AR-B1740

VER 1.0

FORM FACTOR	CPU TYPE	CPU
Half-sieze SBC PCI	mPGA478M	Pentium M 1.7GHz

CHIPSET	MEMORY	I/O
ICH4 Intel 855GME	DDR 1GB	USB/Serial/ IrDA/LPT

LAN	AUDIO	
10/100/Gigabit Mbps	AC'97	IDE x 4 FDD x 2

USER'S MANUAL

About this Manual

This manual provides general information and installation instructions about the board and this

User's Manual is intended for experienced users and integrators with hardware knowledge of

personal computers. If you are not sure about any description in this User's Manual, please

consult your vendor before further handling.

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.   Disconnect your Single Board Computer from the power source when you want to work on the inside

2.   Hold the board by the edges and try not to touch the IC chips, leads or circuitry

3.   Use a grounded wrist strap when handling computer components.

4.   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

5. Compact Flash Card is not hot-plug since it uses IDE interface.

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 teh manufacturer (BR2335).

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

Warranty

This product is warranted to be in good working order for a period of one year from the date of purchase. Should this product fail to be in good working order at any time during this period, we will, at our option, replace or repair it at no additional charge except as set forth in the following terms. This warranty does not apply to products damaged by misuse, modifications, accident or disaster.

Vendor assumes no liability for any damages, lost profits, lost savings or any other incidental or consequential damage resulting from the use, misuse of, or inability to use this product. Vendor will not be liable for any claim made by any other related party.

Vendors disclaim all other warranties, either expressed or implied, including but not limited to implied warranties of merchantibility and fitness for a particular purpose, with respect to the hardware, the accompanying product's manual(s) and written materials, and any accompanying hardware. This limited warranty gives you specific legal rights.

Return authorization must be obtained from the vendor before returned merchandise will be accepted. Authorization can be obtained by calling or faxing the vendor and requesting a Return Merchandise Authorization (RMA) number. Returned goods should always be accompanied by a clear problem description.

PACKING LIST
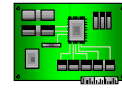
AR-B1740

1xPRINT Cable
2xCOM Flat Cable
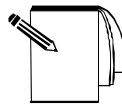1xFDD Cable
1xUSB V2.0 Cable
1xAUDIO Cable
1xIDE Cable
1xUltraDMA 100 IDE Flat Cable
1xY Cable
1xCooler

1 x CD-ROM (driver)

Before up and running, please make sure the package contains all of above accessories.

If any of the above items is damaged or missing, contact your vendor immediately.

Ordering Codes

AR-B1740
Low power Intel Pentium-M Half size PCI BUS SBC with CRT/LCD & LAN

Specification

MODEL		AR-B1740	
System Board	SYSTEM	AR-B1740	
	CPU	mPGA478M socket support: Pentium-M with FSB 400 up to 2.0 GHz	
	CPU Cache	CPU Integrated	
	Chipset	Southbridge: ICH4; Northbridge: Intel 855GME	
	Memory	One 184-pin DIMM sockets support up to 1GB DDR SDRAM (266MHz/333MHz) ECC	
	Display	Chipset: 855GME integrated graphic, 4 x AGP Display Memory: Memory shared up to 64MB (DVMT) Display Type: CRT/ LCD LVDS panel supported 2 channel 48 bit resolution up to 1600x1200 at 85Hz & 2048x1536 at 75Hz TTL 24 bit supported	
	Fast Ethernet	1x Onboard 10/100 Mbps Fast Ethernet (Intel 82562ET PHY)	
	Audio	ICH4 integrated audio with AC97 Codec Audio Interactive (MIC in, Line-in, Speaker out, AC'97 ver. 2.3)	
	Flash Disk	CompactFlash Type II	
Multiple I/O	Serial Port	1 x RS-232C & 1 x RS-232C/422/485	
	Parallel Port	1 x Parallel prot supports SPP, EPP and ECP mode	
	Enhanced IDE	2 ports and up to 4 ATAPI devices, Ultra DMA transfer rates 33/66/100MB/sec (IDE1: 40 Pin DMA 100; IDE2: 44 Pin DMA 33)	
	Floppy	2 floppy disk drives	
	IrDA	1 x IrDA	
	USB	6 x USB 2.0 Ports	
	K/B & Mouse	1 x PS/2 connector for keyboard & mouse	
	Watchdog Timer	256 level generates RESET	
Mechanical and Environment		Power Requirement: +5V@4.25A, +12V@0.27A (Pentium M 1.7Ghz + 1GB DDR SDRAM) Power Consumption: TBD Typical: 18W@5V (1.1GHz LV CPU) Operating Temperature: 0 ~ 60¢XC (32 ~ 140¢XF) Storage Temperature: -20 ~ 80¢XC (-68 ~ 176¢XF) Relative Humidity: 0% ~ 90% Dimension (Lx W): 185 x 122 mm (7.3" x 4.8") Weight: 0.6Kg (1.32 lb)	

Board Layout
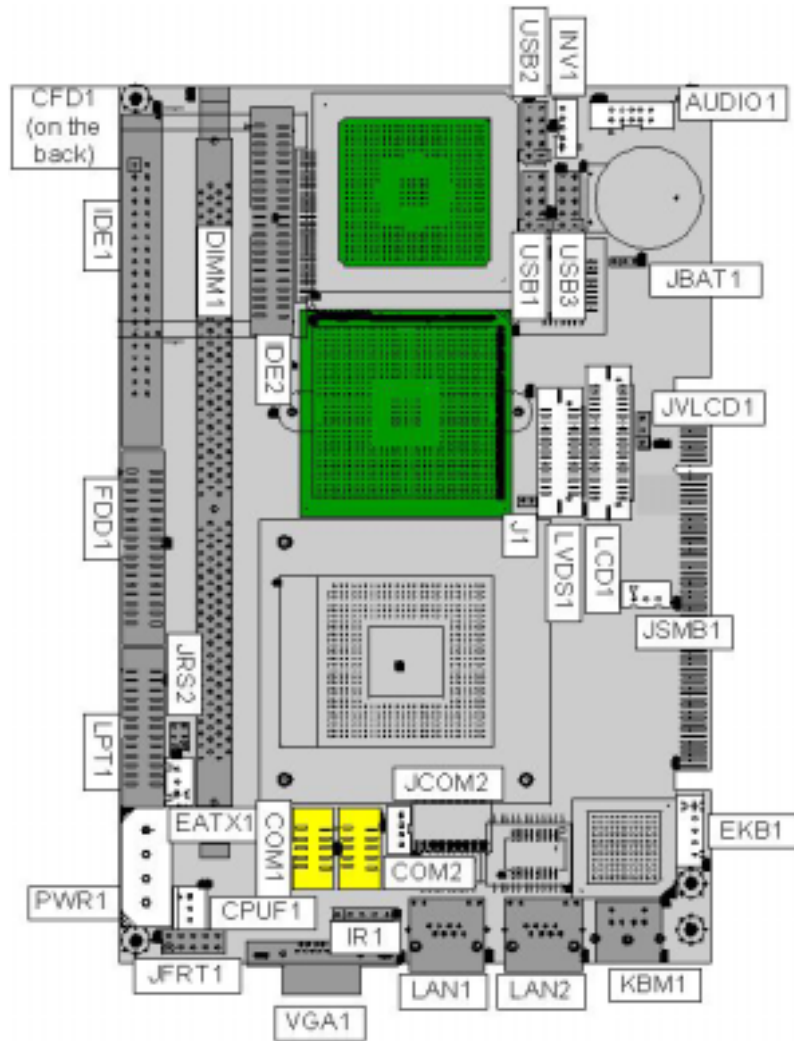
Board Dimension
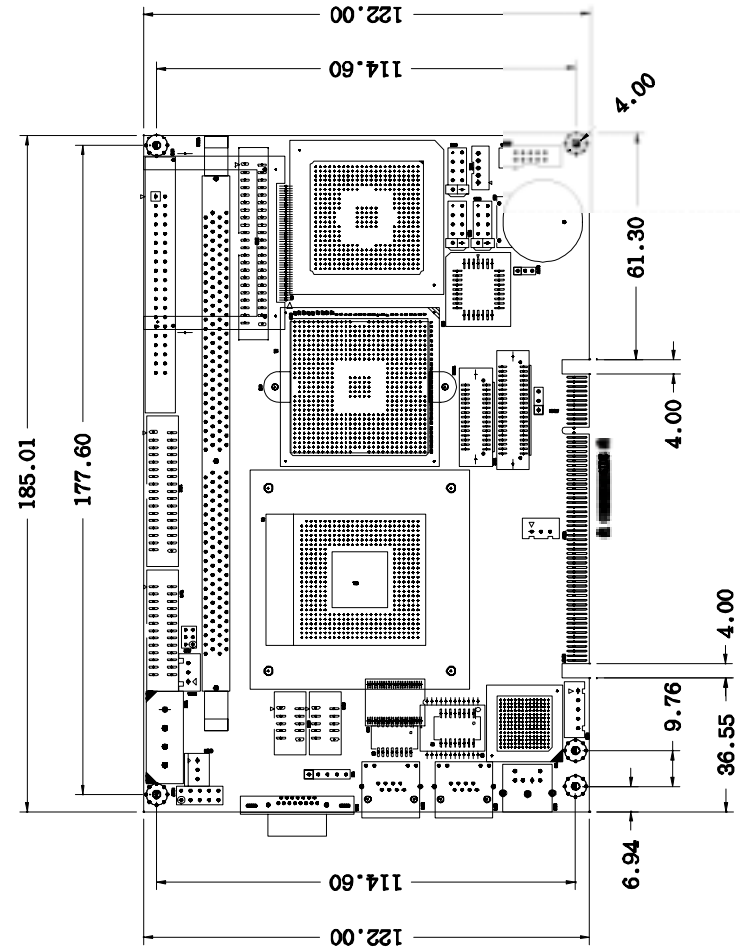
Jumper/Connector quick reference

Jumpers

Lable	Function
JBAT1	Clear CMOS
JRS2	COM2 RS-232C / 422 / 485 Selection
JVLCD1	LVDS voltage selection
JSMB1	External SMB
JFRT1	Switches & Indicators
J1	CPU Type selection

Jumper/Connector Quick Reference

Connectors

Lable	Function
AUDIO1	Audio Interface Port
CFD1	Compact Flash Disk
COM1	RS-232C Serial Port
COM2	Serial Port (RS-232C/422/485)
CPUF1	CPU Fan connector
DIMM1	DDR bank 1/2 184 pin DIMM Socket
EATX1	ATX feature connector
EKB1	External Keyboard Connector
FDD1	Floppy Disk Drive Connector
IDE1	Primary IDE Connector
IDE2	Secondary IDE Connector
INV1	LCD Inverter Connector
KBM1	Keyboard and PS/2 Mouse
LAN1	10/100 LAN1 Connector
LAN2	10/100/1000 M Connector
LCD1	18bit/24bit TTL Flat Panel Connector (DF13 40 pin)
LVDS1	24bit LVDS Panel Connector (DF13 30 pin)
LPT1	Parallel Port
PWR1	4P Auxiliary Power Connector
IR1	Infrared (IR) Connector
USB1	USB Port 0,1
USB2	USB Port 2,3
USB3	USB Port 4,5
VGA1	VGA Display Connector

CMOS Jumper Settings

CMOS Operation (JBAT1)
Type : JBAT1: onboard 3-pin header

1   2
3

JBAT1

If the AR-B1740 refuses to boot due to inappropriate CMOS settings, here is how to proceed to clear (reset) the CMOS to its default values.

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

External SMB

Type : JSMB1: onboard 3-pin header

○ ○ ○
1   2

Pin	Description
1	SMB DATA
2	SMB CLK
3	GND

LVDS LCD Power Selection

Type : JVLCD1: onboard 3-pin header

1   2   3

JVLCD1

The voltage of LCD panel could be selected by JV9 in 5V or 3.3V .
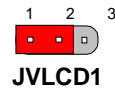
Mode	JVLCD1
3.3V	2-3
5V	1-2
default setting 3.3V	
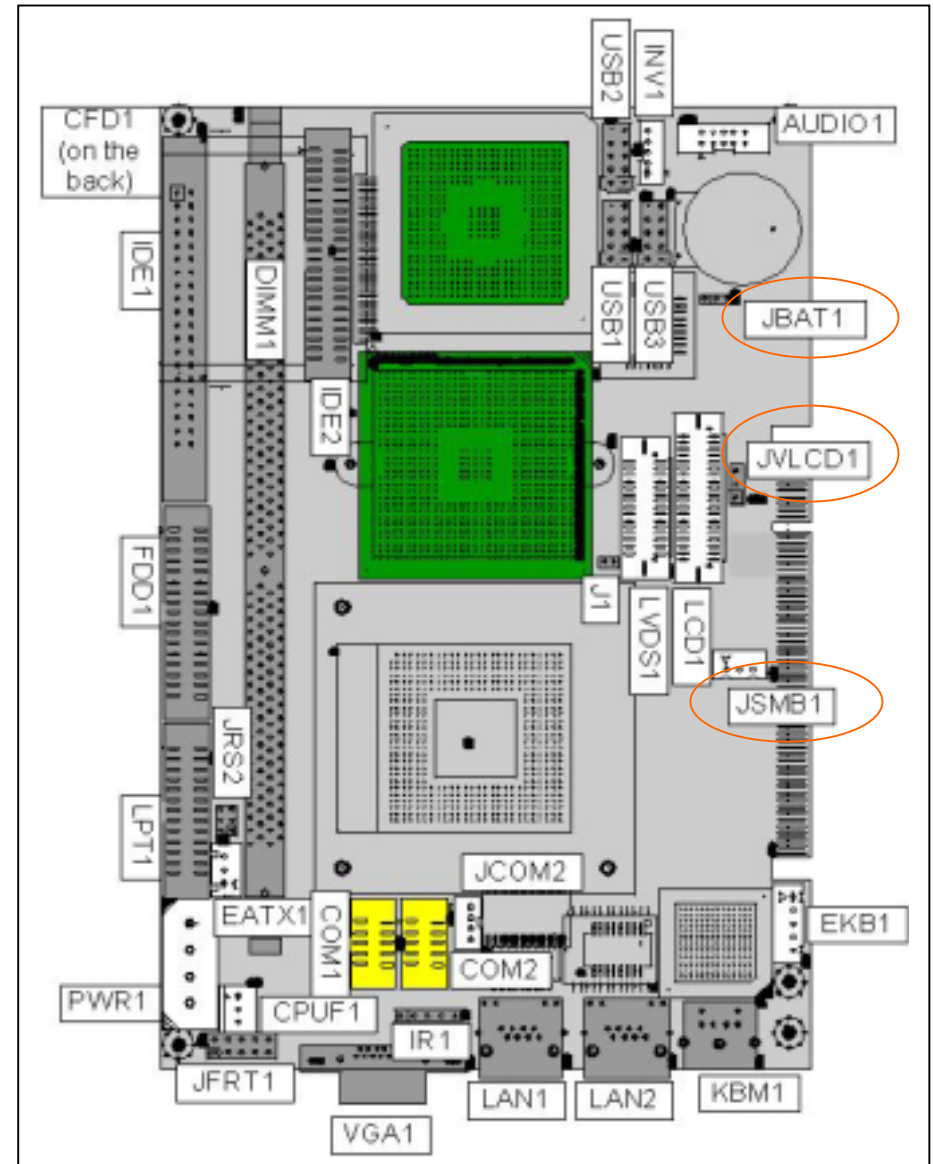
Serial Port Selection (RS232C/422/485)

RS-232C/422/485 Mode select (JRS2)

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

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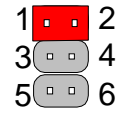
JRS2 Selection	1-2	3-4	5-6
RS-232C	ON	OFF	OFF
RS-422	OFF	ON	OFF
RS-485	OFF	OFF	ON

default setting   RS-232C

CPU Type Selection

Type : J1: onboard 2-pin header

The CPU VccA (PLL supply voltage) could be selected by J1 in 1.5 V or 1.8

```
1 ■ □ 2
```

Mode	J1
CPU VccA : 1.8V	ON
CPU VccA : 1.5V	OFF

default setting   VccA : 1.8 V
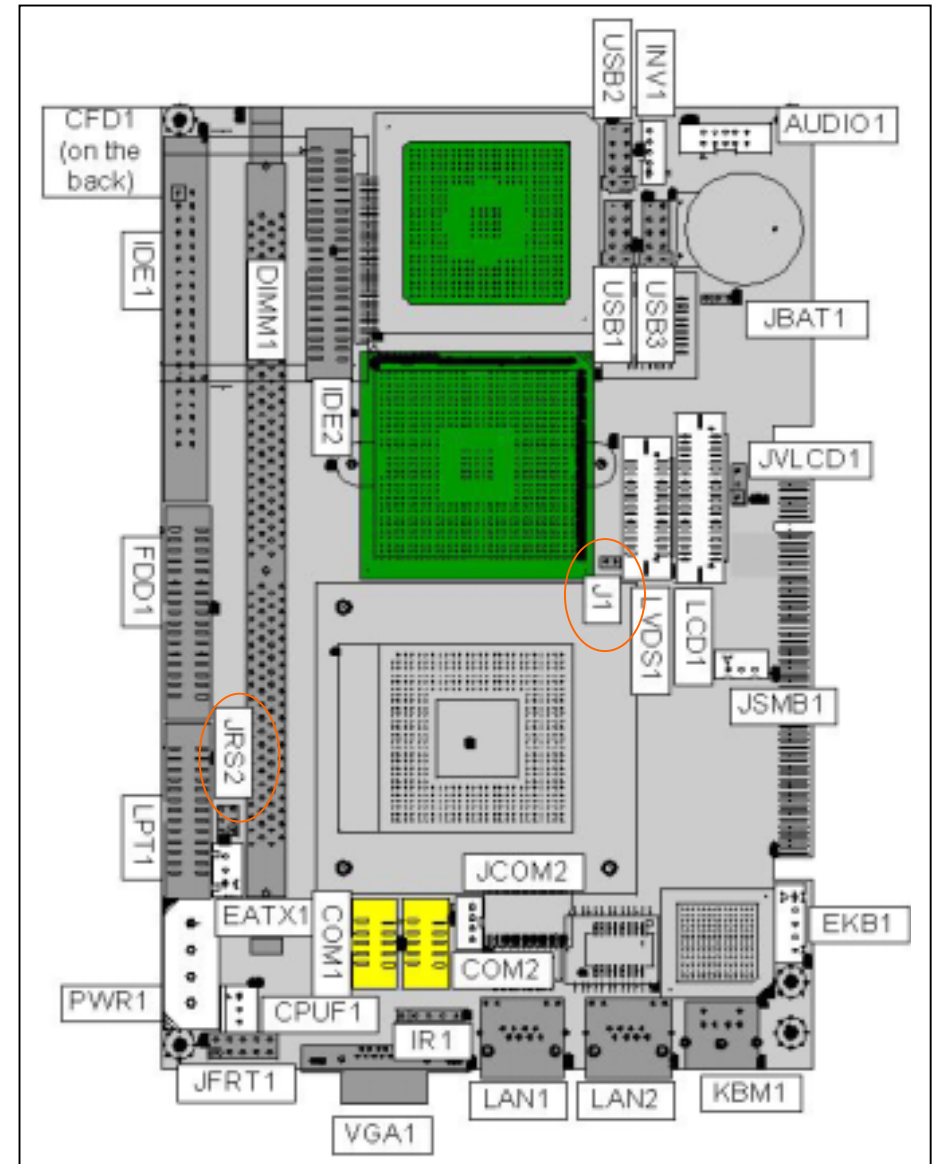
Switches and Indicators

Reset Button

Connector : **RESET**

Pin	Description
1	RESET
2	GND

1 2

RESET
PLED
HLED
ESPK
ATX Soft Power Switch

9 10

JFRT1
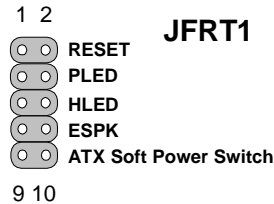
Power LED Connector

Connector : **PLED**
Power LED can be indicated when the CPU card is on or off. And keyboard lock can be
used to disable the keyboard function so the PC will not respond by any input.

Pin	Description
3	Power LED+
4	Power LED-

Power LED status description

Power Type	AT Power	ATX Power
Power On	On	On
Power Suspend	Fast Glittering	Fast Glittering
Power Off	Off	Slow Glittering

Hard Disk LED Connector

Connector : **HLED**

Pin	Description
5	Hard Disk LED+
6	Hard Disk LED-

External Speaker Connector

Connector : **ESPK1**

Pin	Description
7	+5V
8	Speak out
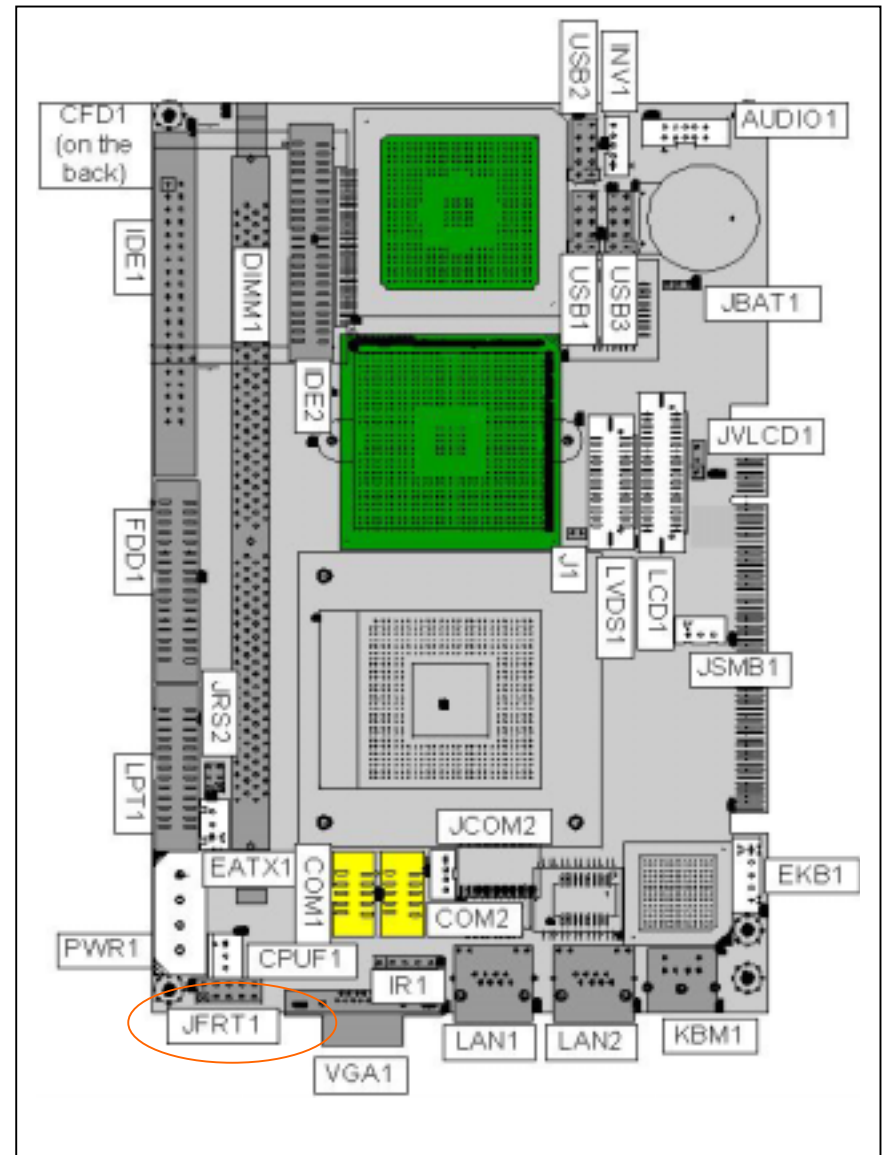
Audio Interface
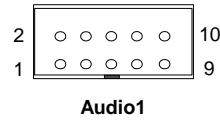
Audio1

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

COM Port Connector

COM1
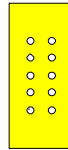
Connector : COM1
Type : onboard 10-pin box header

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

COM2
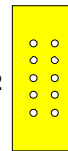
Connector : **COM2**
Type : onboard 10-pin box header

Pin	Description	Pin	Description
1	DCD2	2	RXD2
3	TXD2	4	DTR2
5	GND	6	DSR2
7	RTS2	8	CTS2
9	RI	10	NC

Connector : **JCOM2**
Type : onboard 4-pin box header
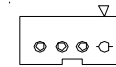
4 3 2 1

Pin	Description	Pin	Description
1	485DATA+(422TXD+)	2	485DATA-(422TXD-)
3	422RXD+	4	422RXD-
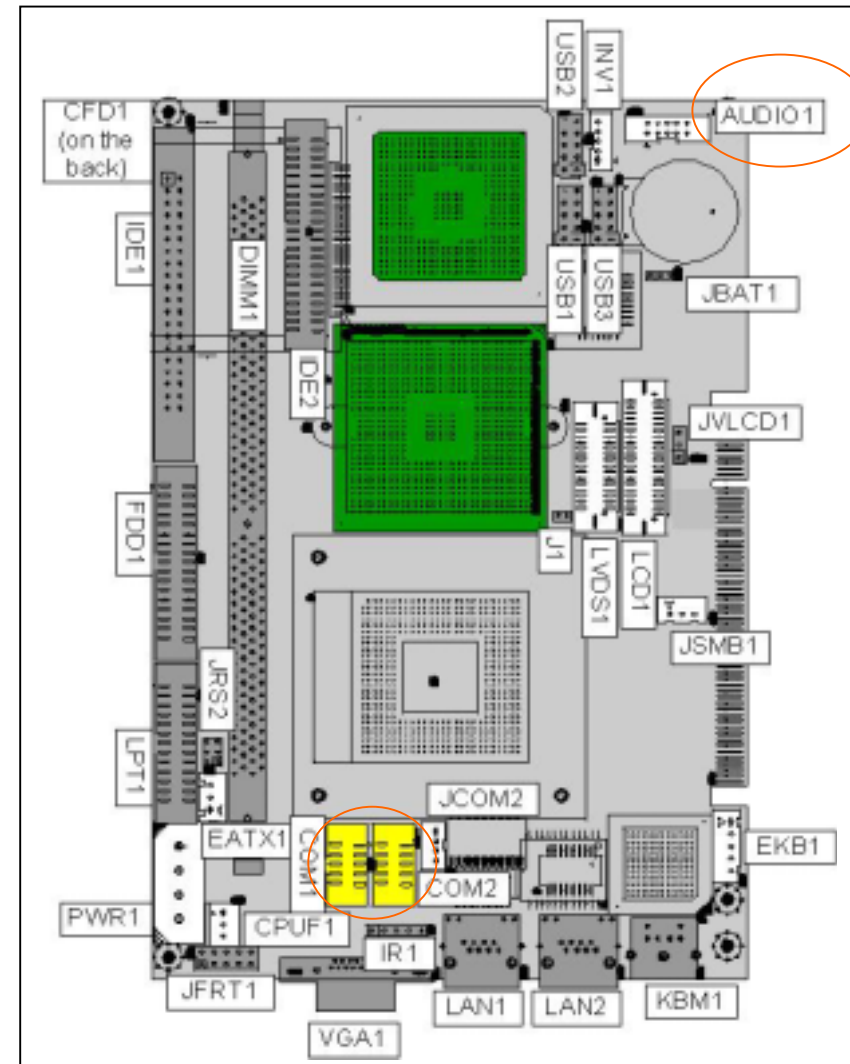
CPU Fan Connector

Connector : **CPUF1**
Type : onboard 3-pin wafer connector

1 2 3

CPUF1

Pin	Description
1	GND
2	+12V
3	FAN Dectect

Keyboard & Mouse Connector

AT Keyboard

EKB1

1
2
3
4
5

Connector : **EKB1**
Type : Onboard 5-pin header
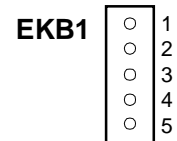
Pin	Description	Pin	Description
1	CLK	2	DATA
3	NC	4	GND
5	Vcc		

PS/2 Keyboard & Mouse

Connector: **KBM1**
Type: 6-pin Mini DIN connector on bracket
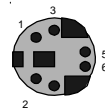
Pin	Description	Pin	Description
1	KB-DATA	2	MS-DATA
3	GND	4	VCC
5	KB-CLK	6	MS-CLK

Note: KBM1 supports PS/2 keyboard directly, and PS/2 mouse suppoted with the additional PS2 1-to-2 cable in the standard packing.
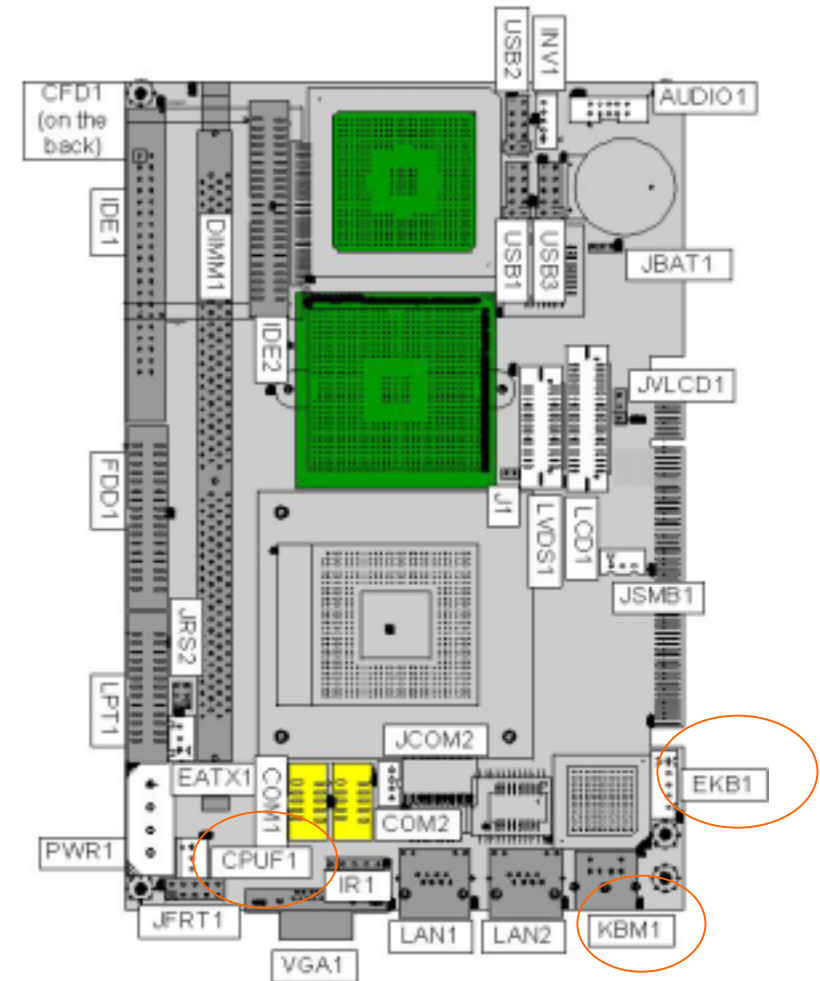
Interface Connectors HDD, FDD

Enhance IDE Connector

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33  ○○○○○○○○○○○○○○○○○  1
34  ○○○○○○○○○○○○○○○○○  2
```

Floppy Disk Drive Connector

Connector : **FDD1**
Type : onboard 34-pin box header
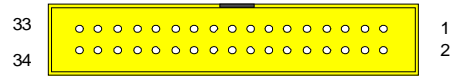
Pin	Description	Pin	Description
1	GND	2	DRIVE DENSITY SELECT 0
3	GND	4	NC
5	GND	6	DRIVE DENSITY SELECT 1
7	GND	8	#INDEX
9	GND	10	#MOTOR ENABLE A
11	GND	12	#DRIVER SELECT B
13	GND	14	#DRIVER SELECT A
15	GND	16	#MOTOR ENABLE B
17	GND	18	#DIRECTION
19	GND	20	#STEP
21	GND	22	#WRITE DATA
23	GND	24	#WRITE 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

```
○○○○○○○○○○○○○○○○○○○○  1
○○○○○○○○○○○○○○○○○○○○  2
```
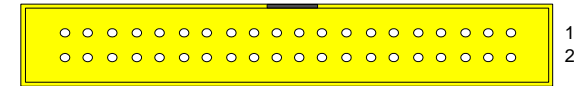
Connector : **IDE1**
Type : Two onboard 40-pin box headers

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/(Vcc)
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	#CS1	38	#CS3(#HD SELECT1)
39	#ACT	40	GND

Enhance IDE Connector
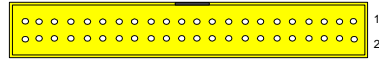
Connector : **IDE2**
Type : One onboard 44-pin box headers

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	#CS1	38	#CS3(#HD SELECT1)
39	#ACT	40	GND
41	Vcc 42		Vcc
43	GND	44	NC

Peripheral Port
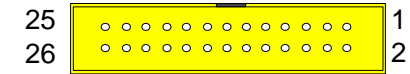
Connector : **LPT1**
Type : onboard 26-pin box header

LPT1

Pin	Description	Pin	Description
1	#STROBE	2	#AUTO FEED
3	DATA0	4	#ERROR
5	DATA1	6	#INITIALIZE
7	DATA2	8	#SELECT INPUT
9	DATA3	10	GND
11	DATA4	12	GND
13	DATA5	14	GND
15	DATA6	16	GND
17	DATA7	18	GND
19	#ACKNOWLEDGE	20	GND
21	BUSY	22	GND
22	PAPER EMPTY	24	GND
25	SELECT	26	GND

LCD Inverter connector

Connector : INV1

1 2 3 4 5

Type : Onboard 5-pin mini boxheader
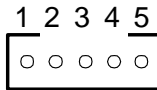
Pin	Description	Pin	Description
1	+12 V	2	GND
3	on/off	4	brightness control
5	GND		

LAN connector

LAN1

Connector : **LAN1(10/100Mbps)**
Type : external RJ-45 on bracket
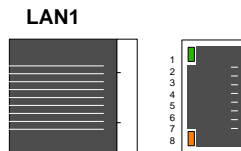
Pin	1	2	3	4	5	6	7	8
Desciption		TX+	TX-	RX+	NC	NC	RX-	NC	NC

Connector : **LAN2(1000Mbps)**
Type : external RJ-45 on bracket

Pin	1	2	3	4	5	6	7	8
Desciption	MDX3-	MDX0+	MDX0-	MDX1+	MDX2+	MDX2-	MDX1-	MDX3+
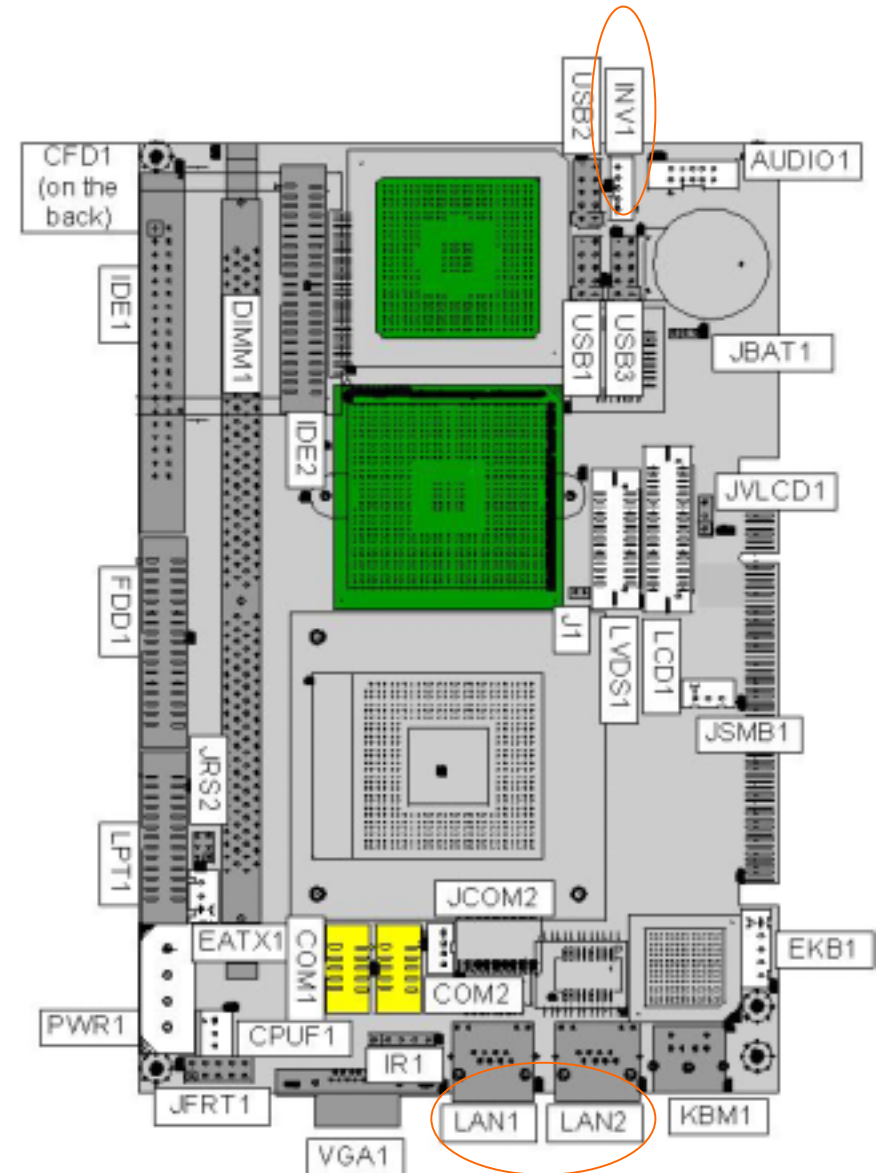
18/24bit TTL Flat Panel Connector

Connector : LCD1
Type : Onboard DF13 40-pin

1　　　　　　　　　　　　　　3 9

L C D 1

2　　　　　　　　　　　　　　4 0
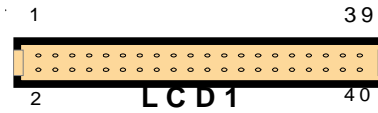
LCD1 pin Assignment

Pin	Description	Pin	Description
1	VDD	2	VDD
3	Ground	4	Ground
5	VDD	6	VDD
7	NA	8	Ground
9	R0	10	R1
11	R2	12	R3
13	R4	14	R5
15	R6	16	R7
17	G0	18	G1
19	G2	20	G3
21	G4	22	G5
23	G6	24	G7
25	B0	26	B1
27	B2	28	B3
29	B4	30	B5
31	B6	32	B7
33	Ground	34	Ground
35	FPSCLK	36	VS
37	DTMG	38	HS
39	NA	40	NA

Note: VDD Voltage selected by JVLCD1 in 5V or 3.3V.

LVDS LCD Connector

Connector LVDS1

Type : onboard 30-pin DF-13 Connector

1　　　　　　　　　　　　　　29

2　　　　　　　　　　　　　　30
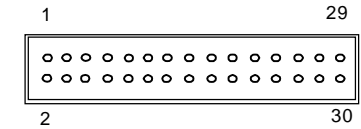
Pin	Signal	Pin	Signal
1	VDD	2	VDD
3	TX1CLK+	4	TX2CLK+
5	TX1CLK-	6	TX2CLK-
7	GND	8	GND
9	TX1D0+	10	TX2D0+
11	TX1D0-	12	TX2D0-
13	GND	14	GND
15	TX1D1+	16	TX2D1+
17	TX1D1-	18	TX2D1-
19	GND	20	GND
21	TX1D2+	22	TX2D2+
23	TX1D2-	24	TX2D2-
25	GND	26	GND
27	TX1D3+	28	TX2D3+
29	TX1D3-	30	TX2D3-

Note: VDD Voltage selected by JVLCD1 in 5V or 3.3V.

Power Connector

PWR1

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

+5 V
GND
GND
+12 V
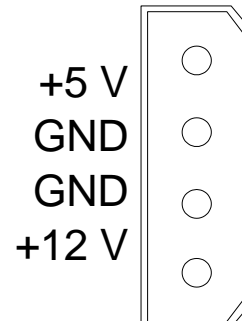
Infrared (IR) Connector

Connector : **IR1**

Type : onboard 5-pin header

1 2 3 4 5
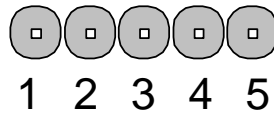
Pin	Description	Pin	Description
1	Vcc	2	NC
3	IRRX	4	GND
5	IRTX		

VGA Connector

Connector : **VGA1**
Type : external 15-pin D-sub female connector

VGA1

1 2 3 4 5 6 10 11 12 13 14 15
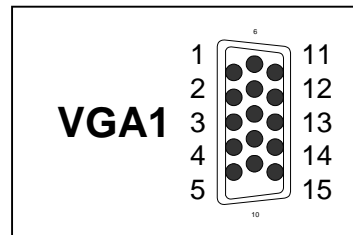
Pin	Description	Pin	Description	Pin	Description
1	RED	6	GND	11	NC
2	GREEN	7	GND	12	VDDAT
3	BLUE	8	GND	13	HSYNC
4	NC	9	Vcc	14	VSYNC
5	GND	10	GND	15	VDCLK
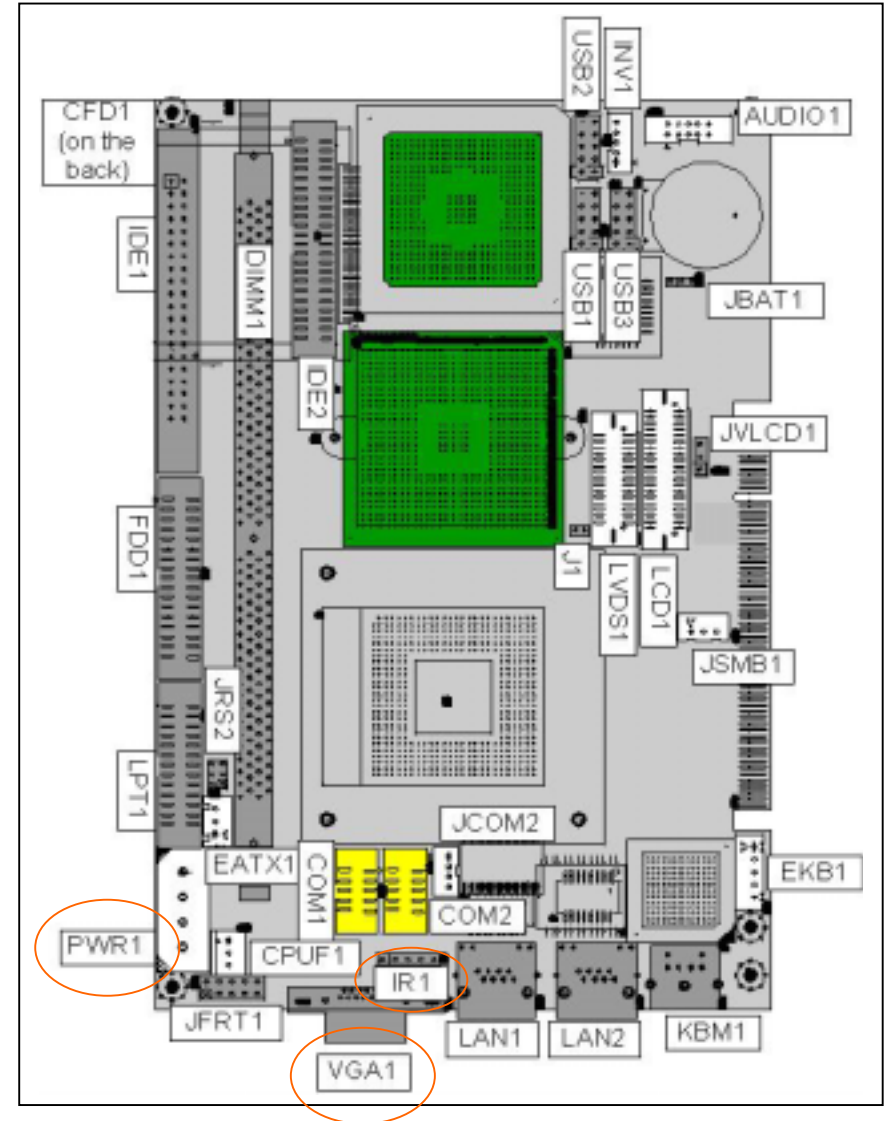
USB Connector

USB Ports

Connector: **USB1, USB2, USB3**
Type:onboard 2*5pin 2.0mm pitch header

```
2  □ □ □ □      10
1  □ □ □ □ □     9
```
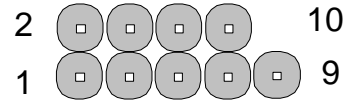
USB

Pin	Description	Pin	Description
1	Vcc	2	Vcc
3	DATA-	4	DATA-
5	DATA+	6	DATA+
7	GND	8	GND
9	GND	10	Key
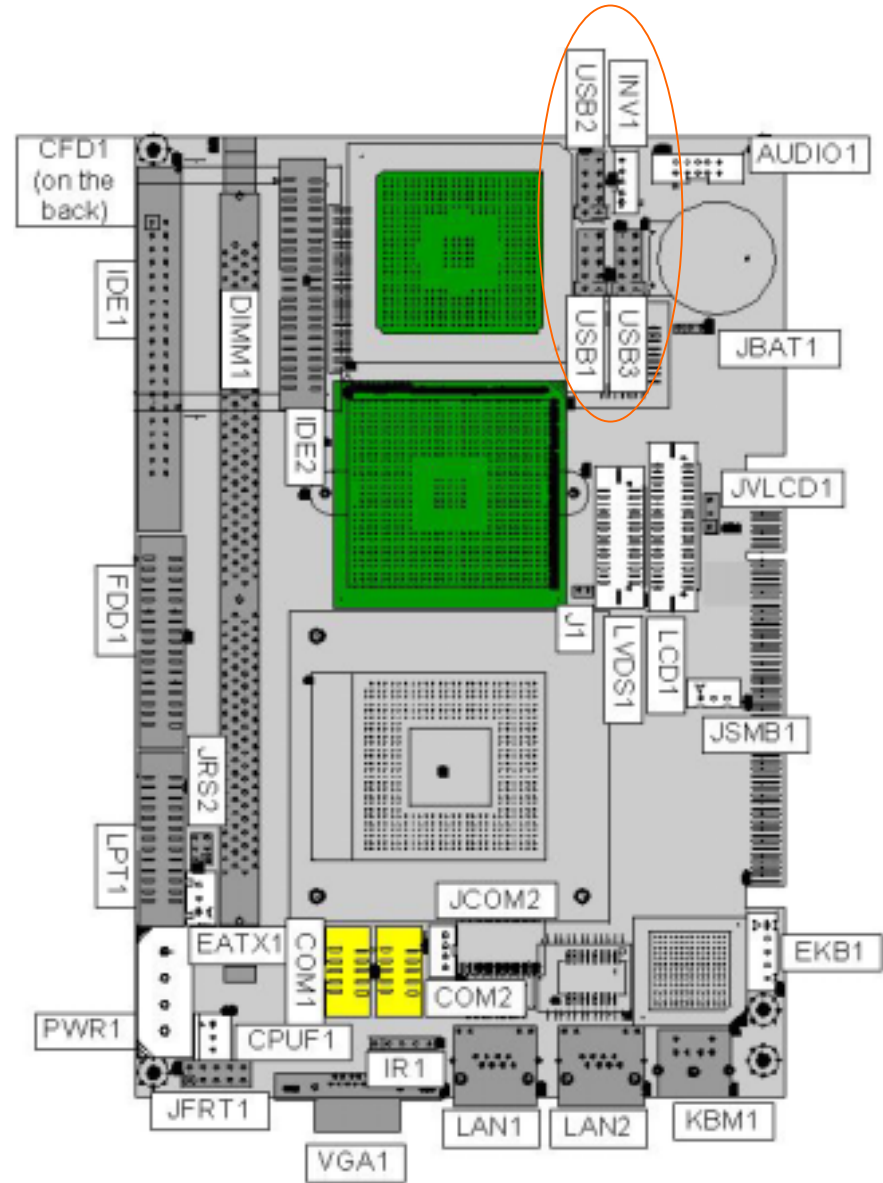
System Resources

Resource	Share	Device Description
DMA 02	Undetermined	Standard Floppy Disk Controller
DMA 04	Undetermined	Direct memory access
controller IRQ 00	Undetermined	System timer
IRQ 01	Undetermined	Standard 101/102-Key or Microsoft Natural Keyboard
IRQ 02	Undetermined	Programmable interrupt controller
IRQ 03	Exclusive	Communications Port (COM2)
IRQ 04	Exclusive	Communications Port (COM1)
IRQ 05	Shared	Realtek AC'97 Audio
IRQ 05	Shared	ACPI IRQ Holder for PCI IRQ Steering
IRQ 05	Shared	Intel(R) 82801DB/DBM SMBus Controller - 24C3
IRQ 06	Undetermined	Standard Floppy Disk Controller
IRQ 07	Undetermined	Printer Port (LPT1)
IRQ 08	Undetermined	System CMOS/real time clock
IRQ 09	Shared	Intel(R) PRO/1000 MT Network Connection
IRQ 09	Shared	Intel USB 2.0 Enhanced Host Controller
IRQ 09	Shared	ACPI IRQ Holder for PCI IRQ Steering
IRQ 09	Shared	SCI IRQ used by ACPI bus
IRQ 0A	Shared	Intel(R) PRO/100 VE Network Connection
IRQ 0A	Shared	Intel(R) 82801DB/DBM USB Universal Host Controller - 24C4
IRQ 0A	Shared	ACPI IRQ Holder for PCI IRQ Steering
IRQ 0A	Shared	ACPI IRQ Holder for PCI IRQ Steering
IRQ 0B	Shared	Intel(R) 82801DB/DBM USB Universal Host Controller - 24C2
IRQ 0B	Shared	Intel(R) 82801DB/DBM USB Universal Host Controller - 24C7
IRQ 0B	Shared	ACPI IRQ Holder for PCI IRQ Steering
IRQ 0B	Shared	ACPI IRQ Holder for PCI IRQ Steering
IRQ 0B	Shared	Intel(R) 82852/82855 GM/GME Graphics Controller
IRQ 0C	Undetermined	PS/2 Compatible Mouse Port
IRQ 0D	Undetermined	Numeric data processor
IRQ 0E	Exclusive	Primary Ultra ATA Controller
IRQ 0E	Undetermined	Intel(R) 82801DB Ultra ATA Storage Controller - 24CB
IRQ 0F	Exclusive	Secondary Ultra ATA Controller
IRQ 0F	Undetermined	Intel(R) 82801DB Ultra ATA Storage Controller - 24CB
Memory 00000000-0009FFFF	Undetermined	System board extension for ACPI BIOS
Memory 00000000-FFFFFFFF	Exclusive	Intel(R) 82801DB PCI Bridge - 244E
Memory 000A0000-000AFFFF	Exclusive	Intel(R) 82852/82855 GM/GME Graphics Controller
Memory 000B0000-000BFFFF	Exclusive	Intel(R) 82852/82855 GM/GME Graphics Controller
Memory 000C0000-000CC7FF	Exclusive	Intel(R) 82852/82855 GM/GME Graphics Controller
Memory 000D0000-000D17FF	Exclusive	Intel(R) PRO/100 VE Network Connection
Memory 000D1800-000D3FFF	Undetermined	System board extension for ACPI BIOS

```
Memory  000E0000-000EFFFF   Undetermined   System board extension for ACPI BIOS
Memory  000F0000-000F7FFF   Undetermined   System board extension for ACPI BIOS
Memory  000F8000-000FBFFF   Undetermined   System board extension for ACPI BIOS
Memory  000FC000-000FFFFF   Undetermined   System board extension for ACPI BIOS
Memory  00100000-1DFEFFFF   Undetermined   System board extension for ACPI BIOS
Memory  1DFF0000-1DFFFFFF   Undetermined   System board extension for ACPI BIOS
Memory  D0000000-D7FFFFFF   Exclusive      Intel(R) 82852/82855 GM/GME Graphics Controller
Memory  D8000000-DFFFFFFF   Exclusive      Intel(R) 82852/82855 GM/GME Graphics Controller
Memory  E0000000-E1FFFFFF   Exclusive      Intel(R) 82801DB PCI Bridge - 244E
Memory  E1000000-E101FFFF   Exclusive      Intel(R) PRO/1000 MT Network Connection
Memory  E1020000-E102FFFF   Exclusive      Intel(R) PRO/1000 MT Network Connection
Memory  E1030000-E1030FFF   Exclusive      Intel(R) PRO/100 VE Network Connection
Memory  E2000000-E207FFFF   Exclusive      Intel(R) 82852/82855 GM/GME Graphics Controller
Memory  E2080000-E20FFFFF   Exclusive      Intel(R) 82852/82855 GM/GME Graphics Controller
Memory  E2100000-E21003FF   Exclusive      Intel USB 2.0 Enhanced Host Controller
Memory  E2101000-E21011FF   Exclusive      Realtek AC'97 Audio
Memory  E2102000-E21020FF   Exclusive      Realtek AC'97 Audio
Memory  FEC00000-FECFFFFF   Undetermined   System board extension for ACPI BIOS
Memory  FEE00000-FEEFFFFF   Undetermined   System board extension for ACPI BIOS
Memory  FFB00000-FFB7FFFF   Undetermined   System board extension for ACPI BIOS
Memory  FFB80000-FFBFFFFF   Undetermined   Intel(r) 82802 Firmware Hub Device
Memory  FFF00000-FFFFFFFF   Undetermined   System board extension for ACPI BIOS
Port  0000-000F            Undetermined   Direct memory access controller
Port  0010-001F            Undetermined   Motherboard resources
Port  0020-0021            Undetermined   Programmable interrupt controller
Port  0022-003F            Undetermined   Motherboard resources
Port  0040-0043            Undetermined   System timer
Port  0044-005F            Undetermined   Motherboard resources
Port  0060-0060            Undetermined   Standard 101/102-Key or Microsoft Natural Keyboard
Port  0061-0061            Undetermined   System speaker
Port  0062-0063            Undetermined   Motherboard resources
Port  0064-0064            Undetermined   Standard 101/102-Key or Microsoft Natural Keyboard
Port  0065-006F            Undetermined   Motherboard resources
Port  0070-0073            Undetermined   System CMOS/real time clock
Port  0074-007F            Undetermined   Motherboard resources
Port  0080-0090            Undetermined   Direct memory access controller
Port  0091-0093            Undetermined   Motherboard resources
Port  0094-009F            Undetermined   Direct memory access controller
Port  00A0-00A1            Undetermined   Programmable interrupt controller
Port  00A2-00BF            Undetermined   Motherboard resources
```

Port 00C0-00DF	Undetermined	Direct memory access controller
Port 00E0-00EF	Undetermined	Motherboard resources
Port 00F0-00FF	Undetermined	Numeric data processor
Port 0170-0177	Exclusive	Intel(R) 82801DB Ultra ATA Storage Controller - 24CB
Port 0170-0177	Exclusive	Secondary Ultra ATA Controller
Port 01F0-01F7	Exclusive	Intel(R) 82801DB Ultra ATA Storage Controller - 24CB
Port 01F0-01F7	Exclusive	Primary Ultra ATA Controller
Port 02F8-02FF	Undetermined	Communications Port (COM2)
Port 0376-0376	Exclusive	Intel(R) 82801DB Ultra ATA Storage Controller - 24CB
Port 0376-0376	Exclusive	Secondary Ultra ATA Controller
Port 0378-037F	Undetermined	Printer Port (LPT1)
Port 03B0-03BB	Exclusive	Intel(R) 82852/82855 GM/GME Graphics Controller
Port 03C0-03DF	Exclusive	Intel(R) 82852/82855 GM/GME Graphics Controller
Port 03F0-03F5	Undetermined	Standard Floppy Disk Controller
Port 03F6-03F6	Exclusive	Intel(R) 82801DB Ultra ATA Storage Controller - 24CB
Port 03F6-03F6	Exclusive	Primary Ultra ATA Controller
Port 03F7-03F7	Undetermined	Standard Floppy Disk Controller
Port 03F8-03FF	Undetermined	Communications Port (COM1)
Port 0400-04BF	Undetermined	Motherboard resources
Port 04D0-04D1	Undetermined	Motherboard resources
Port 0500-051F	Exclusive	Intel(R) 82801DB/DBM SMBus Controller - 24C3
Port 0778-077B	Undetermined	Printer Port (LPT1)
Port 0A78-0A7B	Undetermined	Motherboard resources
Port 0B78-0B7B	Undetermined	Motherboard resources
Port 0BBC-0BBF	Undetermined	Motherboard resources
Port 0CF8-0CFF	Undetermined	PCI bus
Port 0E78-0E7B	Undetermined	Motherboard resources
Port 0F78-0F7B	Undetermined	Motherboard resources
Port 0FBC-0FBF	Undetermined	Motherboard resources
Port 9000-903F	Exclusive	Intel(R) PRO/1000 MT Network Connection
Port 9000-9FFF	Exclusive	Intel(R) 82801DB PCI Bridge - 244E
Port 9400-943F	Exclusive	Intel(R) PRO/100 VE Network Connection
Port A000-A01F	Exclusive	Intel(R) 82801DB/DBM USB Universal Host Controller - 24C2
Port A400-A41F	Exclusive	Intel(R) 82801DB/DBM USB Universal Host Controller - 24C4
Port A800-A81F	Exclusive	Intel(R) 82801DB/DBM USB Universal Host Controller - 24C7
Port AC00-AC07	Exclusive	Intel(R) 82852/82855 GM/GME Graphics Controller
Port B400-B4FF	Exclusive	Realtek AC'97 Audio
Port B800-B83F	Exclusive	Realtek AC'97 Audio
Port F000-F007	Undetermined	Primary Ultra ATA Controller
Port F000-F00F	Exclusive	Intel(R) 82801DB Ultra ATA Storage Controller - 24CB
Port F008-F00F	Undetermined	Secondary Ultra ATA Controller

CPU Heatsink Installation

To install CPU heatsink, please be aware of the orientation of it. Align the end of CPU Fan power cable to the top-left in order to mount it easily.

CPU Fan power socket

The holes that secure the heatsink

Insert the CPU fan powe cable into the socket and place the heatsink into position.
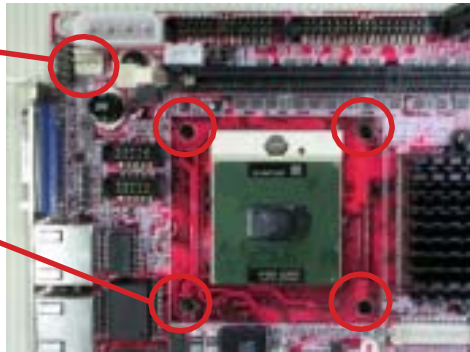
The solided side of heatsink that to be secured by screws
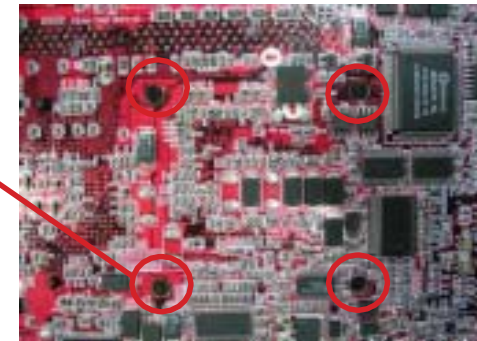
Use tool-free screws to secure heatsink

Warning: Screw them to half-way at the same time, then screw each of them until heatsink snaps into mainboard gently.
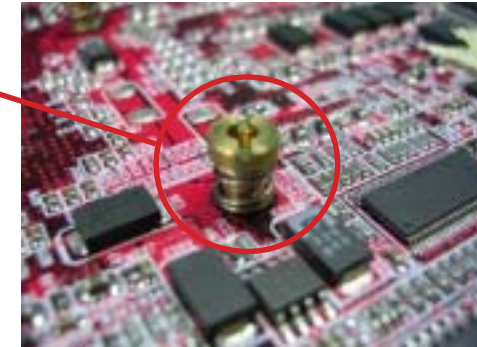
AWARD BIOS Setup

The AR-B1740 uses the Award PCI/ISA BIOS 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.

```
          Phoenix - AwardBIOS CMOS Setup Utility

  ► Standard CMOS Features          ► PC Health Status

  ► Advanced BIOS Features          ► Frequency/Voltage Control

  ► Advanced Chipset Features          Load Optimized Defaults

  ► Integrated Peripherals             Set Password

  ► Power Management Setup             Save & Exit Setup

  ► PnP/PCI Configurations             Exit Without Saving


  Esc : Quit        F9 : Menu in BIOS    ↑ ↓ → ←   : Select Item
  F10 : Save & Exit Setup

                Time, Date, Hard Disk Type...
```

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
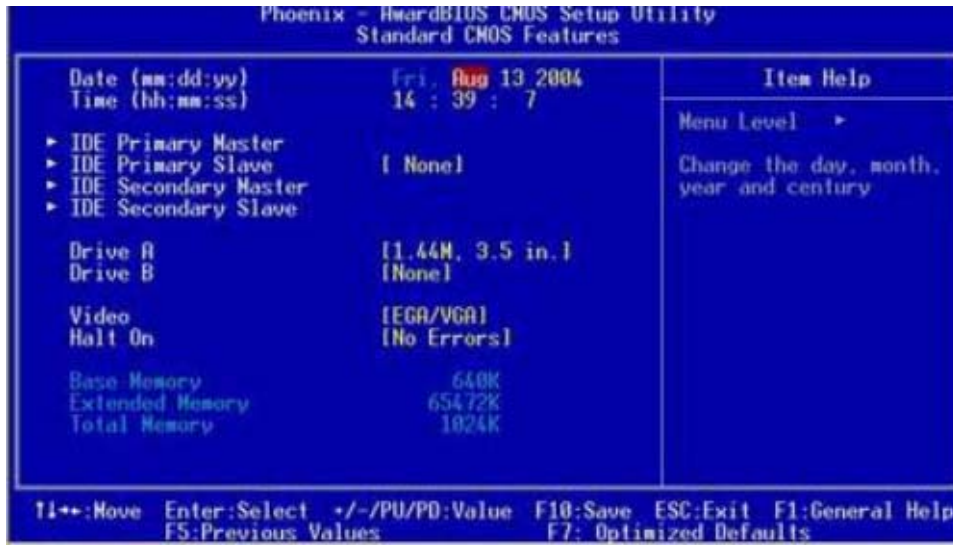Use this menu to set User and Supervisor Passwords.

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

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.

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.

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

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

BIOS Features Setup

CPU L1 & L2 Cache
Cache memory is additional memory that is much faster than conventional DRAM (system memory). CPUs from 486-type on up contain internal cache memory, and most, but not all,

CPU L3 Cache
This item allows you to enable/disable CPU L3 Cache.
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
Keystrokes repeat at a rate determined by the keyboard controller.   When enabled, the typematic rate and typematic delay can be selected.
The choice: Enabled/Disabled.

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.

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
Setting it to Enabled is to extend the number of IRQ.

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.

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.

Advanced Chipset Features

DRAM Timing Selectable
When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on DRAM timing.
        The choices: By SPD (default), Manual

CAS Latency Time
When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing. Do not reset this field from the default value specified by the system designer.

Active to Precharge Delay
Delay that results when two different rows in a memory chip are addressed one after another.

DRAM RAS# to CAS# Delay
When RAS is asserted, there must be a small wait before the CAS can be pulled. This setting controls length of the wait. Like CAS latency, it's a delay before you get your data, so while your system is faster at a lower setting, it's also more stressful at that setting. Your RAM may handle it, or it may not.

DRAM RAS Precharge
The third part of the x-y-z notation used in SDRAM, the other two being CAS and RAS to CAS. Like its brethren, it's better lower but also more stressful lower. See the pattern 2.5 is only available with DDR.

DRAM Data Integrity Mode
This BIOS feature controls the ECC feature of the memory controller.

System BIOS Cacheable
Allows the system BIOS to be cached for faster system performance.

Video BIOS Cacheable
This item allows you to "Enabled" or "Disabled" on Video BIOS Cacheable.

Memory Hole At 15M-16M
If you enable this feature, 1MB of memory (the 15th MB) will be reserved exclusively for the ISA card's use. This effectively reduces the total amount of memory available to the operating system by 1MB. If you disable this feature, the 15th MB of RAM will not be reserved for the ISA card's use. The full range of memory is therefore available for the operating system to use. However, if your ISA card requires the use of that memory area, it may then fail to work.

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.

Delay Prior to Thermal
Controls the activation of the Thermal Monitor's automatic mode. It allows you to determine when the Pentium 4's Thermal Monitor should be activated in automatic mode after the system boots. For example, with the default value of 16 Minutes, the BIOS activates the Thermal Monitor in automatic mode 16 minutes after the system starts booting up.

AGP Aperture Size

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

This option selects the size of the AGP aperture. The aperture is a portion of the PCI memory address range dedicated as graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without need for translation. This size also determines the maximum amount of system RAM that can be allocated to the graphics card for texture storage.

AGP Aperture size is set by the formula : maximum usable AGP memory size x 2 plus 12MB. That means that usable AGP memory size is less than half of the AGP aperture size. That's because the system needs AGP memory (uncached) plus an equal amount of write combined memory area and an additional 12MB for virtual addressing. This is address space, not physical memory used. The physical memory is allocated and released as needed only when Direct3D makes a "create non-local surface" call.

On-Chip VGA
If your system contains a VGA controller and you want to activate it, select Enabled. The next option will become available.

On-Chip Frame Buffer Size
The On-Chip Frame Buffer Size can be set to 1MB or 8MB. This memory is shared with system memory.

Boot Display
This option let you select the display devices.

Panel Number
This option let you select the type of panel.

Integrated Peripherals

[Sub Menu]

OnChip Primary/Seconary IDE
Select "Enabled" to activate each on-board IDE channel separately, Select "Disabled", if you install an add-on IDE Control card

IDE HDD Block Mode
This feature enhances disk performance by allowing multi-sector data transfers and eliminates the interrupt handling time for each sector.

[Sub Menu]

USB Controller
Select "Enabled" to activate USB Controller, Select "Disabled", if you want to disable USB Controller.

USB 2.0 Controller
Select "Enabled" to activate USB 2.0 Controller, Select "Disabled", if you want to disable USB 2.0 Controller.

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

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

AC97 Audio
AC97 Audio selection.

Init Display First
Select "AGP" or "PCI Slot" for system to detect first when boot-up.

Onboard LAN 1 & 2
Select "Enabled" if your system contains onboard LAN 1 & 2 supports.

Power Management Setup

Power-Supply Type
Select the power-supply type.

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.

HDD Power Down is always set independently

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

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.

Primary IDE 0/1
Select   "Disabled" to turn off Primary IDE.

Secondary IDE 0/1
Select   "Disabled" to turn off Secondary IDE.

FDD,COM,LPT Port
Select   "Disabled" to turn off these I/O.

PCI PIRQ[A-Q]#
Enabled or Disabled PCI,PIRQ[A-D]#IRQ status.

PC Health Status

This section describes CPU temperare for the system.

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

System Temperature
This field displays the current system temperature.

CPU Temperature
These fields display the current CPU temperature, if your computer contains a monitoring system.

Vcore
These fields display the current voltage of up to seven voltage input lines, if your computer contiains a monitoring system.

VTT
 One type of CPU voltage

 +3.3V, +5V, +12V
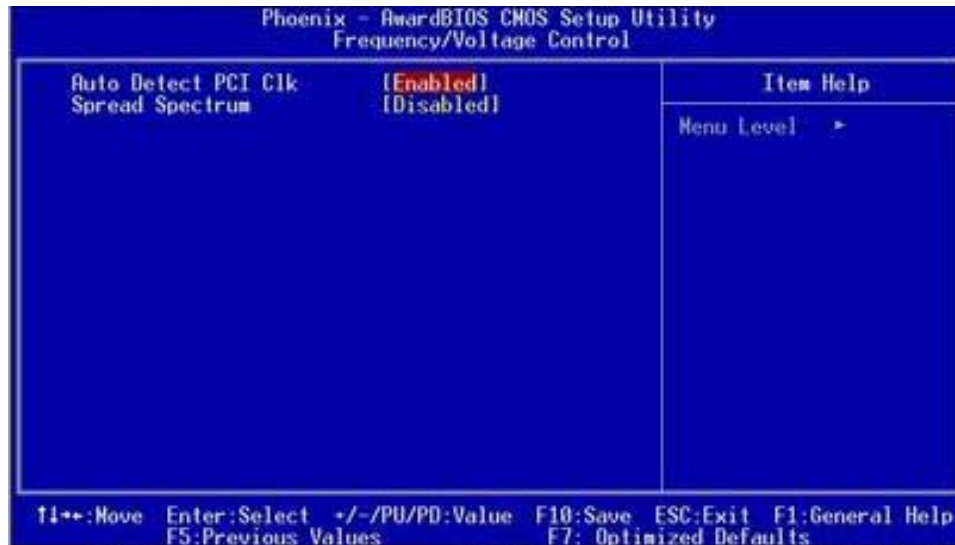 Show you the voltage of +3.3V, +5V, +12V

CPUFAN Speed
These fields display the current speed of up to three CPU fans, if your computer contains a monitoring system.

System FAN Speed
Show you the current SystemFAN operating speed

Frequency/Voltage Control

```
          Phoenix - AwardBIOS CMOS Setup Utility
                 Frequency/Voltage Control
 ┌────────────────────────────────────┬──────────────────────┐
 │ Auto Detect PCI Clk      [Enabled]  │     Item Help        │
 │ Spread Spectrum          [Disabled] │                      │
 │                                     │  Menu Level    ►     │
 │                                     │                      │
 │                                     │                      │
 │                                     │                      │
 │                                     │                      │
 │                                     │                      │
 │                                     │                      │
 │                                     │                      │
 ├─────────────────────────────────────┴──────────────────────┤
 │ ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help │
 │      F5:Previous Values               F7: Optimized Defaults  │
 └────────────────────────────────────────────────────────────┘
```

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)

How to flash the BIOS

Warranty

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.

The procedure:

Create a new, clean DOS (6 or higher) 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.

This product is warranted to be in good working order for a period of one year from the date of purchase. Should this product fail to be in good working order at any time during this period, we will, at our option, replace or repair it at no additional charge except as set forth in the following terms. This warranty does not apply to products damaged by misuse, modifications, accident or disaster.

Vendor assumes no liability for any damages, lost profits, lost savings or any other incidental or consequential damage resulting from the use, misuse of, or inability to use this product. Vendor will not be liable for any claim made by any other related party.

Return authorization must be obtained from the vendor before returned merchandise will be accepted. Authorization can be obtained by calling or faxing the vendor and requesting a Return Merchandise Authorization (RMA) number. Returned goods should always be accompanied by a clear problem description.