



User's Manual

3301040

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

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 (BR2335).

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

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Specifications

System

- CPU Type: Low Voltage (LV) Mobile Pentium III or Ultra Low Voltage (ULV) Celeron (Fanless)

3301040xx/C400: Intel ULV Celeron CPU 400MHz with 100MHz FSB and 256KB L2 cache

- System Memory: 128MB On-Board (Optional 256MB On-Board) One 144-pin SODIMM supports up to 512MB SDRAM
- Chipset: VIA VT8606 TwisterTM NorthBridge & VIA VT82C686B Super South-Bridge

Multi I/O

- Serial: 3 high speed RS-232C ports (COM1, 3, 4); 1 high speed RS-232C/422/485 port (COM2)
- Parallel: Supports SPP, EPP and ECP mode
- USB: 4 USB ver1.1 ports

LAN

- Chipset: Triple Intel 82551 or Realtek 8100BL for 10/100Mbps or Intel 82540 for Gigabit LAN
- Supports boot ROM Function (upon customer's request)
- Connector: RJ-45 Connector (Available with Box header by OEM Case)

Audio

- Chipset: Integrated in VIA VT82C686B
- Audio Controller: AC97 v2.2

Display (Flat Panel / CRT)

- Chipset: S3 Savage 4 (VT8606T) AGP Video Controller with TTL, LVDS and CRT support
- Display Memory: Up to 32MB share memory Video RAM
- CRT: Up to UXGA 1600 x 1200 @ 32bpp
- TTL: Direct connection to TFT/DSTN panels (36-bit)
- LVDS: Supports dual channel 110MHz (36-bit)
- TV-out: Support NTSC, PAL, NTSC-EIA (Japan) format, 800 x 600 resolutions

Flash Disk

- CompactFlash Type I/II supported
- DiskOnChip 2000

Environmental and Power

- Power Requirements (typical) : 5.79 watt (3301040 VL3/N, Celeron 400 with 128MB RAM)
- 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 3301040 5.25" Embedded Celeron 400 (Celeron 650, PIII 800, PIII 933) SBC
- > 1 x Quick Installation Guide
- > 1 x CD-ROM (for driver used)

Cable Kit (optional)

3301040 Cable Kit (6910706250000) contains the followings:

Content	Part No.
. 1 x Audio Cable	3431011000000
. 1 x USB 2 Port Cable	3431122000050
. 1 x Ultra DMA 100 IDE Flat	3432061000030
. 1 x IDE cable w/SR	3432061000370
. 1 x FDD Flat Cable	3432031000010
. 1 x Parallele Port Cable	3432091000000
. 1 x COM Cable	3432021000120

3301040 Cable Kit (6911106250000) contains the followings:

Content	Part No.
. 1 x VGA Cable	3432131000000
. 1 x Serial Port Cable (COM1)	3432021000010
. 1 x Serial Port 3 in 1 Cable (COM2~COM4)	3432021000120
. 1 x Audio Cable	3431011000000
. 3 x RJ-45 Ethernet Wire Cable	3432112000090
. 2 x USB 2 Port Cable	3431122000050
. 1 x PS2 Cable	3432102000000
. 1 x Ultra DMA 100 IDE Flat	3432061000030
. 1 x IDE cable	3432061000370
. 1 x FDD Flat Cable	3432031000010
. 1 x Parallele Port Cable	3432091000000

Ordering Codes

- **3301040VL3/N/C400-C**

EBX Embedded Intel Ultra Low Voltage Celeron 400 Mini-board with 4xAGP CRT SVGA, triple Intel 82551 Fast Ethernet, Audio, DOC and CompactFlash Socket

- Cable Kit (6910706250000) for 3301040

- Cable Kit (6911106250000) for 3301040

- **3301040VL3/R/C400-C**

Same as above with triple Realtek 8100BL Fast Ethernet

- **3301040VL3/G/C400-C**

Same as above with triple Intel 82540 Gigabyte Ethernet Box header version and all other specifications are available upon OEM request.

- CPU options

ULV Celeron 650MHz with 100MHz FSB and 256K L2 Cache

LV PIII 800MHz with 133MHz FSB and 512K L2 Cache

LV PIII 933MHz with 133MHz FSB and 512K L2 Cache

- Ethernet options

Intel 82551 10/100 Mbps

Intel 82540 10/100/1000 Mbps

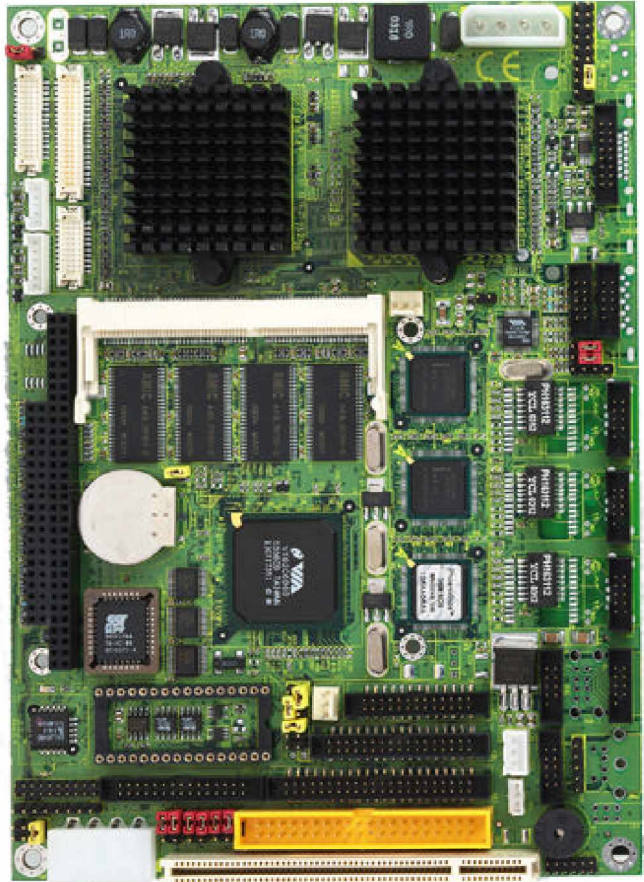
Realtek 8100BL 10/100 Mbps

- Connector options

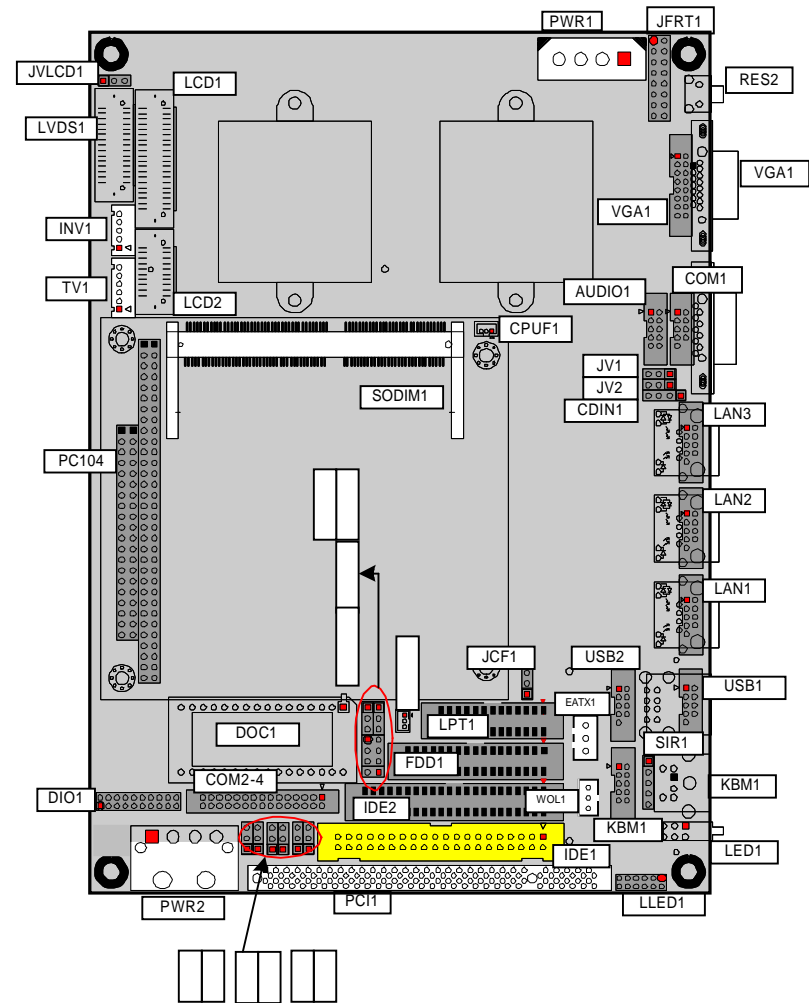
I/O connector type: 3301040-C (standard) Box

header type: 3301040-B (optional)

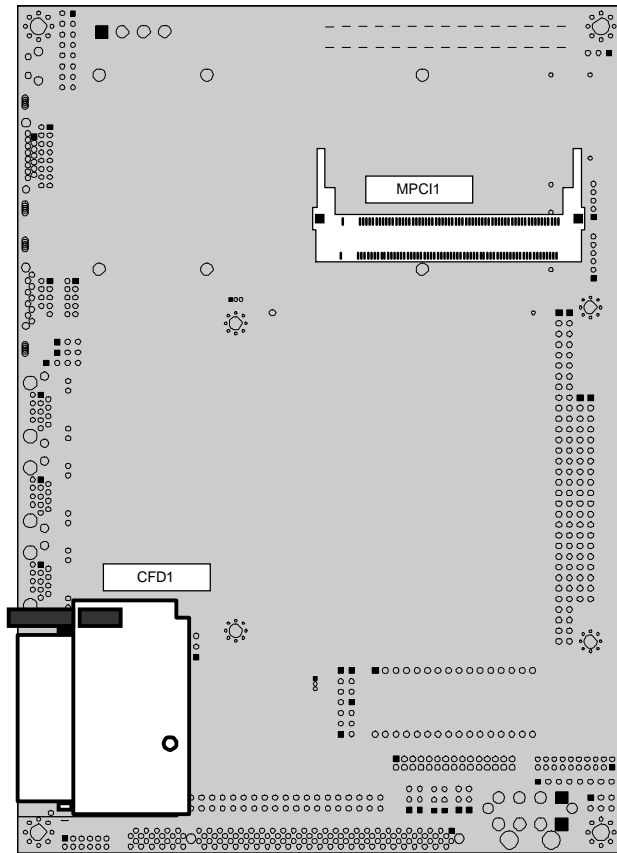
Board Image (boxheader version)



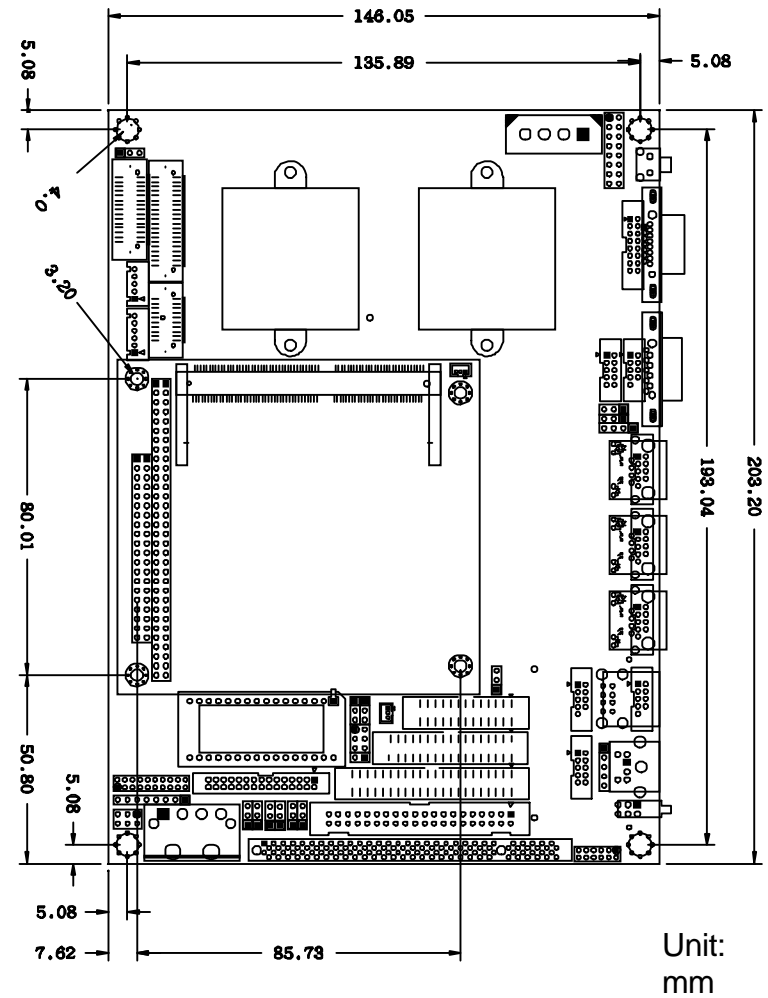
Board Layout (Front)



Board Layout (Back)



Board Dimension



Jumper Quick Reference

Jumpers Label	Function
JBAT1	Clear CMOS
JWT1	Watchdog Output
JRS2	COM2 RS-232C / 422 / 485 Selection
JV1-2	COM1 Power Source Special Support
JV3-4	COM2 Power Source Special Support
JV5-6	COM3 Power Source Special Support
JV7-8	COM4 Power Source Special Support
JVLCD1	LVDS LCD Voltage selection
JCF1	CFD Master/Slave Selection
JPWR1	AT/ATX Power Type Selection

Connector Quick Reference

Connectors Lable	Function
EATX1	ATX feature connector
AUDIO1	Audio Interface Port
CDIN1	CD-ROM Audio Input
COM1	RS232 Serial Port: COM1
COM2-4	Serial Port: COM2~COM4
PC104	PC104 for ISA Interface Connector
CPUF1	CPU Fan1 connector
DIO1	Digital I/O Connector
FDD1	Floppy Disk Drive Connector
IDE1	Primary IDE Connector (ATA 33/66)

IDE2	Secondary IDE Connector (ATA 33)
KBM1	PS/2 Keyboard and Mouse
DOC1	DiskOnChip Connector
LAN1	10/100/1000 M LAN1 Connector
LAN2	10/100/1000 M LAN2 Connector
LAN3	10/100/1000 M LAN3 Connector
LPT1	Parallel Port
PWR1	4P Power Connector (180D)
PWR2	4P Power Connector (90D)
RES2	Reset Push Button
IR1	Infrared (IR) Connector
SYSF1	System Fan1 connector
USB1	USB Port 0,1
USB2	USB Port 3,4
VGA1	CRT SVGA Connector
WOL1	Wake On LAN
JFRT1	Switches & Indicators
SODIMM1	144-pin SODIMM Slot
CFD1	Compact Flash Disk
LLED1	LAN LED connector
LED1	Power / HDD LED
LCD1	18bit/24bit TTL Flat Panel Connector (DF13 40 pin)
LCD2	36bit TTL Flat Panel Connector (DF13 20 pin)
LVDS1	18/24bit LVDS Panel Connector (DF13 30 pin)
MPCI1	Mini PCI TYPE III Connector
INV1	LCD Inverter connector
TV1	TV-OUT Connector
PCI1	PCI Slot / Expansion PCI Slot

CMOS Jumper Settings

CMOS Operation (JBAT1)

Type : JBAT1: onboard 3-pin header

If the 3301040 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)	J1	Status
Normal Operation	1-2	ON
Clear CMOS	2-3	ON
default setting	1-2 ON	

Watchdog Output

Mode Setting

Type : JWT1: onboard 3-pin (1*3) header

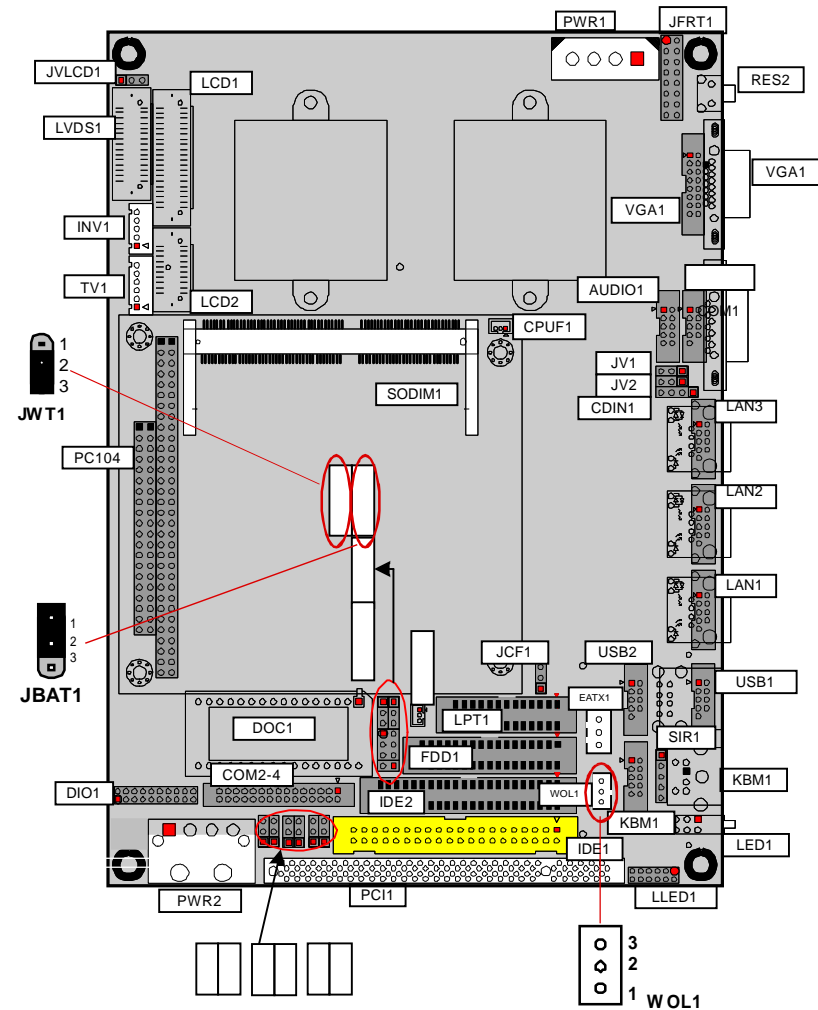
Watchdog mode	JWT1
Enabled for Active NMI(I/O Channel Check)	1-2
Enabled for System Reset	2-3
Disable Watchdog Timer	None
default setting	Enabled for System Reset

Wake On LAN

Connector: **WOL1**

Type : onboard 3-pin wafer connector

Pin	Description
1	5V_SB
2	GND
3	WOL_CTL



Serial Port Selection (RS232C/422/485)

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

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

RS-422/485 Mode on COM2

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

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

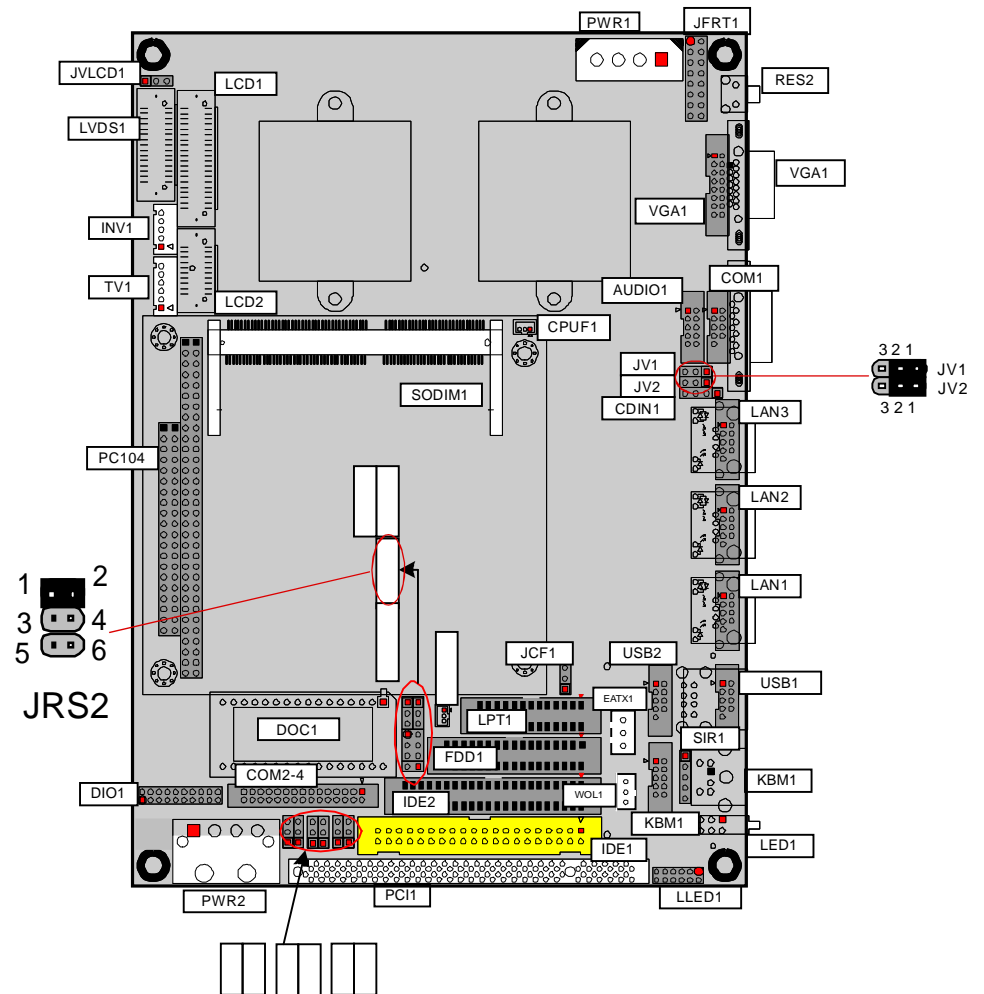
COM1~COM4 Power Source Special Support

Jumper : JV1 & JV2

Type : Onboard 2*3 pin 2.0mm header

The voltage of COM 1 could be selected by JV1 & JV2.

COM1 Power Source	JV1	JV2
Standard	1-2	1-2
POS:12V on pin 9	2-3	1-2
POS:5V on pin 1	1-2	2-3
POS:5V on pin 1 and 12V on pin 9	2-3	2-3
default setting	Standard	



Jumper : JV3 & JV4

Type : Onboard 2*3 pin 2.0mm header

The voltage of COM 2 could be selected by JV3 & JV4.

COM2 Power Source	JV3	JV4
Standard	1-2	1-2
POS:12V on pin 9	2-3	1-2
POS:5V on pin 1	1-2	2-3
POS:5V on pin 1 and 12V on pin 9	2-3	2-3
default setting	Standard	

Jumper : JV5 & JV6

Type : Onboard 2*3 pin 2.0mm header

The voltage of COM 3 could be selected by JV5 & JV6.

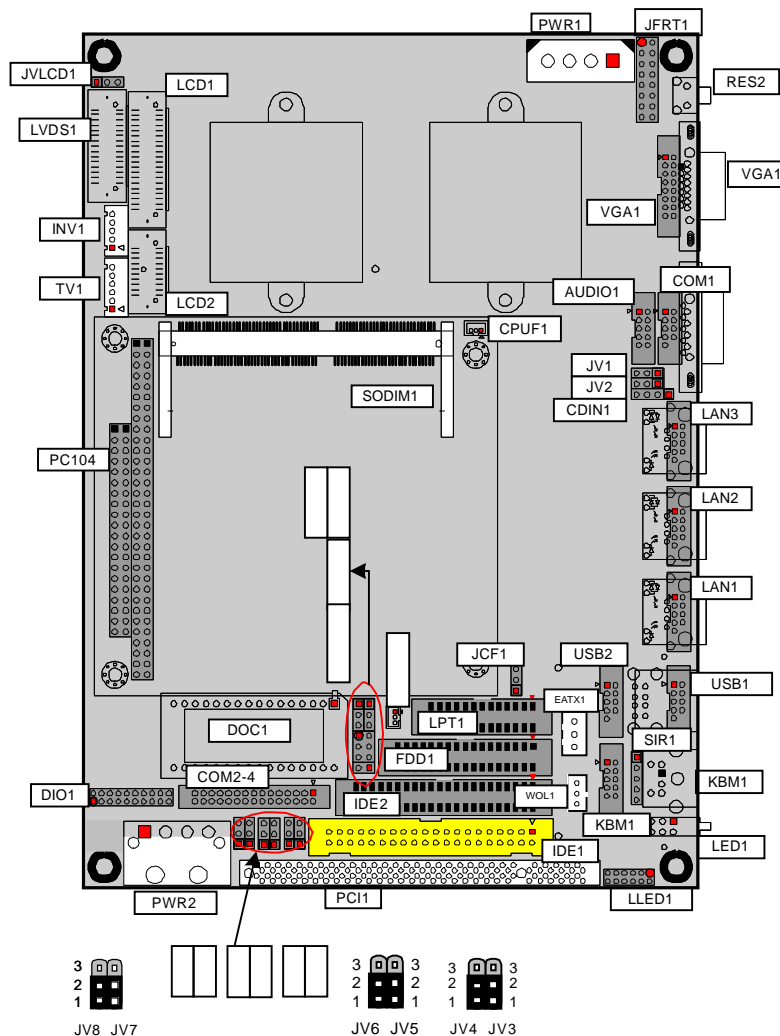
COM1 Power Source	JV5	JV6
Standard	1-2	1-2
POS:12V on pin 9	2-3	1-2
POS:5V on pin 1	1-2	2-3
POS:5V on pin 1 and 12V on pin 9	2-3	2-3
default setting	Standard	

Jumper : JV7 & JV8

Type : Onboard 2*3 pin 2.0mm header

The voltage of COM 4 could be selected by JV7 & JV8.

COM1 Power Source	JV7	JV8
Standard	1-2	1-2
POS:12V on pin 9	2-3	1-2
POS:5V on pin 1	1-2	2-3
POS:5V on pin 1 and 12V on pin 9	2-3	2-3
default setting	Standard	



LVDS Voltage Selection

Type : JVLCD1: onboard 3-pin header

The voltage of LVDS panel could be selected by JVLCD1 in 5V or 3.3V .

Mode	JVLCD1
3.3V	2-3
5V	1-2
default setting	3.3V

Audio Interface

Connector : AUDIO1

Type : Onboard 10-pin box header

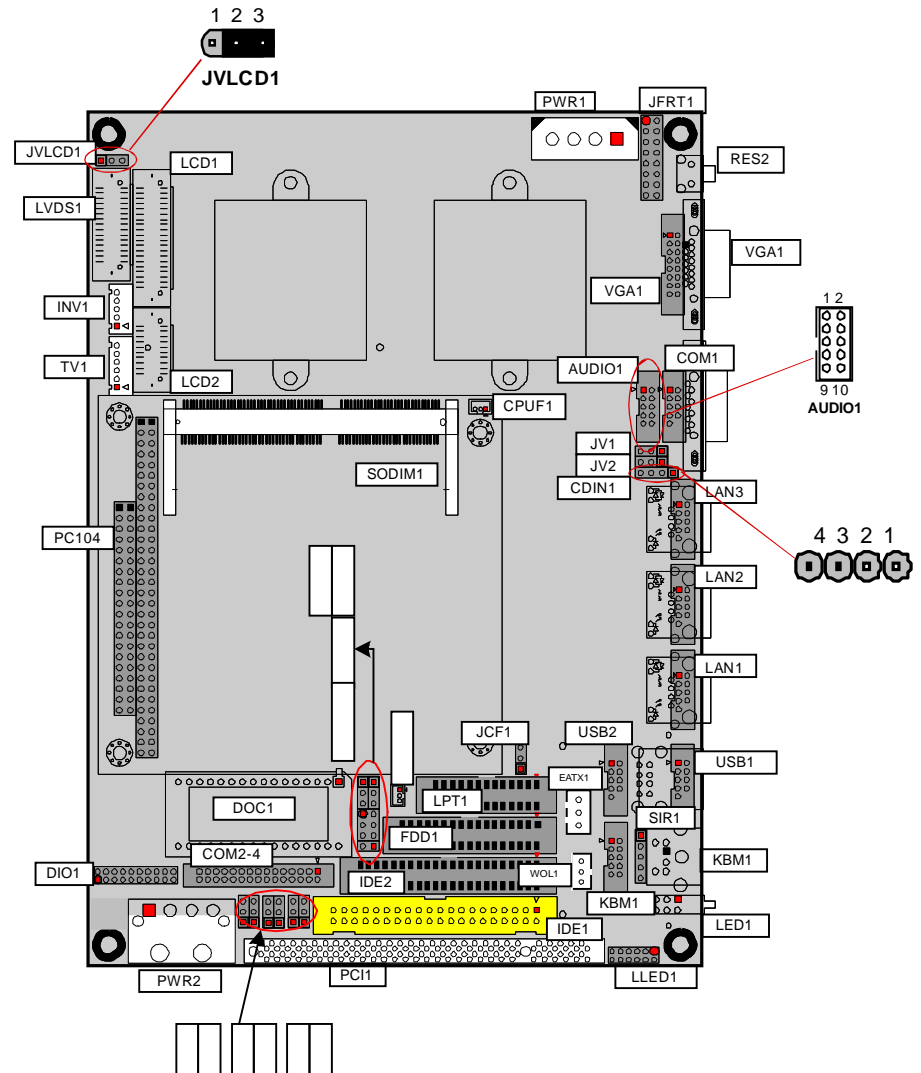
Pin	Description	Pin	Description
1	LINE IN LEFT	2	LINE IN RIGHT
3	GND	4	GND
5	MIC	6	NC
7	GND	8	GND
9	SPEAKER LEFT	10	SPEAKER RIGHT

CDIN Connector

Connector : CDIN1

Type : onboard 4-pin header

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



VGA Connector

Connector : VGA1

Type: Onboard 16-pin mini boxheader

Pin	Description	Pin	Description
1	RED	2	GREEN
3	BLUE	4	NC
5	GND	6	GND
7	GND	8	GND
9	NC	10	GND
11	NC	12	VDDAT
13	HSYNC	14	VSYNC
15	VDCLK	16	NC

LAN LED

Connector : LLED1

Type : Onboard 12-pin box header

Pin	Description	Pin	Description
1	#LINK1	2	3VSB
3	#Active1	4	3VSB
5	#LINK2	6	3VSB
7	#Active2	8	3VSB
9	#Link3	10	3VSB
11	#Active3	12	3VSB

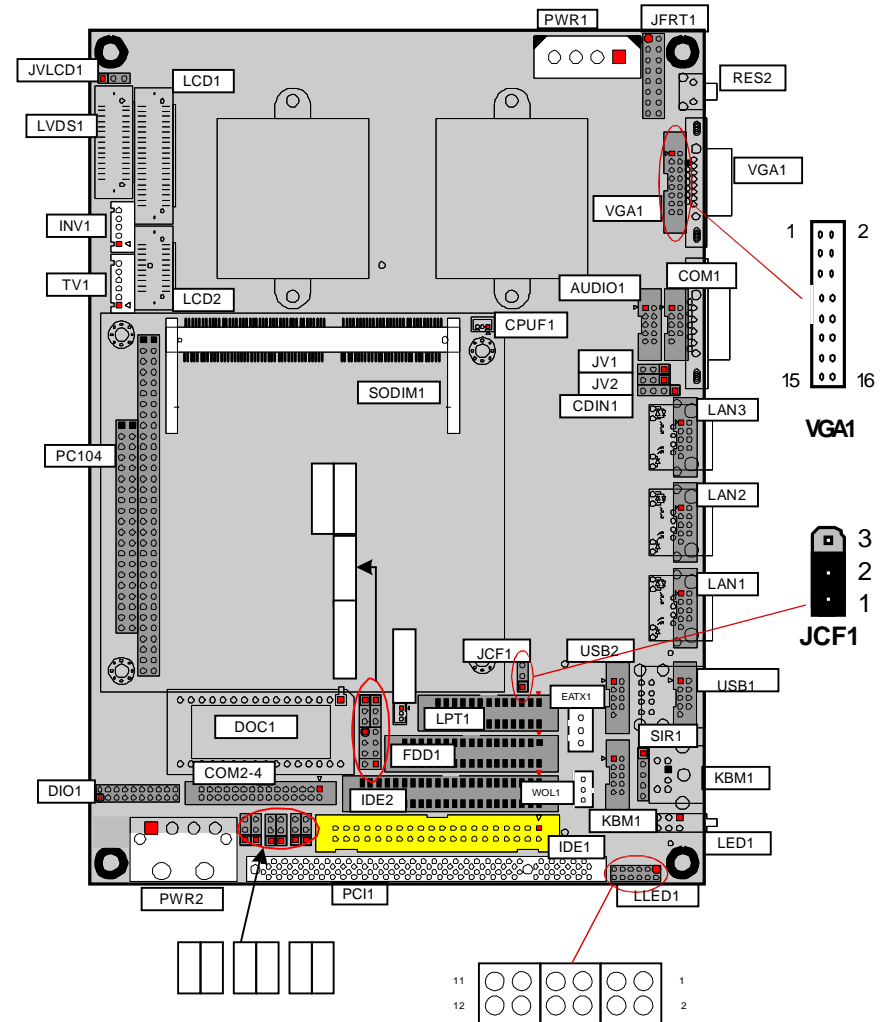
CFD Master/Slave Selection

Connector : JCF1

Type : onboard 3-pin header

The CFD could be selected by JCF1 in master or slave.

Mode	JCF1
Master	1-2 (ON)
Slave	2-3 (OFF)
default setting	Master



CPU Fan Connector

Connector : **CPUF1**

Type : onboard 3-pin wafer connector

Pin	Description
1	FAN Detect
2	+5V
3	GND

System Fan Connector

Connector : **SYSF1**

Type : onboard 3-pin wafer connector

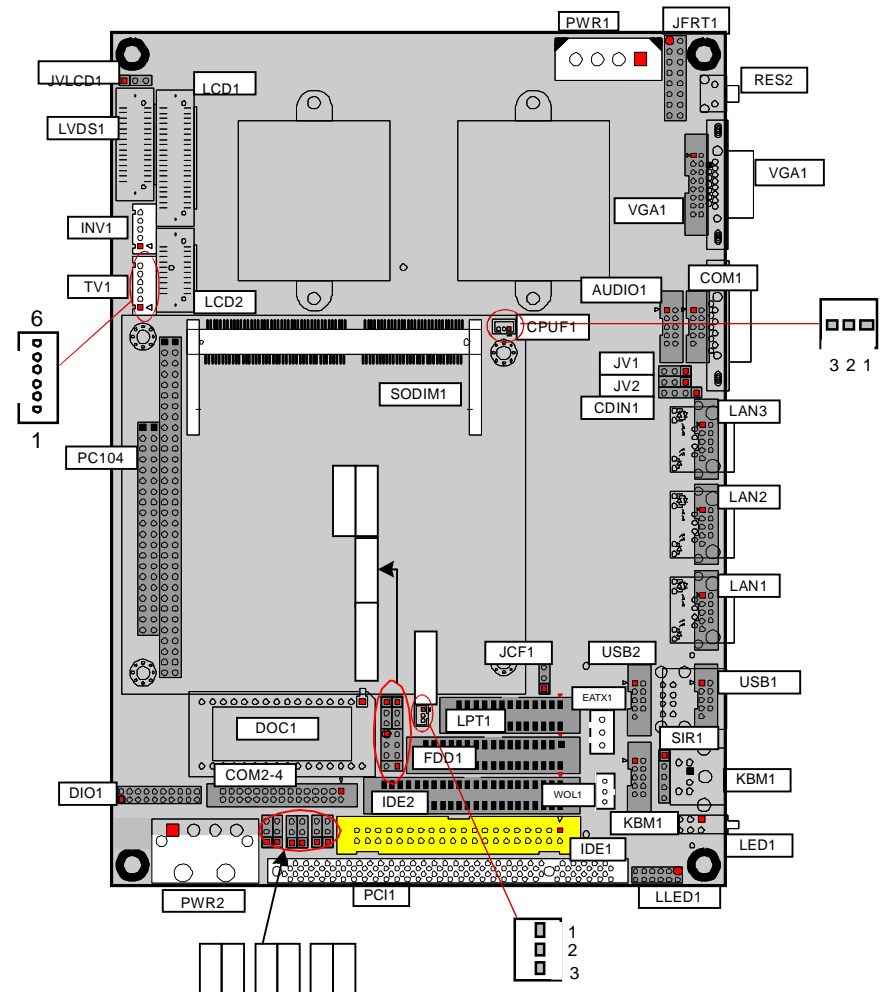
Pin	Description
1	GND
2	+12V
3	FAN Detect

TV-out Connector

Connector : TV1 Connector

Type: Onboard 6-pin wafer

PIN	Description
1	Composite Video
2	GND
3	S-Video Y
4	GND
5	S-Video C
6	GND



18bit/24bit TTL Flat Panel Connector

Connector : LCD1

Type : Onboard DF13 40-pin

LCD1 pin Assignment

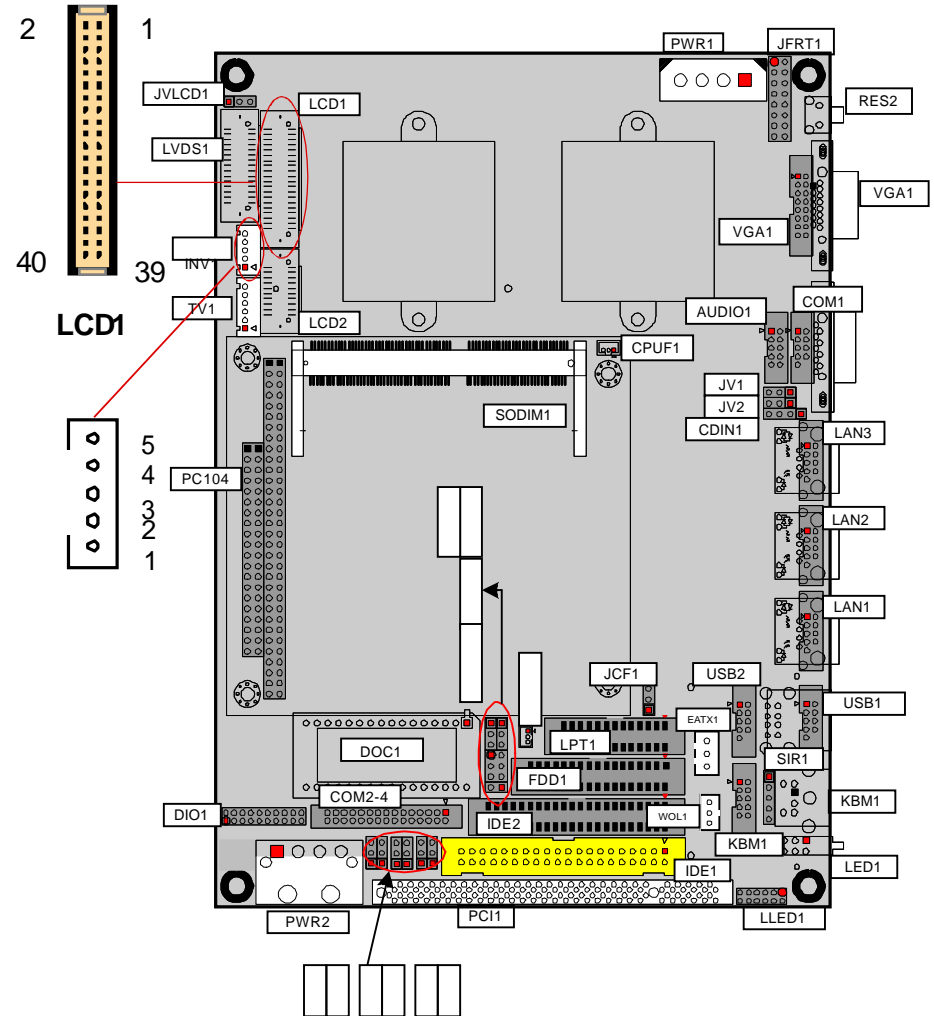
Pin	Description	Pin	Description
1	5V	2	5V
3	Ground	4	Ground
5	3V	6	3V
7	VEEP	8	Ground
9	FP0	10	FP1
11	FP2	12	FP3
13	FP4	14	FP5
15	FP6	16	FP7
17	FP8	18	FP9
19	FP10	20	FP11
21	FP12	22	FP13
23	FP14	24	FP15
25	FP16	26	FP17
27	FP18	28	FP19
29	FP20	30	FP21
31	FP22	32	FP23
33	Ground	34	Ground
35	FPCLK	36	FP
37	M	38	LP
39	FPVDDEN	40	VBIASEN

INV Connector

Connector : INV1

Type : Onboard 5-pin wafer

Pin	Description	Pin	Description
1	+12 V	2	GND
3	on/off	4	brightness control
5	GND		



36bit Panel Connector

Connector: LCD2

Type: Onboard 20-pin DF-13 Connector

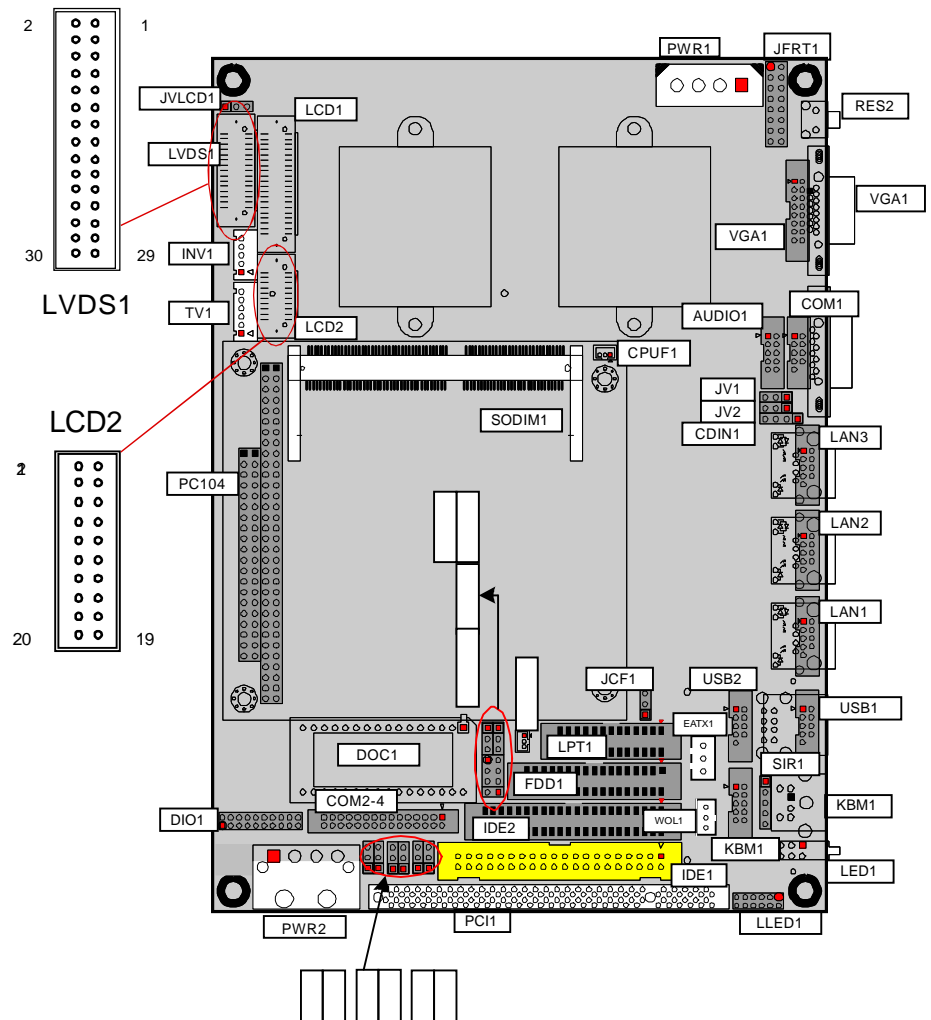
Pin	Description	Pin	Description
1	GND	2	GND
3	FD24	4	FD25
5	FD26	6	FD27
7	FD28	8	FD29
9	FD30	10	FD31
11	FD32	12	FD33
13	FD34	14	FD35
15	GND	16	GND
17	DOTCLK(NC)	18	NC
19	NC	20	NC

18/24bit LVDS LCD Connector

Connector : LVDS1 (Note : VDD could be selected by JVLCD1 in +5V or +3.3V.)

Type : onboard 30-pin DF-13 Connector

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	N/A	28	N/A
29	N/A	30	N/A



USB1 Connector (box header version only)

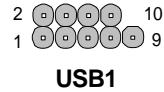
Connector : USB1

Type: onboard 10-pin box header

Pin	Description	Pin	Description
1	+5V	2	+5V
3	USB0-	4	USB1-
5	USB0+6	USB1+	
7	GND	8	GND

Connector : USB1

Type: onboard Two 10-pin pin headers

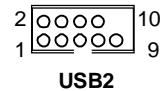


Pin	Description	Pin	Description
1	+5V	2	+5V
3	USB0-	4	USB1-
5	USB0+6	USB1+	
7	GND	8	GND
9	GND	10	NC

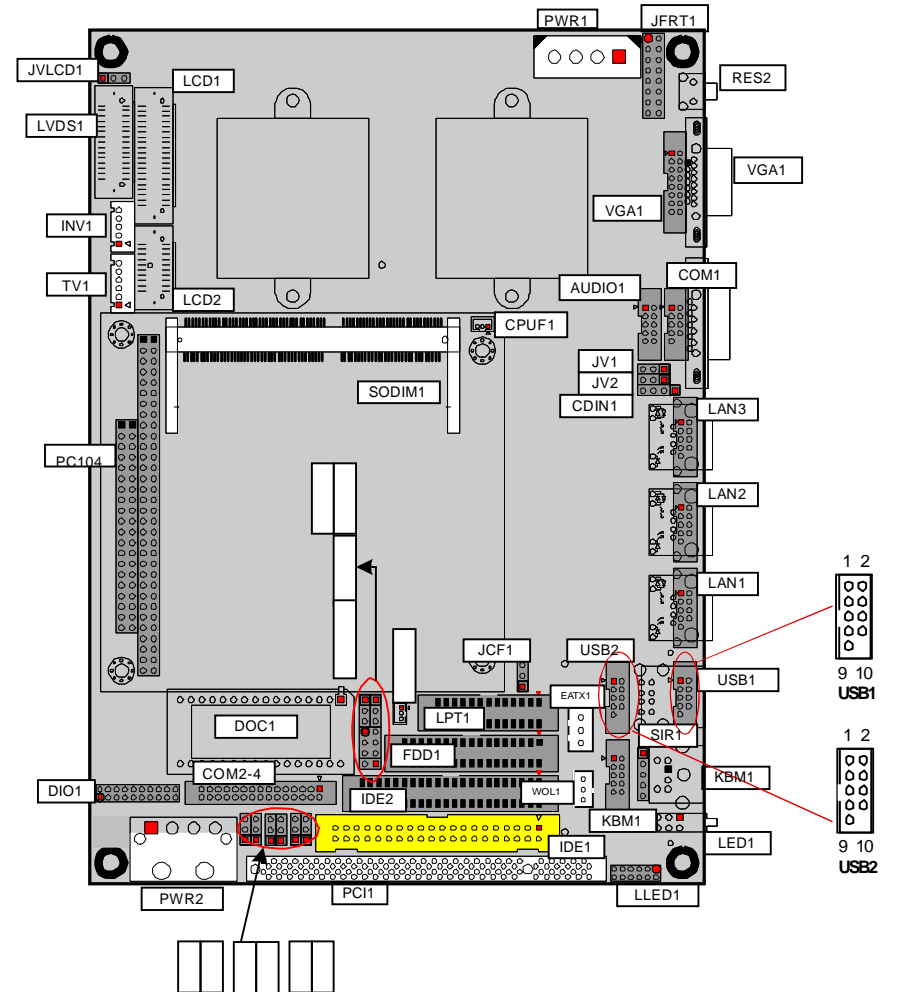
USB2 Connector (connector version only)

Connector : USB connector

Type: onboard 10-pin box header



Pin	Description	Pin	Description
1	+5V	2	+5V
3	USB0-	4	USB1-
5	USB0+6	USB1+	
7	GND	8	GND
9	GND	10	N/C

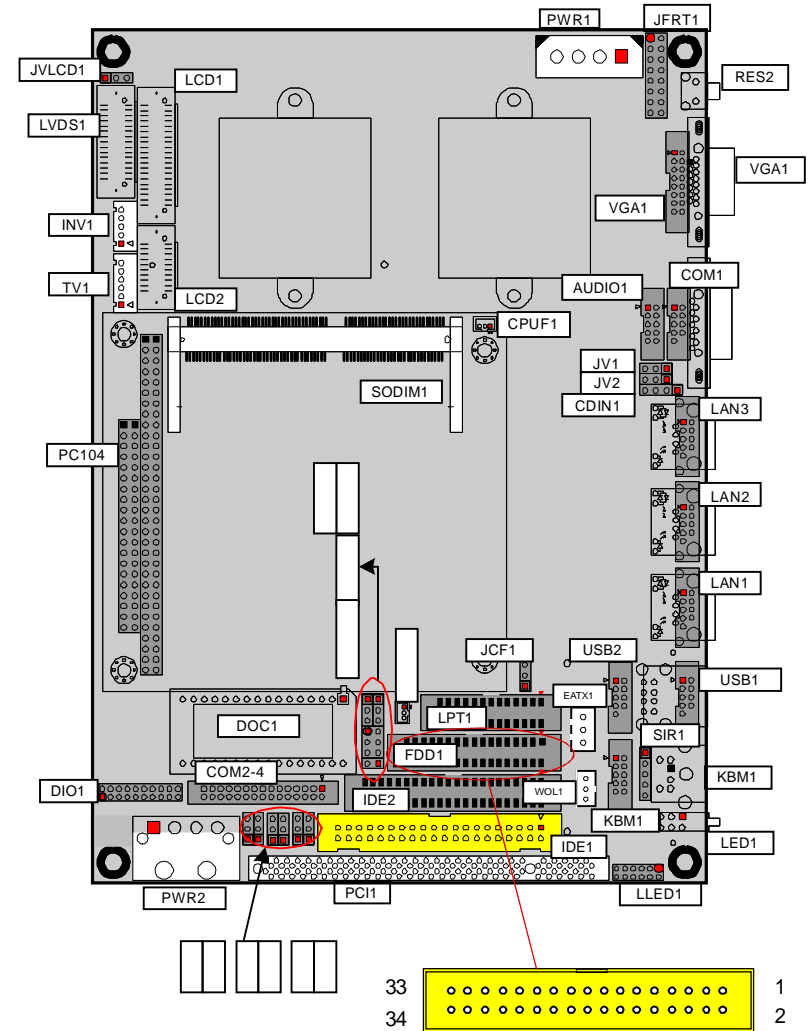


Interface Connectors FDD

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



Fast Ethernet Connectors

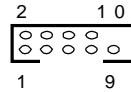
Connector : LAN1-LAN3

Type : external RJ-45 on connector

Pin	1	2	3	4	5	6	7	8
Description	TX1+	TX1-	RX1+	RX2+	RX2-	RX1-	TX2+	TX2-

Connector : Giga LAN Connector

Type : onboard 9-pin box header



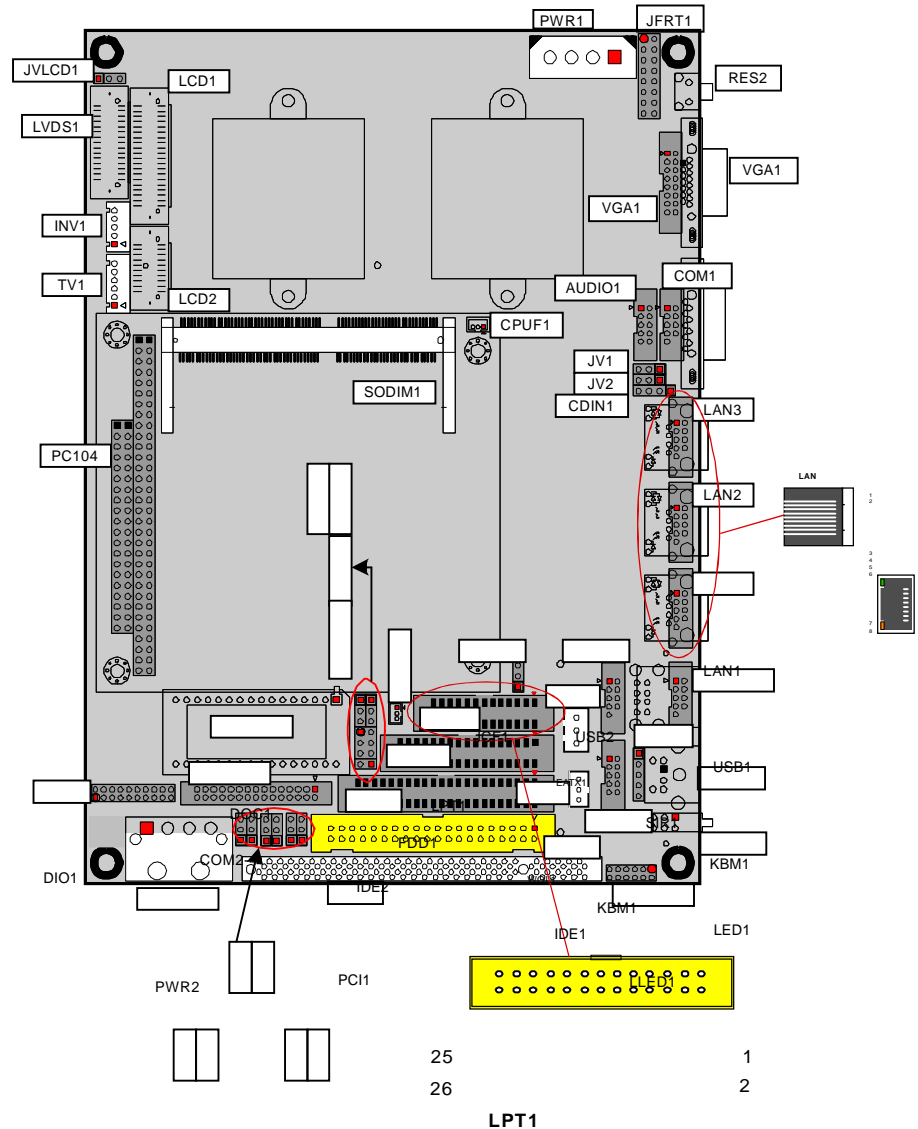
Pin	Description	Pin	Description
1	TX1+	2	TX1-
3	RX1+	4	RX2+
5	RX2-	6	RX1-
7	TX2+	8	TX2-
9	NC	10	Key

LPT1

Connector : LPT1

Type : onboard 26-pin box header

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



IrDA Connector

Connector : **IR1**

Type : SIR1: onboard 5-pin header

Pin	Description	Pin	Description
1	+5V	2	NC
3	IRRX	4	GND
5	IRTX		

Keyboard & PS/2 Mouse

Connector : **KBM1**

Type : KBM2: onboard 6-pin box header

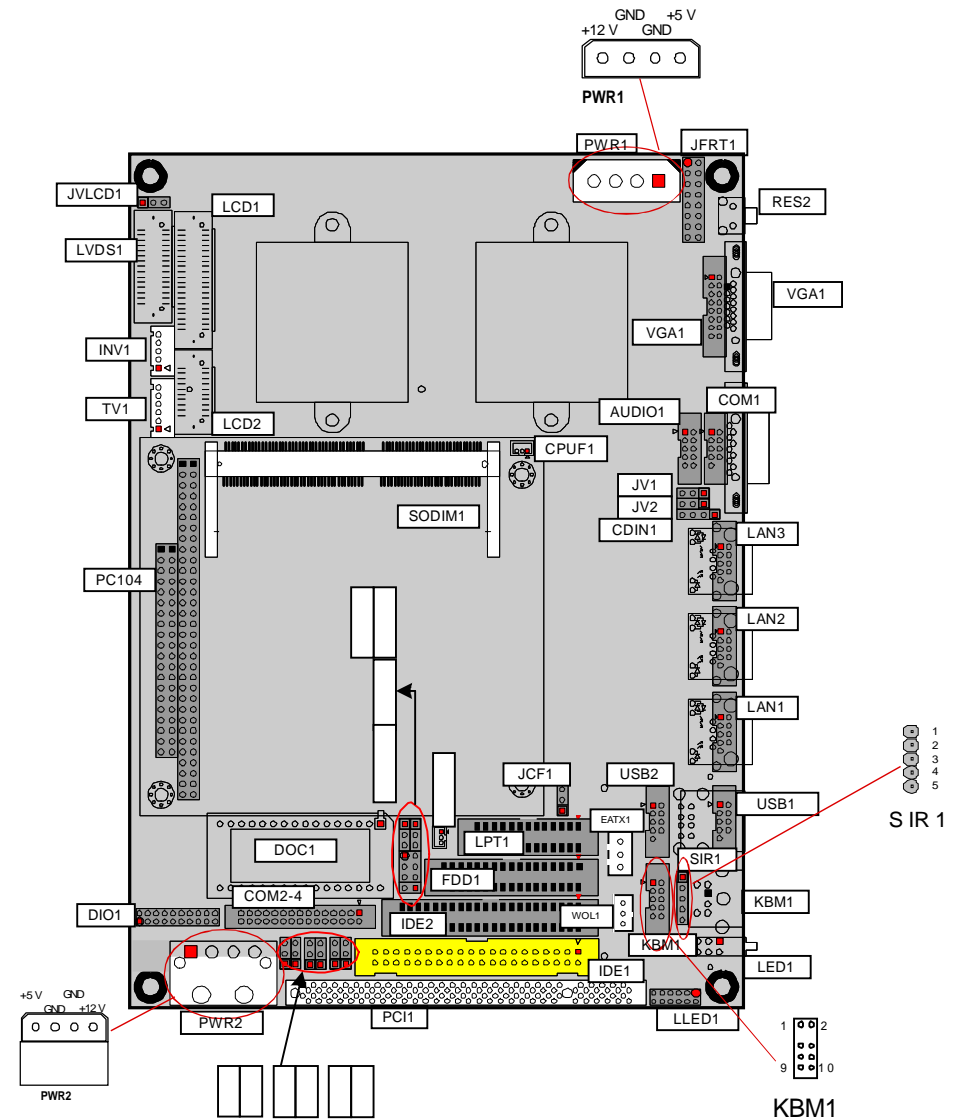
Pin	Description	Pin	Description
1	KB_DATA	2	MS_DATA
3	NC	4	NC
5	GND	6	GND
7	+5V	8	+5V
9	KB_CLK	10	MS_CLK

4P Power Connector

Connector : **PWR1 & PWR2**

Type : onboard 4-pin Wafer connector

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



Switches and Indicators

Connector : **JFRT1**

Type : onboard 16-pin header

Connector : **PLED (Power LED)**

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
1	Power LED+
3	Power LED-
5	Power LED-

Connector : **ESPK (External Speaker)**

Pin	Description
10	+5V
12	+5v
14	Speak out

Connector : **SMB (SM Bus)**

Pin	Description
11	SMBUS Clock
13	SMBUS DATA
15	GND

Connector : **HLED (Hard Disk LED)**

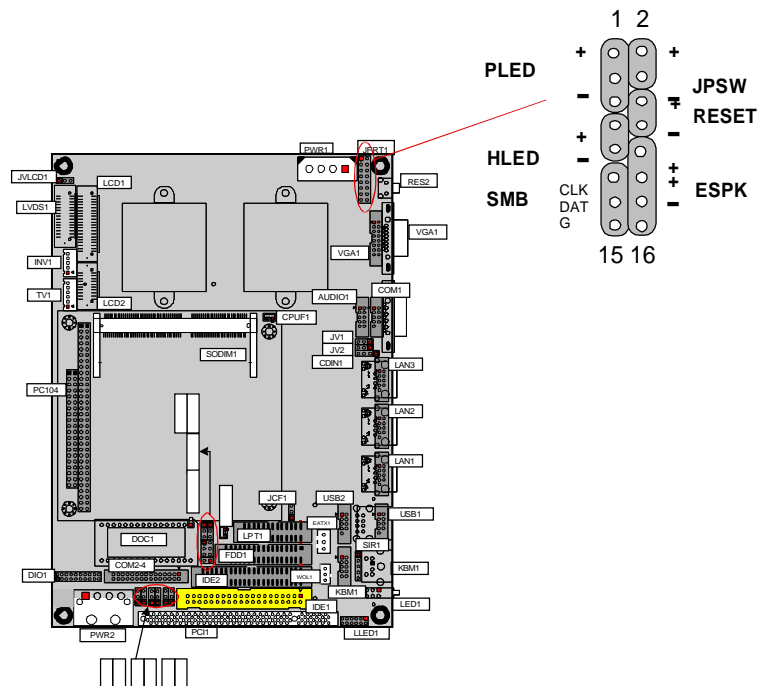
Pin	Description
7	Hard Disk LED+
9	Hard Disk LED-

Connector : **JPSW (Power On/Off button)**

Pin	Description
2	PWR BTN
4	5VSB

Connector : **RESET (Reset Input button)**

Pin	Description
6	RESET
8	GND



LED Indicator

Connector : LED1

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

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		

AT/ATX Power Type Selection Connector

Connector : JPWR1

Type : onboard 2-pin header

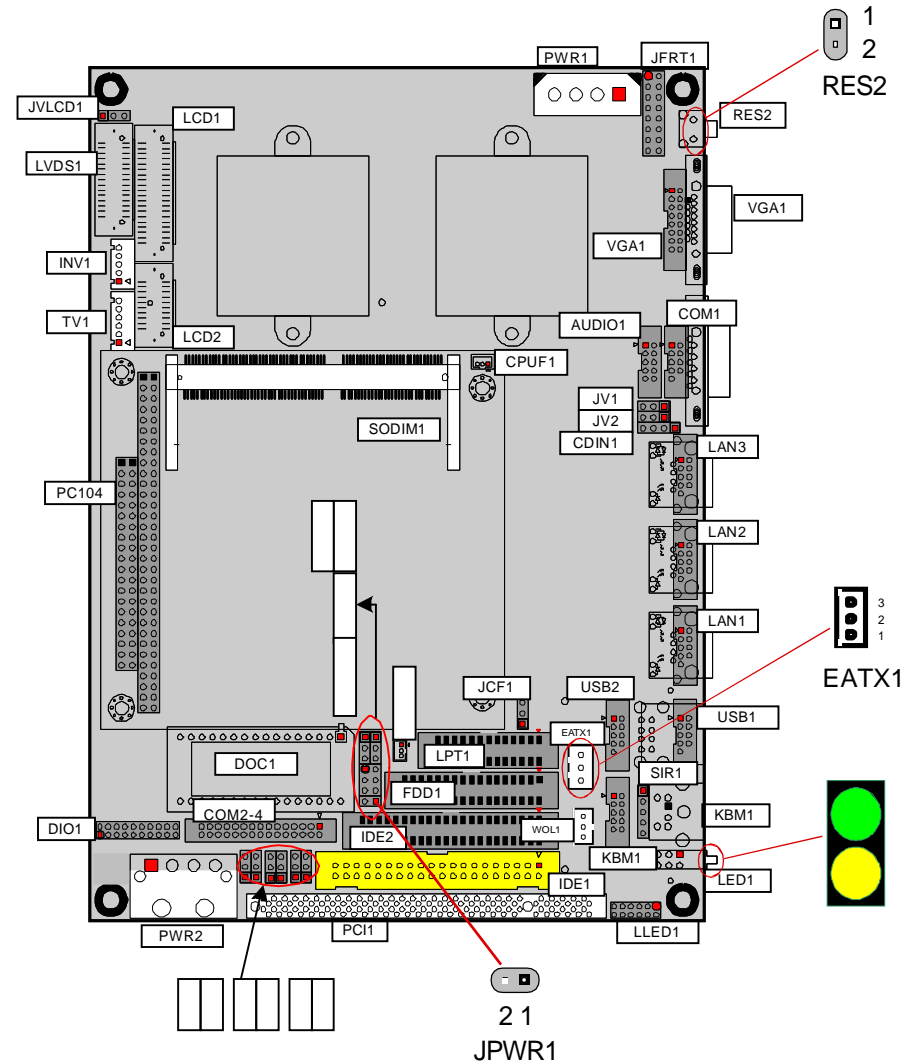
Type	Description	
AT	CLOSE (ON)	Default
ATX	OPEN (OFF)	

Reset Connector

Connector : RES2

Type : RES2: reset switch connector for reboot

Pin	Description	Pin	Description
1	Reset	2	GND



COM2/COM3/COM4 Connector

Connector : **COM2_4**

Type : onboard 30-pin connector

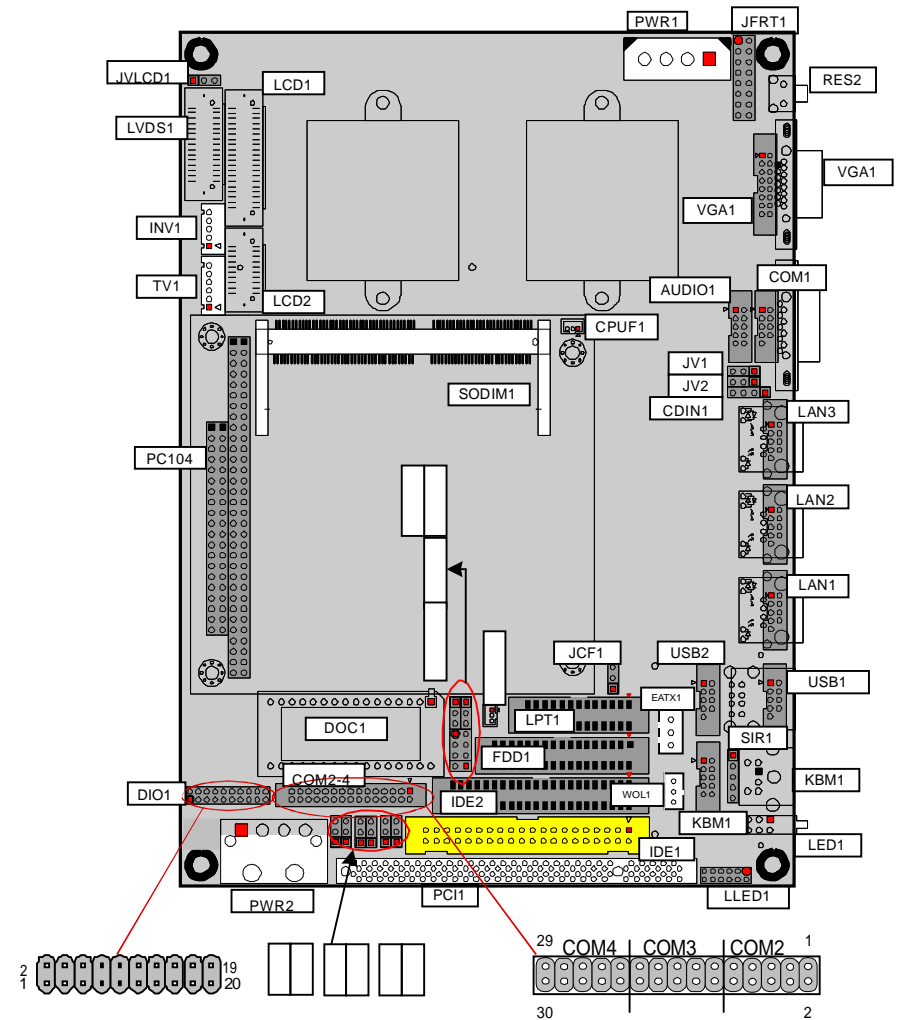
Pin	Description	Pin	Description
1	DCD2(422TXD+/485DATA+)	2	RXD2(422TXD-/485DATA-)
3	TXD2	4	DTR2
5	GND	6	DSR2
7	RTS2	8	CTS2(422RXD+)
9	RI(422RXD-)	10	N/C
11	DCD3	12	RXD3
13	TXD3	14	DTR3
15	GND	16	DSR3
17	RTS3	18	CTS3
19	RI3	20	N/C
21	DCD4	22	RXD4
23	TXD4	24	DTR4
25	GND	26	DSR4
27	RTS4	28	CTS4
29	RI4	30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

16 Bit General purpose I/O

Connector : **DIO1**

Type : Onboard 20-pin header

Pin	Description	Pin	Description
1	DO0	2	DO1
3	DO2	4	DO3
5	DO4	6	DO5
7	DO6	8	DO7
9	GND	10	GND
11	DI0	12	DI1
13	DI2	14	DI3
15	DI4	16	DI5
17	DI6	18	DI7
19	+5V	20	+12V



System Resources

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	Intel(R) PRO/1000 MT Network Connection
5	IRQ Holder for PCI Steering
6	Standard Floppy Disk Controller
7	Printer Port (LPT1)
8	System CMOS/real time clock
9	S3 Graphics Twister
9	IRQ Holder for PCI Steering
10	VIA AC 97 Audio Controller (WDM)
10	Intel(R) PRO/1000 MT Network Connection
10	IRQ Holder for PCI Steering
11	IRQ Holder for PCI Steering
11	Intel(R) PRO/1000 MT Network Connection
11	VIA Tech 3038 PCI to USB Universal Host Controller
12	PS/2 Compatible Mouse Port
13	Numeric data processor
14	Primary IDE controller (dual fifo)
14	VIA Bus Master PCI IDE Controller
15	Secondary IDE controller (dual fifo)
15	VIA Bus Master PCI IDE Controller

Direct Memory Access (DMA)

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

Ports Input/Output (IO)

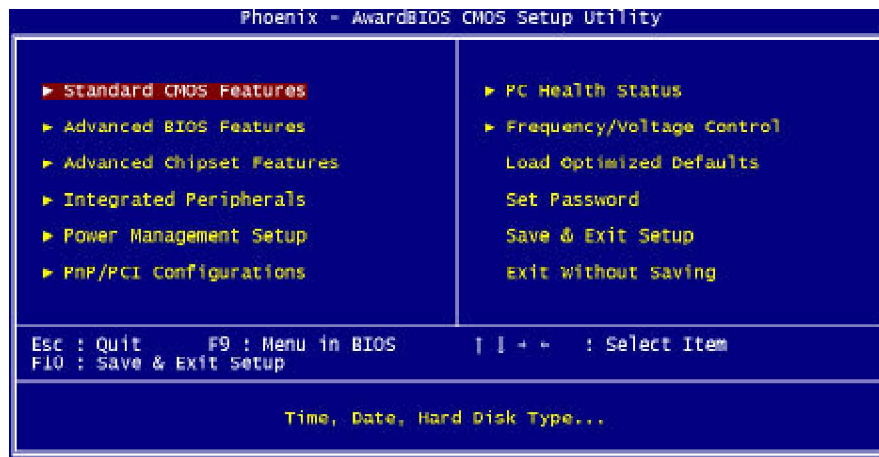
I/O Address	Description
0020- 0021	Programmable interrupt controller
0040- 0043	System timer
0060- 0060	Standard 101/102
0061- 0061	System speaker
0064- 0064	Standard 101/102
0070- 0071	System CMOS/real time clock
0081- 0083	Direct memory access controller
0087- 0087	Direct memory access controller
0089- 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	VIA Bus Master PCI IDE Controller
0170- 0177	Secondary IDE controller (dual fifo)
01F0- 01F7	Primary IDE controller (dual fifo)
01F0- 01F7	VIA Bus Master PCI IDE Controller
02F8- 02FF	Communications Port (COM2)
0376- 0376	VIA Bus Master PCI IDE Controller
0376- 0376	Secondary IDE controller (dual fifo)
0378- 037F	Printer Port (LPT1)
03B0- 03BB	S3 Graphics Twister
03C0- 03DF	S3 Graphics Twister
03F0- 03F5	Standard Floppy Disk Controller
03F6- 03F6	VIA Bus Master PCI IDE Controller
03F6- 03F6	Primary IDE controller (dual fifo)
03F7- 03F7	Standard Floppy Disk Controller
03F8- 03FF	Communications Port (COM1)
04D0- 04D1	PCI bus
0CF8- 0CFF	PCI bus
4000- 407F	PCI bus

4080- 40FF	PCI bus
5000- 501F	PCI bus
0000-000F	Direct memory access controller
6000- 607F	PCI bus
C000- C00F	VIA Bus Master PCI IDE Controller
C000- C007	Primary IDE controller (dual fifo)
C008- C00F	Secondary IDE controller (dual fifo)
C400- C41F	VIA Tech 3038 PCI to USB Universal Host Controller
C800- C81F	VIA Tech 3038 PCI to USB Universal Host Controller
CC00-CCFF	VIA AC 97 Audio Controller (WDM)
D000- D003	VIA AC 97 Audio Controller (WDM)
D400- D403	VIA AC 97 Audio Controller (WDM)
D800- D83F	Intel(R) PRO/1000 MT Network Connection
DC00-DC3F	Intel(R) PRO/1000 MT Network Connection
E000 - E03F	Intel(R) PRO/1000 MT Network Connection

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 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 Configurations

This entry appears if your system supports PnP / PCI.

PC Health Status

This entry appears CPU temperature for the system.

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.

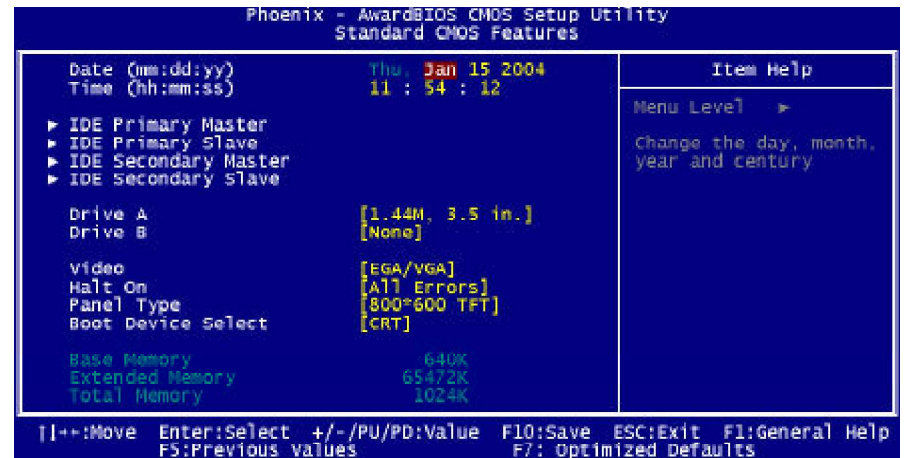
Save & Exit Setup

Save CMOS value changes to CMOS and exit setup.

Exit Without Save

Abandon all CMOS value changes and exit setup.

Standard CMOS Setup



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 & Secondary Master/Slave

Selecting "Manual" lets you set the remaining fields on this screen.

Select the type of fixed disk.

"User Type" will let select the number of cylinder, head, etc.

Note: PRECOMP=65535 means NONE!

[NONE]

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.

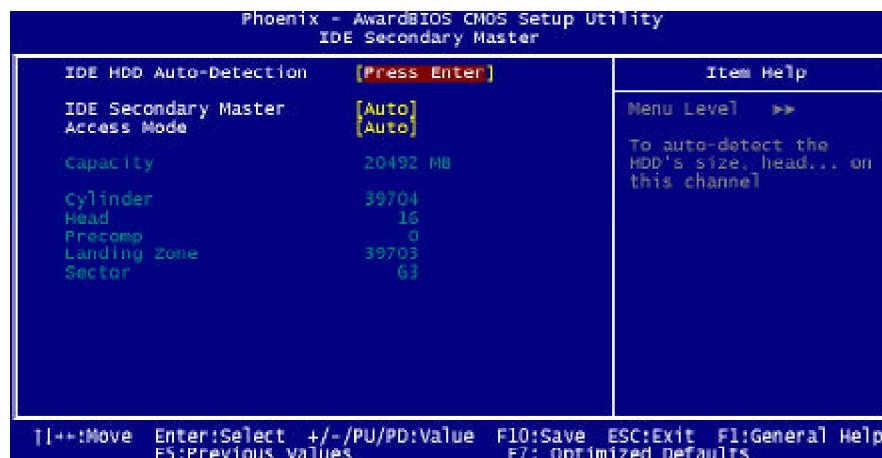
Halt On During the power-on self-test (POST), the computer stops if the BIOS detects a hardware error. You can tell the BIOS to ignore certain errors during POST and continue the boot-up process. These are the selections:

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.

Panel Type Select the type of panel.

Boot Device Select Select the booting device.

IDE HDD AUTO DETECTION



IDE HDD Auto-detection

Press Enter to auto-detect the HDD on this channel. If detection is successful, it fills the remaining fields on this menu.

IDE Primary Master

Selecting 'manual' lets you set the remaining fields on this screen. Selects the type of fixed disk. "User Type" will let you select the number of cylinders, heads, etc. Note: PRECOMP=65535 means NONE !

Access Mode

Normal, LBA, Large or Auto Choose the access mode for this hard disk

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

Cylinder Min = 0 Max = 65535

Set the number of cylinders for this hard disk.

Head Min = 0 Max = 255

Set the number of read/write heads

Precomp Min = 0 Max = 65535

**** Warning: Setting a value of 65535 means no hard disk

Landing zone Min = 0 Max = 65535

**** Warning: Setting a value of 65535 means no hard disk

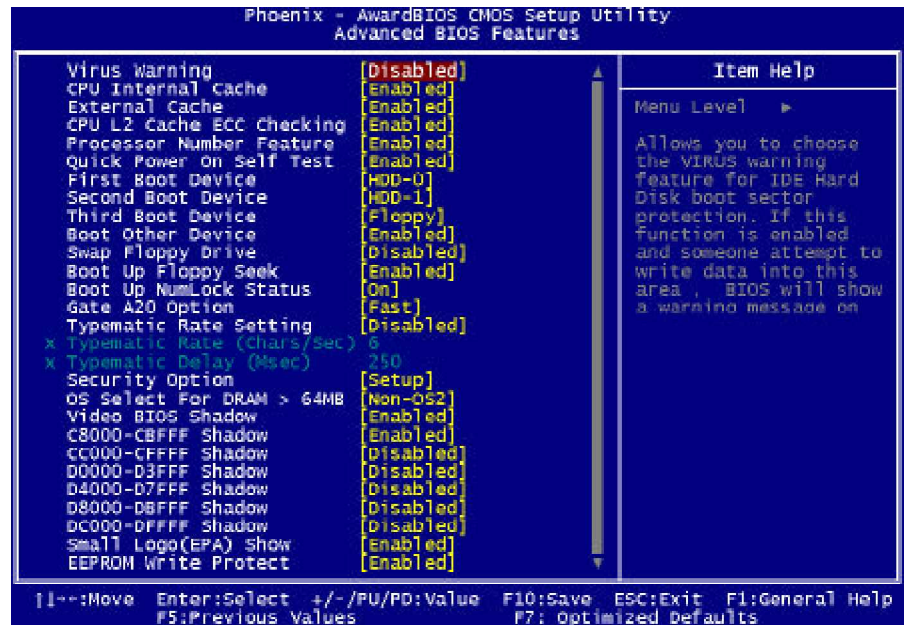
Sector Min = 0 Max = 255

Number of sectors per track

We recommend that you select Type "AUTO" for all drives. The BIOS will auto-detect the hard disk drive and CD-ROM drive at the POST stage.

If your hard disk drive is a SCSI device, please select "None" for your hard drive setting.

Advanced BIOS Features



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 scrning message on screen and alarm beep.

CPU Internal 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, modern PCs have additional (external) cache memory. When the CPU requests data, the system transfers the request ed data from the main DRAM into cache memory, for even faster access by the CPU.

Extrnal 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, modern PCs have additional (external) cache memory. When the CPU requests data, the system transfers the requested data from the main DRAM into cache memory, for even faster access by the CPU.

CPU L2 Cache ECC checking ---> This feature enables or disables the L2 (Level 2 or Secondary) cache's ECC (Error Checking and Correction) function, if available.

Processor Number Feature ---> This BIOS feature allows you to control the use of the processor's embedded unique identification number. Therefore, it is only valid if you are using a processor that features such a feature.

If [enabled], the processor's identification number can be read by external programs. It used to be required for certain secure transactions. However, this is no longer true as the initiative has long been abandoned.

If [disabled], the processor's identification number cannot be read by external programs.

Quick Power On Self Test ---> Allows the system to skip certain tests while booting. This will decrease the time needed to boot the system.

Fist Boot Device ---> Select Your boot Device Priority.

Second Boot Device ---> Select Your boot Device Priority.

Third Boot Device ---> Select Your boot Device Priority.

Boot Other Device ---> Select Your boot Device Priority.

Swap Floppy Drive ---> If the system has two floppy drives, choose enable to assign physical drive B to logical drive A and vice-versa.

Boot Up Floppy Seek ---> Enabled tests floppy drives to determine whether they have 40 or 80 tracks.

Boot Up NumLock Status ---> Selects power on state for NumLock.

Gate A20 Option ---> Fast - lets chipset control GateA20 and Normal a pin in the keyboard controller controls GateA20.
Default is Fast

Typematic Rate Setting ---> Keystrokes repeat at a rate determined by the keyboard controller when enabled, the typematic rate and typematic delay can be selected.

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

OS Select For DRAM > 64MB ---> Select OS2 only if you are running OS/2 operating system with greater then 64MB of RAM on the system.

Video BIOS Shadow ---> This BIOS feature allows faster access to the video BIOS by shadowing or making a copy of it in the system memory.

Small Logo(EPA) Show ---> Select Enabled if your system has a small Logo(EPA) show If you has no small logo show, select Disabled in this field.

EEPROM Write Protect ---> Select Enabled to prevent EEPROM text screen from being changed when the display is not in configuration mode.

Integrated Peripherals



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.

Init Display First

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

OnChip USB --> Enabled or Disabled OnChip USB support.

USB Legacy Support --> Enabled or Disabled USB Legacy support.

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

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

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

Onboard Lan---> Select "Enabled" if your system contains onboard LAN supports.

Onboard FDD Controller --->

Select Enabled if your system has a floppy disk controller (FDC) in-

stalled on the system board and you wish to use it. If you install an add-in FDC or the system has no floppy drive, select Disabled in this field.

Onboard Serial Port 1/2/3/4 --->

Select a logical COM port name and matching address for the first and second serial ports. Select an address and corresponding interrupt for the first and second serial ports.

Onboard Parallel Port --->

Select a logical LPT port address and corresponding interrupt for the physical parallel port.

Parallel Port Mode ---> Select an operating mode for the onboard parallel (printer) port. Select Normal, Compatible, or SPP unless you are certain your hardware and software both support one of the other available modes. For information about parallel port modes, see <http://www.fapo.com/1284int.htm>

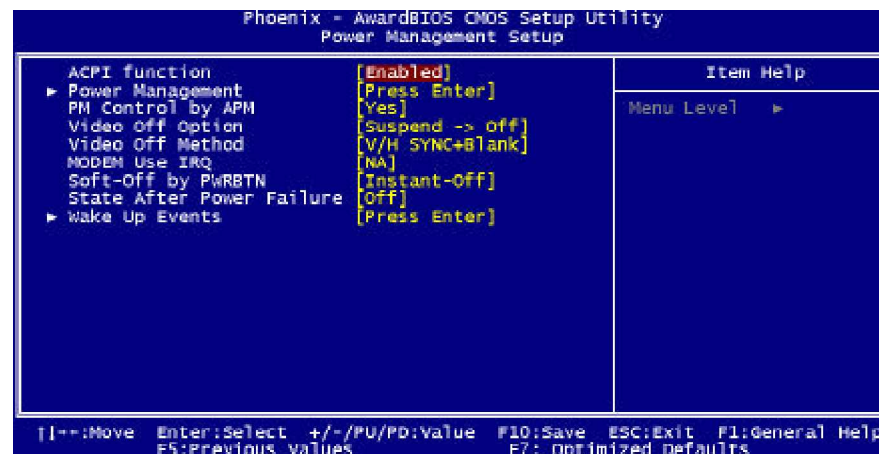
ECP Mode Use DMA

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

Onboard Legacy Audio

Enabled or Disabled onboard audio support.

Power Management Setup



ACPI Function

Select Enabled only if your computer's operating system supports ACPI (the Advanced Configuration and Power Interface) specification. Currently, Windows 98 and Windows 2000 support ACPI.

Power Management

There are 6 selections for Power Management, 3 of which have fixed mode :

PM Control by APM

If Advanced Power Management (APM) is installed on your system, electing Yes gives better power savings.

Video Off Option

Controls what causes the display to be switched off

Suspend -> Off Always On All Mode -> Off

Video Off Method

This determines the manner in which the monitor is blanked.

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.

Soft-Off By PWRBTN

The field defines the power-off mode when using an ATX power supply. The Instant-Off mode means powering off immediately when pressing the power button. In the Delay 4 Sec mode, the system powers off when the power button is pressed for more than four seconds or places the system in a very low-power-usage state, with only enough circuitry receiving power to detect power button activity or resume by ring activity when press for less than four seconds. The default is 'Instant-Off'.

State After Power Failure Select the state after power failure.

Wake Up Events

Setting an event on each device listed to awaken the system from a soft off state.

VGA

LPT & COM

HDD & FDD

PCI Master

Power On by PCI Card

Wake Up on LAN/Ring

RTC Alarm Resume

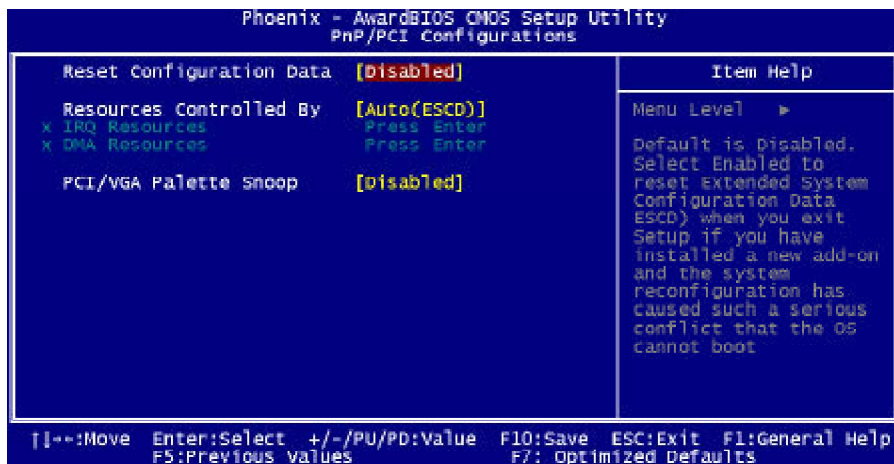
Date (of Month)

Resume Time (hh:mm:ss)

Primary INTR

IRQs Activity Monitoring

PnP/PCI Configuration



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.

is no USB peripheral connected. Disabling this will free the IRQ.

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.

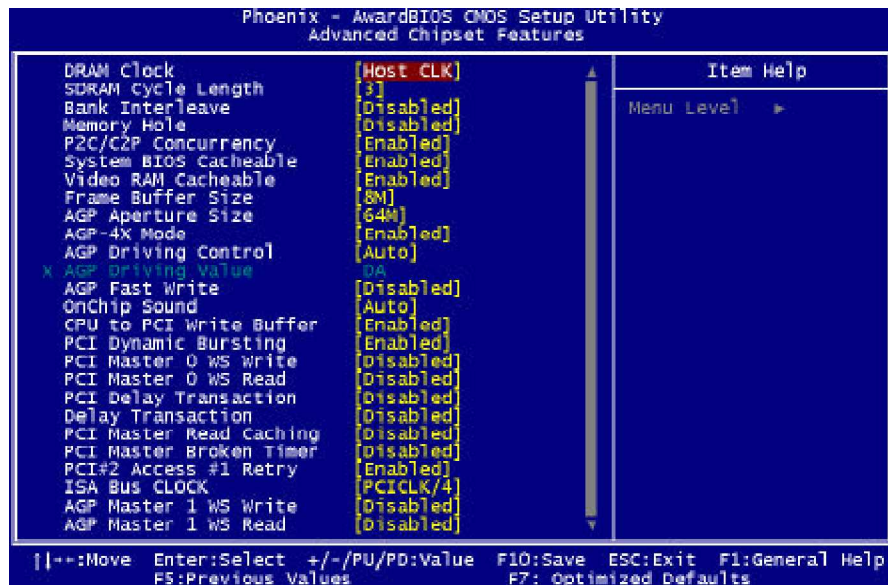
Reset Configuration Data

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.

Advanced Chipset Features



DRAM Clock

This item allows you to set the DRAM Clock. Options are Host CLK, HCLK+33M or HCLK-33M. Please set the item according to the Host (CPU) Clock and DRAM Clock.

SDRAM Cycle Length

This feature is similar to SDRAM CAS Latency Time. It controls the time delay (in clock cycles - CLKs) that passes before the SDRAM starts to carry out a read command after receiving it. This also determines the number of CLKs for the completion of the first part of a burst transfer. Thus, the lower the cycle length, the faster the transaction. However, some SDRAM cannot handle the lower cycle length and may become unstable. So, set the SDRAM Cycle Length to 2 for optimal performance if possible but increase it to 3 if your system becomes unstable.

Bank Interleave

This feature enables you to set the interleave mode of the SDRAM interface. Interleaving allows banks of SDRAM to alternate their refresh and access cycles. One bank will undergo its refresh cycle while another is being accessed. This improves performance of the SDRAM by masking the refresh time of each bank. A closer examination of interleaving will reveal that since the refresh cycles of all the SDRAM banks are staggered, this produces a kind of pipelining effect. If there are 4 banks in the system, the CPU can ideally send one data request to each of the SDRAM banks in consecutive clock cycles. This means in the first clock cycle, the CPU will send an address to Bank 0 and then send the next address to Bank 1 in the second clock cycle before sending the third and fourth addresses to Banks 2 and 3 in the third and fourth clock cycles respectively. Each SDRAM DIMM consists of either 2 banks or 4 banks. 2-bank SDRAM DIMMs use 16Mbit SDRAM chips and are usually 32MB or less in size. 4-bank SDRAM DIMMs, on the other hand, usually use 64Mbit SDRAM chips though the SDRAM density may be up to 256Mbit per chip. All SDRAM DIMMs of at least 64MB in size or greater are 4-banked in nature.

If you are using a single 2-bank SDRAM DIMM, set this feature to 2-Bank. But if you are using two 2-bank SDRAM DIMMs, you can use the 4-Bank option as well. With 4-bank SDRAM DIMMs, you can use either interleave options. Naturally, 4-bank interleave is better than 2-bank interleave so if possible, set it to 4-Bank. Use 2-Bank only if you are using a single 2-bank SDRAM DIMM. Notethat it is recommends that SDRAM bank interleaving be disabled if 16Mbit SDRAM DIMMs are used.

Memory Hole

Enabling this feature reserves 15MB to 16MB memory address space to ISA expansion cards that specifically require this setting. This makes the memory from 15MB and up unavailable to the system. Expansion cards

can only access memory up to 16MB.

P2C/C2P Concurrency

When Disabled, CPU bus will be occupied during the entire PCI operation period.

System BIOS Cacheable

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

Video RAM Cacheable

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

Frame Buffer Size

This item defines the amount of system memory that will be shared and uses as video memory.

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.

AGP-4X Mode

Set to Enabled if your AGP card supports the 4X mode, which transfers video data at 1066MB/s.

AGP Driving Control

This item is use for control AGP drive strength.

Auto: Setup AGP drive strength by default setting.

Manual: Setup AGP drive strength by manual setting.

AGP Fast Write

To enable this function can increase VGA performance on graphic designed.

OnChip Sound

This menu can access the sound controller automatically

CPU to PCI Write Buffer

This controls the CPU write buffer to the PCI bus. If this buffer is disabled, the CPU writes directly to the PCI bus. Although this may seem like the faster and thus, the better method, this isn't true. Because the CPU bus is faster than the PCI bus, any CPU writes to the PCI bus has to wait until the PCI bus is ready to receive data. This prevents the CPU from doing anything else until it has completed sending the data to the PCI bus. Enabling the buffer enables the CPU to immediately write up to 4 words of data to the buffer so that it can continue on another task without waiting for those 4 words of data to reach the PCI bus. The data in the write buffer will be written to the PCI bus when the next PCI bus read cycle starts. The difference here is that it does so without stalling the CPU for the entire CPU to PCI transaction. Therefore, it's recommended that you enable the CPU to PCI write buffer.

PCI Dynamic Bursting

When enabled, data transfer on the PCI bus, where possible, make use of the high-performance PCI burst protocol, in which greater amounts of data are transferred at a single command.

PCI Master 0 WS Write

This function determines whether there's a delay before any writes to the PCI bus. If this is enabled, then writes to the PCI bus are executed immediately (with zero wait states), as soon as the PCI bus is ready to

receive data. But if it is disabled, then every write transaction to the PCI bus is delayed by one wait state. Normally, it's recommended that you enable this for faster PCI performance. However, disabling it may be useful when overclocking the PCI bus results in instability. The delay will generally improve the overclockability of the PCI bus.

PCI Master 0 WS Read

This function determines whether there's a delay before any writes to the PCI bus. If this is enabled, then read to the PCI bus are executed immediately (with zero wait states), as soon as the PCI bus is ready to receive data. But if it is disabled, then every read transaction to the PCI bus is delayed by one wait state. Normally, it's recommended that you enable this for faster PCI performance. However, disabling it may be useful when overclocking the PCI bus results in instability. The delay will generally improve the overclockability of the PCI bus.

PCI Delay 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 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.

PCI Master Read Caching

To enable this function, the CPU L2 cache will be used to cache PCI master reads. This boosts the performance of PCI master. It's recommended to disable this feature

PCI Master Broken Timer

To enable this feature allows for slower PCI bus mastering expansion cards.

PCI # 2 Access # 1 Retry

This BIOS feature is linked to the CPU to PCI Write Buffer. Normally, the

CPU to PCI Write Buffer is enabled. All writes to the PCI bus are, as such, immediately written into the buffer, instead of the PCI bus. This frees up the CPU from waiting till the PCI bus is free. The data are then written to the PCI bus when the next PCI bus cycle starts.

There's a possibility that the buffer write to the PCI bus may fail. When that happens, this BIOS option determines if the buffer write should be reattempted or sent back for arbitration. If this BIOS option is enabled, then the buffer will attempt to write to the PCI bus until successful. If disabled, the buffer will flush its contents and register the transaction as failed. The CPU will have to write again to the write buffer. It is recommended that you enable this feature unless you have many slow PCI devices in your system. In that case, disabling this feature will prevent the generation of too many retries which may severely tax the PCI bus.

ISA Bus Clock

Allows you to set the speed of the ISA bus in fractions of the PCI bus speed, so if the PCI bus is operating at its theoretical maximum, 33Mhz, PCICLK/3 would yield an ISA speed of 11Mhz. The choices: 7.159Mhz, PCICLK/4 and PCICLK/3.

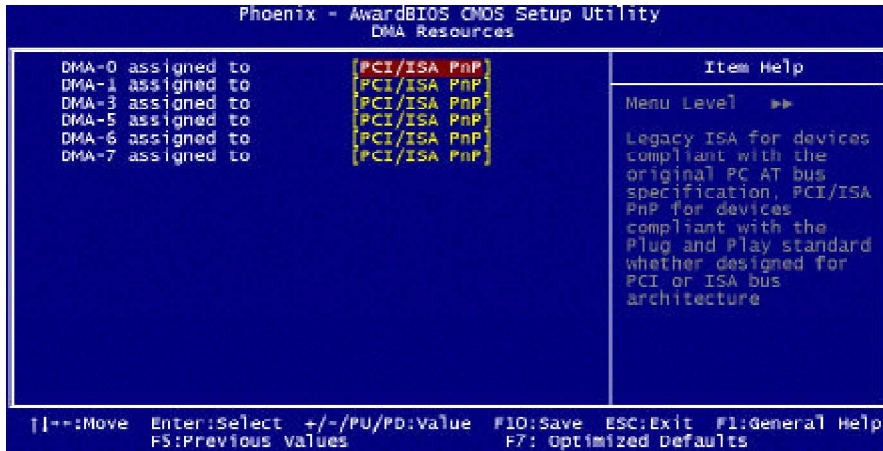
AGP Master 1 WS Write

By default, the AGP busmastering device waits for at least 2 wait states or AGP clock cycles before it starts a write transaction. This BIOS option allows you to reduce the delay to only 1 wait state or clock cycle. For better AGP write performance, enable this option but disable it if you experience weird graphical anomalies like wireframe effects and pixel artifacts after enabling this option.

AGP Master 1 WS Read

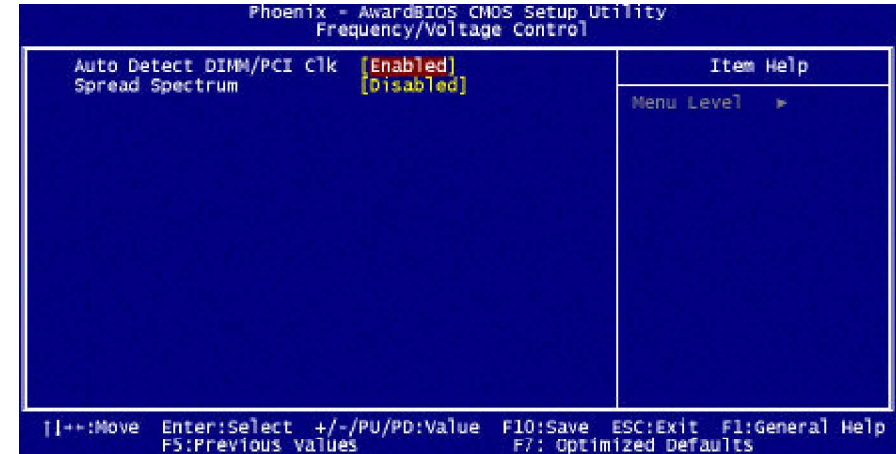
By default, the AGP busmastering device waits for at least 2 wait states or AGP clock cycles before it starts a read transaction. This BIOS option allows you to reduce the delay to only 1 wait state or clock cycle. For better AGP read performance, enable this option but disable it if you experience weird graphical anomalies like wireframe effects and pixel artifacts after enabling this option.

DMA Resources



DMA Resources 0-7 Assignment

Frequency/Voltage Control



Auto Detect DIMM/PCI Clk

[Enabled]

[Disabled]

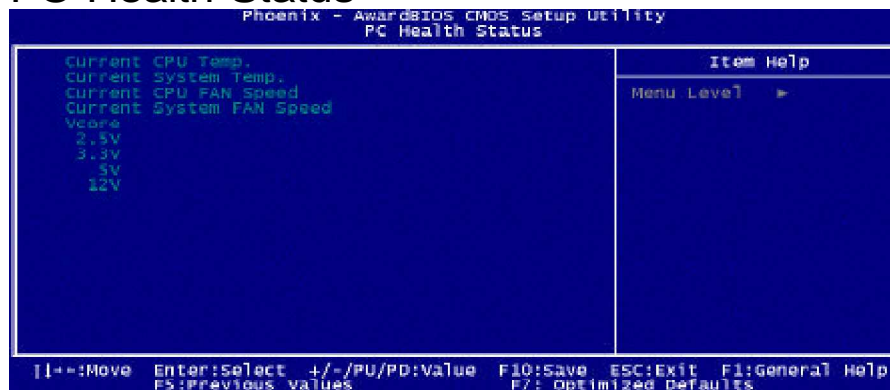
Spread Spectrum

[Disabled]

[0.25 %]

[0.50 %]

PC Health Status



Current CPU Temp.---> This field displays the current system temperature, if your computer contains a monitoring system.

Current System Temperature ---> This field displays the current system temperature, if your computer contains a monitoring system.

Current CPUFAN1 Speed ---> These fields display the current speed of up to three CPU fans, if your computer contains a monitoring system.

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

2.5V ---> These fields display the current voltage of up to seven voltage input lines, if your computer contains a monitoring system.

3.3V ---> These fields display the current voltage of up to seven voltage input lines, if your computer contains a monitoring system.

5V ---> These fields display the current voltage of up to seven voltage input lines, if your computer contains a monitoring system.

12V ---> These fields display the current voltage of up to seven voltage input lines, if your computer contains a monitoring system.

IRQs Activity Monitoring



IRQ3 (COM 2)

IRQ4 (COM 1)

IRQ5 (LPT 2)

IRQ6 (Floppy Disk)

IRQ7 (LPT 1)

IRQ8 (RTC Alarm)

IRQ9 (IRQ2 Redir)

IRQ10 (Reserved)

IRQ11 (Reserved)

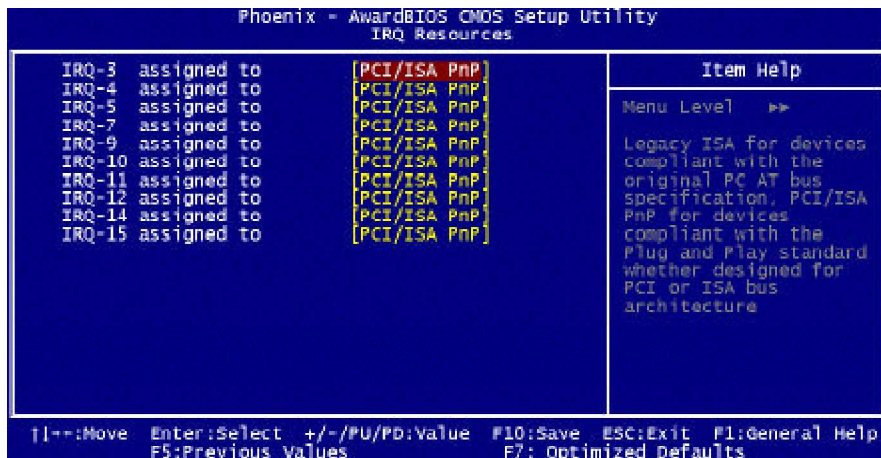
IRQ12 (PS/2 Mouse)

IRQ13 (Coprocesor)

IRQ14 (Hard Disk)

IRQ15 (Reserved)

IRQ Resources



IRQ-3 assigned to ---> Legacy ISA for devices compliant with the original PC AT bus specification, PCI/ISA Pnp for devices compliant with the Plug and Play standard whether designed for PCI or ISA bus architecture.

IRQ-4 assigned to

IRQ-5 assigned to

IRQ-7 assigned to

IRQ-9 assigned to

IRQ-10 assigned to

IRQ-11 assigned to

IRQ-12 assigned to

IRQ-14 assigned to

IRQ-15 assigned to

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Wake Up Events



VGA --->When ON, an event occurring on each listed device restarts the global timer for Standby mode.

LPT & COM ---> When Enabled, an event occurring on each listed device restarts the global timer for Standby mode.

HDD & FDD ---> When Enabled, an event occurring on each listed device restarts the global timer for Standby mode.

PCI Master ---> When ON, an event occurring on each listed device restarts the global timer for Standby mode.

Power-On by LAN ---> When Enabled, an event occurring on each listed device restarts the global timer for Standby mode.

Modem Ring Resume ---> When Enabled, an event occurring on each listed device restarts the global timer for Standby mode.

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

Primary INTR ---> When Enabled, an event occurring on each listed device restarts the global timer for Standby mode.

IRQs Activity Monitoring

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 awdfash *.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.

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.

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.



Any advice or comments about our products and service, or anything we can help you with please don't hesitate to contact with us. We will do our best to support you for your products, projects and business.

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