R686 Serial

Special FORM, VIA PL133 Chipset.
USER' S MANUAL

R686 Serial

USER’ S MANUAL

PCB Ver. A4

Manual Ver. 20325

Introduction

Thanks for choosing the Rise Computer Inc. The next generation high performance Socket 370 motherboard “ R686” . The R686 uses the high performance VIA PL133 chipset that will deliver superior performance to your computer.

About This User’ s Guide

This User’ s Guide is for assisting system manufactures and end user in setting up and installing the motherboard. Information in this guide has been carefully checked for reliability, however, there may still be inaccuracies and information in this document is subject to change without notice.

DISCLAIMER

The information in this manual has been carefully checked and is believed to be accurate. We assume no responsibility for any inaccuracies that may still be contained in this manual. We reserve the right to make changes to this material at any time without notice.

REMARK

http://www.rise.com.tw

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1.1 Item Checklist

[ ] Motherboard

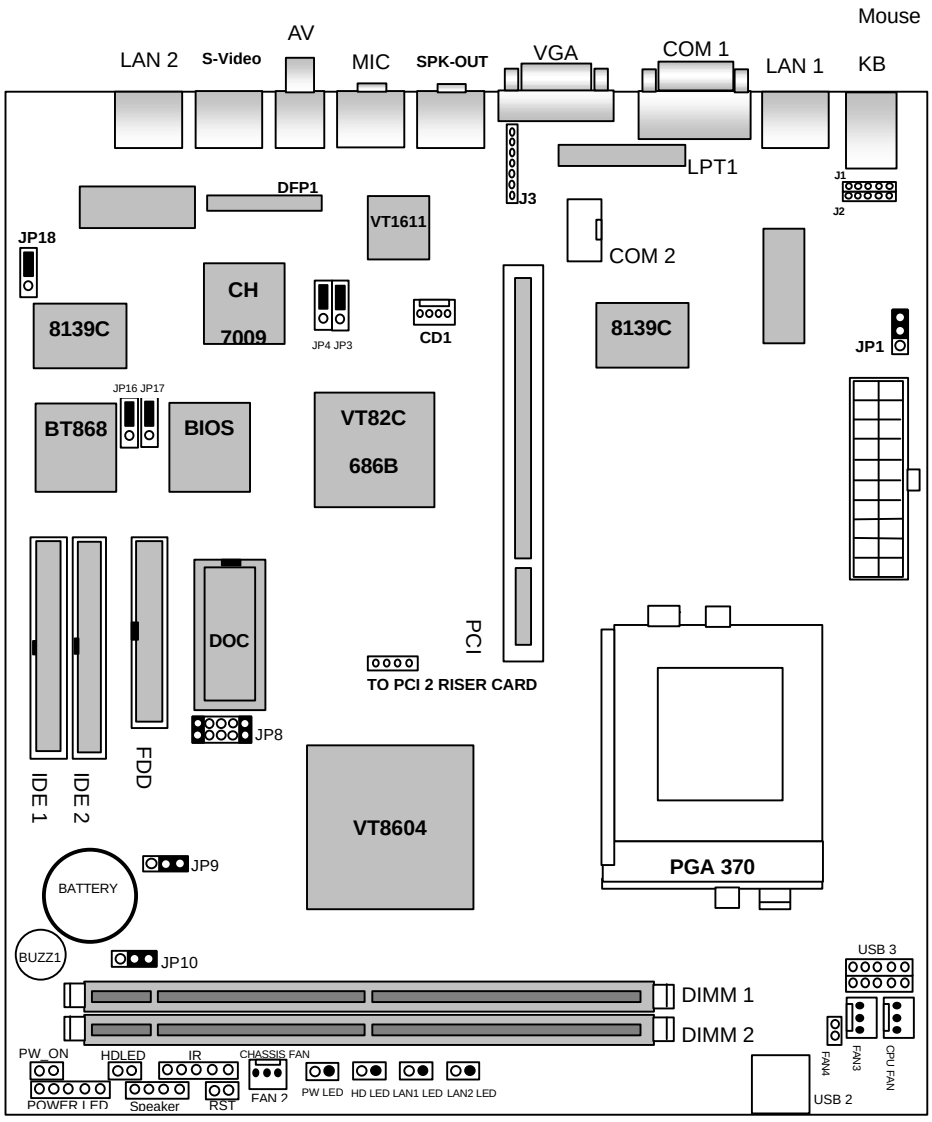
[ ] User' s manual

[ ] 40-pin ATA 66/100 cable

[ ] Internal Print/COM port cable

[ ] Driver CD

1.2 Layout


Mouse
AV
LAN 2
S-Video
MIC
SPK-OUT
VGA
COM 1
LAN 1
KB
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VT82C
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DOC
TO PCI 2 RISER CARD
JP8
FDD
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VT8604
PGA 370
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USB 3
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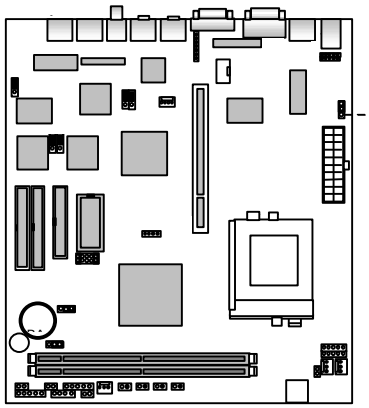
PW_ON
HDLED
IR
CHASSIS FAN
FAN4
FAN3
CPU FAN
POWER LED
Speaker
RST
FAN 2
PW LED
HD LED
LAN1 LED
LAN2 LED
USB 2

1.3 CPU Clock Setting

This motherboard will auto detecting CPU clock & voltage by its BIOS when computer power on. So you don' t need to setting CPU clock & voltage by yourself.

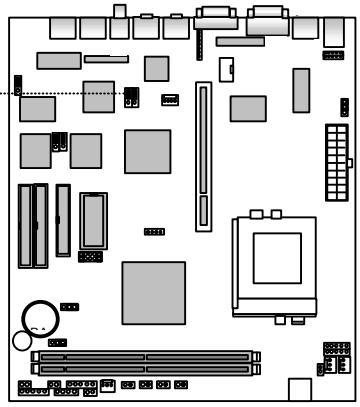
1.4 Jumper & Connectors :

JP1 : Keyboard Power On



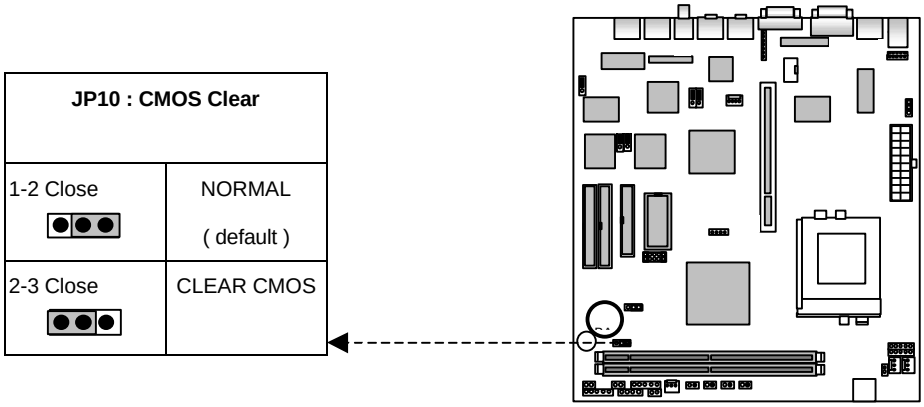
JP1 : Keyboard Power On	
1-2 Close	DISABLED (default)
2-3 Close	ENABLED

JP3, JP4 : CHRONTEL 7009 TV-OUT Chip Function Setting :



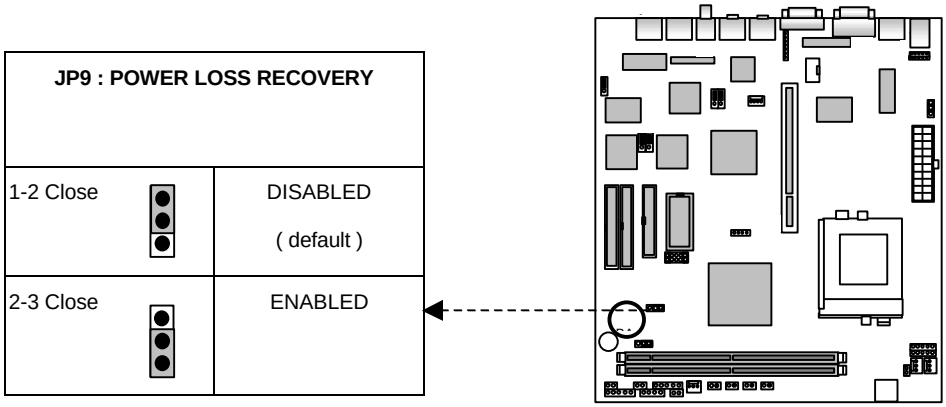
JP3	NTSC or PAL
1-2 Close (default)	NTSC
2-3 Close	PAL
JP4	**CH7009 Address**
1-2 Close	OX76
2-3 Close (default)	OX75

JP10 : CMOS Clear

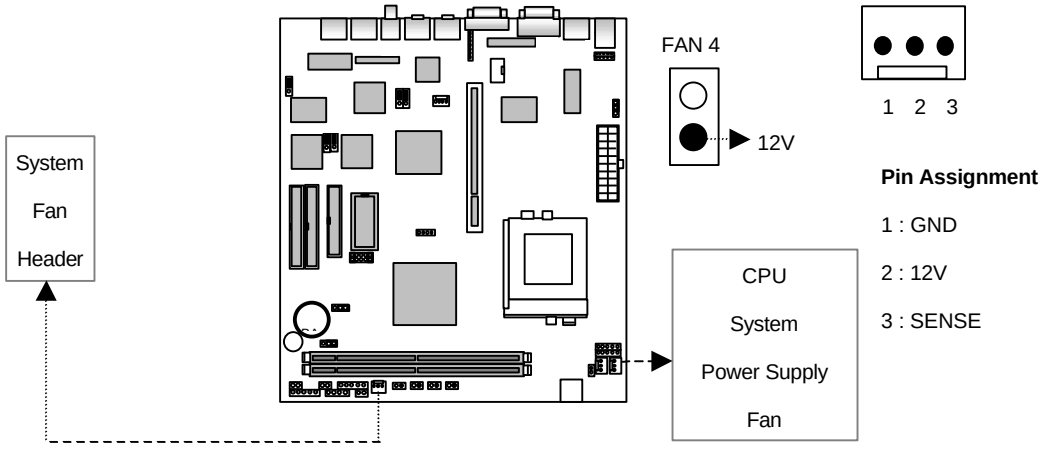


JP9 : Power Loss Recovery

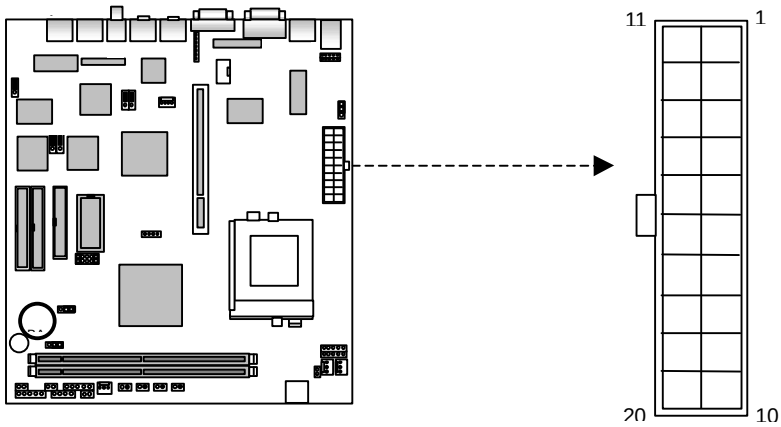
(System will auto power on, you don' t need to press Power-On Button when power ok, *This function for sometime power failure.)



CPU & CHASSIS FAN Header : Connect RED line to 12V.

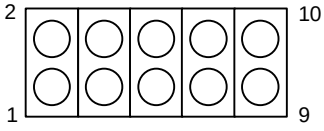


ATX Power Connector

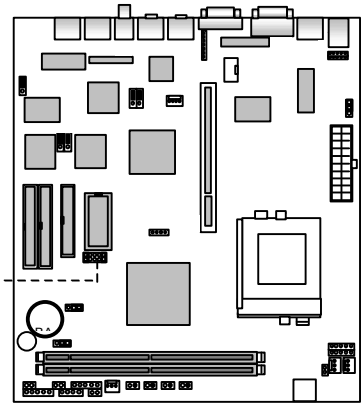


PIN NO	Definition	PIN NO	Definition
1	+3.3V	**11**	+3.3V
2	+3.3V	**12**	-12V
3	GROUND	**13**	GROUND
4	+5V	**14**	Power Supply On
5	GROUND	**15**	GROUND
6	+5V	**16**	GROUND
7	GROUND	**17**	GROUND
8	Power Good	**18**	-5v
9	+5V Standby	**19**	+5v
10	+12V	**20**	+5v

JP8 : Disk On Chip Address Setting :

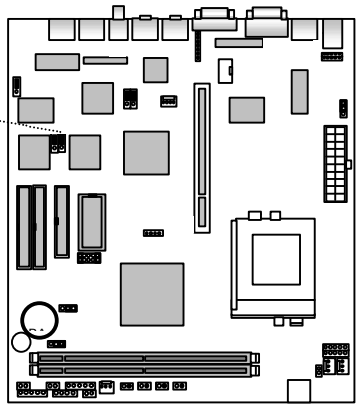


1-2, 7-8 close	0C800H-0C9FFH
1-2, 9-10 close	0CC00H-0CDFFH
3-4, 7-8 close	0D000H-0D1FFH
3-4, 9-10 close	0D400H-0D5FFH
5-6, 7-8 close	0D800H-0D9FFH
5-6, 9-10 close	0DC00H-0DDFFH



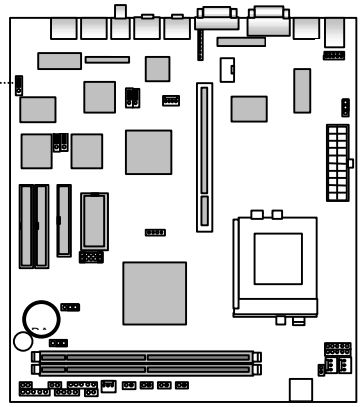
JP16, JP17 : TV or DVI (Digital Video Interface) SELECT.

	JP16	JP17
TV	1-2 Close 	1-2 Close
DVI	2-3 Close 	2-3 Close



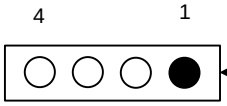
JP18 : LAN 2 Enabled or Disabled.

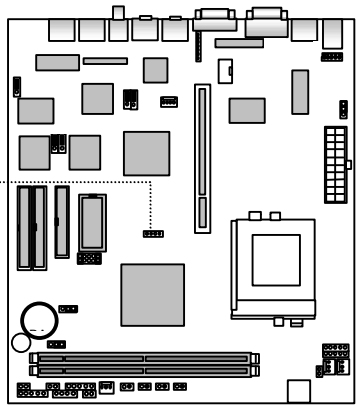
JP 18	
1-2 Close 	Enabled LAN 2
2-3 Close 	Disabled LAN2



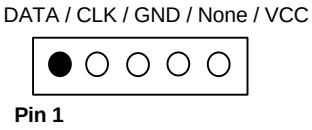
JP7 : TO PCI 2 RISER CARD Connect Jumper Pin.

RED Line to Pin 1.

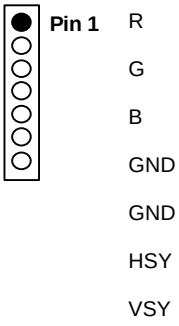




J1, J2 : PS/2 Keyboard, Mouse Jumper Pin.

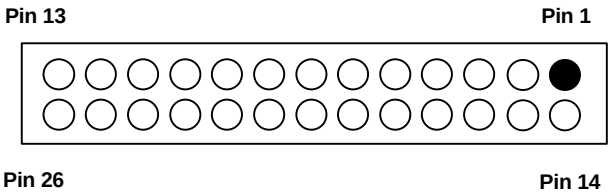


J3 : VGA Jumper Pin.



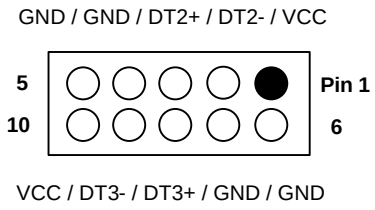
DFP1 : (Digital Video Interface Connect Pins)

(Only CH7009 TV-Out CHIP Support)

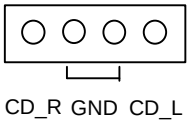


DFP1			
1	TDC0-	14	TDC2-
2	TDC0	15	TDC1-
3	GND	16	TDC2
4	None	17	TDC1
5	None	18	GND
6	GND	19	GND
7	None	20	5VDDCCL
8	TLC	21	VCC
9	TLC-	22	5VDDCDA
10	GND	23	VSYNC
11	-BLUE	24	HPDET
12	GND	25	-RED
13	HSYNC	26	-GREEN

USB3 : USB Jumper Pin.

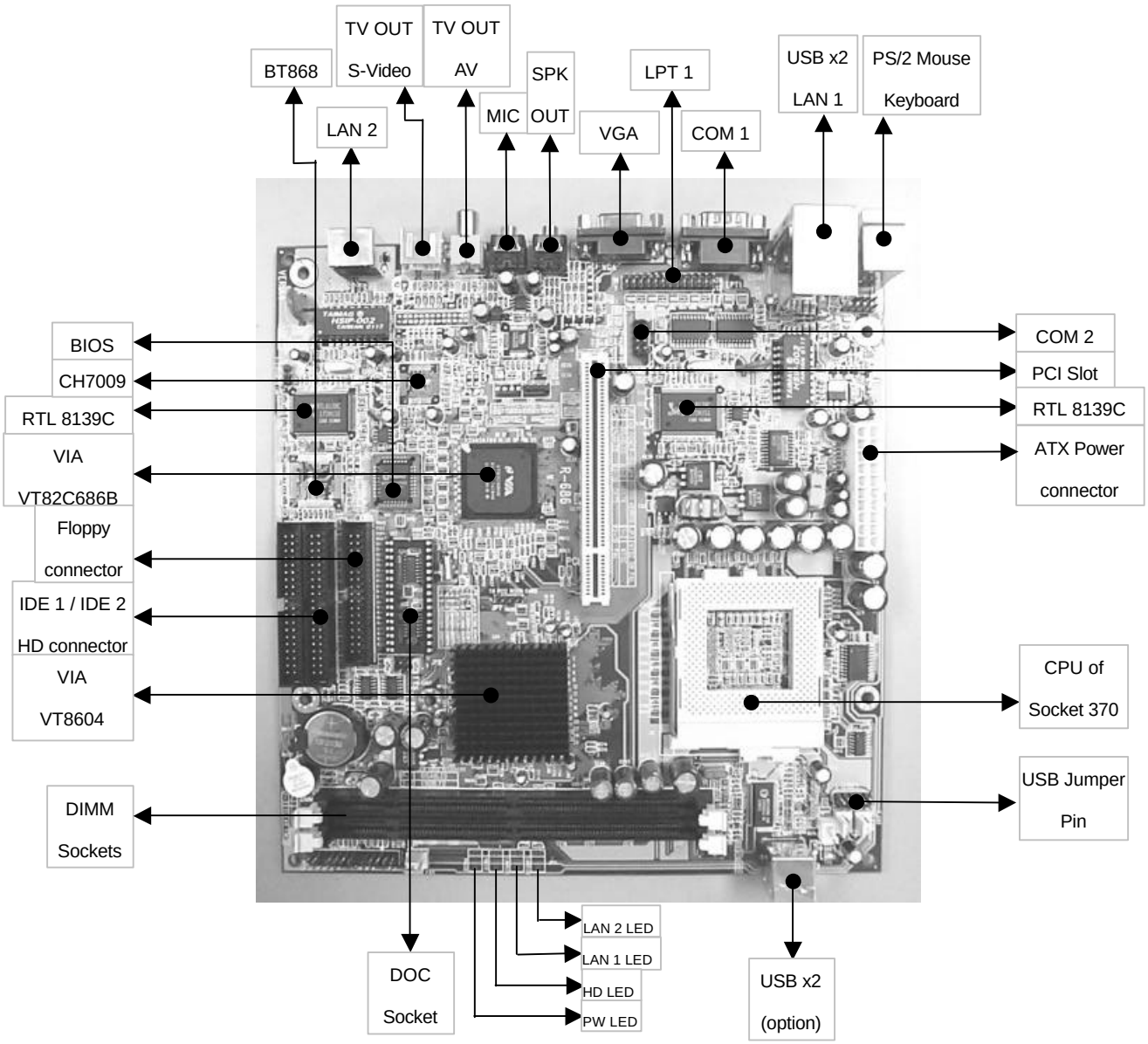


CD1 : CDROM Audio Connect Pin.

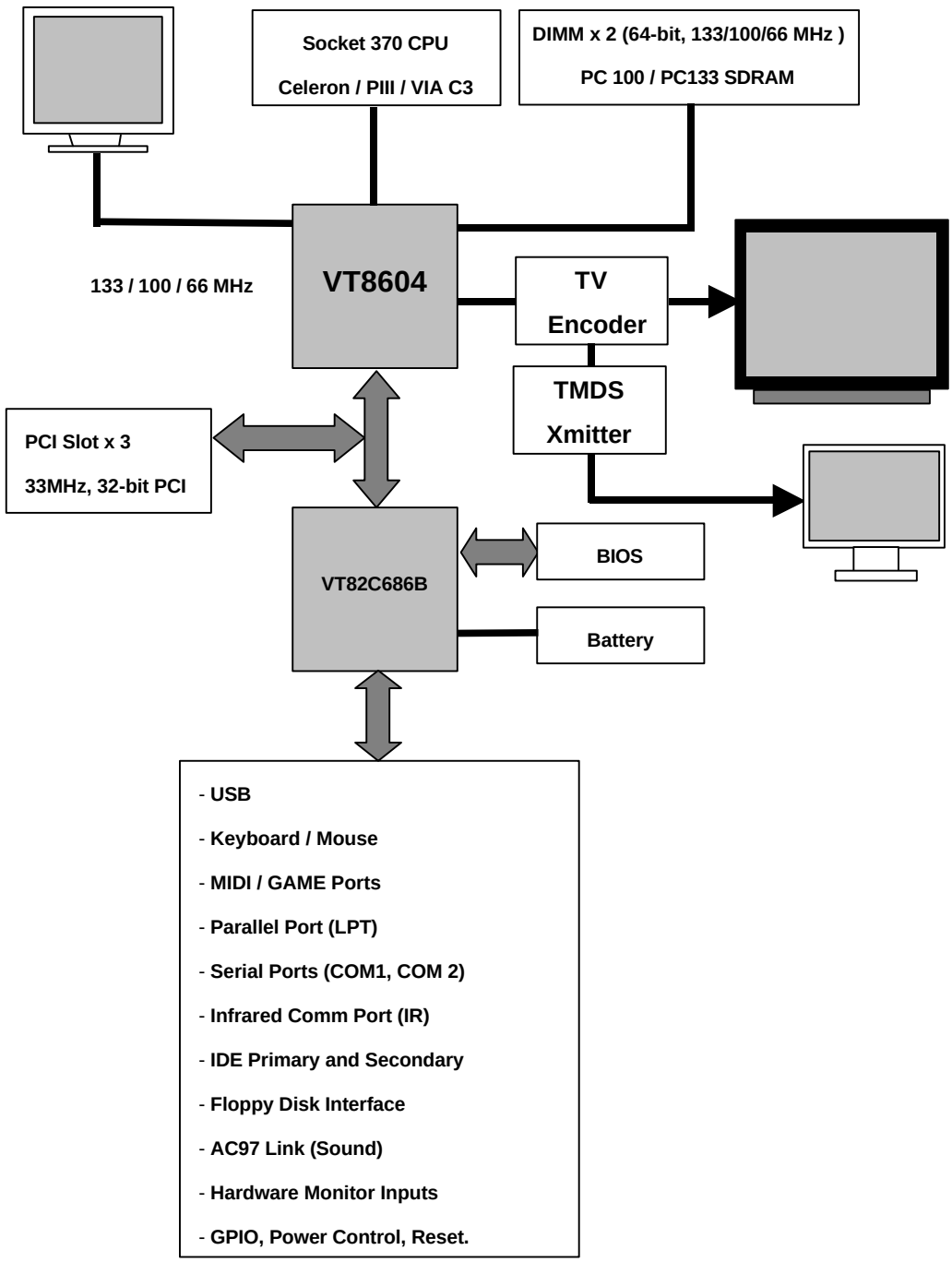


2. Feature

2.1 Motherboard (PCB Ver. A4) Components Placement



2.2 Block Diagram



2.3 Motherboard Specifications

Processor	Socket 370 CPU, INTEL Celeron, Pentium III FC-PGA 0.18 micro / VIA Cyrix C3.
Chipset	VIA PL133 (VT8604 + VT82C686B) (133/100/66)
Expansion Slot	PCI x 2 on Riser Card
System memory	2 X 168-pin DIMM Sockets with 3.3V SDRAM. Maximum for SDRAM to 1GB
VGA	● Integrated in VT8604 (S3 Savage 4 AGP 4X 3D & Savage 2000 2D Shared memory 2~32MB.
TV-OUT	● CHRONTEL 7009 chip, resolution – 640x480 / 800x600 / 1024x768. ● Brook Tree BT868 chip, resolution – 640x480 / 800x600 (PAL only).
Network	● Realtek 8139C 10/100Mbps Lan chip x 2.
Onboard I/O	● On Board Sound (VIA 1611 codec and sound chip). ● Supports 2 X USB Ports (Essential), 2 x USB Ports (Optional). ● PCI Bus Master IDE Ports : PIO Mode 3 and 4 ; DMA Mode 2 ; Ultra DMA33/66. VT82C686B support Ultra DMA 100. ● Fast IrDA Support. ● PS/2 Keyboard and PS/2 Mouse Support. ● 1 Floppy Port (Up to 2.88MB；3mode Floppy Supported). ● 2 Serial Ports (16550 Fast UART Compatible). ● 1 Parallel Port (ECP,EPP Port). ● Speak Out & MIC. ● AV & S-Video TV OUT. ● Two LAN ports for RJ-45 cable.
Support Watch-Dog, Disk-On-Chip	
Switching Voltage Regulator	Support VRM ver. 8.4
BIOS	BIOS with DMI, Green Fun., PnP, and Anti-virus. Support LS120/ZIP/CD-ROM Booting 2MB Firmware
Dimension	230mm x 220mm, Special Size.

Advance Features :

Power Management :

- "Advance Configuration Power Interface" (ACPI) Standard ready for PC' 99.
- Power Off by Windows 95 & 98 Shut Down & Soft Power Switch (ATX Power Require)
- Power Loss Recovery ON/OFF Control.

Monitoring Function :

- Vital voltages on the power supply.

- CPU temperature.
- CMOS battery voltage.
- Fan speed, and Hard drive memory resources.

CD-ROM :

- Health monitor Utility.
- Bus Master IDE Driver.
- Video Driver.
- Audio Driver.
- Lan Driver
- Watch-Dog Setting program for Windows98.

3. Hardware Setup

3.1 Before Installation

For installation, you may need tool (screwdriver).

Users must follow these guidelines to ensure the motherboard is protected during installation.

1. Make sure your computer is powered-off whenever work in with inside components.

2. The motherboard, like all other electronic equipment, is sensitive to static. Please take the proper precautions when handling it. If possible, ground yourself by touching a metal table or desk. Keep the board in its conductive wrapping until it is configured and ready to be installed in your system.

3. Keep all magnets away from both your hard and floppy disk drives, especially magnetic screwdrivers. Keep both floppy and hard disks apart if disassembled.

4. Keep water and liquids away from your computer and its components

3.2 Install the CPU

The CPU should have a fan attached to it to prevent overheating. If this is not the case, then purchase a fan before you turn on your system.

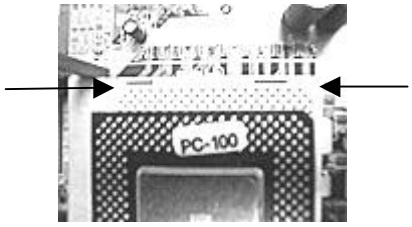
Be sure that there is sufficient air circulation across the CPUs heat sink by regularly checking that your CPU fan is working. Without sufficient circulation, the processor could overheat and damage both the CPU and the motherboard. You may install an auxiliary fan, if necessary.

Step 1 : Locate the ZIF socket and open it by first pulling the lever of socket upward.

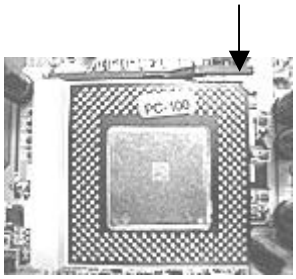
Step 2 : Insert the CPU into the socket. Please keep the lever angle when inserting CPU.

When inserting the CPU please note the correct orientation as shown.

The notched corner should point toward the end of the lever.



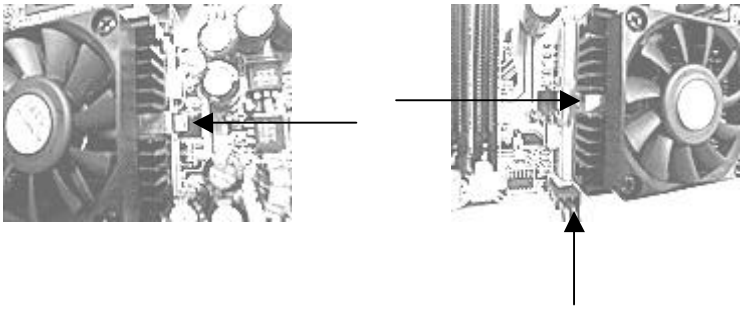
Step 3 : Push the lever down to close the socket.



Step 4 : Attach the heat sink onto the CPU. Be careful not to scrape the motherboard

when mounting a clamp CPU fan or else damage may occur to the motherboard.

Attach the fan cable to the CPU fan header.

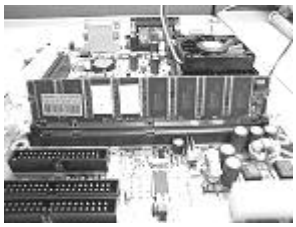


3.3 Install Memory Modules

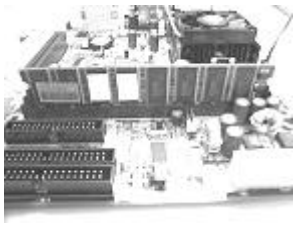
The motherboard has two Dual In-line Memory Module (DIMM) sockets and supports the maximum size up to 1GB. These DIMM sockets only support 3.3V SDRAM (Synchronized DRAM) modules of 32, 64, 128, 256, 512MB.

Step 1 : Open latches of DIMM socket.

Step 2 : Proofread the RAM module to the DIMM socket.



Step 3 : Insert the RAM module into the DIMM socket. Press the latches into the notches of the RAM module.



3.4 ATX Power Supply Connector

"In order to support the power up function other than power/soft-off button, such as Wake-On-LAN, your ATX power supply must supply at least 720mA, 5VSB".

Power on procedures

STEP	Description
1	After all connections are made, close the system case over.
2	Be sure that all switches are off.
3	Connect the power cord into the power supply located on the back of your system case.
4	Connect the power cord a power out let that is equipped with a surge protector.
5	Many of the power supply support 110V/220V by a switch setting. Switch your power supply to the correct supply voltage.
6	Turn on your system in the following order 1. The monitor 2. The external devices. 3. The computer system.

"The power LED on the front panel of the chassis will light. After few seconds, the system will then run power-on tests. Some additional messages will appear on the screen during the test. If you do not see anything within 30 seconds from the time you turn on the power, the system may have failed a power-on test. Recheck the jumper settings and connections or call your retailer for assistance."

Power off procedures

STEP	Description
1	Exit from all the software applications.
2	Shut down your operating system.
3	Switch off power button. If you are using Win 95/98, the power supply should turn off automatically after Windows shut down.
4	Turn off all external devices.
5	Turn off you monitor.

3.5 Back Panel

Function	Color	Description
PS/2 Mouse	Green	This connector can be used to support a PS/2 mouse
PS/2 Keyboard	Purple	This connector can be used to support a PS/2 keyboard.
Universal Serial Bus	Black	This motherboard has two USB ports, any USB compatible peripherals and hub can be connected into either USB port.
LAN port : LAN 1, LAN 2.	Black	This connector can be used to support RJ-45 cable.
Serial port : COM 1, COM2	Green	One serial port is ready for a modem or other serial devices.
Parallel port	Blue	This connector is used for printers, or other parallel devices.
TV-OUT : S-Video	Black	This connector is used for S-Video to TV.
TV-OUT : AV Video.	Yellow	This connector is used for AV Video to TV.
MIC, Speak Out	Silver	**MIC :** allows microphones to be connected for inputting voice. **Speak Out :** can be connected to headphones or powered speakers.

Chapter 4. BIOS Setup

4.1 Flash BIOS

The BIOS can be upgraded from a diskette with the Award Flash utility – AWDFLASH.EXE The BIOS image file, and update utility are available from RISE website "http://www.rise.com.tw"

How to Update BIOS (Flash ROM)

1. Copy the Flash Utility to a bootable diskette. Ex : C:\>copy awdflash.exe a:
2. Copy the new bios file to the diskette. Ex : C:\>copy filename.bin a:
3. Turn the system on and run the Flash Utility.
   Ex : A:\>awdflash filename.bin /cc (/cc is Clear CMOS).
4. Follow the prompt and input the file name.
   "Do You Want To Save Bios (Y/N)" – Press "Y" : please input file name [Enter].
   The program will backup your old bios.
   Press "N" : "Are you sure to program (y/n)", please press "y" and flash bios.
5. After flashed, press F1 to reboot your computer and press <DEL> to enter BIOS Setup, setting CMOS data (because used "/cc" this function will clear CMOS data), then Save & Exit Setup.

4.2 Enter BIOS Setup program

Power on the system by either pressing the Power On button, or by using and of the power on features provided by the motherboard. Then, press the <DEL> key after the Power On Self Test (POST), and before the scanning of IDE devices, Simply look for the message "Press F1 to continue, DEL to enter SETUP" displayed at the bottom of the screen during the boot up process. If the message disappears before you' ve had a chance to respond, you can restart the system by Turning off the system power then turn it on again, or Pressing the Pressing the "RESET" button on the system case, or Pressing <CTRL>, <ALT> and <DEL> keys simultaneously.

Generally, the BIOS default settings have been carefully chosen by the system manufacturer to provide the absolute maximum performance and reliability. It is very dangerous to change any setting without full understanding. We strongly recommend that you.

DO NOT update your BIOS if the system works perfectly.

DO NOT change any setting unless you fully understand what it means.

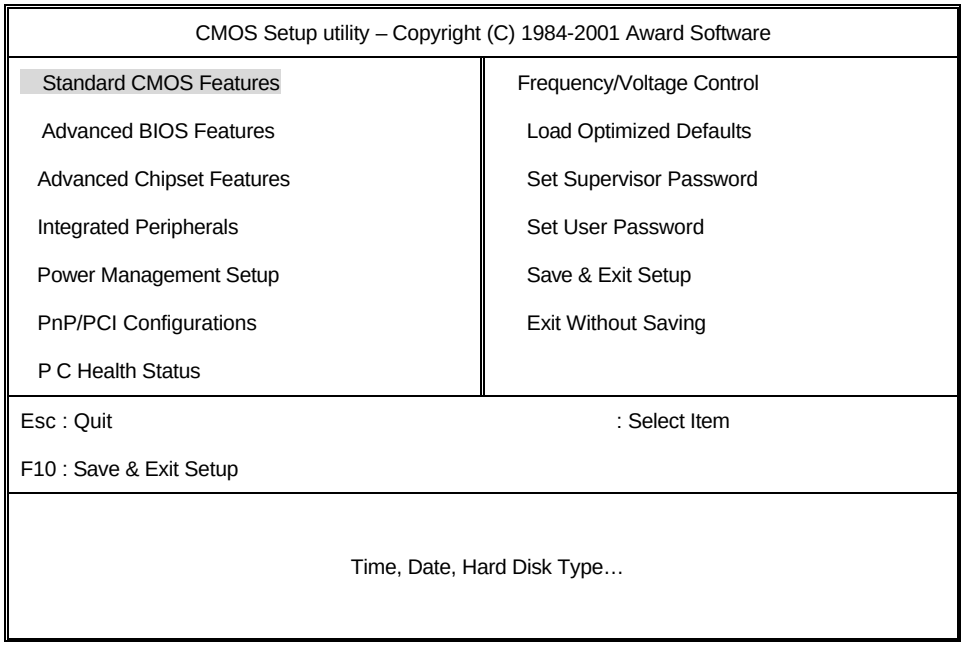
Using BIOS setup program

Up	Move to the previous field
Down	Move to the next field
Left	Move to the field on the left hand side
Right	Move to the field on the right hand side
<ESC>	Quit from setup program without saving changes, or Exit from current menu page and return to main menu page
<Page Up> or <+>	Select the previous value for a field
<Page Down> or <->	Select the next value for a field
<F1>	General Help
<F2>	Item Help
<F5>	Previous Values
<F6>	Fail-Safe Defaults
<F7>	Optimized Defaults.
<F10>	Save the current value and exit setup program

If the system is no longer able to boot after changing the settings, the only way to recover it is to clear the data stored in RTC CMOS. To reset the RTC CMOS data, take the **JP10** jumper cap off pins 1-2 place onto pins 2-3, and then place back onto pins 1-2 again. This will return the RTC to the default setting. Then, get into the BIOS setup program, choose Load Fail-Safe Defaults ; Load Optimized Defaults, and select the original manufacturer default settings in you CMOS.

4.3 Main Menu

The main menu allows you to select from several setup pages. Use the arrow keys to select among these pages and press <Enter> key to enter the sub-menu. A brief description of each highlighted selection appears at the bottom of the screen.



4.4 Standard CMOS Features

CMOS Setup utility – Copyright (C) 1984-2001 Award Software Standard CMOS Features		
Date (mm:dd:yy)	Tue, Jan 2 2001	Item Help
Time (hh:mm:ss)	17 : 21 : 53	Menu Level
IDE Primary Master	[None]	Change the day, month, year and century.
IDE Primary Slave	[None]	
IDE Secondary Master	[None]	
IDE Secondary Slave	[None]	
Drive A	[1.44M, 3.5 in.]	
Drive B	[None]	
Video	[EGA/VGA]	
Halt On	[All, But Keyboard]	
Select Display Device	[Auto]	
Base Memory	640K	
Extended Memory	113664K	
Total Memory	114688K	
: Move Enter : Select +/-/PU/PD : Value F10 : Save ESC : Exit F1 : General Help F5 : Previous Values F6 : Fail-Safe Defaults F7 : Optimized Defaults		

- **Date**

  This field specifies the current date. The date format is <month>, <day>, and <year>.

- **Time**

  This field specifies the current time. The time format is <hour>, <minute>, and <second>.

  The time is calculated based on the 24-hour (military-time) clock.

- **IDE Primary Master / Primary Slave / Secondary Master / Secondary Slave**

  Press "Enter" to enter next page for detail hard drive setting.

  1. IDE HDD Auto-Detection : [Press Enter]

     To auto-detect the HDD' s size, and its parameters, ex : Cylinder, Head and Sector.

  2. IDE Primary Master / Primary Slave / Secondary Master / Secondary Slave

     This field specifies type of drive that corresponds to the drive installed in your system.

     If you select User, please specify the correct number of Cylinders, Heads, and Sectors.

Manual	Selecting annual lets you set the remaining fields on this screen. Selects the type of fixed disk.
Auto (Default Value)	BIOS automatically fills in the values for the cylinders, heads and sectors fields.
None	Any Disk Drives are attached

3. Access MODE

This field specifies the IDE translation mode.

CHS (Normal)	Specifies traditional CHS addressing mode.
LARGE	Specifies extended CHS translation mode.
LBA	Specifies LBA translation mode
AUTO (Default Value)	BIOS specifies translation method automatically

4. Capacity Auto Display you disk drive size.

5. Cylinders : Set the number of cylinders for this hard disk.

6. Head : Set the number of read/write heads.

7. Precomp : Set the value = 0.

8. Landing Zone : Set the value = cylinders number - 1

9. Sector : Set the number of sectors per track.

■ Drive A / Drive B

This field specifies the traditional type of floppy drives

None (Drive B default)	Any Floppy drive is connected
360K, 5.25 in	Specifies extended CHS translation mode
1.2M, 5.25 in	A 1.2M floppy drive is connected
720K, 3.5 in	A 720K floppy drive is connected
1.44M, 3.5 in (Default)	A 1.44M floppy drive is connected
2.88M, 3.5 in	A 2.88M floppy drive is connected

■ Video

EGA/VGA (Default)	Specifies EGA or VGA adapter
CGA 40	Specifies CGA adapter with 40 column mode
CGA 80	Specifies CGA adapter with 80 column mode
MONO	Specifies Monochrome adapter

■ Halt On

All Errors	Each time the BIOS detects a non-fatal error, the system will stop and display an error message
No Errors	The system will stop for any errors that are detected
All, But Keyboard (Default)	The system will stop for any errors except keyboard error
All, But Diskette	The system will stop for any errors except diskette error
All, But Disk/Key	The system will stop for any errors except diskette and key board errors.

■ Select Display Device

[Auto] default : This item will auto setting your video output.

[CRT] : CRT Monitor output only. Normal monitor use CRT connector (15pin).

[LCD] : LCD Monitor output only. If your LCD is connect to onboard DVI (Digital Video Interface) connector, please select this item.

[CRT+LCD] : CRT and LCD monitor output.

[TV] : TV output only.

[CRT+TV] : CRT and TV output.

■ Base Memory

The POST (Power On Self Test) determines the amount of base (conventional) memory installed in the system. The value of the base memory is typically 640K. This field has no options.

■ Extended Memory

The BIOS determines how much extended memory is present during the POST. This is the amount of memory located above 1MB in the processor' s memory address map. This field has no options.

■ Total Memory

Displays the total memory available in the system.

4.5 Advanced BIOS Features

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Advanced BIOS Features

Virus Warning	[Disabled]	Item Help
CPU Internal Cache	[Enabled]	Menu Level
External Cache	[Enabled]	Allows you to choose the VIRUS warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and alarm beep.
CPU L2 Cache ECC Checking	[Enabled]	
Quick Power On Self Test	[Enabled]	
First Boot Device	[Floppy]	
Second Boot Device	[HDD-0]	
Third Boot Device	[LS120]	
Boot Other Device	[Enabled]	
Swap Floppy Seek	[Disabled]	
Boot Up Floppy Seek	[Enabled]	
Boot Up NumLock Status	[On]	
Gate A20 Option	[Fast]	
Typematic Rate Setting	[Disabled]	
Typematic Rate (Chars/Sec)	6	
Typematic Delay (Msec)	250	
Security Option	[Setup]	
OS Select For DRAM > 64MB	[Non-OS2]	
Video BIOS Shadow	[Enabled]	
C8000-CBFFF Shadow	[Disabled]	
CC000-CFFFF Shadow	[Disabled]	
D0000-D3FFF Shadow	[Disabled]	
D4000-D7FFF Shadow	[Disabled]	
D8000-DBFFF shadow	[Disabled]	
DC000-DFFFF shadow	[Disabled]	
Small Logo(EPA) Show	[Disabled]	

: Move Enter : Select +/-/PU/PD : Value F10 : Save ESC : Exit F1 : General Help

F5 : Previous Values F6 : Fail-Safe Defaults F7 : Optimized Defaults

- **Virus Warning**

  When this function is enabled, the BIOS monitor the boot sector and partition table of the hard disk drive for any attempt at modification. If an attempt is made, the BIOS will halt the system and then display an error message.

Afterwards, if necessary, you can run and anti-virus program to locate and remove the problem before any damage is done. Many disk diagnostic programs will attempt to access the boot sector table, which can cause the above warning message. If you run such a program, we recommend that you first disable the Virus Warning function beforehand.

Enabled, Disabled (default)

- **CPU Internal Cache**

  This field configures the CPU internal cache (L1 cache)

  Enabled (default), Disabled

- **External Cache**

  This field configures the system' s external cache (L2 cache)

  Enabled (default), Disabled

- **CPU L2 cache ECC Checking**

  This field specifies whether the CPU L2 cache supports ECC or not.

  Enabled (default), Disabled

- **Quick Power On Self Test**

  This field allows the system to skip certain tests while booting.

  This will decrease the time needed to boot the system

  Enabled (default), Disabled.

- **First / Secondary / Third / Other boot Device**

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

  Floppy, LS120, ZIP, HDD-0, SCSI, CDROM, HDD-1, HDD-2, HDD-3, LAN.

- **Swap Floppy Drive**

  When enabled, floppy drives A and B will be exchanged without the user physically changing the connection on the cable.

  Enabled, Disabled (default)

- **Boot Up Floppy Seek**

  Seeks disk drives during boot up. Disabling speeds boot up.

  Enabled (default), Disabled

- **Boot Up NumLock Status**

  This field determines the configuration of the numeric keypad after system boot up. If On, the keypad uses numbers keys. If Off, the keypad uses arrow keys.

  On (default), Off

- **Gate A20 Option**

  This field configures how the gate A20 is handled. The gate A20 is a device used to address memory above 1MB. At first, the gate A20 was handled from a pin on the keyboard. While some keyboards still provide this support, it is more common, and much faster, for modern system chipsets to provide support for gate A20.

  Fast (default) : Gate A20 signal supported by core logic.

  Normal :Gate A20 signal supported by keyboard controller.

- **Typematic Rate Setting**

  This field determines if the typematic rate is to be used. When enabled, the BIOS will report (after a moment) that the key has been depressed repeatedly. When disabled, the BIOS will report only once if a key is held down continuously. This feature is used to accelerate cursor movements using the arrow keys.

  Enabled, Disabled (default)

- **Typematic Rate (Chars/Sec)**

  When Typematic Rate Setting enabled, this field specifies how many characters will be displayed in one second when a key is held down continuously.

  6 (default), 8, 10, 12, 15, 20, 24, 30

- **Typematic Delay (Msec)**

  When enabled, Typematic delay allows you to select the time delay between when the key is first pressed and when the acceleration begins.

  250msec (default), 500msec, 750msec, 1000msec

- **Security Option**

  This field configures how the system security is handled. It works conjunction with SETTING SUPERVISOR / USER PASSWORD page to control the security level of the system.

  Setup (default) : System needs a password to enter BIOS setup program.

  System : System needs a password to boot.

- **OS Select for DRAM > 64MB**

  When enabled, this field allows you to access the memory that is over 64MB under OS/2

  OS2, Non-OS2 (default)

- **Video BIOS Shadow**

  Enabled (default) : Map the VGA BIOS to system RAM.

  Disabled : Don' t map the VGA BIOS to system RAM.

- **C8000-CBFFF to DC000-DFFFF Shadow**

  These options are used to shadow other expansion card ROMs.

- **Small Logo(EPA) Show**

  Enabled : if you want to show your logo, please enabled it.

  Disabled (default) : When this item disabled, logo(EPA) will not show on screen.

4.6 Advanced Chipset Features

This setup page is used to specify advanced features available through the chipset. The default setting have been chosen carefully for most operating conditions. DO NOT change the value of any field in this setup page without full understanding.

CMOS Setup utility – Copyright (C) 1984-2001 Award Software Advanced Chipset Features		
DRAM Timing By SPD	[Enabled]	Item Help
DRAM Clock	[Host CLK]	Menu Level
SDRAM Cycle Length	[3]	
Bank Interleave	[Disabled]	
Memory Hole	[Disabled]	
P2C/C2P Concurrency	[Enabled]	
Fast R-W Turn Around	[Disabled]	
System BIOS Cacheable	[Disabled]	
Video RAM Cacheable	[Disabled]	
Frame Buffer Size	[16M]	
AGP Aperture Size	[64M]	
AGP-4X Mode	[Enabled]	
AGP Driving Control	[Auto]	
AGP Driving Value	DA	
OnChip USB	[Enabled]	
USB Keyboard Support	[Disabled]	
OnChip Sound	[Auto]	
OnChip Modem	[Auto]	
CPU to PCI Write Buffer	[Enabled]	
PCI Dynamic Bursting	[Enabled]	
PCI Master 0 WS Write	[Enabled]	
PCI Delay Transaction	[Disabled]	
PCI#2 Access #1 Retry	[Enabled]	
AGP Master 1 WS Write	[Disabled]	
AGP Master 1 WS Read	[Disabled]	
: 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 By SPD**

  Enabled (default), Disabled

- **DRAM Clock**

  Host CLK (default), HCLK+33M, HCLK-33M.

- **SDRAM Cycle Length**

  This field determines the CAS timing parameter of the SDRAM in terms of clocks.

  3 (default), 2

- **Bank Interleave**

  Disabled (default), 2 Bank, 4 Bank

- **Memory Hole**

  Disabled (default), 15-16M

- **P2C/C2P Concurrency**

  Enabled (default), Disabled

- **Fast R-W Turn Around**

  Disabled (default), Enabled

- **System BIOS Cacheable**

  Disabled (default), Enabled

- **Video RAM Cacheable**

  Disabled (default), Enabled

- **Frame Buffer Size**

  Share Memory Size : 2M, 4M, 8M, 16M(default), 32M.

- **AGP Aperture Size**

  64M (default), 32M, 16M, 8M, 4M, 128M

- **AGP-4X Mode**

  Enabled (default), Disabled

- **AGP Driving Control**

  Auto (default), Manual

- **AGP Driving Value**

  DA (default), DB, DC……

- **OnChip USB**

  Enabled (default), Disabled

- **USB Keyboard Support**

  Disabled (default), Enabled

- **OnChip Sound**

  Auto (default), Disabled

- **OnChip Modem**

  Auto (default), Disabled

- **CPU to PCI Write Buffer**

  Enabled (default), Disabled

- **PCI Dynamic Bursting**

  Enabled (default), Disabled

- **PCI Master 0 WS Write**

  Enabled (default), Disabled

- **PCI Delay Transaction**

  Disabled (default), Enabled

- **PCI#2 Access #1 Retry**

  Enabled (default), Disabled

- **AGP Master 1 WS Write**

  Disabled (default), Enabled

- **AGP Master 1 WS Read**

  Disabled (default), Enabled

4.7 Integrated Peripherals

CMOS Setup utility – Copyright (C) 1984-2001 Award Software Integrated Peripherals			
OnChip IDE Channel0		[Enabled]	Item Help
OnChip IDE Channel1		[Enabled]	Menu Level
IDE Prefetch Mode		[Enabled]	
Primary Master	PIO	[Auto]	
Primary Slave	PIO	[Auto]	
Secondary Master	PIO	[Auto]	
Secondary Slave	PIO	[Auto]	
Primary Master	UDMA	[Auto]	
Primary Slave	UDMA	[Auto]	
Secondary Master	UDMA	[Auto]	
Secondary Slave	UDMA	[Auto]	
Init Display First		[PCI Slot]	
IDE HDD Block Mode		[Enabled]	
Onboard FDD Controller		[Enabled]	
Onboard Serial Port 1		[Auto]	
Onboard Serial Port 2		[Auto]	
UART 2 Mode		[Standard]	
IR Function Duplex		Half	
TX, RX inverting enable		No, Yes	
Onboard Parallel Port		[378/IRQ7]	
Onboard Parallel Mode		[Normal]	
ECP Mode Use DMA		3	
Parallel Port EPP Type		EPP1.9	
Onboard Legacy Audio		[Enabled]	
Sound Blaster		[Disabled]	
SB I/O Base Address		[220H]	
SB IRQ Select		[IRQ 5]	
SB DMA Select		[DMA 1]	
MPU-401		[Disabled]	
MPU-401 I/O Address		[330-333H]	
Game Port (200-207H)		[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 Channel0 / Channel1**

  This field enables or disables the onboard IDE controller

  Enabled (default), Disabled

- **IDE Prefetch Mode**

  Enabled (default), Disabled

- **Primary Master / Slave PIO ; Secondary Master / Slave PIO**

  These field configure the PIO (Programmable Input Output) transfer mode for each IDE devices. The maximum transfer rates of each PIO mode are Listing as follow

PIO Mode 0	3.3 MB/sec
PIO Mode 1	5.2 MB/sec
PIO Mode 2	8.3 MB/sec
PIO Mode 3	11 MB/sec
PIO Mode 4	16.6MB/sec

  Auto (default), Mode 0, Mode 1, Mode 2, Mode 3, Mode 4

- **Primary Master / Slave UDMA ; Secondary Master / Slave UDMA**

  If you select Auto, the IDE controller uses Ultra DMA 33/66 Mode to access Ultra DMA-capable IDE devices. The maximum transfer rate of Ultra DMA 66 Mode is 66.6MB/sec.

  Auto (default), Disabled

- **Init Display First**

  This item allows you to decide which slot to activate first, either PCI slot or AGP slot.

  PCI Slot (default), AGP

- **IDE HDD Block Mode**

  When enabled, the IDE controller will use the faster block mode access devices.

  Enabled (default), Disabled

- **Onboard FDD Controller**

  This field enables or disables the onboard FDD controller

  Enabled (default), Disabled.

- **Onboard Serial Port 1 / 2**

  These fields configure the onboard serial ports. There are several port addresses and IRQ channels to select from.

3F8 / IRQ 4	Port address 3F8h, IRQ 4
2F8 / IRQ 3	Port address 2F8h, IRQ 3
3E8 / IRQ 4	Port address 3E8h, IRQ 4
2E8 / IRQ 3	Port address 2E8h, IRQ 3
Auto (default)	BIOS assigns port address and IRQ channel automatically.
Disabled	Disables serial port

■ UART 2 Mode

This field must be configured in order to use the infrared connector, which supports infrared wireless transmitting and receiving of data between devices when using the appropriate application software.

Standard (default), TX, RX Active for HPSIR and ASKIR functions

When setting the field to either HPSIR or ASKIR, you must select the active level of receiving and transmission signal.

TX, RX inverting enable :

No, Yes (default) / Yes, No / Yes, Yes / No, No

IR Function Duplex :

Half (default), Full

■ Onboard Parallel Port

This field configures the onboard parallel port. There are several port addresses and IRQ channels to select from.

378 / IRQ 7 (default)	Port address 378h, IRQ 7
278 / IRQ 5	Port address 278h, IRQ 5
3BC / IRQ 7	Port address 3BCh, IRQ 7
Disabled	Disables parallel port

■ Onboard Parallel Mode

This field configures the operating mode of an onboard parallel port. Ensure you know the specification of you parallel port devices before selecting field.

Normal (default) / EPP / ECP / ECP+EPP

■ ECP Mode Use DMA

When the Parallel Port Mode field is configured as ECP, ECP+EPP mode, it needs a DMA channel for data transfer. This field specifies the DMA channel for ECP parallel port use.

1	Use DMA channel 1
3 (default)	Use DMA channel 3

- **Parallel Port EPP Type**

  When the Parallel Port Mode field is configured as EPP, ECP+EPP mode, the EPP version needs to be specified. Please refer to your peripheral document before selecting field.

EPP 1.7	Use EPP 1.7 protocol
EPP 1.9 (default)	Use EPP 1.9 protocol

- **Onboard Legacy Audio :** Enabled (default), Disabled
- **Sound Blaster :** Disabled (default), Enabled
- **SB I/O Base Address :** 220H (default), 240H, 260H, 280H.
- **SB IRQ Select :** IRQ 5 (default), IRQ 7, IRQ 9, IRQ 10
- **SB DMA Select :** DMA 1 (default), DMA 2, DMA 3, DMA 0
- **MPU-401 :** Disabled (default), Enabled
- **MPU-401 I/O Address :** 330-333H (default), 300-303H, 310-313H, 320-323H.
- **Game Port (220-207H) :** Enabled (default), Disabled.

4.8 Power Management Setup

CMOS Setup utility – Copyright (C) 1984-2001 Award Software Power Management Setup		
ACPI function	[Enabled]	Item Help
Power Management	[Press Enter]	Menu Level
ACPI Suspend Type	[S1(POS)]	
PM Control by APM	[Yes]	
Video off Option	[Suspend -> Off]	
Video off Method	[V/H SYNC+Blank]	
MODEM Use IRQ	[3]	
Soft-Off by PWRBTN	[Instant-Off]	
State After Power Failure	[Off]	
Wake Up Events	[Press Enter]	
: Move Enter : Select +/-/PU/PD : Value F10 : Save ESC : Exit F1 : General Help F5 : Previous Values F6 : Fail-Safe Defaults F7 : Optimized Defaults		

Each power-saving mode has a respective timer. The value of the timer can be assigned or reloaded and it will count down to zero. When the timer equals to zero, the system will be forced into the related suspend or power-saving mode. If any predefined signal or event is detected during the timer counting period, the timer restarts automatically.

- **ACPI function :** Enabled (default), Disabled

- **Power Management**

This feature allows the user to select the default parameters for the power-saving mode

Min Saving.	When idle for one hour, the system enter suspend mode
Max Saving	When idle for fifteen minutes, the system enters suspend mode
User Define (default)	User can specify the time the system enters suspend mode.

- **ACPI Suspend Type**

There are several ACPI modes used to save computer' s energy.

S1 (POS) (default)	This is the Power-On-State, the CPU clock runs at slower speed, the system operates at slower speed.
S3 (STR)	This is the Suspend-To-Ram State, all system data will be saved in systems memory and all devices except the memory will shut off **(Please checking your VGA card, can support the S3 mode)**

- **PM Control by APM :** Yes (default), No

- **Video Off Option :** Suspend -> Off (default), All Modes -> Off, Always On,

- **Video Off Method**

V/H SYNC+Blank (default)	Turn off the vertical and horizontal synchronization ports and write blanks to the video buffer
Blank Screen	Writes blanks to the video buffer only.
DPMS Support	Initial display power management signaling with DPMS

- **MODEM Use IRQ**

  This determines the IRQ in which the MODEM can use.

  3 (default), 4, 5, 7, 9, 10, 11, NA

- **Soft-Off by PWRBTN**

  This field specifies the function of power button

Instant-Off (default)	When power button pressed, the system turns off immediately
Delay 4 Sec	After the power button has been pressed and held for four seconds, the system turns off

- **State After Power Failure :** Auto, Off, On (default)

- **Wake Up Events :** [Press Enter]

  These items determines when the system will be wake up.

  VGA : OFF, ON

  LTP & COM : LPT/COM, NONE, LPT, COM

  HDD & FDD : ON, OFF

  PCI Master : OFF, ON

  Modem Ring Resume : Disabled, Enabled

  RTC Alarm Resume : Disabled, Enabled

  Date (of Month) 0

  Resume Time (hh:mm:ss) 0 : 0 : 0

  Primary INTR : ON, OFF

  IRQs Activity Monitoring : [Press Enter]

  IRQ3 ~ IRQ15 : [Enabled], [Disabled]

4.9 PnP / PCI Configurations

CMOS Setup utility – Copyright (C) 1984-2001 Award Software PnP / PCI Configurations		
PNP OS Installed	[No]	Item Help
Reset Configuration Data	[Disabled]	Menu Level Select Yes if are using a Plug and Play capable operating system Select No if you need the BIOS to configure non-boot devices
Resources Controlled By	[Auto (ESCD)]	
IRQ Resources	[Press Enter]	
DMA Resources	[Press Enter]	
PCI/VGA Palette Snoop	[Disabled]	
Assign IRQ For VGA	[Enabled]	
Assign IRQ For USB	[Enabled]	
: Move Enter : Select +/-/PU/PD : Value F10 : Save ESC : Exit F1 : General Help F5 : Previous Values F6 : Fail-Safe Defaults F7 : Optimized Defaults		

■ PNP OS Installed

The Field specifies whether a Plug and Play operating system is installed.

Yes, No (default)

■ 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 can not boot.

Enabled, Disabled (default)

■ Resources Controlled By

The Award Plug and play BIOS has the capacity to automatically configure all of the boot and Plug and Play compatible devices. However, this capability means absolutely nothing unless you are using a Plug and Play operating system such as Windows 98/95/NT. If you set this field to "manual" choose specific resources by going into each of the sub menu that follows this field.

Manual	Resources controlled by the user.
Auto (ESCD) (default)	Resources controlled by BIOS automatically

- **IRQ Resources :** Press Enter

  IRQ3, 4, 5, 7, 9, 10, 11, 12, 14, 15 assigned to PCI/ISA PnP or Legacy ISA.

- **DMA Resources :** Press Enter

  DMA-0, 1, 3, 5, 6, 7 assigned to PCI/ISA PnP or Legacy ISA.

- **PCI /VGA Palette Snoop**

  This field controls the ability of a primary PCI graphics controller to share a common palette with an ISA/VESA video or MPEG card.

Enabled	PCI VGA co-works with ISA MPEG card
Disabled (default)	All cases except above

- **Assign IRQ For VGA :** Enabled (default), Disabled

- **Assign IRQ For USB :** Enabled (default), Disabled

4.10 PC Health Status

This page is monitoring your status of computer. On the screen displays CPU/System temperature,

FAN speed, and voltages.

CMOS Setup utility – Copyright (C) 1984-2001 Award Software PC Health Status		
Current CPU Temp.	32úC/ 89F	Item Help
Current System Temp	31C/87F	Menu Level
Current CPUFAN1 Speed	5041 RPM	
Current CPUFAN2 Speed	0 RPM	
Vcore	2.03V	
1.5V	1.54V	
3.3V	3.41V	
5V	5.17V	
12V	12.24V	
: Move Enter : Select +/-/PU/PD : Value F10 : Save ESC : Exit F1 : General Help F5 : Previous Values F6 : Fail-Safe Defaults F7 : Optimized Defaults		

4.11 Frequency/Voltage Control

CMOS Setup utility – Copyright (C) 1984-2001 Award Software Frequency/Voltage Control		
Auto Detect DIMM/PCI Clk	[Enabled]	Item Help
Spread Spectrum	[Disabled]	Menu Level
CPU Host/PCI Clock	[100/33MHz]	
: Move Enter : Select +/-/PU/PD : Value F10 : Save ESC : Exit F1 : General Help F5 : Previous Values F6 : Fail-Safe Defaults F7 : Optimized Defaults		

- **Auto Detect DIMM/PCI Clk :** Enabled (default), Disabled

- **Spread Spectrum :** Disabled (default), 0.25%, 0.5%.

- **CPU Host/PCI Clock :** 100/33MHz (Auto detecting and setting current CPU & PCI clock), Min = Current CPU host clock, Max = You can setting by yourself (Key in a DEC number : ???). ex : 101, 102…110..This is over-clocking !

Over-clocking is not guaranteed. Users must have substantial knowledge of proper CPU relative to adjusting CPU speeds. Over-clocking should be done only by experienced engineers who conduct tests.

4.12 Load Optimized Defaults

When you press <Enter> on this item you get a confirmation dialog box with a message similar to : Pressing "Y" loads the BIOS default values for the most Optimize, maximum-performance system operations.

4.13 Set Supervisor / User Password

These setup pages are used for password setting. When a password has been enabled and the Security Option field is set as Setup, you will be required to enter the password every time you try to enter BIOS Setup program. This prevents an unauthorized person from changing any part of your system configuration. Additionally, if the Security Option field is set as Boot, the BIOS will request a password every time your system boot. This would prevent unauthorized use of your computer.

In you wish to use this function, bring the cursor to this field, then press <Enter>. The computer will display the message, "Enter Password". Type your password and press <Enter>. After the message on firm Password" is displayed, re-type your password. The Supervisor Password function will be in effect after you save an exit setup.

To disable a password, bring the cursor to this field, then press <Enter>. The computer will display the message, "Enter Password". Press <Enter>. A message will confirm that the password is disabled. Once the password is disabled, the system will boot and you can enter setup program freely.

4.14 Save & Exit Setup

Saves current CMOS value and exit BIOS setup program.

4.15 Exit Without Saving

Abandons all CMOS value changes and exits BIOS setup program.