3301100
USER MANUAL

About this Manual

The manual provides general information and installation instructions about the SBC. 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

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 (CR2032).

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

Technical Support

Please do not hesitate to call or e-mail our customer service when you still can not find out the answer.

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.com

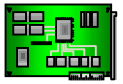
Introduction

The 3304160 Series single board computer is optimized for socket 478 FC- PGA processor, supporting 800/533MHz Front Side Bus, the memory can accommo- date is up to 2GB DDR333/400 SDRAM. This board is based on the Intel® 865G chipset and is fully designed for harsh industrial environment. The 3301100 series is 800MHz FSB with chipset (GMCH) on-die enhanced Intel® Extreme Graph- ics 2 and one 10/100/1000 Mbps Gigabit Ethernet controller. It is for CTI and high-performance applications.

The other I/O function include two SATA ports, two serial ports, one parallel port, two ATA100 IDE interface, one FDC interface, four USB 2.0 ports, Watch Dog Timer and PS/2 Keyboard & Mouse.

In the meantime, the key components inside are chosen on the long-term availabili- ty criterion, such as Intel® chipset. We guarantee this product will be available. Even longer life is still possible which is dependent on the marketing situation. We also accept to extend the product life cycle based on OEM contract.

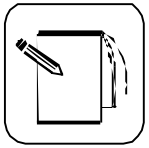
PACKING LIST



3301100

1xFDD Cable
1xATA-66/100 HDD ribbon cable
1xPrinter & COM1 ribbon cable
1xK/B & M/S Y type cable
1xK/B-M/S extend to BP cable
1xATX power control cable
1xUSB 2.0 cable (for 2 USB ports)
1xS-ATA & Power cable (for 1 S-ATA port)

1 x CD-ROM (driver)



3301100 Quick Installation

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.

Note: For fully utilize the versatile expanding abilities of 3301100, you need additional one USB and one S-ATA cables. Please contact your vendor for purchasing information.

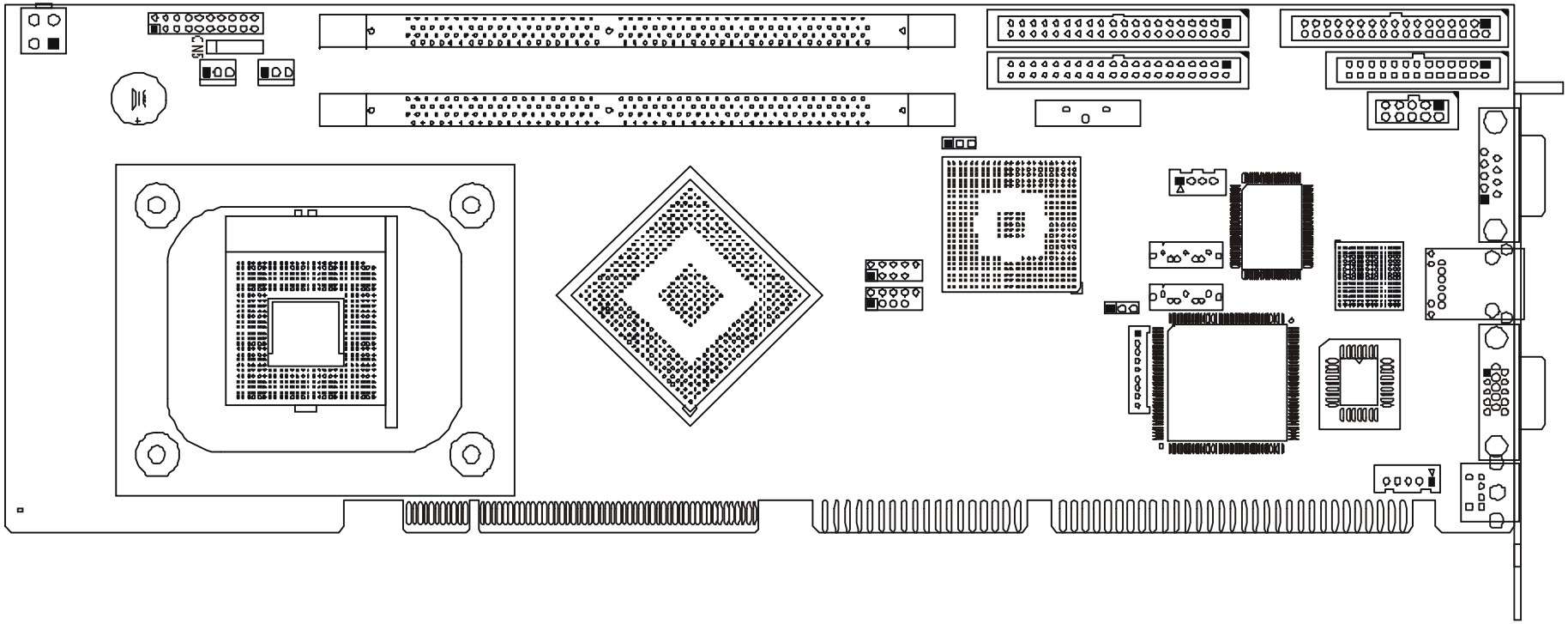
Ordering Codes

3301100
Full-Size Socket 478 Pentium SBC CRT, Serial ATA and 10/100/1000 Mbps LAN

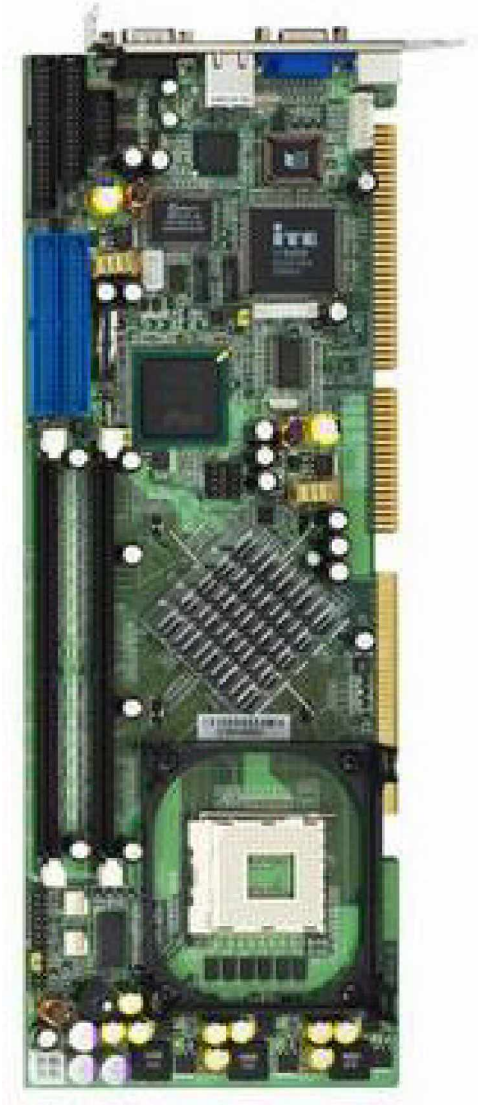
3501000
Audio Codec Module (for 3301100 uses only)

Specification		
Model	3301100	
System Board	CPU	Socket 478 processors, for Intel® Pentium® 4/ Celeron™ processor Up to 3.2GHz
	Chipset	Intel® 865G + ICH5 AGPset
	Front Side Bus	400 / 533 / 800 MHz
	SDRAM up to Memory	2 x 184pins DIMM for DDR 2GB (max.) Support DDR 266 / 333 / 400 SDRAM
	Display	Intel® 865G chipset integrated graphic function
	Audio	AC97 audio interface, by option audio card --- 3501000 Onboard 9-pins (pin-header) interface
	SATA Function	Two S-ATA ports, support data transfer rates up to 150MB/s
	Onboard I/O	On-Chip I/O integrated with K/B, Mouse, FDD, Parallel and Serial controller Intel® ICH5 South Bridge controller
	Onboard PCI / IDE	PCI rev2.2 Compliant ACPI Compliant Power Management
	BIOS	PCI Bus IDE Port with PIO /ATA-100 x 2 (Up to 4 Devices) Award Plug & Play BIOS
Multiple I/O	Bracket I/O Connectors	D-Sub Serial port (COM1) Single RJ-45 connector 15-pins D-Sub VGA connector
		PS/2 style Mouse or Keyboard connector
	USB 2.0 Ports	Gigabit Ethernet Intel 82547GI 4 x USB 2.0 ports (pin-header)
	Extended Function	Hardware monitoring function IrDA by pin-header
	Weight	0.93lb (420g) --- IP-4PGP23

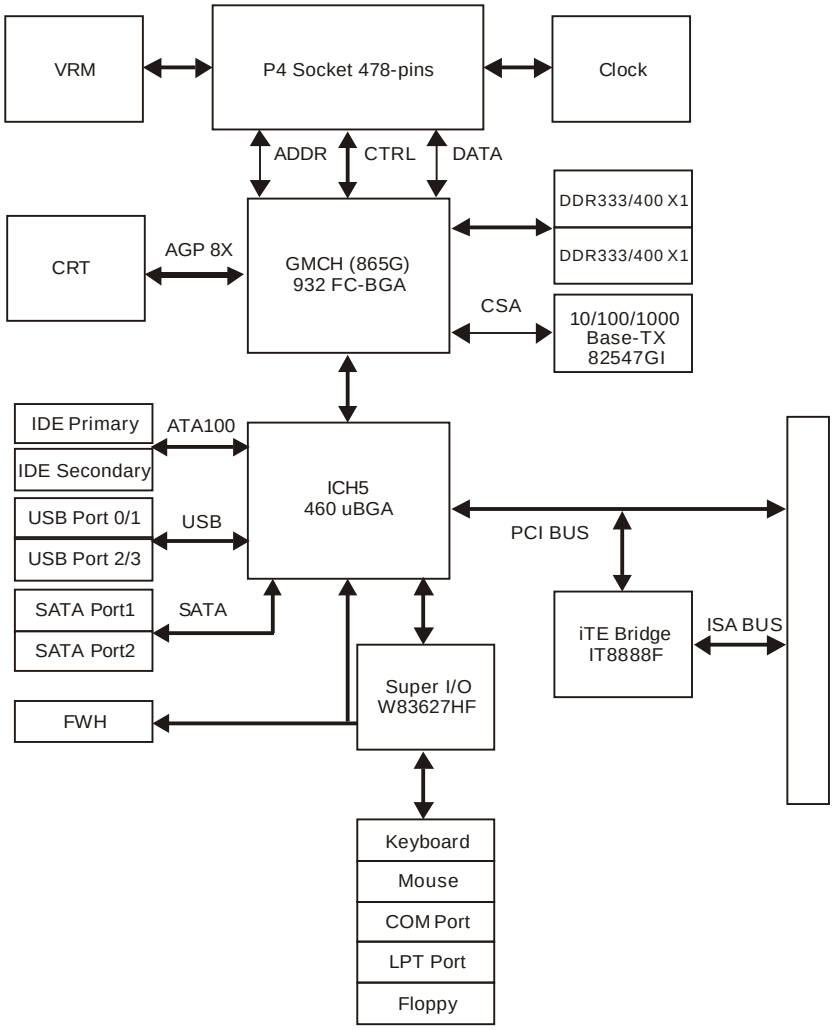
Board Layout



Board Image



System Block Diagram



Jumper/Connector Quick Reference

Jumpers	
Lable	Function
JP1	Clear CMOS
JP2	Watchdog Timer Setting Selection

Jumper/Connector Quick Reference

Connectors	Functions
CN1	System Panel Indicate Connector
CN2	ATX 12V Power Connector
CN3	Secondary IDE Connector
CN4	Floppy Disk Connector
CN5	IrDA Connector
CN6	Primary IDE Connector
CN7	Parallel Port Connector
CN8	CPU FAN Connector
CN9	System FAN Connector
CN10	COM2 RS-232 Serial Port Connector
CN11	COM1 RS-232 Serial Port Connector
CN12	ATX Control Power Connector
CN13	USB0/1 Port Connector
CN14	Gigabit LAN (82547GI) RJ-45 Connector
CN15	USB2/3 Port Connector
CN16	Extension Audio (Pin-Header) Connector
CN17	CRT VGA Port Connector
CN18	External Keyboard & Mouse Connector
CN19	PS/2 Keyboard & Mouse Connector
SATA1	S-ATA1 Connector
SATA2	S-ATA2 Connector

CMOS Jumper Settings

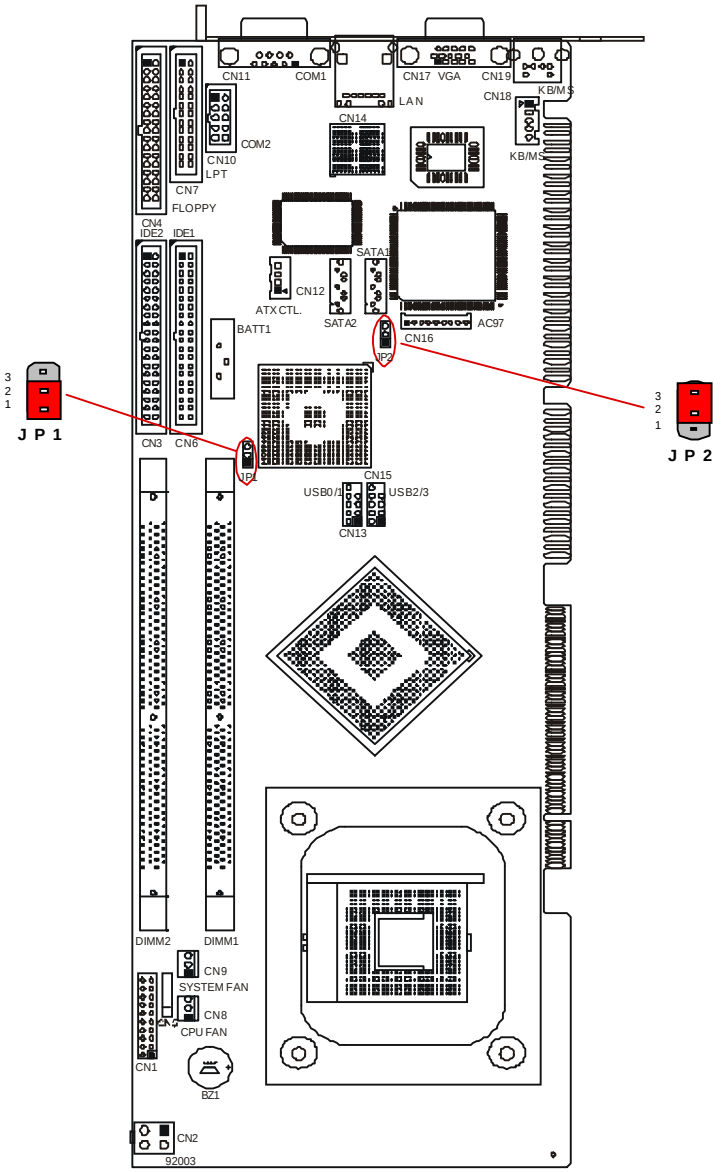
CMOS Operation (JP1)

Type : JP1: onboard 3-pin header

If the 3301100 refuses to boot due to inappropriate CMOS settings, here is how to proceed to clear (reset) the CMOS to its default values.

CMOS Setup (JP1)	JP1	Status
Normal Operation	1-2	ON
Clear CMOS	2-3	ON

default setting 1-2 ON



Watchdog Timer

Watchdog Output (JP2)

Mode Setting

Watchdog Mode	JP2
Enabled for Active NMI(I/O Channel Check)	1-2
Enabled for System Reset	2-3
Disable Watchdog Timer	None

default setting 2-3

IO por t: Enable/Refresh I/O port : 2FH
Level : 255 (1 level = 1 sec.)
Enable WDT demo program (by Debug under DOS):
-0 2e, 87
-0 2e, 87
-0 2e, 07
-0 2F, 08
-0 2e, F6
-0 2F, 30 ; count down 30 sec
-0 2e, 30
-0 2f, 01 ; start to count down

Refresh WDT demo program:
-0 2f, 30 ; Re-start to count down 30 sec.

Disable WDT demo program:
-0 2f, 0 ; send o to I/O port "2F"

Switches and Indicators

System Panel Indicate Connector: CN1

Pin #	Assignment	Pin #	Assignment
	PWR LED		**SPEAKER**
1	+5V	2	SPKR (Default)
3	NC	4	BUZZ (Default)
5	PWLED	6	NC
	KEYLOCK	8	+5V
7	KBLOCK		**RESET**
9	Ground	10	RESET
	ATX PWR ON	12	Ground
11	Ground		**HD_LED**
13	NC	14	HDDLED
15	PSON	16	+5V
17	5VSB		**PWR ON**
19	PME	18	PWRBT+
		20	PWRBT+

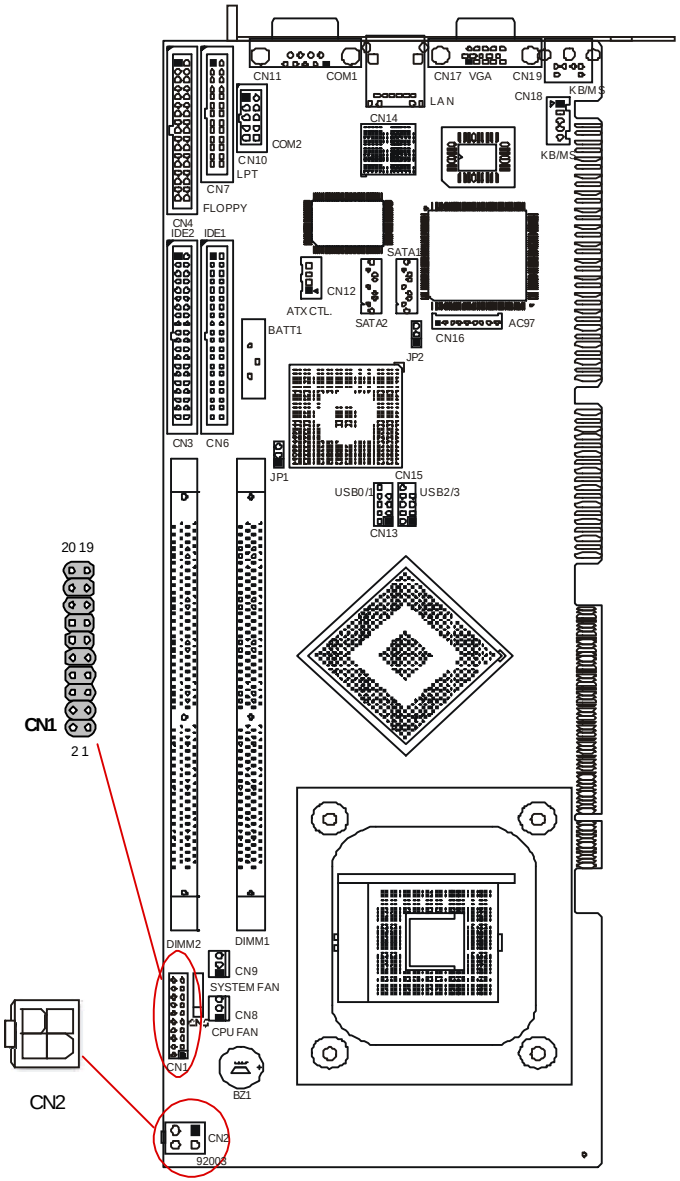
ATX 12V Power Connector

ATX 12V Power Connector:CN2

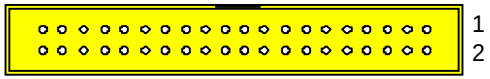
Type : onboard 4-pin Wafer connector

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

Note: The system can not boot without connecting this connector.



Secondary IDE Connector



Connector : **CN3**

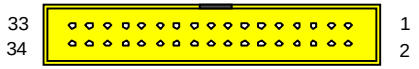
Type : **40-pins 2.54mm Pitch Pin-Header with Housing**

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

FDD Connector

Connector : **CN4**

Type : **34-pins 2.54mm Pitch Pin-Header with Housing**



Pin #	Assignment	Pin #	Assignment
1	Ground	2	Drive Density Selection
3	Ground	4	No Connect
5	Ground	6	Drive Density Selection
7	Ground	8	Index
9	Ground	10	Motor Enable 0
11	Ground	12	Drive Select 1
13	Ground	14	Drive Select 0
15	Ground	16	Motor Enable 1
17	Ground	18	Direction
19	Ground	20	Step
21	Ground	22	Write Data
23	Ground	24	Write Gate
25	Ground	26	Track 00
27	Ground	28	Write Protect
29	Ground	30	Read Data
31	Ground	32	Head Select
33	Ground	34	Diskette Change

Infrared (IR) Connector

Connector : **CN5**

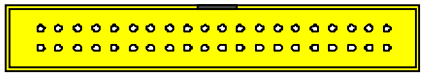
Type : onboard 5-pin header

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

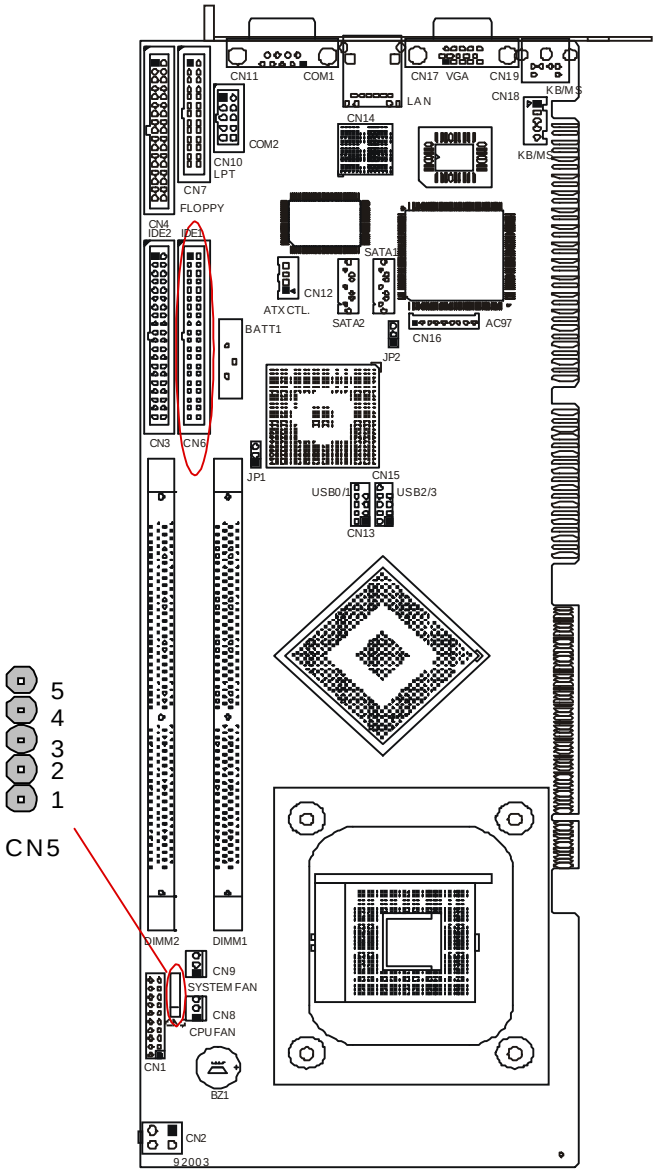
Primary IDE Connector

Connector : **CN6**

Type : **40-pins 2.54mm Pitch Pin-Header with Housing**



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



Peripheral Port

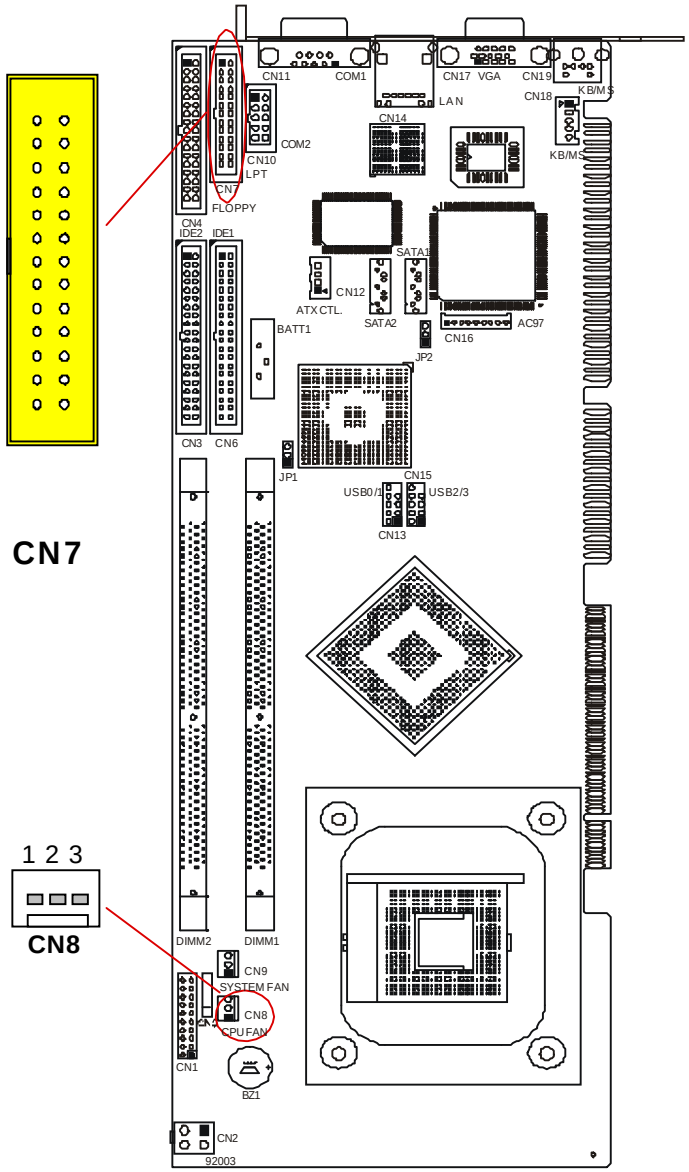
Connector : **CN7**
Type : **26-pins 2.54mm Pitch Pin-Header with Housing**

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

CPU Fan Connector

Connector : **CN8**
Type : onboard 3-pin wafer connector

Pin	Description
1	GND
2	+12V
3	FAN Dectect



System Fan Connector

Connector : **CN9**
Type : onboard 3-pin wafer connector

	Pin	Description
CN4	1	GND
	2	+12V
	3	FAN Dectect

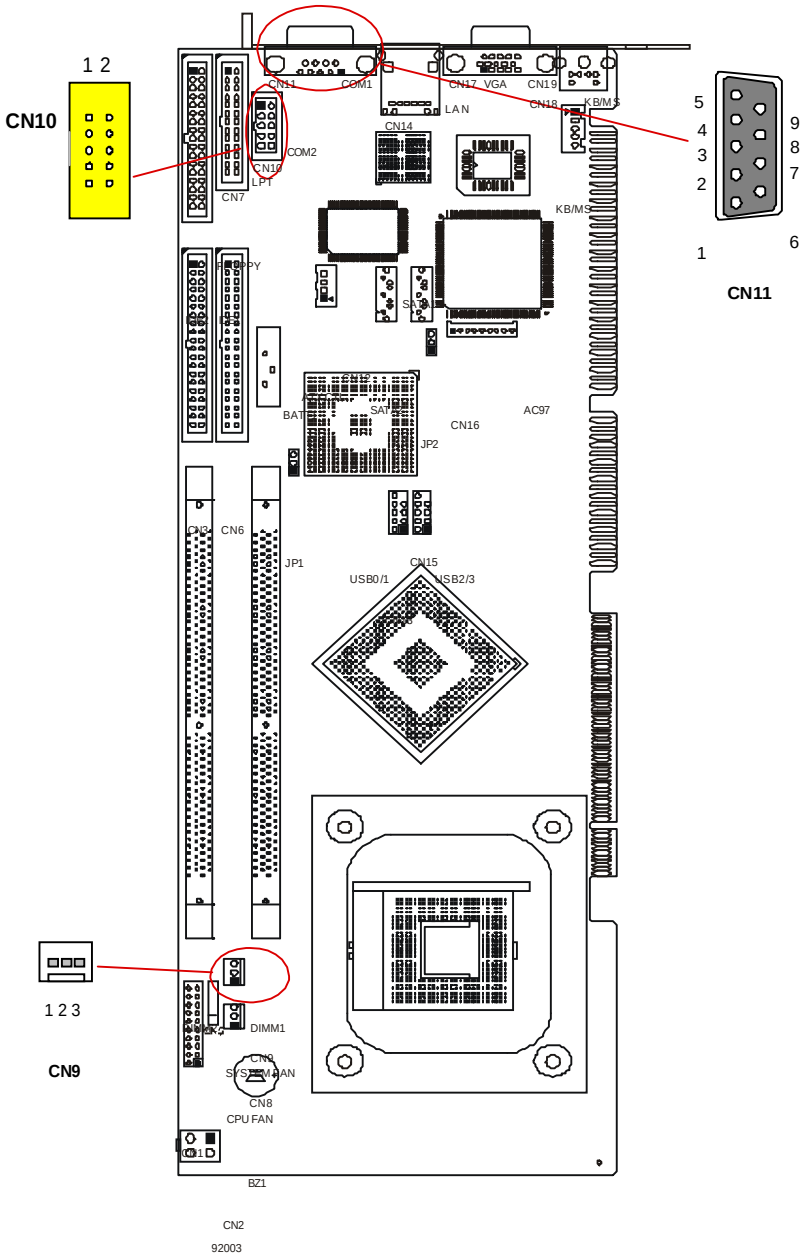
COM Port Connector

Connector : **COM2 RS-232 Serial Port Connector : CN10**
Type : **10-pins 2.54mm Pitch Pin-Header with Housing**

Pin #	Assignment	Pin #	Assignment
1	DCD (Data Carrier Detect)	2	DSR (Data Set Ready)
3	RXD (Receive Data)	4	RTS (Request to Send)
5	TXD (Transmit Data)	6	CTS (Clear to Send)
7	DTR (Data Terminal Ready)	8	RI (Ring Indicator)
9	Ground	10	Ground

Connector : **COM1 RS-232 Serial Port Connector : CN11**
Type : **D-Sub 9-pins Male**

Pin #	Assignment	Pin #	Assignment
1	DCD (Data Carrier Detect)	6	DSR (Data Set Ready)
2	RXD (Receive Data)	7	RTS (Request to Send)
3	TXD (Transmit Data)	8	CTS (Clear to Send)
4	DTR (Data Terminal Ready)	9	RI (Ring Indicator)
5	Ground		



ATX Power Connector

ATX Feature Connector:CN12

Pin	Description
1	PME
2	5VSB
3	PWRON
4	GND

USB 0/1 Connector

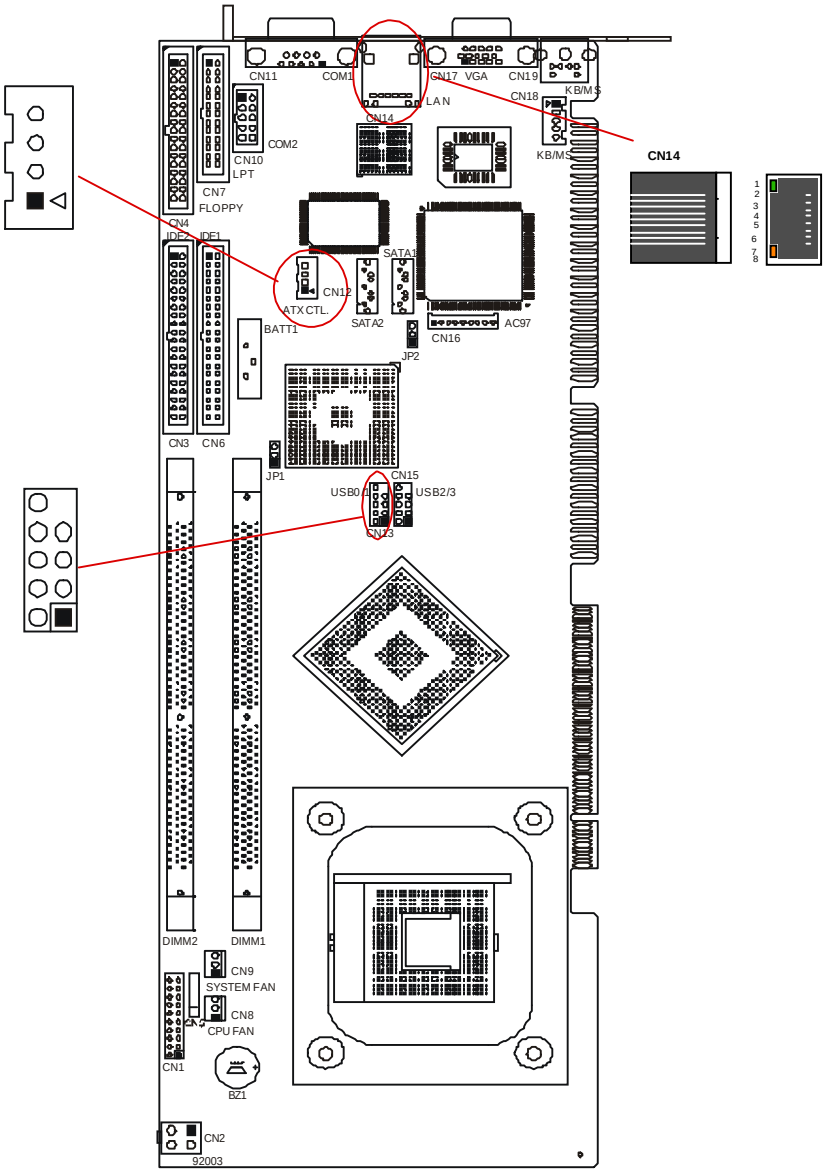
Connector: **CN13**
Type:onboard Two 9-pins Pin-Header

Pin #	Assignment	Pin #	Assignment
1	VCC	2	VCC
3	USB0 N	4	USB1 N
5	USB0 P	6	USB1 P
7	Ground	8	Ground
9	n/a	10	NC

Fast Ethernet Connectors

Connector : **Gigabit LAN (82547GI) : CN14**
Type : external RJ-45 on bracket

Pin #	Assignment	Pin #	Assignment
1	Transmit output (+)	5	NC
2	Transmit output (-)	6	Receive input (-)
3	Receive input (+)	7	NC
4	NC	8	NC



USB 2/3 Connector

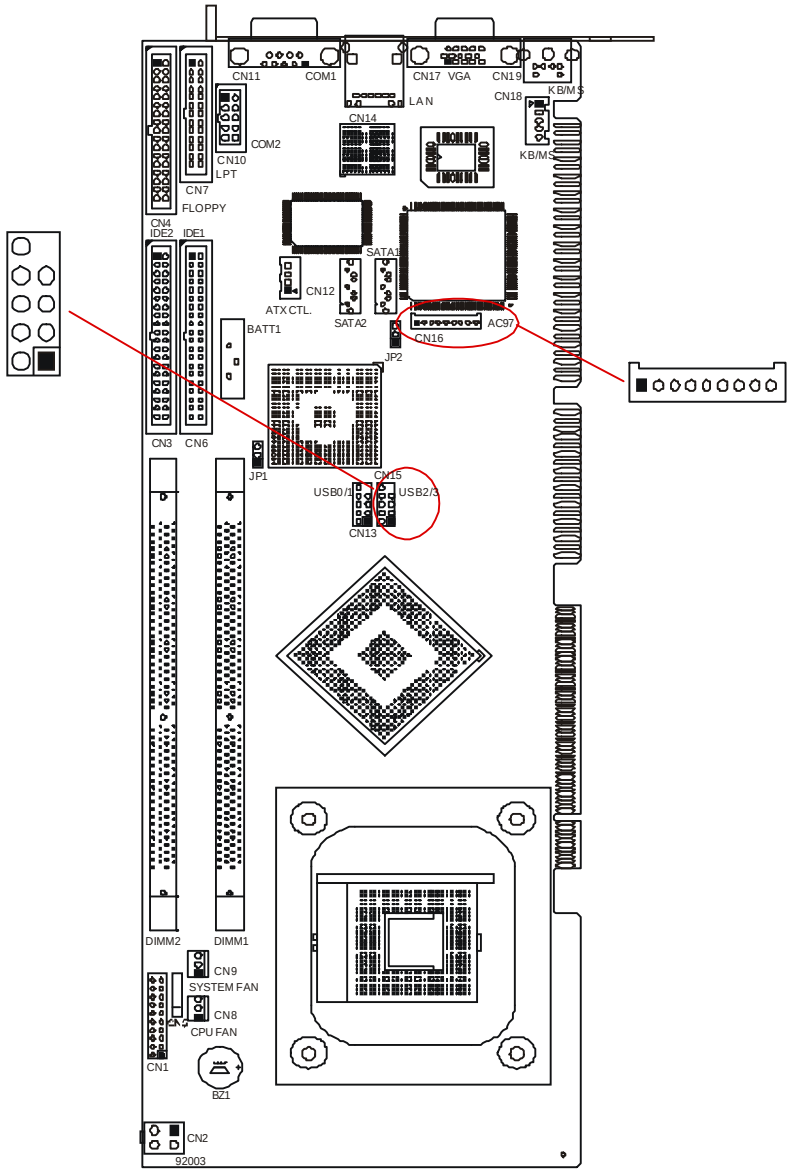
Connector: **CN15**
Type:onboard Two 9-pins Pin-Header

Pin #	Assignment	Pin #	Assignment
1	VCC	2	VCC
3	USB2 N	4	USB3 N
5	USB2 P	6	USB3 P
7	Ground	8	Ground
9	n/a	10	NC

Audio Interface

Connector : **CN16**
Type : Onboard 10-pin box header

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



VGA Connector

Connector : **CN17**
Type : external 15-pin D-sub female connector

Pin #	Assignment	Pin #	Assignment
1	Red Color Signal	2	Green Color Signal
3	Blue Color Signal	4	5V
5	Ground	6	Ground
7	Ground	8	Ground
9	5V	10	Ground
11	5V	12	VGA DDA
13	H-Sync.	14	V-Sync.
15	SPCLK		

Keyboard & Mouse Connector

AT Keyboard

Connector : **CN18**
Type : Onboard 5-pin header

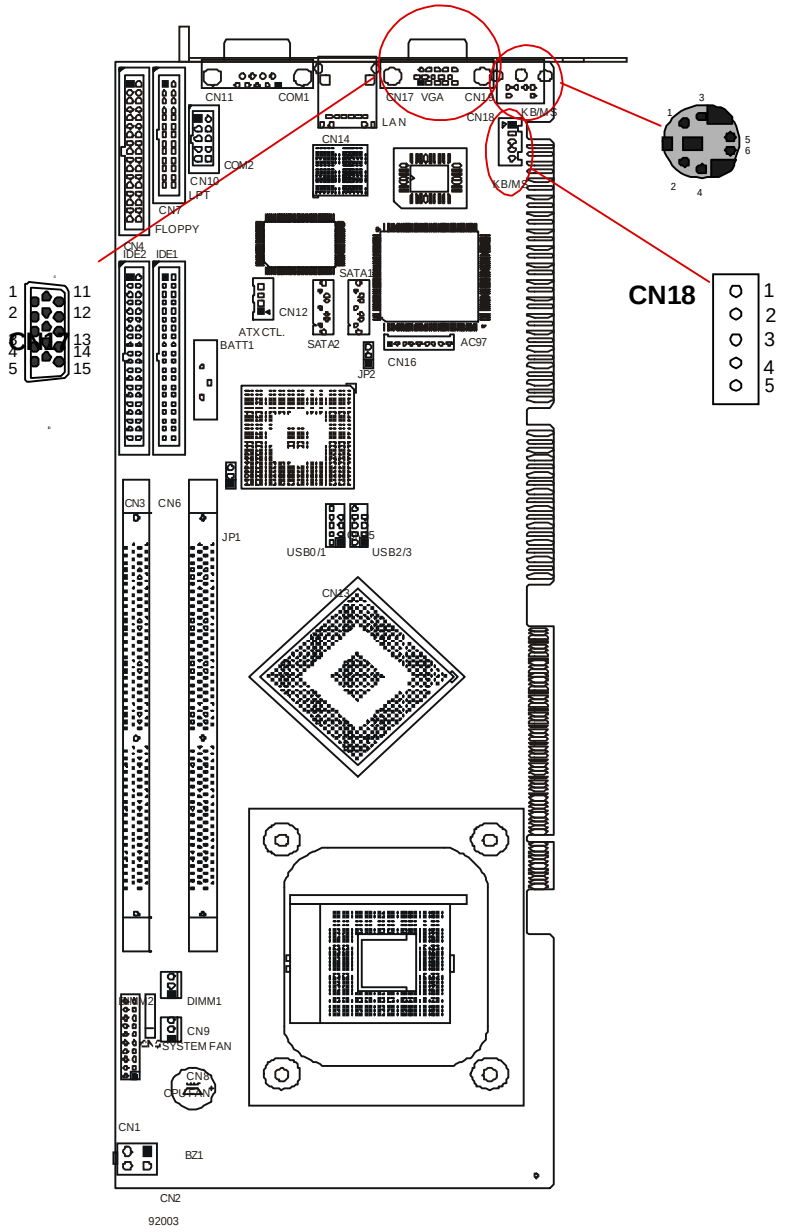
Pin	Description	Pin	Description
1	CLK	2	DATA
3	NC	4	GND
5	Vcc		

PS/2 Keyboard & Mouse

Connector: **CN19**
Type: 6-pin Mini DIN connector on bracket

Pin	Description	Pin	Description
1	KB-DATA	2	MS-DATA
3	GND	4	+5V
5	KB-CLK	6	MS-CLK

Note: CN18 supports PS/2 keyboard directly, and PS/2 mouse suppoted with the additional PS2 1-to-2 cable in the standard packing.



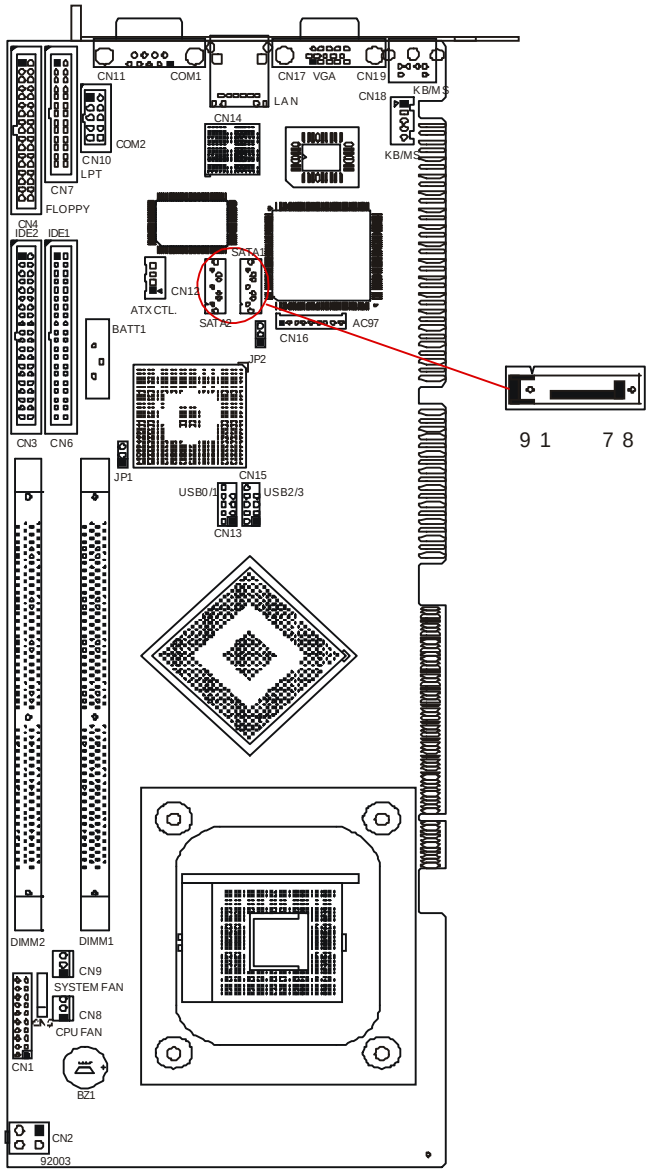
S-ATA Connector

Connector : **S-ATA1 Connector (9-pins): SATA1**

Pin #	Assignment
1	Ground
2	SATA1_TXP
3	SATA1_TXN
4	Ground
5	SATA1_RXN
6	SATA1_RXP
7	Ground
8	Ground
9	Ground

Connector : **S-ATA2 Connector (9-pins): SATA2**

Pin #	Assignment
1	Ground
2	SATA2_TXP
3	SATA2_TXN
4	Ground
5	SATA2_RXN
6	SATA2_RXP
7	Ground
8	Ground
9	Ground



3501000 Audio Card (Optional)

Thank you for select 3501000 Audio Card, here is the description about how to connect the connector and phone jack to use audio functions.

CD_IN Connector: JP1

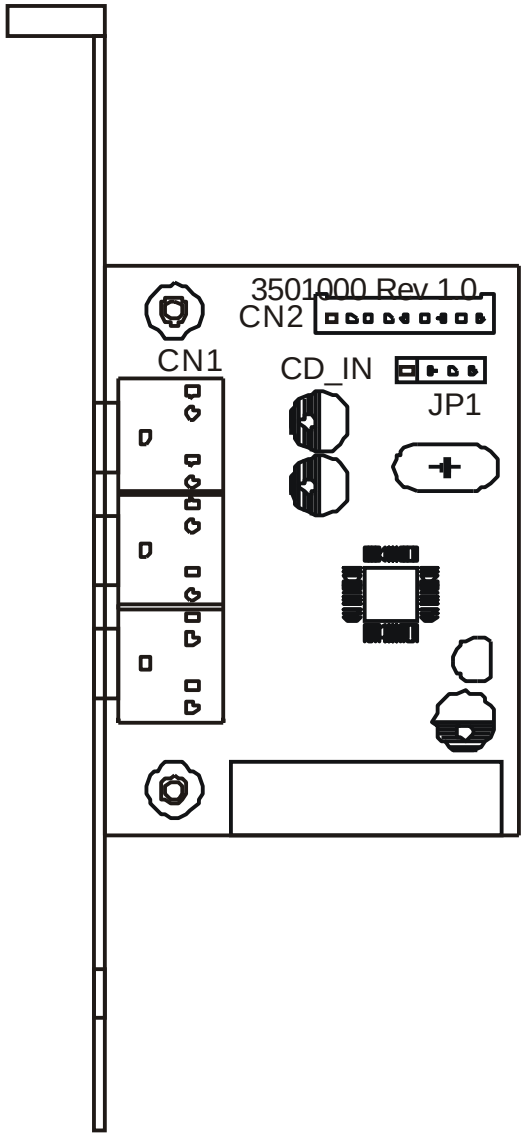
Pin #	Assignment
1	Left
2	Ground
3	Ground
4	Right

Audio Line_In, Line_Out, MIC Phone Jack: CN1

Pin #	Assignment
1	Line_In
2	Line_Out
3	MIC

Audio Line_In, Line_Out, MIC Phone Jack: CN1

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



AWARD BIOS Setup

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

It is possible for the CMOS battery to fail, this will cause data loss in the CMOS only. If this does happen you will need to reconfigure your BIOS settings.

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.

Phoenix - AwardBIOS CMOS Setup Utility

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

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. See 3.3 for the details.

Advanced BIOS Features:

Use this menu to set the Advanced Features available on your system. See 3.5 for the details.

Advanced Chipset Features:

Use this menu to change the values in the chipset registers and optimize your system S performance. See 3.6 for the details.

Integrated Peripherals:

Use this menu to specify your settings for integrated peripherals. See section 3.7 for the details.

Power Management Setup:

Use this menu to specify your settings for power management. See 3.8 for the details.

PnP / PCI Configuration:

This entry appears if your system supports PnP / PCI. See 3.9 for the details.

PC Health Status:

Use this menu to show your system temperature, speed and voltage status. See 3.10 for the details.

Frequency / Voltage Control:

Use this menu to specify your settings for frequency/voltage control. See 3.11 for the details.

Load Fail-Safe Defaults:

Use this menu to load the BIOS default values for the minimal/stable performance for your system to operate. See 3.12 for the details.

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. See 3.13 for the details.

Supervisor / User Password:

Use this menu to set User and Supervisor Passwords. See 3.14 for the details.

Save & Exit Setup:

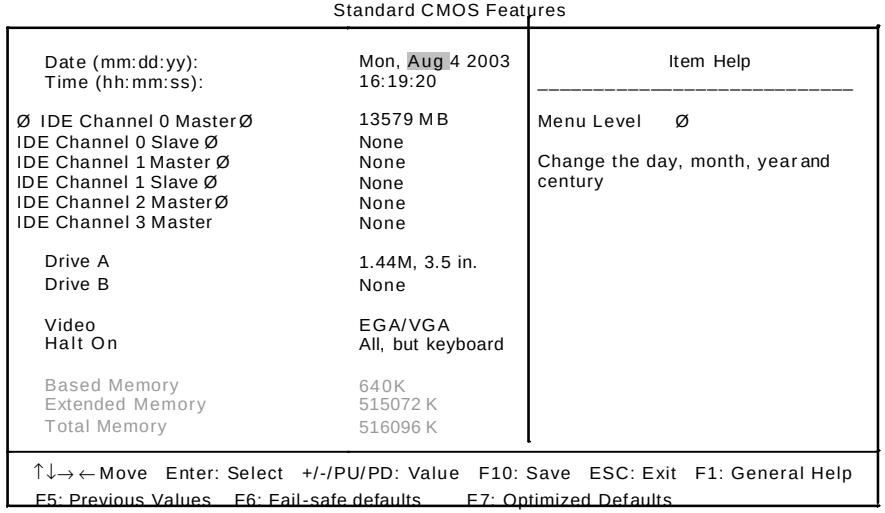
Save CMOS value changes to CMOS and exit setup. See 3.15 for the details.

Exit Without Save:

Abandon all CMOS value changes and exit setup. See 3.15 for the details.

Standard CMOS Features

The items in Standard CMOS Setup Menu are divided into 10 categories. Each category includes no, one or more than one setup items. Use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.



Date: Options Month/DD/YYYY

Set the system date. Note that the 'Day' automatically changes when you set the date.

Time: Options HH : MM : SS

Set the system time.

IDE Channel 0 Master: Options are in its sub menu (described in 3.4)

Press <Enter> to enter the sub menu of detailed options.

IDE Channel 0 Slave: Options are in its sub menu (described in 3.4)

Press <Enter> to enter the sub menu of detailed options.

IDE Channel 1 Master: Options are in its sub menu (described in 3.4)

Press <Enter> to enter the sub menu of detailed options.

IDE Channel 2 Slave: Options are in its sub menu (described in 3.4)

Press <Enter> to enter the sub menu of detailed options.

IDE Channel 2 Master: Options are in its sub menu (described in 3.4)

Press <Enter> to enter the sub menu of detailed options.

IDE Channel 3 Master: Options are in its sub menu (described in 3.4)

Press <Enter> to enter the sub menu of detailed options.

Drive A/Drive B: Options None 360K, 5.25 in/1.2M, 5.25 in/720K, 3.5 in/

1.44M, 3.5 in/2.88M, 3.5 in

Select the type of floppy disk drive installed in your system.

Video: Options EGA/VGA/CGA 40/CGA 80/MONO

Select the default video device.

Halt On: Options All Errors/No Errors/All, but Keyboard/All, but Diskette/All,

but Disk/Key

Select the situation in which you want the BIOS to stop the POST process and notify you.

Base Memory:

Displays the amount of conventional memory detected during boot up.

Extended Memory:

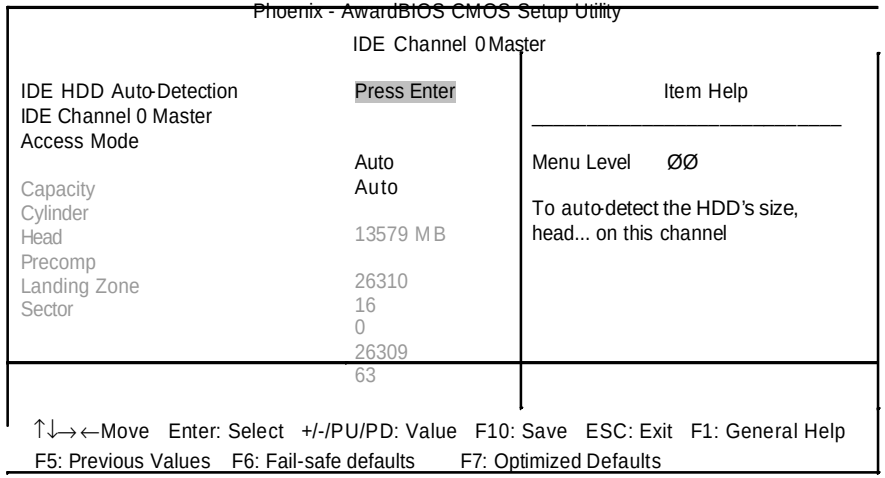
Displays the amount of extended memory detected during boot up.

Total Memory:

Displays the total memory available in the system.

IDE Adapters

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



IDE HDD Auto-detection: Options Press Enter

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

IDE Channel 0 Master: Options None, Auto and Manual

Selecting a 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: PRE-COMP=65535 means NONE !

Access Mode: Options CHS, LBA, Large and Auto

Choose the access mode for this hard disk

Capacity: Options Auto Display your disk drive size

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

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

Cylinder: Options Min = 0, Max = 65535

Set the number of cylinders for this hard disk.

Head: Options Min = 0, Max = 255

Set the number of read/write heads

Precomp: Options Min = 0, Max = 65535

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

Landing zone: Options Min = 0, Max = 65535

****

Sector: Options Min = 0, Max = 255

Number of sectors per track

Advanced BIOS Features

This section allows you to configure your system for basic operation. You have the opportunity to select the system default speed, boot-up sequence, keyboard operation, shadowing and security.

Phoenix - AwardBIOS CMOS Setup Utility
Advanced BIOS Features

Ø CPU Feature	Press Enter	Item Help
Ø Hard Disk Boot Priority	Press Enter	----------
Virus Warning	Enabled	Menu Level Ø
CPU L1 & L2 Cache	Enabled	
Hyper-Threading Technology	Enabled	
Quick Power On Self Test	Enabled	
First Boot Device	Floppy	
Second Boot Device	HDD-0	
Third Boot Device	LS-120	
Boot Other Devic e	Enabled	
Swap Floppy Drive	Disabled	
Boot Up Floppy Seek	Enabled	
Boot Up NumLock Status	On	
Gate A20 Option	Normal	
Typematic Rate Setting	Disabled	
X Typematic Rate (Chars/Sec)X	6	
Typematic Delay (Msec)	250	
Security Option	Setup	
APIC Mode	Disabled	
X MPS Version Control For OS	1.1	
OS Select For DRAM > 64MB	Non-OS2	
Console Redirection	Disabled	
Baud Rate	19200	
Agent Commect via	NULL	
Agent wait time (min)	1	
Agent after boot	Disabled	
Report No FDD For Win 95	No	

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

CPU Feature

Phoenix - AwardBIOS CMOS Setup Utility
CPU Feature

Delay Prior to Thermal	16Min	Item Help
Thermal Management	Thermal Monitor 1	----------
		Menu Level Ø Ø

•¯ ® ¬ Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-safe defaults F7: Optimized Defaults

Delay Prior To Thermal:

Select this item allows the delay prior to thermal time.

The Choice: Auto, 4, 8, 16, 32Min

Thermal Management:

It allows you to select the thermal Monitor. The Choice: Thermal monitor1, thermal Monitor2.

Hard Disk Boot Priority:

Press Enter and It shows Bootable add-in Card.

Virus Warning:

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

Enabled Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector or hard disk partition table.

Disabled No warning message will appear when anything attempts to access the boot sector or hard disk partition table.

CPU L1& L2 Cache:

These two categories speed up memory access. However, it depends on CPU/chipset design.

Enabled Enable cache
Disabled Disable cache

Hyper-Threading Technology:

Allow you to choose the CPU Hyper-Threading Technology.

Enabled Enable CPU Hyper-Threading

Disabled Disabled CPU Hyper-Threading

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 Boot Device:

The BIOS attempts to load the operating system from the devices in the sequence selected in these items.

The Choice: Floppy, LS/ZIP, HDD, SCSI, CDROM, LAN and Disabled.

Boot Other Device:

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

The Choice: Enabled, 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: On, Off

Gate A20 Option:

Select if chipset or keyboard controller should control GateA20.

Normal A pin in the keyboard controller controls GateA20

Fast Lets chipset control GateA20

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.

Typematic Rate (Chars/Sec):

Sets the number of times a second to repeat a keystroke when you hold the key down.

The choice: 6, 8, 10, 12, 15, 20, 24 and 30.

Typematic Delay (Msec):

Sets the delay time after the key is held down before it begins to repeat the keystroke.

The choice: 250, 500, 750 and 1000.

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:

This item allows you to enable/disable APIC Mode.

The choice: Enabled, Disabled.

MPS Version Control For OS:

Select the operating system that is Multi-Processors Version Control for OS.

The choice: 1.4, 1.1.

OS Select For DRAM > 64MB:
Select the operating system that is running with greater than 64MB of RAM on the system.

The choice: Non-OS2, OS2.

Console Redirection:

This item allows you to redirect console.

The choice: Enabled Redirect console via Com Port.

Disabled Redirect console when keyboard absent.

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

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

Agent Wait Time (min):

Select the time to allow agent connects when timeout.

The choice: 1, 2, 4, 8.

Agent After Boot:

This item allows you to keep agent running after OS boot.

The Choice: Enabled, Disabled.

Report No FDD For WIN95:
Whether report no FDD for Win 95 or not. The choice: Yes, No.

Advanced Chipset Features

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

Phoenix - AwardBIOS CMOS Setup Utility
Advanced Chipset Features

DRAM Timing Selectable	By SPD	Item Help
X CAS Latency Time	2	
X Active to Precharge Delay X	6	Menu Level Ø
DRAM RAS# to CAS# Delay X	3	
DRAM RAS# Precharge	3	
Memory Frequency For	Auto	
System BIOS Cacheable	Enabled	
Video BIOS Cacheable	Disabled	
Memory Hole At 15M-16M	Disabled	
AGP Aperture Size (MB)	128	
Init Display First	Onboard/AGP.	
On-Chip VGA Setting		
On-Chip VGA	Enabled	
On-Chip Frame Buffer Size	8MB	

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

DRAM Timing Selectable:

Select the operating system that is selecting DRAM timing, so select SPD for setting SDRAM timing by SPD.
The choice: Manual, By SPD

CAS Latency Time:

When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing.
The choice: 2, 2.5 and 3.

Active To Precharge Delay:

Select the operating system that is active to precharge delay.

The choice: 5, 6, 7, 8.

DRAM RAS# to CAS# Delay:

You can select RAS to CAS Delay time in HCLKs of 2/2 or 3/3.

The system board designer should set the values in this field, depending on the DRAM installed. Do not change the values in this field unless you change specifications of the installed DRAM or the installed CPU.

The choice: 2, 3, 4.

DRAM RAS# Precharge:

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

The choice: 2, 3, 4.

Memory Frequency For:

You can use this item to select operating frequency for the main system memory.

The choice: Auto, DDR266

System BIOS Cacheable:

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

The choice: Enabled, Disabled.

Video BIOS Cacheable:

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

The choice: Enabled, Disabled.

Memory Hole At 15M-16M:

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

The choice: Enabled, Disabled.

AGP Aperture Size (MB):

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

The choice: 4, 8, 16, 32, 64, 128 and 256

Init Display First:

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

The choice: PCI Slot, Onboard/AGP.

On-Chip VGA:

You can use this item to select on-chip VGA for the main system VGA.

The choice: Enabled, Disabled.

On-Chip Frame Buffer Size:

You can use this item to select frame buffer size.

The choice: 1MB, 8MB,16M

Integrated Peripherals

Phoenix - AwardBIOS CMOS Setup Utility
Integrated Peripherals

Ø OnChip IDE Device	Press Enter	Item Help
Ø Onboard Device	Press Enter	
Ø SuperI/O Device	Press Enter	Menu Level Ø
Onboard Lan Boot ROM	Enabled	

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

OnChip IDE Device:

OnChip IDE Device

IDE HDD Block Mode	Enabled	Item Help
On-Chip Primary PCI IDE	Enabled	
IDE Primary Master PIO	Auto	Menu Level Ø
IDE Primary Slave PIO	Auto	
IDE Primary Master UDMA	Auto	If you IDE hard drive supports block mode select Enabled for automatic detection of the optimal number of block read/writes per sector the drive can support.
IDE Primary Slave UDMA	Auto	
On-Chip Secondary PCI IDE	Enabled	
IDE Secondary Master PIO	Auto	
IDE Secondary Slave PIO	Auto	
IDE Secondary Master UDMA	Auto	
IDE Secondary Slave UDMA	Auto	
******On-Chip Serial ATA Setting		
On-Chip Serial ATA	Auto	
X Serial ATA Port 0 Mode	SATA0 master	
X Serial ATA Port 1 Mode	SATA1 master	

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

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.

The choice: Enabled, Disabled

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.

The choice: Enabled, Disabled.

IDE Primary/Secondary Master/Slave PIO:

The four IDE PIO (Programmed Input/Output) fields let you set a PIO mode (0-4) for each of the four IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device.

The choice: Auto, Mode 0, Mode 1, Mode 2, Mode 3 and Mode 4.

IDE Primary/Secondary Master/Slave UDMA:

Ultra DMA/33 implementation is possible only if your IDE hard drive supports it and the operating environment includes a DMA driver (Windows 95 OSR2 or a third-party IDE bus master driver). If your hard drive and your system software both support Ultra DMA/33, select 'Auto' to enable BIOS support.

The choice: Auto, Disabled.

On-Chip Serial ATA:

The five Serial ATA fields let you set the Serial ATA.

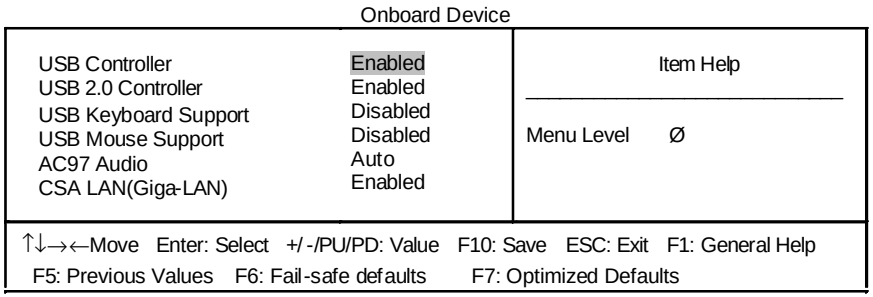
Disabled-Disabled SATA Controller

Auto-Auto arrange by BIOS

Conbined Mode-PATA and SATA are combined. Max. of 2 IDE drives in each channel.

Enhanced Mode: Enable both SATA and PATA. Max. of 6 IDE drives are supported.

Onboard Device:



USB Controller:

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

The choice: Enabled, Disabled.

USB 2.0 Controller:

Select 'Enabled' if your system contains a Universal Serial Bus 2.0 (USB 2.0) controller and you have USB peripherals.

The choice: Enabled, Disabled.

USB Keyboard Support:

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

The choice: Enabled, Disabled.

USB Mouse Support:

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

The choice: Enabled, Disabled.

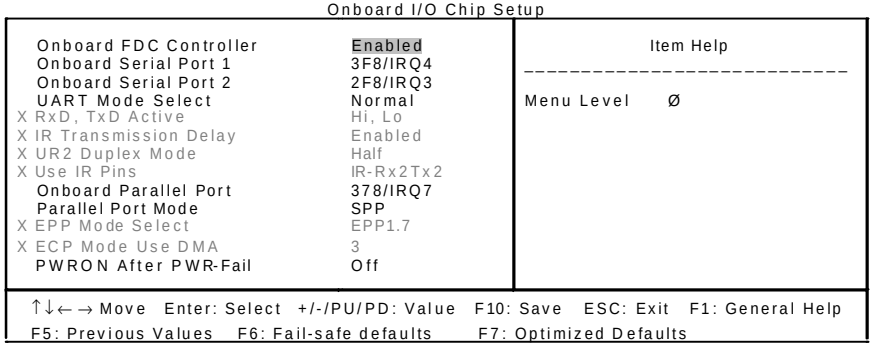
AC97 Audio:

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

The choice: Auto, Disabled.

CSA LAN(Giga-LAN): Enables the onboard LAN feature.

Onboard I/O Chip Setup:



Onboard FDC Controller:

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

The choice: Enabled, Disabled.

Onboard Serial Port 1/Port 2:

Select an address and corresponding interrupt for the first and second serial ports.

The choice: 3F8/IRQ4, 2E8/IRQ3, 3E8/IRQ4, 2F8/IRQ3, Disabled and Auto.

UART Mode Select:

This item allows you to determine which Infra Red (IR) function of onboard I/O chip.

The Choice: Normal, IrDA and ASKIR.

RxD, TxD Active:

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

The Choice: "Hi, Hi", "Lo, Lo", "Lo, Hi" and "Hi, Lo".

IR Transmission Delay:

This item allows you to enable/disable IR transmission delay.

The choice: Enabled, Disabled.

UR2 Duplex Mode:

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

The choice: Half, Full.

Use IR Pins:

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

The choice: IR-Rx2Tx2, RxD2 and TxD2.

Onboard Parallel Port:

This item allows you to determine access onboard parallel port controller with which I/O address. The choice: 3BC/IRQ7, 378/IRQ7, 278/IRQ5 and Disabled.

Parallel Port Mode:

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

The choice: SPP, EPP, ECP and ECP+EPP, Normal.

EPP Mode Select:

Select EPP port type 1.7 or 1.9.

The choice: EPP1.7, 1.9.

ECP Mode Use DMA:

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

The choice: 3, 1.

PWRON After PWR-Fail:

This item allows you to select if you want to power on the system after power failure.

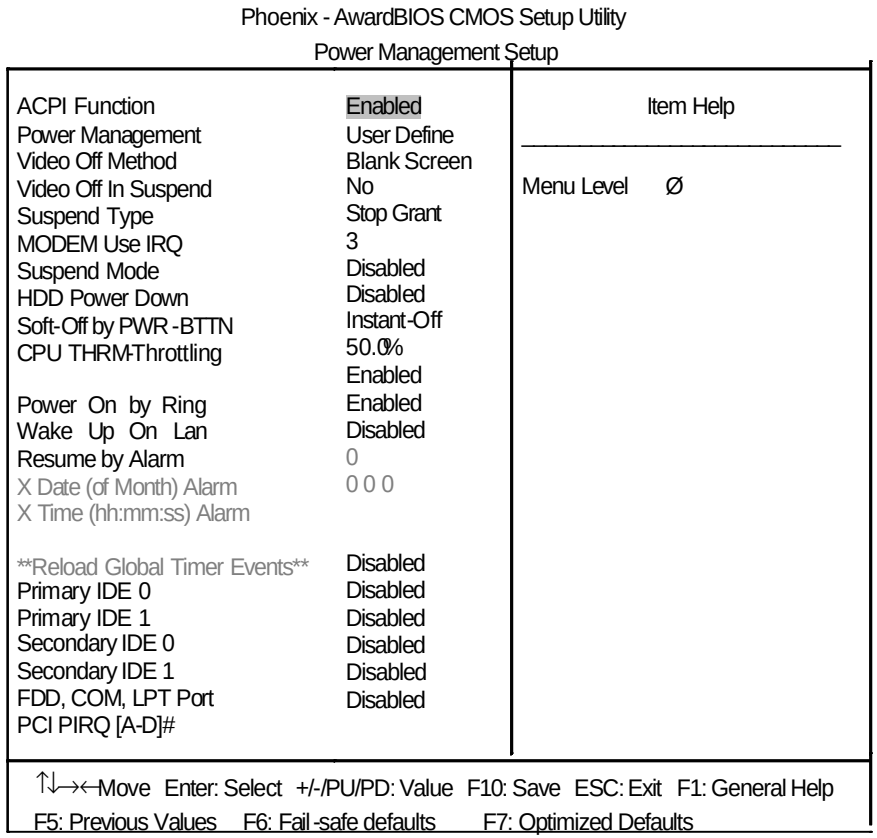
The choice: Off, On and Former-Sts.

Onboard Lan Boot ROM:

This item allows you to enable or disable the onboard LAN Boot ROM.
The choice: Enabled, Disabled

Power Management Setup

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



ACPI Function:

This item allows you to enable/disable the Advanced Configuration and Power Management (ACPI).

The choice: Enabled, Disabled.

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

1. HDD Power Down

2. Doze Mode

3. Suspend Mode

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

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

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

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

V/H SYNC+Blank:
This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.

Blank Screen:
This option only writes blanks to the video buffer.

DPMS:
Initial display power management signaling.

Video Off Method:
This item allows you to on/off Method function.

The choice: Yes, No.

Video Off In Suspend:
This determines the manner in which the monitor is blanked.

The choice: Yes, No.

Suspend Type:
Select the Suspend Type.

The choice: PwrOn Suspend, Stop Grant.

MODEM Use IRQ:
This determines the IRQ in which the MODEM can use.

The choice: 3, 4, 5, 7, 9, 10, 11 and NA.

Suspend Mode:

When 'Enabled' and after the set time of system inactivity. All devices except the CPU will be shut off.

The choice: Disabled, 1, 2, 4, 8, 12, 20, 30, 40 Min and 1Hour.

HDD Power Down:

When 'Enabled' and after the set time of system inactivity, the hard disk drive will be powered down while all other devices remain active.

The choice: Disabled, 1~15Min.

Soft-Off by PWR-BTTN:

Pressing the power button for more than 4 seconds forces the system to enter the Soft-Off state when the system has "hung".

The choice: Delay 4 Sec, Instant-Off.

CPU THRM-Throttling:

Select the CPU THRM-Throttling rate.

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

Power On by Ring:

An input signal on the serial Ring Indicator (RI) line (in other words, an incoming call on the modem) awakens the system from a soft off state.

The choice: Enabled, Disabled.

Wake Up On Lan:

An input signal from Lan awakens the system from a soft off state.

The choice: Enabled, Disabled.

Resume by Alarm:

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

The choice: Enabled, Disabled.

Reload Global Timer Events:

The events are I/O events whose occurrence can prevent the system from entering a power saving mode or can awaken the system from such a mode. In effect, the system remains alert for anything, which occurs to a device, which is configured as Enabled, even when the system is in a power down mode.

Primary IDE 0

Primary IDE 1

Secondary IDE 0

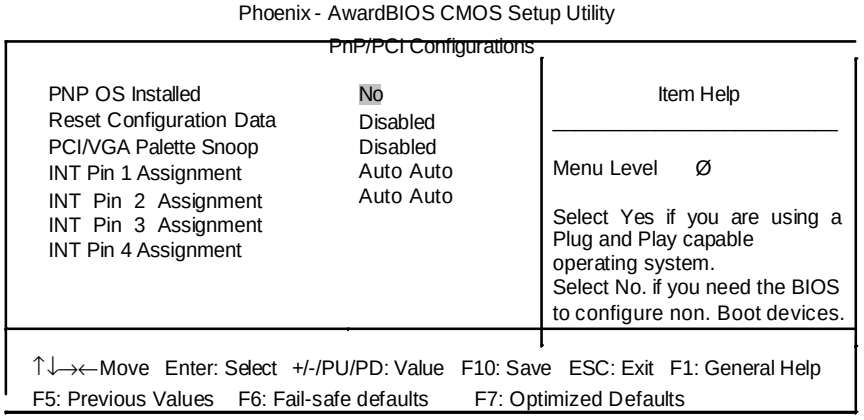
Secondary IDE 1

FDD, COM, LPT Port

PCI PIRQ [A-D] #

PnP/PCI Configuration

This section describes configuring the PCI bus system. PCI, or **P**ersonal **C**omputer **I**nterconnect, 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. This section covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.



Reset Configuration Data:

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

The choice: Enabled, Disabled.

PCI/VGA Palette Snoop:

Leave this field at 'Disabled'.

The choice: Enabled, Disabled.

INT Pin 1~Pin 4 Assignment:

These items allow you to specify what IRQ will be assigned.

The choice: Auto, 3,4,5,7,9,10,11,12,14,15.

PC Health Status

Phoenix - AwardBIOS CMOS Setup Utility
PC Health Status

CPU Warning Temperature	Disabled	Item Help
Current System Temp.	33°C / 91°F	
Current CPU1 Temperature	38°C / 100°F	Menu Level Ø
Current CPUFan1 Speed	3835 RPM	
Current System Fan Speed	4725RPM	
VDIMM (V)	2.48V	
Vcore (V)	1.45V	
+3.3V	3.37V	
+ 5 V	5.08V	
+12 V	11.91V	
VBAT (V)	3.24V	
5VSB (V)	4.80	
Shutdown temperature	Disabled	

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

CPU Warning Temperature:

This item will prevent CPU from overheating.

The choice: 50°C /122°F ~70°C /158°F, Disabled.

Current System Temp:

Show you the current system temperature.

Current CPU1 Temperature:

Show you the current CPU temperature.

Current CPUFan1 Speed:

Show you the current CPU fan operating speed.

Current System Fan Speed:

Show you the current system fan operating speed.

VDIMM (V)

Show you the voltage level of the DRAM.

Vcore (V)

Show you the voltage level of CPU (Vcore).

VCC3.3V/+5V/+12V/-12V/-5V/5VSB(V):

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

VBAT (V)

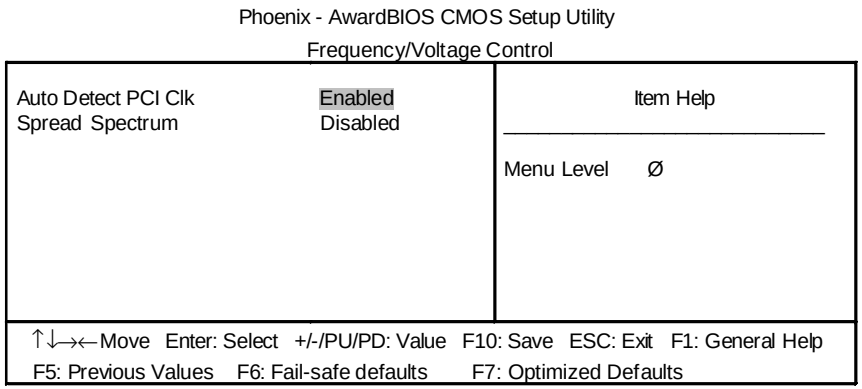
Show you the voltage level of the battery.

Shutdown Temperature:

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

The choice: Disabled, 60°C / 140°F, 65°C / 149°F, 70°C / 158°F and 75°C / 167°F.

Frequency/Voltage Control



Auto Detect PCI CLK:

When 'Enabled', this item will auto detect if the PCI socket have devices and will send clock signal to PCI devices. When disabled, it will send the clock signal to all PCI socket.

The choice: Enabled, Disabled.

Spread Spectrum:

This item allows you to set the spread spectrum modulated.

The choice: +/- 0.35%, +/- 0.50%, +/- 0.75%, +/- 1.0%, Disabled.

Load Fail-Safe Defaults

When you press <Enter> on this item you get a confirmation dialog box with a message similar to:

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

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

Load Optimized Defaults

When you press <Enter> on this item you get a confirmation dialog box with a message similar to:

Load Optimized Defaults (Y/N)? N

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

Supervisor/User Password Setting

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

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

Set User Password: just can only enter but do not have the right to change the options of the setup menus. When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

ENTER PASSWORD:

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

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

PASSWORD DISABLED.

When a password has been enabled, you will be prompted to enter it every time you try to enter Setup. This prevents an unauthorized person from changing any part of your system configuration.

Additionally, when a password is enabled, you can also require the BIOS to request a password every time your system is rebooted. This would prevent unauthorized use of your computer.

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

Exit Selecting

Save & Exit Setup

Pressing <Enter> on this item asks for confirmation:

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

Pressing 'Y' stores the selections made in the menus in CMOS - a special section of memory that stays on after you turn your system off. The next time you boot your computer, the BIOS configures your system according to the Setup selections stored in CMOS. After saving the values the system is restarted again.

Exit Without Saving

Pressing <Enter> on this item asks for confirmation:

Quit without saving (Y/N)? Y

This allows you to exit Setup without storing in CMOS any change. The previous selections remain in effect. This exits the Setup utility and restarts your computer.