or Disabled.

IR2 Duplex Mode
This item allows you to select the IR half/full duplex function.

Use IR Pins
This item allows you to select IR transmission routes, IR-Rx2Tx2, RxD2 and TxD2.

Power Management Setup



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

ACPI Function
Select Enabled only if your computer's operating system supports ACPI (the Advanced Configuration and Power Interface) specification. Currently, Windows 98 and Windows2000 support ACPI.

Power Management
There are 4 selections for Power Management, 3 of which have fixed mode :

Disabled (default)	No power management. Disables all four modes.
Min. Power Saving	Minimum power management. Doze Mode = 1 hr., Standby Mode = 1 hr., Suspend Mode = 1 hr.,
Max. Power Saving	Maximum power management -- ONLY AVAILABLE FOR SL CPU's.. Doze Mode = 1 min., Standby Mode = 1 min., Suspend Mode = 1 min.
User Defined	Allows you to set each mode individually. When not disabled, each of the ranges are from 1 min. to 1 hr.

Video Off Method
This determines the manner in which the monitor is blanked.

V/H SYNC+Blank	cause the system to turn off the vertical and horizontal synchronization signals and writes blanks to the screen.
Blank Screen	This option only writes blanks to the screen.
DPMS	Initial display power management signaling.HDD Power Down is always set independently

Video Off In Suspend

Controls what causes the display to be switched off
Suspend -> Off Always On All Mode -> Off

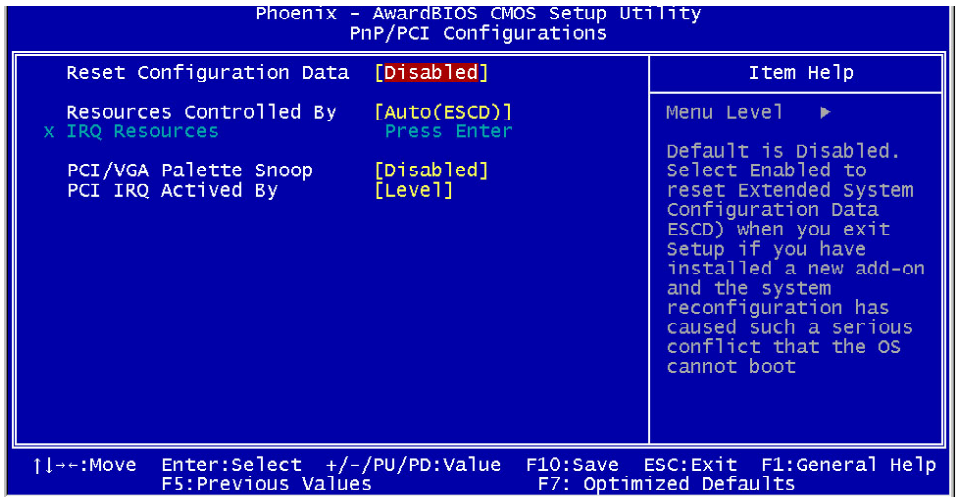
Suspend Type
S1 (POS) Power On suspend
All devices are powered up except for the clock synthesizer. The Host and PCI clocks are inactive and PIIX4 provides control signals and 32-kHz Suspend Clock (SUSCLK) to allow for DRAM refresh and to turn off the clock synthesizer. The only power consumed in the system is due to DRAM Refresh and leakage current of the powered devices. When the system resumes from POS, PIIX4 can optionally resume without resetting the system, can reset the processor only, or can reset the entire system. When no reset is performed, PIIX4 only needs to wait for the clock synthesizer and processor PLLs to lock before the system is resumed. This takes typically 20 ms.

S3 (STR) Suspend To RAM
Power is removed from most of the system components during STR, except the DRAM. Power is supplied to Suspend Refresh logic in the Host Controller, and RTC and Suspend Well logic in PIIX4. PIIX4 provides control signals and 32-kHz Suspend Clock (SUSCLK) to allow for DRAM refresh and to turn off the clock synthesizer and other power planes.

Modem Use IRQ
Name the interrupt request (IRQ) assigned to the modem (if any) on your system. Activity of the selected IRQ always awakens the system.

Suspend Mode
When the suspend mode has been enabled after the selected period of system inactivity, all devices except CPU will be shut down.

PnP/PCI Configuration



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

This section describes configuring the PCI bus system. PCI, or Personal Computer Interconnect, is a system which allows I/O devices to operate at speeds nearing the speed the CPU itself uses when communicating with its own special components.

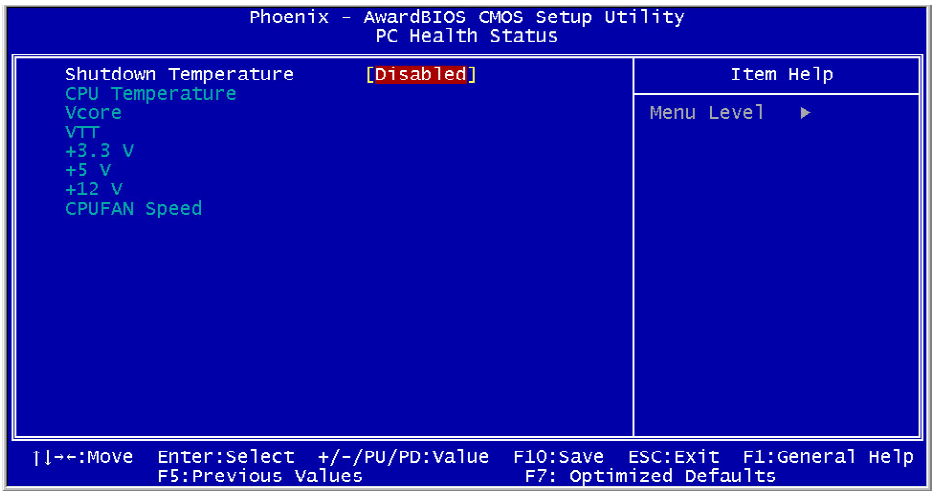
Reset Configuration Data
Normally, you leave this field Disabled. Select Enabled to reset ESCD (Extended System Configuration Date) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the operating system cannot boot.

Resource Controlled By
The Award Play and Play BIOS can automatically configure all the boot and Plug-and-Play compatible devices. If you select Auto, all the interrupt request (IRQ) and DMA assignment fields disappear, as the BIOS automatically assigns them.

PCI/VGA Palette Snoop
Normally this option is always Disabled! Nonstandard VGA display adapters such as overlay cards or MPEG video cards may not show colors properly. Setting Enabled should correct this problem. If this field set Enabled, any I/O access on the ISA bus to the VGA card's palette registers will be reflected on the PCI bus. This will allow overlay cards to adapt to the changing palette colors.

PCI IRQ Actived by
[Level]

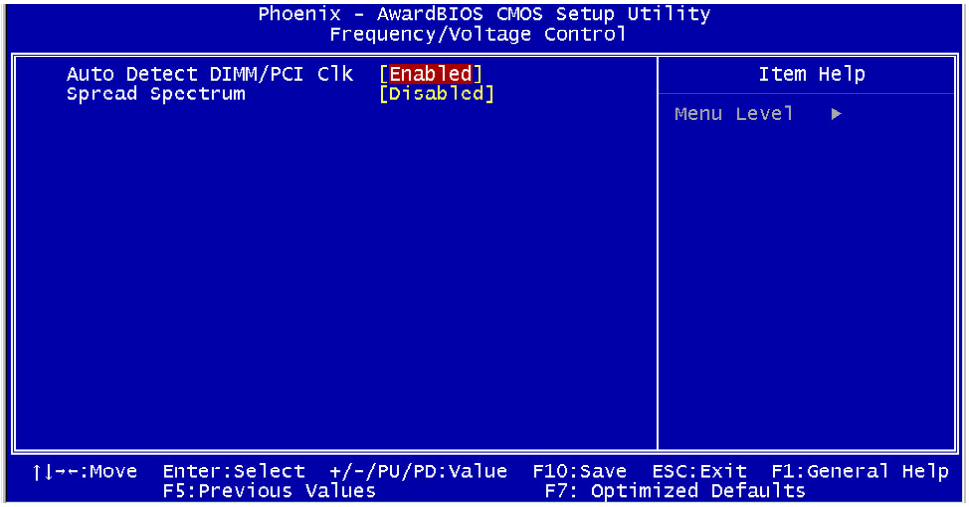
PC Health Status



This section describes CPU tempeare for the system.

Shutdown Temperature
This item allows you to set up the CPU shutdowm Temperature. This item only effective under Windows 98 ACPI mode.

Frequency/Voltage Control



This section describes Frequency and Voltage control for the system.

Auto Detect DIMM/PCI CLK
When enabled, this item will auto detect if the DIMM and PCI socket have devices and will send clock signal to DIMM and PCI devices. When disabled, it will send the clock signal to all DIMM and PCI socket.

Spread Spectrum
This item allows you to enable/disable the spread spectrum modulate.

POST Codes

The following codes are not displayed on the screen. They can only be viewed on the LED display of a so called POST card. The codes are listened in the same order as the according functions are executed at PC startup. If you have access to a POST Card reader, you can watch the system perform each test by the value that's displayed. If the system hangs (if there's a problem) the last value displayed will give you a good idea where and what went wrong, or what's bad on the system board.

CODE	DESCRIPTION OF CHECK
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 back 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 & 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 onboard clock generator if Early_Init_Onboard_Generator is defined. See also POST 26h.
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_INT_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.
24h	Prepare BIOS resource map for PCI & PnP use. If ESCD is valid, take into consideration of the ESCD's legacy information.

25h	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
26h	1. If Early_Init_Onboard_Generator is not defined Onboard clock generator initialization. Disable respective clock resource to empty PCI & DIMM slots. 2. Init onboard PWM 3. Init onboard H/W monitor devices
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.
2Ah	Reserved
2Bh	Invoke Video BIOS
2Ch	Reserved
2Dh	1. Initialize double-byte language font (Optional) 2. Put information on screen display, including Award title, CPU type, CPU speed, full screen logo.
2Eh	Reserved
2Fh	Reserved
30h	Reserved
31h	Reserved
32h	Reserved
33h	Reset keyboard if Early_Reset_KB is defined e.g. Winbond 977 series Super I/O chips. See also POST 63h.
34h	Reserved
35h	Test DMA Channel 0
36h	Reserved
37h	Test DMA Channel 1.
38h	Reserved
39h	Test DMA page registers.
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 write 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 Keyboard & Mouse.
51h	Reserved
52h	Test all memory (clear all extended memory to 0)
53h	Clear password according to H/W jumper (Optional)
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 ISA 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 2. Initialize Init_Onbaord_AUDIO.
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	Reset keyboard if Early_Reset_KB is not defined.
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 & 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	(Reserved
74h	Reserved
75h	Detect & install all IDE devices: HDD, LS120, ZIP, CDROM…..
76h	(Optional Feature) Enter AWDFLASH.EXE if: -AWDFLASH.EXE is found in floppy drive. -ALT+F2 is pressed.
77h	Detect serial ports & parallel ports.
78h	Reserved
79h	Reserved
7Ah	Detect & install co-processor
7Bh	Reserved
7Ch	Init HDD write protect.
7Dh	Reserved
7Eh	Reserved
7Fh	Switch back to text mode if full screen logo is supported. - If errors occur, report errors & wait for keys - If no errors occur or F1 key is pressed to continue : wClear EPA or customization logo.
80h	Reserved
81h	Reserved

E8POST.ASM starts

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. Switch screen back to text mode
86h	Reserved
87h	NET PC: Build SYSID Structure.
88h	Reserved

89h	1. Assign IRQs to PCI devices 2. Set up ACPI table at top of the memory.
8Ah	Reserved
8Bh	1. Invoke all ISA adapter ROMs 2. Invoke all PCI ROMs (except VGA)
8Ch	Reserved
8Dh	1. Enable/Disable Parity Check according to CMOS setup 2. APM Initialization
8Eh	Reserved
8Fh	Clear noise of IRQs
90h	Reserved
91h	Reserved
92h	Reserved
93h	Read HDD boot sector information for Trend Anti-Virus code
94h	1. Enable L2 cache 2. Program Daylight Saving 3. Program boot up speed 4. Chipset final initialization. 5. Power management final initialization 6. Clear screen & display summary table 7. Program K6 write allocation 8. Program P6 class write combining
95h	Update keyboard LED & typematic rate
96h	1. Build MP table 2. Build & 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)

Howto : Flash the BIOS

To flash your BIOS you'll need

1) a xxxxx.bin file that is a file image of the new BIOS

2) AWDFLASH.EXE a utility that can write the data-file into the BIOS chip.

Create a new, clean DOS 6 bootable floppy with "format a: /s".

Copy flash utility and the BIOS image file to this disk.

Turn your computer off. Insert the floppy you just created and boot the computer. As it boots up, hit the [DEL] key to enter the CMOS setup. Go to "LOAD SETUP (or BIOS) DEFAULTS," and then save and exit the setup program. Continue to boot with the floppy disk.

Type "AWDFLASH" to execute the flash utility. When prompted, enter the name of the new BIOS image and begin the flash procedure. Note: If you reboot now, you may not be able to boot again.

After the flash utility is complete, reboot the system.

What to do when the Award flasher says: Insufficient memory

1. In CMOS Chipset Features Setup, Disable Video Bios Cacheable.

2. Hit Esc, F10, Save and exit.

3. Flash the BIOS and reboot

4. Enter CMOS Chipset Features Setup,and Enable Video Bios Cacheable, hit Esc, F10, Save and reboot.

What if things go wrong

if you use the wrong Flash BIOS or if the writing process gets interrupted, there is a fat chance that your computer won't boot anymore.

How can you recover a corrupt BIOS ?

Boot-block booting (this works only for Award BIOS)

Modern motherboards based on Award BIOS have a boot-block BIOS. This is small area of the BIOS that doesn't get overwritten when you flash a BIOS. The boot-block BIOS only has support for the floppy drive. If you have the AGP video enabled you won't see anything on the screen because the boot-block BIOS only supports an ISA videocard.

If you do not want to change your AGP video setting than proceed as follows:

The boot-block BIOS will execute an AUTOEXEC.BAT file on a bootable diskette. Copy an Award flasher & the correct BIOS *.bin file on the floppy and execute it automatically by putting awdflash *.bin in the AUTOEXEC.BAT file.

Solution 2: Hot-swapping

1. Replace the corrupt chip by a working one. The working BIOS doesn't have to be written for your board, it just has to give you a chance of booting to DOS.

BIOSs for the same chipset mostly work. (Chipsets that not differ too much also mostly work. (e.g. Triton FX chipset and Triton HX chipset)

2. Boot the system to DOS (with floppy or HD)

3. Be sure that the System BIOS cacheable option in your BIOS is enabled! If so replace (while the computer is powered on) the BIOS chip with the corrupt one. This should work fine with most boards because the BIOS is shadowed in RAM.

4. Flash an appropriate BIOS to the corrupt chip and reboot.

NOTE: Use a flasher from MRBIOS (**http://www.mrbios.com**). Utilities that come with your motherboard often use specific BIOS-hooks. Because you have booted with a BIOS not written for your motherboard they usually don't work. The MR Flash utilities communicate directly with your Flash Rom and always work. In most cases they flash a non-MRBIOS to your BIOS chip without problems.

Thank you for your purchase. If you have any problems or questions please contact Global American Inc. at:

TEL (603) 886-3900

FAX (603) 886-4545

Website http://www.globalamericaninc.com

E-Mail support@globalamericaninc.com

Address Global American Inc 17 Hampshire Drive Hudson, NH 03051