

AV61
Pentium™ II/III processor
Based AGP MAIN BOARD
User's Manual

Shuttle AV61

Pentium II/III processor based AGPset Mainboard Manual Version 1.2

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1 INTRODUCTION

1.1 To Different Users

First-Time DIY System Builder

Welcome to the DIY world! Building your own computer system is not as difficult as you may think. To make your first computer DIY experience a success, right from the start, we have designed the **3 Hardware Installation** section in a step-by-step fashion for all the first-time DIY system builders. Prior to installation, we also suggest you to read the whole manual carefully to gain a complete understanding of your new AV61 mainboard.

Experienced DIY User

Congratulations on your purchase of the Shuttle AV61 mainboard. You will find that installing your new Shuttle AV61 mainboard is just that easy. Bundled with an array of onboard functions, the highly-integrated AV61 mainboard provides you with a total solution to build the most stable and reliable system. Refer to section **3.2 Jumper Settings** and **Chapter 4 Software Utility** to find out how to get the best out of your new mainboard. **Chapter 5 BIOS Setup** also contains relevant information on how to tune up your system to achieve higher performance.

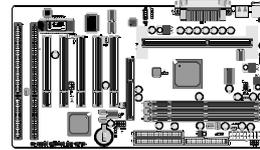
System Integrator

You have wisely chosen Shuttle AV61 to construct your system. Shuttle AV61 incorporates all the state-of-the-art technology of the VT82C693A chipset from VIA. It integrates the most advanced functions you can find to date in a compact ATX board. Refer to section **3.2 Jumper Settings** and **Chapter 4 Software Utility** for an in-depth view of system construction.

1.2 Item Checklist

Check all items you received with your AV61 mainboard to make sure nothing is missing. The complete package should include:

- * One Shuttle AV61 Mainboard
(with onboard Slot1, built-in VIA693A chipset, ATX form factor, including 2xUSB, 2xSerial, and 1xParallel ports, plus 1xPS/2 Keyboard, and 1xPS/2 Mouse connectors.)



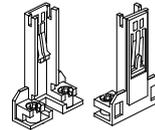
- * One ATA/66 Ribbon Cable



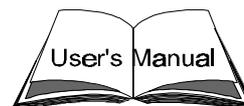
- * One Floppy Ribbon Cable



- * One set of Universal Retention Mechanism



- * This AV61 User's Manual



- * One CD-ROM containing:
 - The AV61 user's manual on PDF format
 - The VIA 4 IN 1 Drivers
 - The Award Flashing Utility



2 FEATURES

The AV61 mainboard is carefully designed for the demanding PC user who wants high performance and maximum intelligent features in a compact package.

2.1 Specifications

* CPU Support

Supports Slot-1 (Celeron, Pentium II/III and Coppermine) processor.
66/100/133MHz CPU Front Side Bus (FSB).

* Chipset

Features VIA VT82C693A AGPset with I/O subsystems.

* Jumperless CPU Configuration

Auto-detect CPU voltage
Soft-configure CPU Speed (The CPU operating speed is software configurable in the CMOS Setup menu of the BIOS Setup utility.)

* Versatile Memory Support

Equipped with three DIMM banks of PC/100 and PC/133 compliant SDRAM to provide up to 768MB of system memory.
Configurable support for EC (Error Checking) and ECC (Error Checking and Correcting)

* AGP Slots

Supports Accelerated Graphics Port cards for high-performance, component level interconnect directed at 3D graphical display applications.

* PCI and ISA Expansion Slots

Provides five 32-bit PCI slots and two 16-bit ISA slots.

* LPC Super I/O Onboard

Provides a variety of I/O interfaces:

- 1 × Floppy interface for 3.5-inch FDD with 720KB, 1.44MB, 2.88MB format or for 5.25-inch FDD with 360KB or 1.2MB format.
- 1 × PS/2 mouse connector

-
- 1 × PS/2 Keyboard connector
 - 2 × USB connectors
 - 3 × USB Hub connectors (optional)
 - 2 × DB9 Serial connectors 16550 UART compatible
 - 1 × Infrared communications port ASKIR and HPSIR compatible.
(Serial port COM2 can also be redirected to an external IrDA Adapter for wireless connection.)
 - 1 × DB25 Parallel port supporting Standard Parallel Port (SPP), Enhanced Parallel Port (EPP), and Extended Capabilities Port (ECP) data transmission schemes.

*** PCI Bus Master IDE Controller Onboard**

Two UltraDMA 33/66 Bus Master Dual-channel IDE ports provide support to a maximum of four IDE devices (one Master and one Slave per channel). The IDE Bus implements data transfer speeds of up to 33/66 MB/sec and also supports Enhanced PIO Modes 3 & 4.

*** ATX Power Supply Connector**

ATX power supply unit can connect to the onboard 20-pin ATX power connector, supporting Suspend and Soft-On/Off by dual-function power button.

*** Advanced Configuration and Power Interface**

Features four power savings modes: Snoop, Suspend to RAM, Suspend to Disk, and Soft-Off. ACPI provides more efficient Energy Savings Features controlled by your operating system that supports OS Direct Power Management (OSPM) functionality.

*** System BIOS**

Provides licensed Award V4.51PG BIOS on 2MB Flash EEPROM.
Supports Green PC and Desktop Management Interface (DMI).

* **ATX Form Factor**

System board conforms to the ATX specification.

Board dimensions: 305mm × 170mm

* **Advanced Features**

- **Dual Function Power Button** - The system can be in one of two states, one is Suspend mode and the other is Soft-Off mode. Pushing the power button for less than 4 seconds places the system into Suspend mode. When the power button is pressed for longer than 4 seconds, the system enters the Soft-Off mode.
- **Keyboard/Mouse Power-On** - This mainboard implements a special jumper to enable a system power-on function by keyboard or PS/2 mouse.
- **Wake-on-LAN (WOL)** - The onboard WOL connector can be attached to a network card that supports this function to wake up the system via the LAN.
- **Modem Ring Power-On** - The system can be powered on automatically by activation of the modem ring.

* **Optional Features**

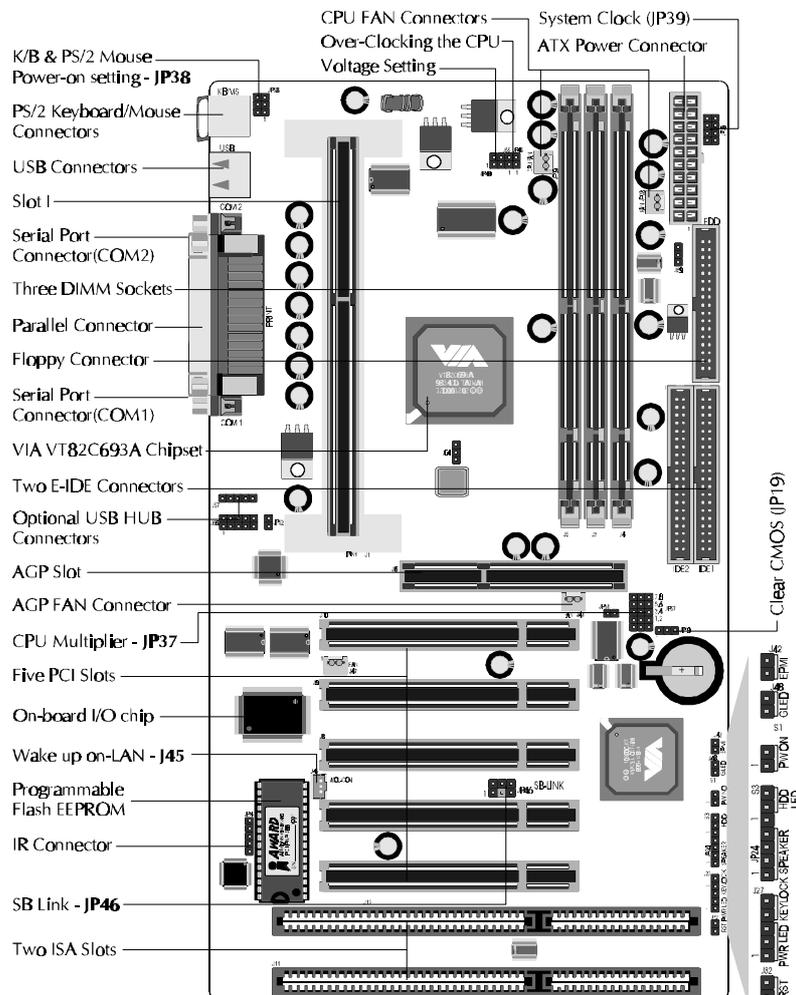
- **Voltage Monitoring** - Monitors various voltages of key elements, such as the CPU, and other critical system voltage levels to ensure stable current reach to mainboard components. System voltages include Vcore/ VTT on CPU, and +5V, +12V, -5V, -12V on system.
- **Fan Status Monitoring** - To prevent overheating of CPU, the CPU fan is monitored for RPM and failure. (CPU Cooling FAN with RPM sensor is required.)
- **On board three ports USB HUB.**

3 HARDWARE INSTALLATION

This section outlines how to install and configure your AV61 mainboard. Refer to the following mainboard layout to help you identify various jumpers, connectors, slots, and ports. Then follow these steps designed to guide you through a quick and correct installation of your system.

3.1 Step-by-Step Installation

Accessories Of AV61



Step 1

Install the CPU

1. Mark your CPU Frequency

Checking the working frequency of your cpu that should be clearly marked on the CPU cover or write your own combination in the space provided.

2. Pentium II/III Processor Installation

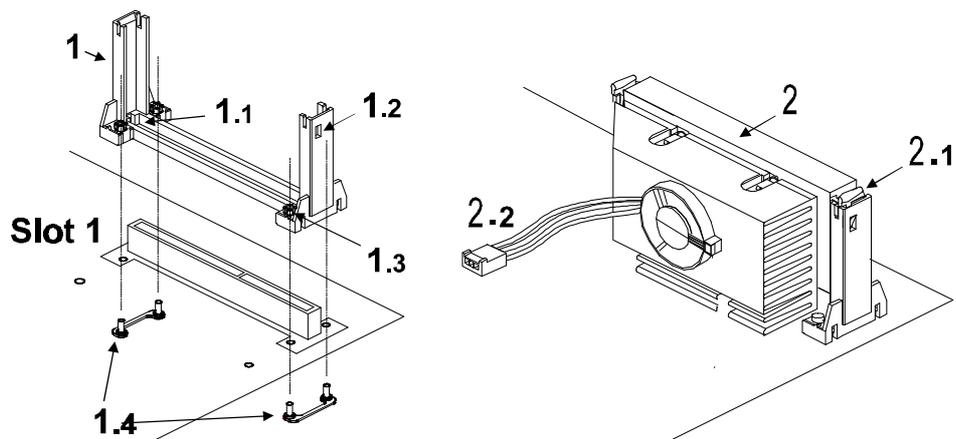
< Locate the Retention Mechanism >

To install a CPU, first turn off your system and remove its cover.

- ✧ Locate the Retention Mechanism (1) around the Slot 1.
- ✧ Take care of the Square Cut Mark (1.1).
- ✧ Fix (1) by inserting Attach Mounts (1.4) up through holes (A1...A4) in the bottom of the mainboard, and screw the four captive nuts (1.3).

< Install the CPU >

- ✧ Insert CPU (2) into the Retention Mechanism (1).
- ✧ Ensure that the alignment notch in the processor fits over the plug (1.2), then push processor down firmly until it is seated.
- ✧ Push the latches (2.1) on the processor outward until they click into place.
- ✧ Connect power cable (2.2) of Fan/Heat Sink.



3. Celeron Processor Installation

< Locate the Retention Mechanism >

To install a CPU, first turn off your system and remove its cover.

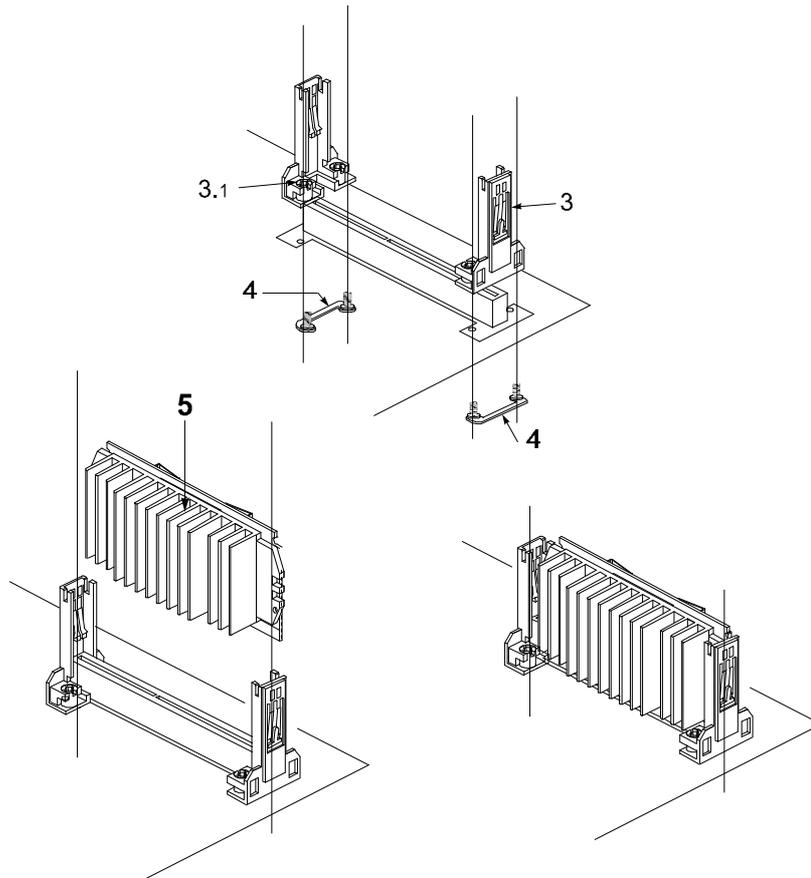
✧ Insert two Retention Mechanism (3) on opposite side of Slot 1.

✧ Fix (3) by inserting Attach Mounts (4) up through holes (A1...A4) in the bottom of the mainboard, and screw the four captive nuts (3.1).

< Install the CPU >

✧ Hold the processor (5) so that the Heatsink is facing toward the DIMM sockets on the mainboard.

✧ Slide the processor into the RM. Push the processor down firmly, with even pressure on both sides of the top, until it is seated.



Step 2.

Set Jumpers

This mainboard is jumperless! The default jumper settings have been set for the common usage standard of this mainboard. Therefore, you do not need to reset the jumpers unless you require special adjustments as in any of the following cases:

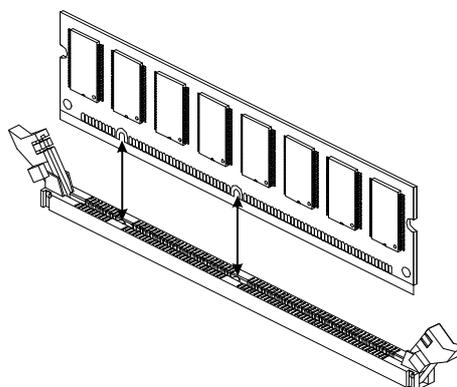
1. Over-clock your CPU
2. Clear CMOS
3. Set the wake up function by keyboard/PS2 mouse

For first-time DIY system builders, we recommend that you do not change the default jumper settings if you are not totally familiar with mainboard configuration procedures. The factory-set default settings are tuned for optimum system performance. For the advanced users who wish to customize their system, section **3.2 Jumper Settings** will provide detailed information on how to configure your mainboard manually.

Step 3

Install SDRAM System Memory

To install memory, insert SDRAM memory module(s) in any one, two or three DIMM banks. Note that SDRAM modules are directional and will not go in the DIMM slots unless properly oriented. After the module is fully inserted into the DIMM socket, lift the clips of both sides of the DIMM bank to lock the module in place.



Step 4

Install Internal Peripherals in System Case

Before you install and connect the mainboard into your system case, we recommend that you first assemble all the internal peripheral devices into the computer housing, including but not limited to the hard disk drive (IDE/HDD), floppy disk drive (FDD), CD-ROM drive, and ATX power supply unit. This will greatly facilitate in making the connections to the mainboard described below.

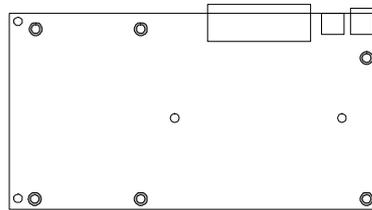
To install IDE & FDD drives, follow this procedure:

1. Set the required jumpers on each device according to the instructions provided by the manufacturer. (IDE devices, HDD and CD-ROM, have to set jumpers to Master or Slave mode depending on whether you install more than one device of each kind.)
2. Connect IDE cable and FDD cable on the back-panel of the internal peripheral devices. Note that the cable should be oriented with its colored stripe (usually red or magenta) connected to pin#1 both on the mainboard IDE or FDD connector and on the device as well.
3. Connect an available power cable from your system power supply unit to the back-panel of each peripheral device. Note that the power cable is directional and cannot fit in if not properly positioned.

Step 5

Mount the Mainboard on the Computer Chassis

1. You may find that there are a lot of different mounting hole positions both on your computer chassis and on the mainboard. To choose a correct mounting hole, the key point is to keep the back-panel of the mainboard in a close fit with your system case, as shown below.



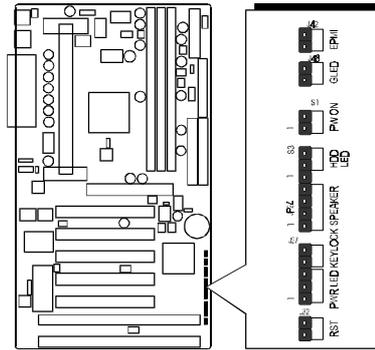
2. After deciding on the proper mounting holes, position the studs between the frame of the chassis and the mainboard. The studs are used to fix the mainboard and to keep a certain distance between the system chassis and the mainboard, in order to avoid any electrical shorts between the board and the metal frame of the chassis. (If your computer case is already equipped with mounting studs, you will need to tighten screws to attach the mainboard.)

Note: In most computer housings, you will be able to find 4 or more attachment points to install mounting studs and fix the mainboard. If there aren't enough matching holes, then make sure to install at least 3 mounting studs to ensure proper attachment of the mainboard.

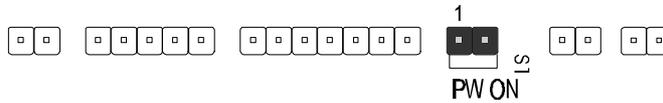
Step 6

Connect Front Panel Switches/LEDs/Speaker

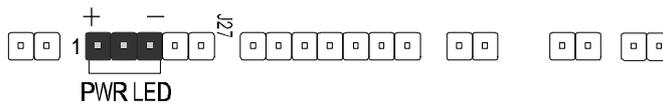
You can find there are several different cables already existing in the system case and originating from the computer's front-panel devices (HDD LED, Power LED, Reset Switch, PC Speaker, etc.) These cables serve to connect the front-panel switches and LEDs to the mainboard's front-panel connectors group, as shown below.



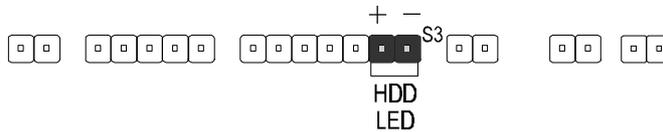
1. ATX Soft Power On/Off



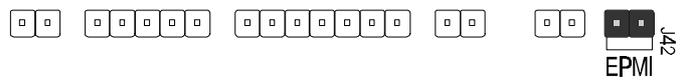
2. Power-LED



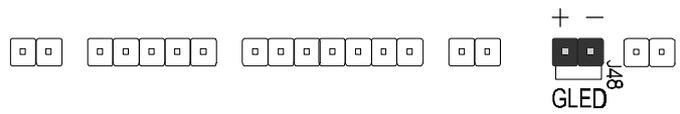
3. HDD-LED



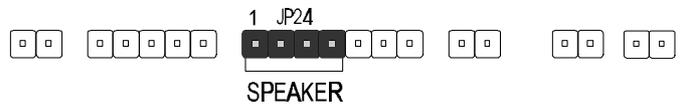
4. EPMI
(Hardware System Management Interface)



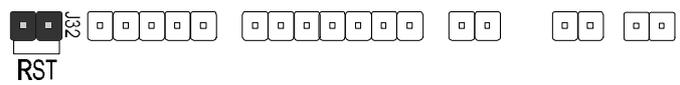
5. Green-LED



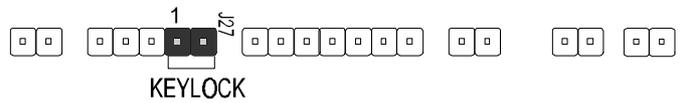
6. PC Speaker



7. Hardware Reset Switch



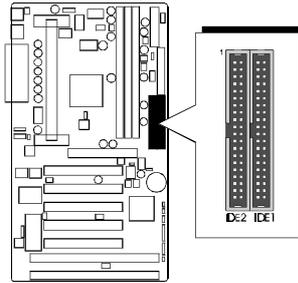
8. Keylock



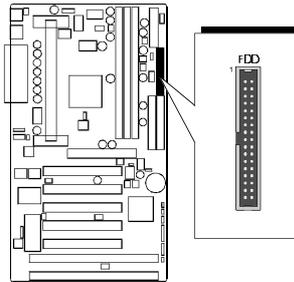
Step 7

Connect IDE & Floppy Disk Drives

1. IDE cable connector



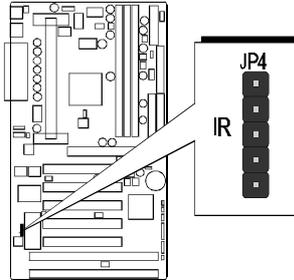
2. FDD cable connector



Step 8

Connect Other Internal Peripherals

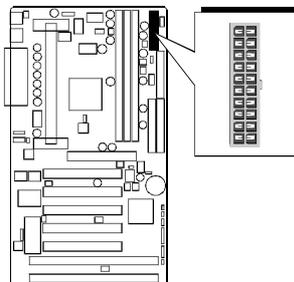
1. IR connector



Step 9

Connect the Power Supply

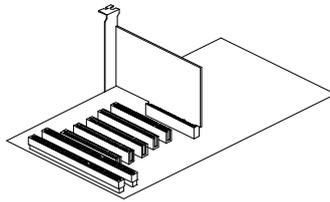
1. System power connector



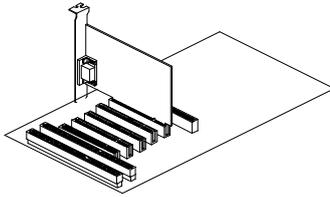
Step 10

Install Add-on Cards in Expansion Slots

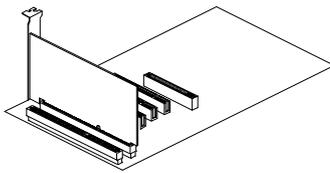
1. Accelerated Graphics Port (AGP) Card



2. PCI Card



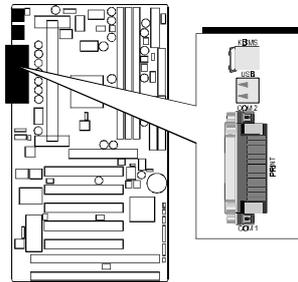
3. ISA Card



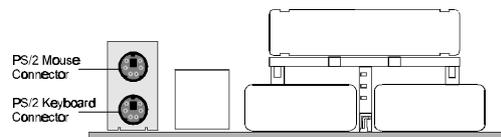
Step 11

Connect External Peripherals to Back Panel

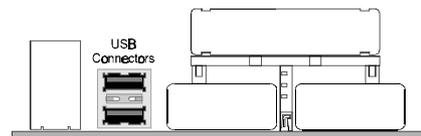
You are now ready to put the computer case back together and get on to the external peripherals connections to your system's back-panel.



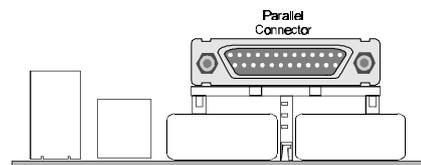
1. PS/2 Mouse and Keyboard



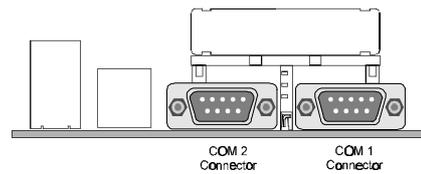
2. USB Devices



3. Parallel Port



4. COM Ports



Step 12

First Time System Boot Up

To assure the completeness and correctness of your system installation, you may check the above installation steps once again before you boot up your system for the first time.

1. Insert a bootable system floppy disk (DOS 6.2x, Windows 95/98/NT, or others) which contains FDISK and FORMAT utilities into the FDD.
2. Turn on the system power.
3. First, you must use the FDISK utility to create a primary partition of the hard disk. You can also add an extended partition if your primary partition does not use all of the available hard disk space. If you choose to add an extended partition, you will have to create one or more logical partitions to occupy all the space available to the extended partition. The FDISK utility will assign a drive letter (i.e., C:, D:, E:,...) to each partition which will be shown in the FDISK program. After FDISK procedure, reboot your system by using the same system floppy disk.

Note: DOS 6.2x and Windows 95A can only support up to 2.1GB of HDD partition. If you use the FDISK utility with one of the operating systems mentioned above, you can only device your HDD into partitions no larger than 2.1GB each.

4. Now, use the FORMAT utility to format all the partitions you've created. When formatting the primary partition (C:), make sure to use the FORMAT C: /S command.

Note: FORMAT C: /S can transfer all the necessary system files into the primary partition of your hard disk. Then, your HDD will become a bootable drive.

5. Install all the necessary drivers for CD-ROM, Mouse, etc.
6. Setup the complete operating system according to your OS installation guide.

Step 13

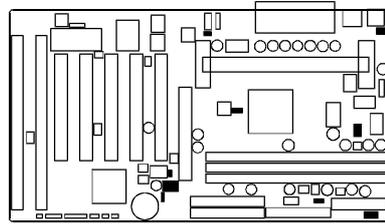
Install Drivers & Software Components

Please note that all the system utilities and drivers are designed for Win 9x operating systems only. Make sure your Windows 9x operating system is already installed before running the drivers installation CD-ROM programs.

1. Insert the AV61 bundled CD-ROM into your CD-ROM drive. The auto-run program will display the drivers main installation window on screen.
2. Select the Mainboard related program.
3. Install AV61 Driver for Win9x/Win NT.

3.2 Jumper Settings

Several hardware settings are made through the use of jumper caps to connect jumper pins on the mainboard. Pin #1 is located on the bottom or on the left when holding the mainboard with the keyboard connector or other back-panel connectors opposite from you, as shown below.



3-pin and multi (> 3) pin jumpers show as follows:
Pin #1 on the left:



Pin #1 on the bottom:



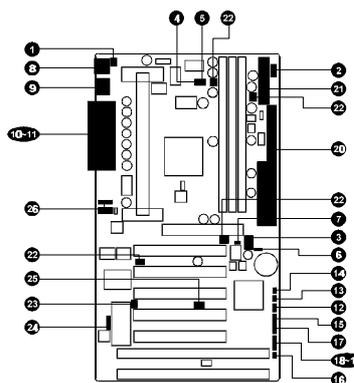
Jumpers with two pins are shown as  for Close [On] or  for Open [Off]. To Short jumper pins, simply place a plastic jumper cap over the desired pair of pins.

Caution!

1. Do not remove the mainboard from its antistatic protective packaging until you are ready to install it.
2. Carefully hold the mainboard by its edges and avoid touching its components. When putting the mainboard down, place it on top of its original packaging film, on an even surface, and components side up.
3. Wear an antistatic wrist strap or take other suitable measures to prevent electrostatic discharge (ESD) whenever handling this equipment.

Jumpers & Connectors Guide

Use the mainboard layout on page 10 to locate CPU socket, memory banks, expansion slots, jumpers and connectors on the mainboard during the installation. The following list will help you identify jumpers, slots, and connectors along with their assigned functions:



CPU/Memory/Expansion Slots

- Slot 1 : CPU Slot for Pentium II/III, Celeron processors
- J5, J3, J4 : Three DIMM Sockets for 8,16,32,64,128,256MB 3.3V SDRAM
- AGP : One AGP (Accelerated Graphics Port) Slot
- PCI : Five 32-bit PCI Expansion Slots
- ISA : Two 16-bit ISA Expansion Slots

Jumpers

- ① JP38 : Keyboard & PS/2 Mouse Power-On
(requires to always set JP38 jumper in order to enable either or both KB & PS/2 mouse power-on functions. In addition, you need to set Power On Function in BIOS setup.)
- ② JP39 : CPU Host frequency setting
- ③ JP37 : CPU Clock Ratio setting
- ④ JP48 : Voltage setting
- ⑤ J55 & JP45 : Over-Clocking the CPU
- ⑥ JP19 : Clear CMOS
- ⑦ JP51 : Factor Reserved

Back Panel Connectors

- ⑧ KB : PS/2 Keyboard
- ⑧ MS : PS/2 Mouse
- ⑨ USB : 2 × USB (Universal Serial Bus)
- ⑩ COM1 : Serial Port 1 (DB9 male)
- ⑩ COM2 : Serial Port 2 (DB9 male)
- ⑪ PRINTER : Parallel Port (DB25 female)

Front Panel Connectors

- ⑫ PWON (S1) : ATX Power On/Off Momentary Type Switch
- ⑬ GLED (J48) : Green LED (ON when system in power savings mode)
- ⑭ EPMI (J42) : Hardware System Management Interface Momentary Type switch.
- ⑮ IDE LED (S3) : IDE Drive Active LED
- ⑯ RST (J32) : Hardware Reset Switch
- ⑰ SPK (JP24) : Housing Internal Speaker
- ⑱ PWR (J27) : System Power LED
- ⑲ KEYLOCK (J27) : Keylock

Internal Peripherals Connectors

- ⑳ FDD : Floppy Disk Drive Interface
- ⑳ IDE1 : IDE Primary Interface (Dual-channel)
- ⑳ IDE2 : IDE Secondary Interface (Dual-channel)

Other Connectors:

- ㉑ J31 : ATX Power (20-pin header)
- ㉒ CPU FAN : CPU Cooling Fan Power
- ㉒ FAN (JP28) : Housing Cooling Fan Power
- ㉒ FAN (J43) : Housing Cooling Fan Power
- ㉒ FAN (J47) : Housing Cooling Fan Power
- ㉓ JP4 : IR Connector
- ㉔ J45 : Wake-On-LAN Connector
- ㉕ JP46 : SB-LINK Connector
- ㉖ J56 & J57 : Optional onboard USB Hub Connector

① Set Keyboard & PS/2 Mouse Power-On (JP38)

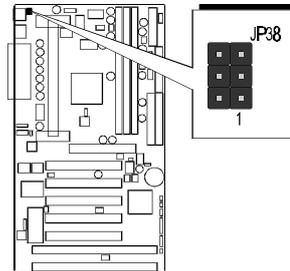
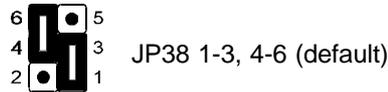
AV61 mainboard provides an easy power-on by keyboard and PS/2 mouse.

Note: When you enable Keyboard Power-On, you also need to configure the proper hot-key combination < Ctrl> + < function key F1 ~ F12 > in BIOS setup program.

To Power on the system by keyboard, simply strike the proper hot-key. (A hot-key is the combination of < Ctrl> + < configured function key F1 ~ F12>)

To power on the system by PS/2 mouse, you only need to double-click with the mouse. (Note that power-on by serial mouse is not supported)

To enable/disable either or both keyboard and PS/2 mouse power-on functions, follow the steps outlined below:



Step 1. Adjust the jumper group JP38 as shown in the following table.

K/B & PS/2 Mouse Power-On - JP38			
Keyboard & PS/2 Mouse Power-On Disabled	Keyboard & PS/2 Mouse Power-On Enabled	Keyboard Power-On Enabled	PS/2 Mouse Power-On Enabled

Step 2. Set the Power On field to the proper value (Hot-key or PS/2 Mouse) in Integrated Peripherals menu of BIOS setup.

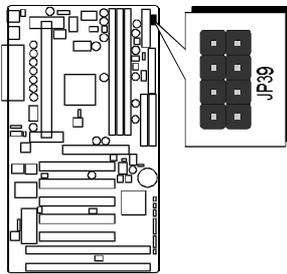
② CPU Host Frequency Setting (JP39)

Normally, CPU FSB auto-detecting by BIOS, System will assign proper frequency to CPU, when JP39 set to default position.

We strongly advise novice users not to modify the original setting of the CPU host frequency, for setting an incorrect value may damage your CPU.

For experienced users, the AV61 mainboard provides an alternative Hard-Configure function to adjust your CPU host frequency manually.

Insert mini-jumper caps properly on JP39 to reach desired CPU Host Frequency, as shown in the following table.



Note: 75, 83 MHz are over-clock usage for 66MHz base processor, 112~ 103MHz are over-clock usage for 100MHz base processor, and 140MHz~ 150MHz are over-clock usage for 133 MHz base processor. However, over-clocking is not a recommended practice.

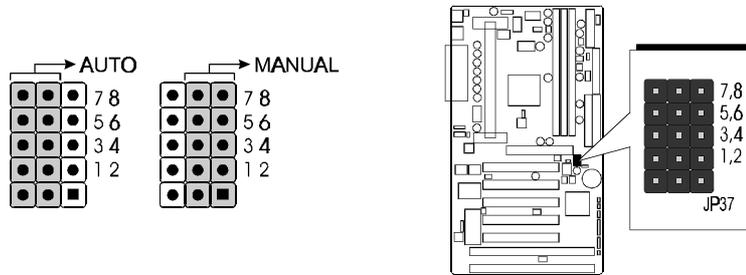
CPU Host Clock	JP39 66MHz based processor	JP39 100MHz based processor
66MHz		
75MHz		
83MHz		
100MHz	N/A	
112MHz	N/A	
133MHz (Default)	N/A	
140MHz	N/A	
150MHz	N/A	

3 CPU Clock Ratio Setting (JP37)

AV61 mainboard provides a jumper group JP37 to set CPU speed configure by BIOS or by hardware jumper.

By inserting jumper pack on Auto group, the user can Soft-Configure the CPU Host Frequency and CPU Clock Ratio from BIOS.

By removing jumper pack from Auto group and inserting mini jumpers on Manual group properly, the user can configure the CPU Clock Ration manually.

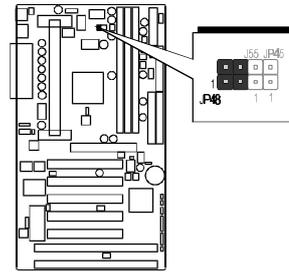


CPU Clock Ratio	JP37	CPU Clock Ratio	JP37	CPU Clock Ratio	JP37
BIOS Setup 2x ~ 5x (Default)		4 x (266 / 66) (400 / 100)		6.5 x (432 / 66) (650 / 100) (866 / 133)	
2 x (133 / 66) (200 / 100)		4.5 x (300 / 66) (450 / 100)		7 x (465 / 66) (700 / 100)	
2.5 x (166 / 66) (250 / 100)		5 x (333 / 66) (500 / 100) (667 / 133)		7.5 x (498 / 66) (750 / 100)	
3 x (200 / 66) (300 / 100)		5.5 x (366 / 66) (550 / 100) (733 / 133)		8 x (531 / 66) (800 / 100)	
3.5 x (233 / 66) (350 / 100)		6 x (399 / 66) (600 / 100) (800 / 133)			

4 CPU Vcore Fine tune (JP48)

AV61 mainboard supports a 4-pin jumper JP48 to increase CPU Vcore which provide from mainboard.

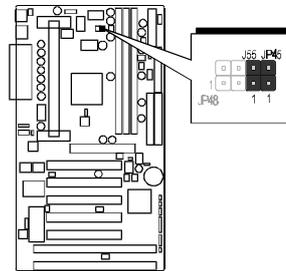
Increase 0.15% CPU Core Voltage	Increase 0.5% CPU Core Voltage	Increase 1.5% CPU Core Voltage	Increase 7.8% CPU Core Voltage
			



5 Over-Clocking the CPU (J55 & JP45)

Warning : Over-clocking is not a recommended practice for it may damage both the mainboard and the processor.

-  J55, JP45 Close (Default)
-  J55 Close (66MHz Based Processor over-clock to 100MHz Processor)
-  JP45 Close (100MHz Based Processor over-clock to 133MHz Processor)

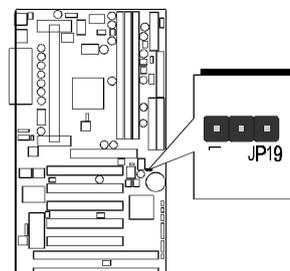


6 Clear CMOS (JP19)

JP19 is used to clear CMOS data. Clearing CMOS will result in permanently erasing the previous system configuration settings and restoring the original (factory-set) system settings.

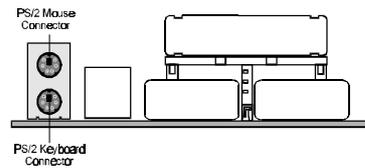
-  Pin 1-2 (Default)
-  Pin 2-3 (Clear CMOS)

- Step 1. Turn off the system power (PC-> Off)
- Step 2. Remove jumper cap from JP19 pins 1-2
- Step 3. Place the jumper cap on JP19 pin 2-3 for a few seconds
- Step 4. Return the jumper cap to pin 1-2
- Step 5. Turn on the system power (PC-> On)



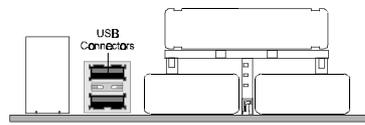
8 PS/2 Keyboard & PS/2 Mouse Connectors

Two 6-pin female PS/2 keyboard & Mouse connectors are located at the rear panel of the mainboard. Depending on the computer housing you use (desktop or minitower), the PS/2 Mouse connector is situated at the top of the PS/2 Keyboard connector when the mainboard is laid into a desktop, as opposed to a minitower where the PS/2 Mouse connector is located at the right of the PS/2 Keyboard's. Plug the PS/2 keyboard and mouse jacks into their corresponding connectors.



9 USB1/USB2 Port Connectors

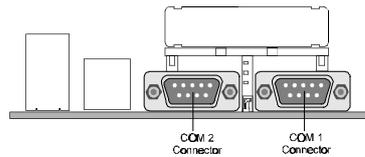
Two female connectors USB1/USB2 share the same USB (Universal Serial Bus) bracket at the rear panel of your mainboard. Plug each USB device jack into an available USB1/USB2 connector.



10 COM1 / COM2 Connector

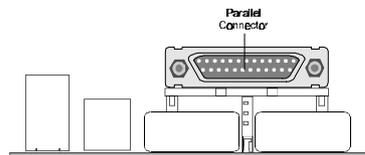
This mainboard can accommodate two serial device on COM1/COM2 .

Attach a serial device cable to the DB9 serial port COM1/COM2 at the back panel of your computer.



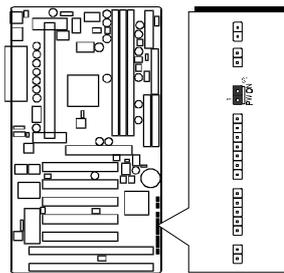
11 Parallel Port Connector

One DB25 female parallel connector is located at the rear panel of the mainboard. Plug the connection cable from your parallel device (printer, scanner, etc.) into this connector.



12 ATX Power On/Off Switch Connector (PWON - S1)

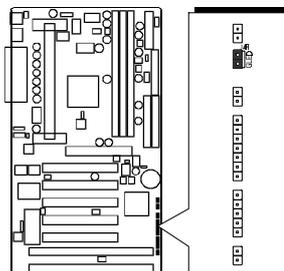
The Power On/Off Switch is a momentary type switch used for turning on or off the system's ATX power supply. Attach the connector cable from the Power Switch to the 2-pin PWON header on the mainboard.



Note : Please notice the Speaker and all the LED connector is directional. If your chassis's LED does not light during running, please simply change to the opposite direction.

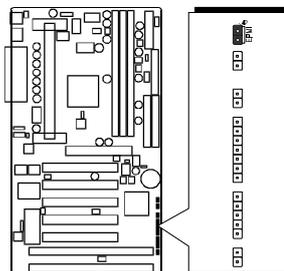
13 Green LED Connector (GLED - J48)

The Green LED (GLED) indicates that the system is currently in one of the power savings mode (Doze/Standby/Suspend). When the system resumes to normal operation, mode, the Green LED will go off. Attach a 2-pin Green LED cable to GLED header.



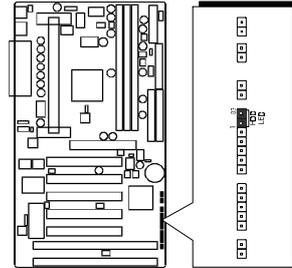
14 EPMI Connector (EPMI - J42)

Hardware System Management Interface (EPMI) header may attach to a 2-pin momentary switch. Press the EPMI switch to force the system into power savings mode; press again to resume normal operation.



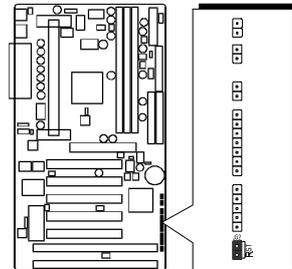
15 HDD LED Connector (IDE LED - S3)

Attach the connector cable from the IDE device LED to the 2-pin HDD LED header. The HDD LED lights up whenever an IDE device is active.



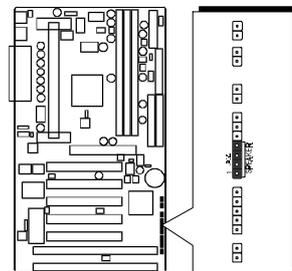
16 Hardware Reset Connector (RST - J32)

Attach the 2-pin hardware reset switch cable to the RST header. Pressing the reset switch causes the system to restart.



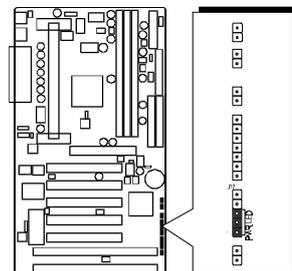
17 Speaker Connector (SPK - JP24)

Attach the PC speaker cable from the case to the 4-pin speaker connector (SPK).



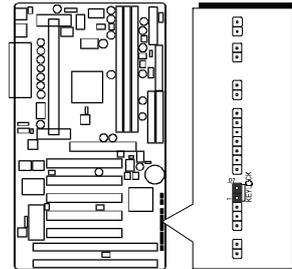
18 PWR LED Connector (PWR - J27)

Attach the 2-pin Power-LED connector cable from the housing front panel to the PWR header on the mainboard. The power LED stays lit while the system is running.



19 Keylock Connector (KEYLOCK - J27)

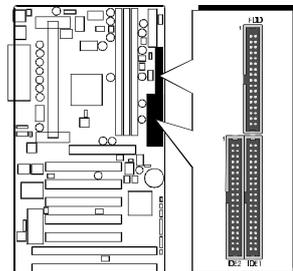
Keylock connector is a 2-pin connector for a lock that may be installed on the system case for enabling or disabling the keyboard.



20 Enhanced IDE Ports and Floppy Connectors

The AV61 mainboard features two 40-pin dual-channel IDE device connectors (IDE1/IDE2) providing support for up to four IDE devices, such as CD-ROM and Hard Disk Drives (H.D.D.). This mainboard also includes one 34-pin floppy disk controller (FDC) to accommodate the Floppy Disk Drive (F.D.D.). Moreover, this mainboard comes with one 40pin ribbon cable to connect to IDE H.D.D. and one 34-pin ribbon cable for F.D.D. connection.

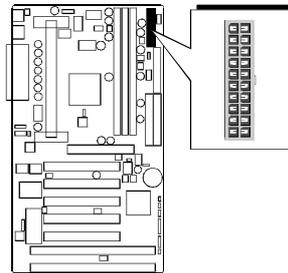
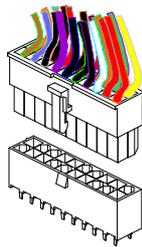
Note : Please connect your system H.D.D. on IDE 1.



Important: Ribbon cables are directional, therefore, make sure to always connect with the red cable stripe on the same side as pin #1 of the IDE1/IDE2 or FDC connector on the mainboard.

21 ATX Power Supply Connector (J31)

Locate the 20-pin male header ATX power connector (J31) on your mainboard. Plug the power cable from the ATX power supply unit directly into J31 ATX power supply connector.



Note 1: The ATX power connector is directional and will not go in unless the guides match perfectly making sure that pin#1 is properly positioned.

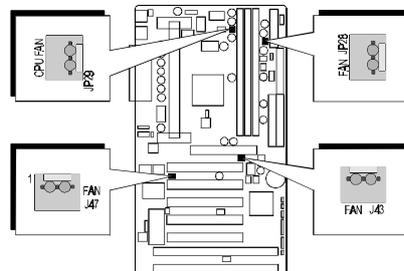
Note 2: Make sure the latch of the ATX power connector clicks into place to ensure a solid attachment.

Note 3: For the requirement of CPU power consumption, AV61 needs the power supply which with 250W minimum load and minimum 20A DC output current on +5V.

22 Cooling Fan Connectors for CPU (JP29), Chassis (JP28), (J43) & (J47)

The mainboard provides four onboard 12V cooling fan power connectors to support CPU (JP29), Chassis (JP28), (J43) and (J47) cooling fans.

Note: Both cable wiring and type of plug may vary depending on the fan maker. Keep in mind that the red wire should always be connected to the +12V header and the black wire to the ground (GND) header.

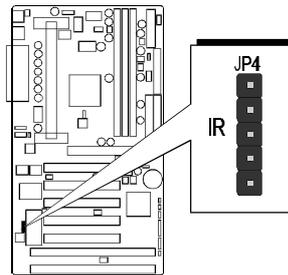


23 IR Connector (JP4)

If you have an Infrared device, this mainboard can implement IR transfer function. To enable the IR transfer function, follow these steps:

IR Pin Assignments:

- 1=VCC
- 2=VCC
- 3=IRRX
- 4=Ground
- 5=IRTX

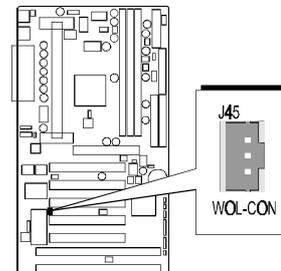


Step 1. Attach the 5-pin infrared device cable to JP4 connector.
(Refer to the above diagram for IR pin assignment.)

Step 2. Configure the Infrared transfer mode in the UR2 Mode field of integrated Peripherals menu in BIOS Setup. This mainboard supports IrDA, ASKIR, Normal and SCR transfer modes.

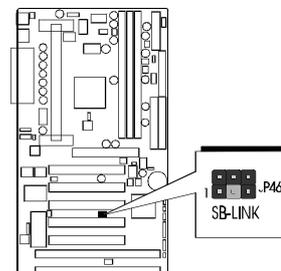
24 Wake-on LAN Connector (J45)

Attach a 3-pin connector from the LAN card which supports the Wake-On-LAN (WOL) function. This function lets users wake up the connected system through the LAN card.



25 SB-Link Connector (JP46)

The main board provides a 2x3 pin SB-Link header accepts the Creative CT4600 series PCI sound cards with PCI solution to connect the legacy Sound Blaster compatible audio to the PCI bus.



3.3 System Memory Configuration

The AV61 mainboard has three 168-pin DIMM sockets that allow you to install from 16MB up to 768MB of system memory with SDRAM (Synchronous DRAM). Each DIMM (Dual In-line Memory Module) socket can accommodate 16MB, 32MB, 64MB, 128MB, and 256MB 3.3V single or double side SDRAM modules. DIMM sockets are arranged in two banks, each memory bank made of one socket and providing a 64 bit wide data path.

The AV61 mainboard supports data integrity algorithms including EC (Error Checking) and ECC (Error Checking and Correction) in the memory array. In EC mode, single and multiple bit error detection is provided. In ECC mode, when the memory is being read from DRAM, the AV61 provides both error checking and correction of the data.

Install Memory:

Install memory in any or all of the banks and in any combination, as follows.

DIMM Socket	Memory Modules	Module Quantity
DIMM 1	16MB, 32MB, 64MB, 128MB, 256MB 168-pin 3.3V SDRAM DIMM	x 1
DIMM 2	16MB, 32MB, 64MB, 128MB, 256MB 168-pin 3.3V SDRAM DIMM	x 1
DIMM 3	16MB, 32MB, 64MB, 128MB, 256MB 168-pin 3.3V SDRAM DIMM	x 1

Note: You do not need to set any jumper to configure memory since the BIOS utility can detect the system memory automatically. You can check the total system memory value in the BIOS Standard CMOS Setup menu.

Upgrade Memory:

You can easily upgrade the system memory by inserting additional SDRAM modules in available DIMM banks. The total system memory is calculated by simply adding up the memory in all DIMM banks. After upgrade, the new system memory value will automatically be computed and displayed by the BIOS Standard CMOS Setup menu.

4 SOFTWARE UTILITY

4.1 AV61 Mainboard CD Overview

Note: The AV61 mainboard attachment CD contents are subject to change without notice.

To start your mainboard CD disc, just insert it into your CD-ROM drive and the CD AutoRun screen should appear. If the AutoRun screen does not appear, double click or run D:\Autorun.exe (assuming that your CD-ROM drive is drive D:)

Navigation Bar Description:

- ☞ **Install Mainboard Software** - Installing AV61 Mainboard Drivers for Windows
- ☞ **Manual** - AV61 series mainboard user's manual in PDF format.
- ☞ **Link to Shuttle Homepage** - Link to shuttle website homepage.
- ☞ **Browse this CD** - Allows you to see the contents of this CD.
- ☞ **Quit** - Close this CD.



4.2 Install Mainboard Driver

Insert the attachment CD into your CD-ROM drive and the CD AutoRun screen should appear. If the AutoRun screen does not appear, double click on Autorun icon in **My Computer** to bring up **Shuttle Mainboard Software Setup** screen.

Select using your pointing device (e.g. mouse) on the "Install Mainboard Software" bar.



Once you made your selection, a another window will show up, the user may install VIA 4 In 1 driver and VIA USB driver.

When the files are done copying make sure you **reboot** the system to insure that the files are installed correctly.

Note : The mainboard software includes four VIA 4 In 1 driver, (VIA Registry (ACPI) Driver, VIA AGP VxD driver, VIA ATAPI Vendor support Driver and VIA PCI IRQ Miniport Driver) and VIA USB driver.

The user may install the appropriate drivers according to the operation system you use, please make a reference to list table:

	Windows 2000	Windows 98/SE	Windows 95	Windows NT
VIA Registry Driver	Not Require	Not Require	Require	Not Require
VIA AGP VxD Driver	Not Require	Suggest	Require	Not Require
VIA ATAPI Vendor Support Driver	Not Require	Not Require	Require	Suggest
VIA PCI IRQ Miniport Driver	Not Require	Suggest	Require	Not Require
VIA USB Filter Driver	Require	Suggest	Not Require	Not Require

4.3 To View the User's Manual

Insert the attachment CD into your CD-ROM drive and the CD AutoRun screen should appear. If the AutoRun screen does not appear, double click on Autorun icon in My Computer to bring up Shuttle Mainboard Software Setup screen.

Select using your pointing device (e.g. mouse) on the "Manual" bar.



Then Online Information windows will appear on your screen. Click on the "Install Acrobat Reader 3.0" bar if you need to install acrobe reader.



Then click on "AV61 Manual" bar to view AV61 user's manual.

5 BIOS SETUP

AV61 BIOS ROM has a built-in Setup program that allows users to modify the basic system configuration. This information is stored in battery-backed RAM so that it retains the Setup information even if the system power is turned off.

The system BIOS is managing and executing a variety of hardware related functions in the system, including:

- System date and time
- Hardware execution sequence
- Power management functions
- Allocation of system resources

5.1 Entering BIOS

To enter the BIOS (Basic Input / Output System) utility, follow these steps:

- Step 1.** Power on the computer and the system will perform its POST (Power-On Self Test) routine checks.
- Step 2.** Press < Del > key immediately or at the following message:
"Press DEL to enter SETUP"
or simultaneously press < Ctrl > , < Alt > , < Esc > keys

Note 1. If you miss the train (the message disappears before you can respond) and you still wish to enter BIOS Setup, restart the system and try again by turning the computer OFF and ON again or by pressing the < RESET > switch located at the computer's front panel. You may also reboot by simultaneously pressing the < Ctrl > , < Alt > , < Del > keys.

Note 2. If you do not press the keys in time and system does not boot, the screen will prompt an error message and you will be given the following options:

"Press F1 to Continue, DEL to Enter Setup"

Step 3. As you enter the BIOS program, the CMOS Setup Utility will prompt you the Main Menu, as shown in the next section.

5.2 The Main Menu

Once you enter the AwardBIOS(tm) 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.

ROM PCI/ISA BIOS (2A6LGH2D) CMOS SETUP UTILITY AWARD SOFTWARE, INC.	
STANDARD CMOS SETUP	CPU SPEED SETTING
BIOS FEATURES SETUP	INTEGRATED PERIPHERALS
CHIPSET FEATURES SETUP	SUPERVISOR PASSWORD
POWER MANAGEMENT SETUP	USER PASSWORD
PnP/PCI CONFIGURATION	IDE HDD AUTO DETECTION
LOAD BIOS DEFAULTS	SAVE & EXIT SETUP
LOAD SETUP DEFAULTS	EXIT WITHOUT SAVING
Esc : Quit	↑ ↓ → ← : Select Item
F10 : Save & Exit Setup	(Shift)F2 : Change Color

Note that a brief description of each highlighted selection appears at the bottom of the screen.

Standard CMOS Setup

This setup page includes all items in a standard compatible BIOS.

BIOS Features Setup

This setup page includes all items of Award special enhanced features.

Chipset Features Setup

This setup page includes all items of chipset features.

Power Management Setup

This setup page includes all items of Power Management features.

PnP/PCI Configuration setup

This item specifies the value (in units of PCI bus blocks) of the latency timer for the PCI bus master and the IRQ level for PCI device. Power-on with BIOS defaults

Load BIOS Defaults

BIOS defaults loads the values required by the System for the maximum performance. However, you can change the parameter through each Setup Menu.

Load Setup Defaults

Setup defaults loads the values required by the system for the O.K. performance. However, you can change the parameter through each Setup Menu.

CPU Speed Setting

This setup page includes all items of CPU speed features.

Integrated Peripherals

This setup page includes all items of peripheral features.

Supervisor Password

Change, set, or disable supervisor password. It allows you to limit access to the system and Setup, or just to Setup.

User Password

Change, set, or disable user password. It allows you to limit access to the system and Setup, or just to Setup.

IDE HDD Auto Detection

Automatically configure IDE hard disk drive parameters.

Save & Exit Setup

Save CMOS value change to CMOS and exit setup

Exit Without Saving

Abandon all CMOS value changes and exit setup.

If you select Type User, related information is asked to be entered to the following items. Enter the information directly from the keyboard and press < Enter > . Those information should be provided in the documentation from your hard disk vendor or the system manufacturer.

The user may also set those items to AUTO to auto configure hard disk drives parameter when system power-on.

If a hard disk drive has not been installed select NONE and press < Enter > .

Drive A type/Drive B type

This item specifies the types of floppy disk drive A or drive B that has been installed in the system.

Video

This item selects the type of adapter used for the primary system monitor that must matches your video display card and monitor.

Although secondary monitors are supported, you do not have to select the type in Setup.

Halt On

This item determines if the system will stop, when an error is detected during power up.

Memory

This item is display-only. It is automatically detected by POST (Power On Self Test) of the BIOS.

Base Memory

The POST of the BIOS will determine the amount of base (or conventional) memory installed in the system. The value of the base memory is typically 512K for systems with 512K memory installed on the mainboard, or 640K for systems with 640K or more memory installed on the mainboard.

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 CPU's memory address map.

BIOS Features Setup

ROM PCI/ISA BIOS (2A6LGH2D) BIOS FEATURES SETUP AWARD SOFTWARE, INC.			
Virus Warning	: Disabled	Video BIOS Shadow	: Enabled
CPU Internal Cache	: Enabled	C8000-CBFFF Shadow	: Disabled
External Cache	: Enabled	CC000-CFFFF Shadow	: Disabled
CPU L2 Cache ECC Checking	: Enabled	D0000-D3FFF Shadow	: Disabled
Processor Number Feature	: Enabled	D4000-D7FFF Shadow	: Disabled
Quick Power On Self Test	: Enabled	D8000-DBFFF Shadow	: Disabled
Boot Sequence	: A,C,SCSI	DC000-DFFFF Shadow	: Disabled
Swap Floppy Drive	: Disabled		
Boot Up Floppy Seek	: Enabled		
Boot Up NumLock Status	: Off		
Gate A20 Option	: Fast		
Memory Parity/ECC Check	: Disabled		
Typeomatic Rate Setting	: Disabled		
Typeomatic Rate (Chars/Sec)	: 6		
Typeomatic Delay (Msec)	: 250		
Security Option	: Setup	ESC : Quit	F10+ : Select Item
PCI-UGA Palette Snoop	: Disabled	F1 : Help	PU/PD+/- : Modify
US Select For DRAM > 64MB	: Non-US2	F5 : Old Values (Shift)F2 : Color	
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

Virus Warning

When this item is enabled, the Award BIOS will monitor the boot sector and partition table of the hard disk drive for any attempt at modification. If an attempt it made, the BIOS will halt the system and the following error message will appear. Afterwards, if necessary, you will be able to run an anti-virus program to locate and remove the problem before any damage is done.

!WARNING!
Disk boot sector is to be modified
Type "Y" to accept write or "N" to abort write
Award Software, Inc.

CPU Internal Cache

This item enables CPU internal cache to speed up memory access.

External Cache

This item enables CPU secondary cache to speed up memory access.

CPU L2 Cache ECC Checking

When you select Enabled, memory checking is enable when the external cache contains ECC SRAMs.

Processor Number Feature

Allows you to Enabled/Disabled, the Pentium III processor serial number.

Quick Power On Self Test

This item speeds up Power On Self Test (POST) after you power on the computer. If it is set to Enabled, BIOS will shorten or skip some check items during POST.

Boot Sequence

This item determines which drive computer searches first for the disk operating system. Default setting is A, C, SCSI. BIOS also support system boot from CD-ROM drive or SCSI hard disk drive.

Swap Floppy Drive

When this item enables, the BIOS will swap floppy drive assignments so that Drive A: will function as Drive B: and Drive B: as Drive A:.

Boot Up Floppy Seek

During POST, BIOS will determine if the floppy disk drive installed is 40 or 80 tracks.

Boot Up NumLock Status

When this option enables, BIOS turns on **Num Lock** when system is powered on.

Gate A20 Option

This entry allows you to select how the gate A20 is handled. The gate A20 is a device used to address memory above 1 MByte. Initially, the gate A20 was handled via a pin on the keyboard. Today, while keyboards still provide this support, it is more common, and much faster, set to Fast for the system chipset to provide support for gate A20.

Memory Parity/ECC Check

This item allows you to Enabled/Disabled memory error checking and correction (ECC). In order for ECC to function, 9-chip (8 memory chips + 1 ECC chip) SDRAM modules must be installed on the mainboard.

Typematic Rate Setting

This determines if the typematic rate is to be used. When disabled, continually holding down a key on your keyboard will generate only one instance. In other words, the BIOS will only report that the key is down. When the typematic rate is enabled, the BIOS will report as before, but it will then wait a moment, and, if the key is still down, it will begin the report that the key has been depressed repeatedly.

For example, you would use such a feature to accelerate cursor movements with the arrow keys.

Typematic Rate (Chars/Sec)

When the typematic rate is enabled, this selection allows you select the rate at which the keys are accelerated.

Typematic Delay (Msec)

When the typematic rate is enabled, this selection allows you to select the delay between when the key was first depressed and when the acceleration begins

Security Option

This item allows you to limit access to the System and Setup, or just to Setup. When **System** is selected, the System will not boot and access to Setup will be denied if the correct password is not entered at the prompt.

When **Setup** is selected, the System will boot, but access to Setup will be denied if the correct password is not entered at the prompt.

PCI/VGA Palette Snoop

This item must be set to enabled if there is a MPEG ISA card installed in the system, and disabled if there is no MPEG ISA card installed in the system.

OS Select For DRAM > 64MB

This item allows you to access the memory that over 64 MB in OS/2.

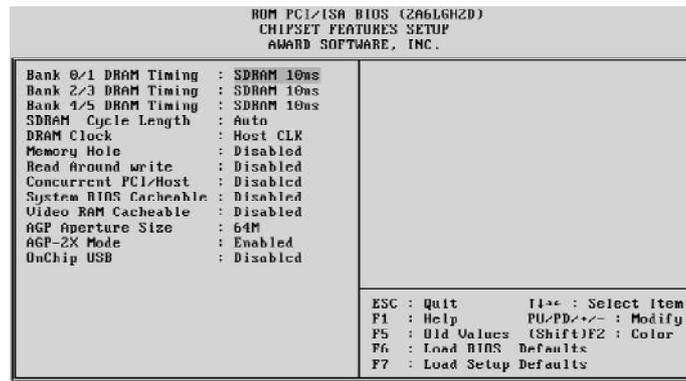
Video BIOS Shadow

Determines whether video BIOS will be copied to RAM. However, it is optional depending on chipset design. Video Shadow will increase the video speed.

C8000-CBFFF Shadow/DC000-DFFFF Shadow

These categories determine whether option ROMs will be Chipset Features Setup Auto Configuration copied to RAM. An example of such option ROM would be support of on-board SCSI.

Chipset Features Setup



Bank x/x DRAM Timing

This value in this field is set by the system board manufacturer, depending on whether the board has paged DRAMS or EDO DRAMS.

SDRAM Cycle Length

This field allows you to set the SDRAM latency timer.

DRAM Clock

This item set the DRAM Read/Write timings that the system uses.

Memory Hole

In order to improve performance, some space in memory can be reserved for ISA cards.

Read Around Write

This is a new cache technology for the video memory of the processor. It can greatly improve the display speed by caching the display data. You must leave this on the default setting of Disabled if your display card cannot support this feature or else your system may not boot.

Concurrent PCI/Host

This item disable CPU bus will be occupied during the entire PCI operation period.

System BIOS Cacheable

This item allows the user to set whether the system BIOS F000~FFFF areas are cacheable or non-cacheable.

Video RAM Cacheable

This is a new cache technology for the video memory of the processor. It can greatly improve the display speed by caching the display data. You must leave this on the default setting of **Disabled** if your display card cannot support this feature or else your system may not boot.

AGP Aperture Size (MB)

This item allows the user to set memory-mapped, graphics data structures can reside in Graphics Aperture.

AGP-2X Mode

This item allows you to enable/disable AGP-2X function. See www.apgforum.org for AGP information.

On Chip USB

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

Power Management Setup

ADM PCI/ISA BIOS (2A6LGH2D) POWER MANAGEMENT SETUP AWARD SOFTWARE, INC.			
Power Management	: User Define	Primary INTR	: ON
PM Control by APM	: Yes	IRQ3 (COM 2)	: Primary
Video Off After	: Suspend	IRQ4 (COM 1)	: Primary
Video Off Method	: U/H SYNC+Blank	IRQ5 (LPT 2)	: Primary
MODEM Use IRQ	: 3	IRQ6 (Floppy Disk)	: Primary
Suspend Option	: Static Suspend	IRQ7 (LPT 1)	: Primary
Soft Off by PWRBTN	: Instant Off	IRQ8 (RTC Alarm)	: Disabled
HDD Power Down	: Disable	IRQ9 (IRQ2 Redir)	: Secondary
Doze Mode	: Disable	IRQ10 (Reserved)	: Secondary
Suspend Mode	: Disable	IRQ11 (Reserved)	: Secondary
** PM Events **			
UGA	: OFF	IRQ12 (PS/2 Mouse)	: Primary
LPT & COM	: LPT/COM	IRQ13 (Coprocessor)	: Primary
HDD & FDD	: ON	IRQ14 (Hard Disk)	: Primary
Modem Ring Resume	: Disabled	IRQ15 (Reserved)	: Disabled
Wake Up On LAN	: Disabled		
RTC Alarm Resume	: Disabled		
		ESC : Quit	↑↓←→ : Select Item
		F1 : Help	PGUP/PAGE↑ : Modify
		F5 : Old Values (Shift)F2 : Color	
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

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

Power Management

This item determines the options of the power management function. *Max Saving* puts the system into power saving mode after a brief period of system inactivity; *Min Saving* is the same as *Max Saving* except the time of the system inactivity period is longer; *Disabled* disables the power saving feature; *User Defined* allows you to set power saving options according to your preference.

PM Control by APM

If this item set to *No*, system BIOS will be ignored and APM calls the power to manage the system.

If this item setup to *Yes*, system BIOS will wait for APM's prompt before it enter any PM mode e.g. *DOZE*, *STANDBY* or *SUSPEND*.

Video Off After

This item define when to activate the video off feature for monitor power management. The settings are *N/A*, *Doze*, *Standby* and *Suspend*.

Video Off Method

This item define the video off features - *V/H SYNC + Blank*, *DPMS*, and *Blank Only*. The first option, which is the default setting, blanks the screen and turns off vertical and horizontal scanning; *DPMS* allows the BIOS to control the video display card if it supports the *DPMS*.

MODEM Use IRQ

This item determines the IRQ in which the MODEM can use.
The choice: 1, 3, 4, 5, 7, 9, 10, 11, N/A.

Suspend Option

Select the suspend type.

Soft-Off by PWRBTN

The setting of **Instant-Off** allows the ATX switch to function as a normal system power off button when pressed for less than 4 seconds. The setting of **Delay 4 Sec.** Allows the button to have a dual function where to press the button for less than 4 seconds will place the system in suspend mode, and pressing the button for more than 4 seconds will shut place the system off.

HDD Power Down

This item defines the continuous HDD idle time before the HDD enters power saving mode (motor off). The options are from 1 min to 15 min and Disabled.

Doze Mode

When enabled and after the set time of system inactivity, the CPU clock will run at slower speed while all other devices still operate at full speed.

Suspend Mode

When enabled and after the set time of system inactivity, all devices except the CPU will be shut off.

**** PM Events ****

PM 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 occurs to a device which is configured as On, even when the system is a power down mode.

VGA

When set to On, any event occurring at a VGA port will awaken a system which has been powered down.

LPT & COM

When set to LPT/COM (default), any event occurring at a COM (Serial) / LPT port will awaken a system which has been powered down.

HDD & FDD

When set to On (default), any event occurring at a hard or floppy drive port will awaken a system which has been powered down.

Modem Ring Resume

When set to Enabled, any event occurring Modem Ring/activity of LAN will awaken a system which has been powered down.

Wake Up On LAN

This item determine the system will resume by activity of LAN. If enabled this feature system will power-on itself from power off when the activity of LAN.

RTC Alarm Resume

When set to Enabled RTC Alarm Resume, you could set the date (of month) and timer (hh:mm:ss), any event occurring at RTC will awaken system which has been powered down.

Primary INTR

When set to On (default), any event occurring at will awaken a system which has been powered down.

This following is a list of IRQ, Interrupt ReQuests, which can be exemplified much as the COM ports and LPT port above can. When an I/O device wants to gain the attention of the operating system, it signals this by causing an IRQ to occur. When the operation system is ready to respond to the request, it interrupts itself and performs the service.

As above, the choices are On and Off.

When set On, activity will neither prevent the system from going into a power management mode nor awaken it.

- IRQ3 (COM2)
- IRQ4 (COM1)
- IRQ5 (LPT2)
- IRQ6 (Floppy Disk)
- IRQ7 (LPT1)
- IRQ8 (RTC Alarm)
- IRQ9 (IRQ2 Redir)
- IRQ10 (Reserved)
- IRQ11 (Reserved)
- IRQ12 (PS/2 Mouse)
- IRQ 13 (Coprocessor)
- IRQ14 (Hard Disk)
- IRQ15 (Reserved)

PnP/PCI Configuration

ROM PCI/ISA BIOS (2A6LGH2D)	
PNP/PCI CONFIGURATION	
AWARD SOFTWARE, INC.	
PNP OS Installed : No	CPU to PCI Write Buffer: Enabled
Resources Controlled By : Manual	PCI Dynamic Bursting : Enabled
Reset Configuration Data : Disabled	PCI Master 0 MS Write : Enabled
IRQ-3 assigned to : PCI/ISA PnP	PCI Delay Transaction : Enabled
IRQ-4 assigned to : PCI/ISA PnP	PCI#2 Access #1 Retry : Disabled
IRQ-5 assigned to : PCI/ISA PnP	AGP Master 1 MS Write : Enabled
IRQ-7 assigned to : PCI/ISA PnP	AGP Master 1 MS Read : Disabled
IRQ-9 assigned to : PCI/ISA PnP	PCI Latency Timer(CLK) : 64
IRQ-10 assigned to : PCI/ISA PnP	MS IRQ Routing Table : Disabled
IRQ-11 assigned to : PCI/ISA PnP	Assign IRQ For VGA : Enabled
IRQ-12 assigned to : PCI/ISA PnP	
IRQ-14 assigned to : PCI/ISA PnP	
IRQ-15 assigned to : PCI/ISA PnP	
DMA-0 assigned to : PCI/ISA PnP	
DMA-1 assigned to : PCI/ISA PnP	ESC : Quit F1+* : Select Item
DMA-3 assigned to : PCI/ISA PnP	F1 : Help PU/PD+/- : Modify
DMA-5 assigned to : PCI/ISA PnP	F5 : Old Values (Shift)F2 : Color
DMA-6 assigned to : PCI/ISA PnP	F6 : Load BIOS Defaults
DMA-7 assigned to : PCI/ISA PnP	F7 : Load Setup Defaults

This section describes configuring the PCI bus system. PCI, or Personal Computer Interconnect, is a system which allows I/O devices to operate at speeds nearing the speed the CPU itself uses when communicating with its own special components. This section covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.

PNP OS Installed

When this item is set to Yes, it will allow the PnP OS (Windows 95) control the system resources except PCI devices and PnP boot devices. Default setting is **No**.

Resources Controlled By

The Award Plug and Play BIOS has the capability 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 as Windows 95.

Reset Configuration Data

This item allows you to determine whether to reset the configuration data or not.

IRQ 3/4/5/7/9/10/11/12/14/15, assigned to

These items allow you to determine the IRQ assigned to the ISA bus and is not available for PCI slot.

Choices are **Legacy ISA** and **PCI/ISA PnP**.

DMA 0/1/3/5/6/7 assigned to

These items allow you to determine the DMA assigned to the ISA bus and is not available for PCI slot.

Choices are *Legacy ISA* and *PCI/ISA PnP*.

CPU to PCI Write Buffer

When enabled, up to four Dwords of data can be written to the PCI bus without interrupting the CPU. When disabled, a write buffer is not used and the CPU read cycle will not be completed until the PCI bus signals that it is ready to receive the data.

PCI Dynamic Bursting

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

PCI Master 0 WS Write

When Enabled, writes to the PCI bus are command with zero wait states.

PCI Delay Transaction

The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. Select Enabled to support compliance with PCI specification version 2.1.

PCI #2 Access #1 Retry

This item allows you enable/disable the PCI #2 Access #1 Retry.

AGP Master 1 WS Write

This implements a single delay when writing to the AGP Bus. By default, two-wait states are used by the system, allowing for greater stability.

AGP Master 1 WS Read

This implements a single delay when reading to the AGP Bus. By default, two-wait states are used by the system, allowing for greater stability.

PCI Latency Timer (CLK)

The number of clocks programmed in the PCI Latency Timer represents the guaranteed time slice allocated to the AV61, after which it must complete the current data transfer phase and surrender the bus as soon as its bus grant is removed.

The PCI Latency Timer is used to guarantee to the PCI agents a minimum amount of the system resource.

MS IRQ Routing Table

This item allows the user to set BIOS IRQ Routing Table Enabled or Disabled.

Assign IRQ For VGA

This item allows the user to set VGA IRQ Routing table Enabled or Disabled.

CPU Features Setup

ROM PCI/ISA BIOS (2A6LGH2D) CPU FEATURES SETUP AWARD SOFTWARE, INC.	
Auto Detect DIMM/PCI Clk : Disabled	
Spread Spectrum : Disabled	
CPU Host Clock (CPU/PCI) : 100 MHz	
CPU/PCI Clock Ratio : x3.5	
CPU Speed : 350 MHz	
CPU Warning Temperature : Disabled	
Current System Temp. : XX°C/XX°F	
Current CPU1 Temperature : XX°C/XX°F	
Current CPU2 Temperature : XX°C/XX°F	
Current CPUFAN1 Speed : XXXXRPM	
Current CPUFAN2 Speed : XXXXRPM	
Current CPUFAN3 Speed : XXXXRPM	
IN0(U) : XX.XU IN1(U) : XX.XU	
IN2(U) : XX.XU +5 U : XX.XU	
+12 U : XX.XU -12 U : -XX.XU	
-5 U : -XX.XU	
Shutdown Temperature : 60°C/140°F	
ESC : Quit	F10 : Select Item
F1 : Help	PU/PD/+/= : Modify
F5 : Old Values (Shift)	F2 : Color
F6 : Load BIOS Defaults	
F7 : Load Setup Defaults	

Auto Detect DIMM/PCI Clock

Enabling this item allows system auto detect and close clock signal to empty DIMM/PCI slot to reduce EMI.

Spread Spectrum

This item allows the user to enable Spread Spectrum Modulated to reduce the EMI.

CPU Host Clock (CPU/PCI)

This item allows the user to adjust CPU Host Bus Clock from BIOS when JP39 is set to Auto.

The user may adjust CPU Host Clock from 75 MHz to 83 MHz when 66 MHz based Pentium II or Celeron processor is used, from 103 MHz to 112 MHz when 100 MHz based Pentium II/III processor is used, and from 140 MHz to 150 MHz when 133 MHz based Pentium III processor is used.

This item will not show up when JP39 is set to Manual.

CPU/PCI Clock Ratio

This item allows the user to adjust CPU Host Clock/Internal Clock ration when JP37 is set to Auto.

The user may adjust CPU Clock Ratio from x2 to x8.

This item will not show up when JP37 is set to Manual.

CPU Speed

This item is show only. when CPU Host Clock and CPU Clock Ratio is set, the result will be display on this item.

CPU Warning Temperature

Since the mainboard support CPU temperature monitoring and over-heat alert. This item allows the user to set the threshold of CPU warning temperature. When CPU temperature over the threshold, system will slow down clock to prevent CPU damage.

Current System Temperature (optional)

Since the mainboard support System and CPU temperature monitoring and overheat alert. This item indicate the current main board temperature.

Current CPU1/2 Temperature (optional)

Since the mainboard support System and CPU temperature monitoring and overheat alert. This item indicate the current Processor temperature.

Current CPUFAN1/2/3 Speed (optional)

The mainboard can detect three fans rotation speed for CPU cooler and system.

IN0(V) ~ IN2(V), +5V ~ -5V (optional)

The mainboard support CPU and mainboard voltages monitoring. The onboard hardware monitor is able to detect the voltages output of the voltage regulators and power supply.

Shutdown Temperature

Select the combination of lower and upper limits for the system shutdown temperature, if your computer contains an environmental monitoring system. If the temperature extends beyond either limit, the system shuts down.

Integrated Peripherals

ROM PCI/ISA BIOS (2A6LGH2D) INTEGRATED PERIPHERALS AWARD SOFTWARE, INC.	
OnChip IDE Channel0 : Enabled	UART Mode Select : Standard
OnChip IDE Channel1 : Enabled	UART2 Duplex Mode : Half
IDE Prefetch Mode : Enabled	RxD , TxD Active : Hi,Lo
IDE HDD Block Mode : Enabled	IR Transmittion delay: Enabled
Primary Master PIO: Auto	Onboard Parallel Port : 378/IRQ
Primary Slave PIO: Auto	Parallel Port Mode : SPP
Secondary Master PIO: Auto	ECP Mode Use DMA : 3
Secondary Slave PIO: Auto	EPP Mode Select : EPP1.?
Primary Master IDMA: Auto	PWRON After PWR-Fail : Off
Primary Slave UDMA: Auto	
Secondary MasterUDMA: Auto	
Secondary Slave UDMA: Auto	
Init Display First : PCI Slot	
POWER ON Function : BUTTON ONLY	
Hot Key Power ON : Ctrl-F1	ESC : Quit
KBC input clock : 8 MHz	11** : Select Item
Onboard FDC Controller: Enabled	F1 : Help
Onboard Serial Port 1 : Auto	PA/PB/+- : Modify
Onboard Serial Port 2 : Auto	F5 : Old Values (Shift)F2 : Color
	F6 : Load BIOS Defaults
	F7 : Load Setup Defaults

OnChip IDE Channel0

This item is used to defined on chip Primary PCI IDE controller is Enable or Disable setting.

OnChip IDE Channel1

This item is used to defined on chip Secondary PCI IDE controller is Enable or Disable setting.

IDE Prefetch Mode

Enable prefetching for IDE drive interfaces that support its faster drive accesses. If you are getting disk drive errors, change the setting to omit the drive interface where the errors occur. Depending on the configuration of your IDE subsystem, this field may not appear, and it does not appear when the Internal PCI/IDE field, above is Disabled.

HDD Block Mode

This item is used to set IDE HDD Block Mode. If your IDE Hard Disk supports block mode, then you can enable this function to speed up the HDD access time. If not, please disable this function to avoid HDD access error.

Primary Master / Slave PIO

In this items, there are five modes defined in manual mode and one automatic mode. There are 0, 1, 2, 3, 4, and AUTO is the default settings for on board Primary Master / Slave PIO timing.

Secondary Master / Slave PIO

In this items, there are five modes defined in manual mode and one automatic mode. There are *0, 1, 2, 3, 4*, and *AUTO* is the default settings for on board Secondary Master / Slave PIO timing.

Primary Master / Slave UDMA

On this mainboard, AV61 PCIset improves IDE transfer rate using Bus Master UltraDMA 33/66 IDE which can handle data transfer up to 33MB/sec. The options are *Disabled, Enabled and Auto*, *Auto* is the default settings for on board Primary Master / Slave *UltraDMA 33/66*.

Note : Your hard drive must also support UDMA for this feature to work.

Secondary Master / Slave UDMA

On this mainboard, AV61 PCIset improves IDE transfer rate using Bus Master UltraDMA 33/66 IDE which can handle data transfer up to 33MB/sec. The options are *Disabled, Enabled and Auto*, *Auto* is the default settings for on board Secondary Master / Slave *UltraDMA 33/66*.

Note : Your hard drive must also support UDMA for this feature to work.

Init Display First

This item is used to determine initial device when system power on. The options are *PCI* and *AGP*.

POWER ON Function

This item is used to defined Keyboard & PS/2 mouse power-on function enabled or disabled. The options are **Button Only**, **HOT-Key** and **PS/2 Mouse**.

Button Only - Only soft-on/off button on the front panel is available.

Hot-Key- Power-on by soft-on/off button and keyboard are available.

The user may set power-on hot-key from < Ctrl > < F1 > to < Ctrl > < F12 > .

PS/2 Mouse- Power-on by soft-on/off button and PS/2 Mouse are available.

Note:1. When item of *PS/2 Mouse* or *HOT-Key* is selected, please also adjust jumper JP38 to the proper position.

2. *USB keyboard, USB Mouse and Serial Mouse* are not supported to this function.

Hot Key Power ON

Power-on by soft-on/off button and keyboard are available. The user may set power-on hot-key from < Ctrl> < F1> to < Ctrl> < F12> .

KBC Input Clock

This item to set the input clock to onboard keyboard controller. The options are 8MHz and 12MHz.

Onboard FDC Controller

This item specifies onboard floppy disk drive controller. This setting allows you to connect your floppy disk drives to the onboard floppy connector. Choose the "Disabled" settings if you have a separate control card.

Onboard Serial Port 1

This item is used to define onboard serial port 1 to 3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3, Auto or Disabled.

Onboard Serial Port 2

This item is used to define onboard serial port 2 to 3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3, Auto or Disabled.

UART Mode Select

The main board support IrDA(HPSIR) and Amplitudes Shift Keyed IR(ASKIR) infrared through COM 2 port. This item specifies onboard Infra Red mode to IrDA 1.0, ASKIR, MIR 0.57M, MIR 1.15M, FIR or Standard (Disabled).

Note : FIR is not available currently.

UART2 Duplex Mode

This item specifies onboard infrared transfer mode to full-duplex. This item will not show up when IrDA, ASKIR, or MIR UR2 modes are selected.

RxD, TxD Active

This item specifies the Active level for RxD & TxD signal.

IR Transmittion delay

This item enable/disable the delay of the IR state change from Rx to Tx mode or Tx to Rx mode.

Onboard Parallel Port

This item specifies onboard parallel port address to *378H*, *278H*, *3BCH* or *Disabled*.

Parallel Port Mode

This item specifies onboard parallel port mode. The options are *SPP* (Standard Parallel Port), *EPP*(Enhanced Parallel Port), *ECP* (Extended Capabilities Port), and *EPP + ECP*.

ECP Mode Use DMA

This item specifies *DMA* (Direct Memory Access) channel when ECP device is in use. The options are *DMA 1* and *DMA 3*. This item will not show up when SPP and EPP printer mode is selected.

EPP Mode Select

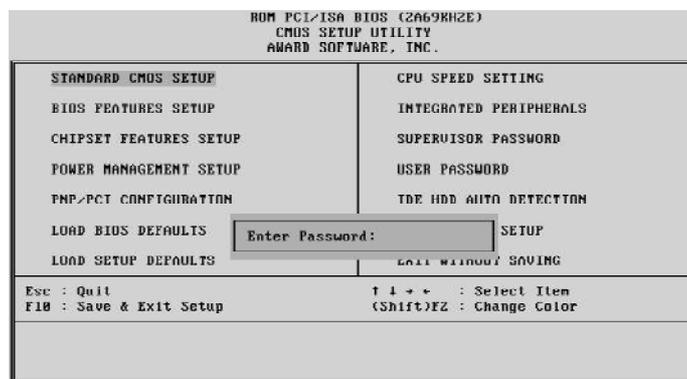
This item select the EPP Mode, EPP 1.9 or EPP 1.7.

PWRON After PWR-Fail

This item to set the ATX power supply status when power resume after unexpected power fail. When off is selected, power supply will maintain on soft-off status, when power is resume. When on is selected, power supply will turn on, and when former-sts is selected, power supply will maintain on the status before unexpected power fail.

User Password Setting

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



Supervisor Password and User Password

The options on the Password screen menu make it possible to restrict access to the Setup program by enabling you to set passwords for two different access modes: Supervisor mode and User mode.

In general, Supervisor mode has full access to the Setup options, whereas User mode has restricted access to the options. By setting separate Supervisor and User password, a system supervisor can limit who can change critical Setup values.

Enter Password

Type the password, up to eight characters, 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 password, just press < Enter > when you are prompted to enter password. A message will confirm the password being disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

Password Disable

If you select System at Security Option of BIOS Features Setup Menu, you will be prompted for the password every time the system is rebooted or any time you try to enter Setup. If you select Setup at Security Option of BIOS Features Setup Menu, you will be prompted only when you try to enter Setup.

Warning : Retain a record of your password in a safe place. If you forget the password, the only way to access the system is to clear CMOS memory, please refer to page 29 "Clear CMOS".

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.