

# **Chapter 1**

## **INTRODUCTION**

The PCI Pentium™ SII1 system board is an ATX high-performance personal computer system board based on the Pentium, 6X86™, and AMD-K5™ microprocessors.

## **SYSTEM BOARD SPECIFICATIONS**

### **Power Supply Selection:**

ATX or PS/2-type power supply selection.

### **Hardware Installation:**

- The system board provides “Plug and Play” BIOS which detects the peripheral devices and expansion cards of the board automatically.
- The system board provides a Desktop Management Interface (DMI) function which records your system board specifications.

### **CPU:**

- Supports P54C/P55C-75/90/100/120/133/166/180/200Mhz, 6X86-P120+/P133+/P150+/P166+ version 2.7 or later, and AMD-K5-PR75/PR90/PR100.

### **Cache Memory:**

256K/512K cache with Pipelined Burst SRAM Optional.

### **Chip Set:**

- The system board utilizes the SiS 5596 and SiS 5513 chipsets. The 5596 includes Cache memory, PCI, and shared memory controller. The SiS 5513 chipset includes PCI IDE controller and PCI to ISA bridge.

### **Multi-I/O:**

- The system board has a built-in Plug and Play Windbond W83877 and Multi-I/O chipsets to support 2 high-speed serial ports, one parallel port with ECP and EPP capabilities, and one floppy drive controller.

### **Enhanced IDE Support:**

- A PCI IDE controller built-in the SiS 5513 supports dual channels and four hard drives.

### **IrDA and PS/2 support:**

- This board supports an infrared port connector for wireless interface and a jumperless PS/2 mouse connector.

### **Slots:**

- Three 32-bit PCI Bus slots and four 16-bit ISA bus slots.

### **Main Memory:**

- Supports two memory banks using four 72-pin SIMM sockets.
- The 5596 chipset support a maximum of 512 Mbytes of memory.
- Supports Fast Page (FP) Mode, and Extended Data Output (EDO) Mode.
- Supports symmetric or asymmetric DRAM memory, 70ns or faster.

### **On-Board I/O:**

- A 32-bit enhanced dual channel and a four enhanced hard drives PCI IDE controller, supports fast-ATA2 PIO Mode 0-4 and bus Master DMA Mode 2.
- One floppy disk drive controller, two high-speed serial ports, and one parallel with ECP and EPP capabilities.
- IrDA function.

### **Keyboard Connector:**

- PS/2 keyboard interface and PS/2 Mouse interface.
- Two 1X5-pin connectors for PS/2 keyboard and mouse.

### **Dimensions:**

- ATX Form Factor: 30.5cm x 18.6cm x 4-layer PCB.

### **Mounting:**

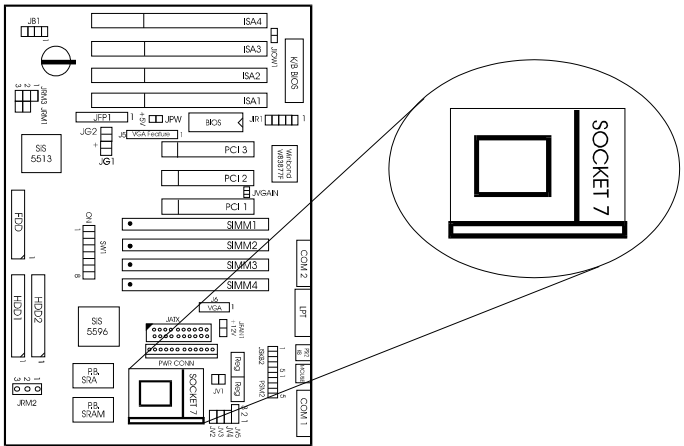


# Chapter 2

## HARDWARE INSTALLATION

### CPU Installation

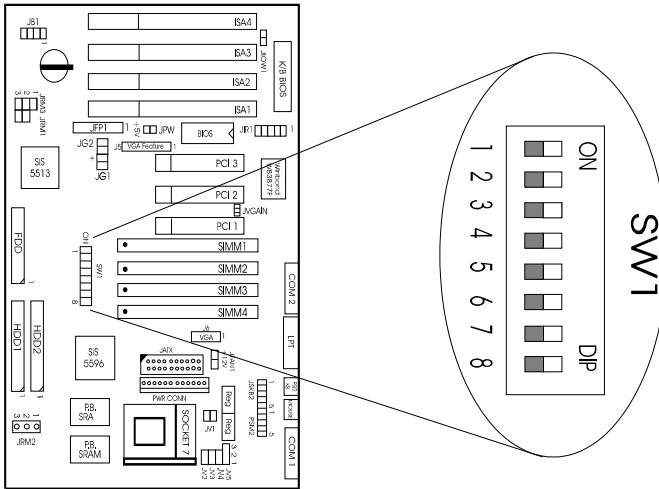
After installing the CPU, adjust SW1 to set CPU speed and JV1-JV6 to set CPU voltage. Then insert CPU fan power cable to JFAN1 to complete CPU installation. (See sections pages 2-3, 2-4)




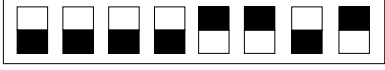




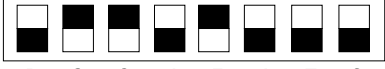


## CHAPTER 2 HARDWARE INSTALLATION

### CPU Speed Setting (SW1)

Adjust SW1 (Dip switch) to set CPU speed. Figure 2-1 shows the location of SW1.



**INTEL P54C/P55C CPU SPEED SETTING**

CPU Speed	SW1 Settings
75MHZ ①	 <div style="display: flex; justify-content: space-around; width: 100%;"> <span>1</span><span>2</span><span>3</span><span>4</span><span>5</span><span>6</span><span>7</span><span>8</span> </div> <div style="display: flex; justify-content: flex-end; margin-top: 5px;"> <span>ON</span> <span>OFF</span> </div>
75MHZ ②	 <div style="display: flex; justify-content: space-around; width: 100%;"> <span>1</span><span>2</span><span>3</span><span>4</span><span>5</span><span>6</span><span>7</span><span>8</span> </div> <div style="display: flex; justify-content: flex-end; margin-top: 5px;"> <span>ON</span> <span>OFF</span> </div>
90MHZ	 <div style="display: flex; justify-content: space-around; width: 100%;"> <span>1</span><span>2</span><span>3</span><span>4</span><span>5</span><span>6</span><span>7</span><span>8</span> </div> <div style="display: flex; justify-content: flex-end; margin-top: 5px;"> <span>ON</span> <span>OFF</span> </div>
100MHZ	 <div style="display: flex; justify-content: space-around; width: 100%;"> <span>1</span><span>2</span><span>3</span><span>4</span><span>5</span><span>6</span><span>7</span><span>8</span> </div> <div style="display: flex; justify-content: flex-end; margin-top: 5px;"> <span>ON</span> <span>OFF</span> </div>
120MHZ	 <div style="display: flex; justify-content: space-around; width: 100%;"> <span>1</span><span>2</span><span>3</span><span>4</span><span>5</span><span>6</span><span>7</span><span>8</span> </div> <div style="display: flex; justify-content: flex-end; margin-top: 5px;"> <span>ON</span> <span>OFF</span> </div>
133MHZ	 <div style="display: flex; justify-content: space-around; width: 100%;"> <span>1</span><span>2</span><span>3</span><span>4</span><span>5</span><span>6</span><span>7</span><span>8</span> </div> <div style="display: flex; justify-content: flex-end; margin-top: 5px;"> <span>ON</span> <span>OFF</span> </div>
150MHZ	 <div style="display: flex; justify-content: space-around; width: 100%;"> <span>1</span><span>2</span><span>3</span><span>4</span><span>5</span><span>6</span><span>7</span><span>8</span> </div> <div style="display: flex; justify-content: flex-end; margin-top: 5px;"> <span>ON</span> <span>OFF</span> </div>
166MHZ	 <div style="display: flex; justify-content: space-around; width: 100%;"> <span>1</span><span>2</span><span>3</span><span>4</span><span>5</span><span>6</span><span>7</span><span>8</span> </div> <div style="display: flex; justify-content: flex-end; margin-top: 5px;"> <span>ON</span> <span>OFF</span> </div>
200MHZ	 <div style="display: flex; justify-content: space-around; width: 100%;"> <span>1</span><span>2</span><span>3</span><span>4</span><span>5</span><span>6</span><span>7</span><span>8</span> </div> <div style="display: flex; justify-content: flex-end; margin-top: 5px;"> <span>ON</span> <span>OFF</span> </div>

Note: 1 With this 75MHz setting the PCI Bus is running at 25MHz.

Note: 2 With this 75MHz setting the PCI Bus is running at 33MHz.

**CYRIX 6x86 CPU SPEED SETTING**

CPU Speed	SW1 Settings
P120+ (100MHZ)	 ON OFF 1 2 3 4 5 6 7 8
P133+ (110MHZ)	 ON OFF 1 2 3 4 5 6 7 8
P150+ (120MHZ)	 ON OFF 1 2 3 4 5 6 7 8
P166+ (133MHZ)	 ON OFF 1 2 3 4 5 6 7 8

Note: SW1 PIN 1 set to “off”, the Cache Mode is Toggle. SW 1 PIN 1 set to “on” the Cache Mode is Linear. CYRIX CPU must use Linear mode, and the BIOS “ Linear Mode SRAM Support” must be enabled.

Note: If you use the CYRIX CPU you must be sure that the onboard voltage is 4.8V or above. If not your system will be unstable.

**AMD 5k86/k5CPU SPEED SETTING**

CPU Speed	SW1 Settings
PR75 (75MHZ)	 ON OFF 1 2 3 4 5 6 7 8
PR90 (90MHZ)	 ON OFF 1 2 3 4 5 6 7 8
PR100 (100MHZ)	 ON OFF 1 2 3 4 5 6 7 8



**Host Clock:**

HOST CLK	SW1 Settings
50MHz Sync	 ON OFF 1 2 3 4 5 6 7 8
50 Async	 ON OFF 1 2 3 4 5 6 7 8
55MHz	 ON OFF 1 2 3 4 5 6 7 8
60MHz	 ON OFF 1 2 3 4 5 6 7 8
66MHz	 ON OFF 1 2 3 4 5 6 7 8
75MHz Async	 ON OFF 1 2 3 4 5 6 7 8

The 5 Host Clock Frequencies that the system supports are 50MHz, 55MHz, 60MHz, 66.6MHz and 75MHz. (By adjusting pins 5, 6, 7, and 8 of SW1 the Host Clock Frequency can be selected). See the following chart to set the different Host Clock frequencies.

## CHAPTER 2 HARDWARE INSTALLATION

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Note 1: SW1 Pin 8 is used for setting the SIS5596 PCI to run in the asynchronous mode.



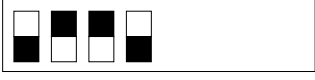

Note 2: With the Host Clock set at 50MHz Sync the Synchronous PCI bus is running at 25Mhz.

With the Host Clock set at 50MHz Async the Asynchronous PCI Bus is running at 33MHz.

Note 3: With the Host Clock set at 75MHz the PCI Bus is running at 32MHz.

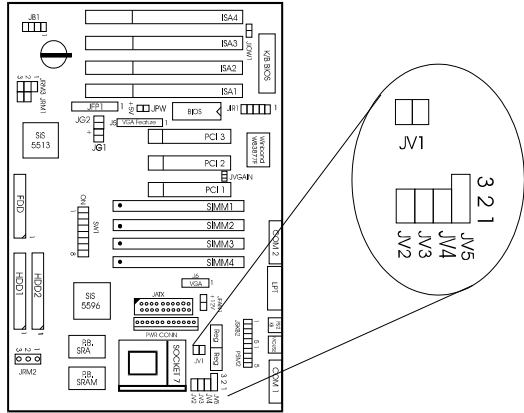
### Core/Bus Ratio:

The Core/Bus Ratio setting can be set by adjusting pins 2, 3, and 4 of SW1. See the following chart for settings:

Core/Bus Ratio		ON OFF
1.5 X	1 2 3 4 5 6 7 8	
2 X		ON OFF
2.5 X	1 2 3 4 5 6 7 8	
2.5 X		ON OFF
3 X	1 2 3 4 5 6 7 8	
3 X		ON OFF



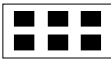


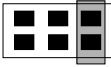


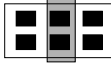







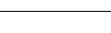

## CPU Voltage Setting: JV1-JV6

JV1-JV6 are used to set the correct voltage for the CPU. The Intel Pentium CPU has four different voltage settings:



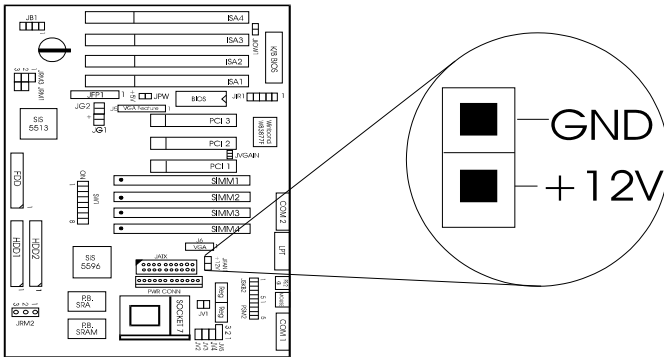
2.8V/STD/VR/VRE

## CHAPTER 2 HARDWARE INSTALLATION

CPU Voltage	JV1	JV5	JV2 JV3 JV4
STD.VR (3.3-3.45V)	 Short all	 3 2 1 Short 1-2	 Open all
VRE (3.45-3.6V)	 Short all	 3 2 1 Short 1-2	 Short JV4
Vcore (2.6V)	 Open all	 3 2 1 Short 2-3	 Short JV3
Vcore (2.7V)	 Open all	 3 2 1 Short 2-3	 Short JV5
Vcore (2.8V)	 Open all	 3 2 1 Short 2-3	 Short JV5
P55C Vcore (2.9V)	 Open all	 3 2 1 Short 2-3	 Short JV2, JV4

### CPU Fan Power Connector (JFAN1)

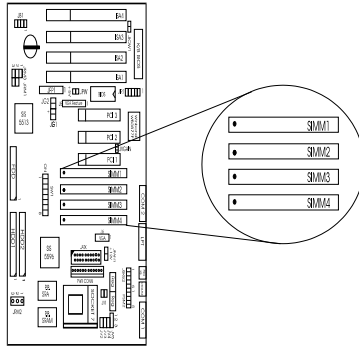
JFAN1 connector supports +12V voltage for CPU fan use.



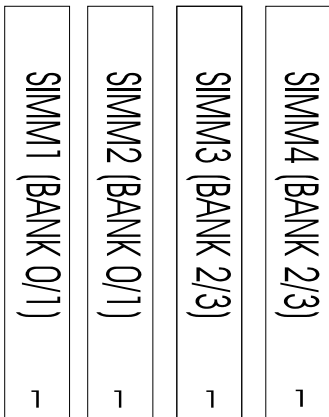
## Memory Installation

### Memory Bank Configuration

The 5596 chipset supports a maximum of 512M of memory, and the system board provides four 72-pin SIMMs (Single In-line Memory Module). Each bank supports 4M, 8M, 16M, and 32M. This board supports 4 RAS. Each RAS supports memory ranging from 4MB to 32MB.



#### SIMM BANKS:



Note 1: Make sure the SIMM banks are using the same type and equal size and density memory.

Note 2: To operate properly at least two 72-pin SIMM modules must be installed in the same bank.

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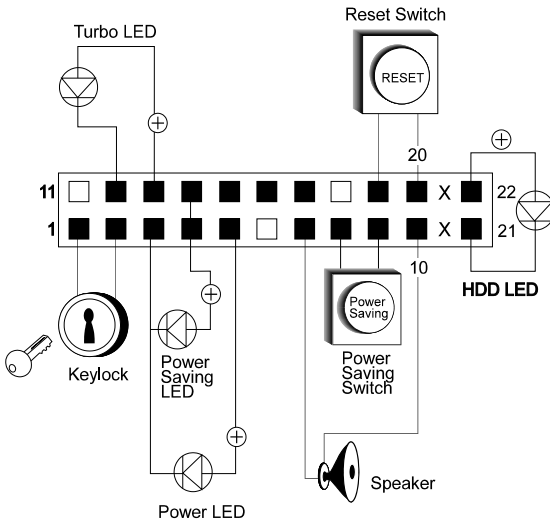
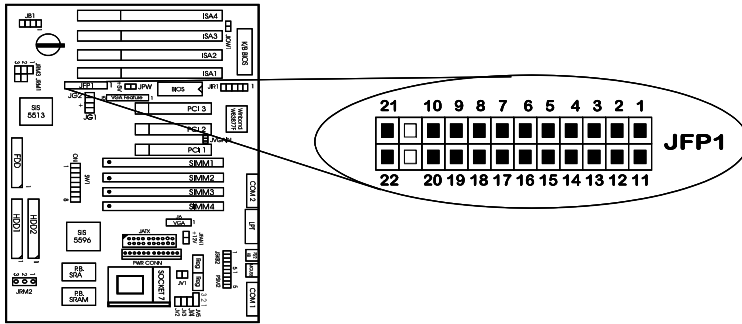
Note 3: This mainboard supports Table Free. So memory can be installed on Bank 0/1 (SIMM1 + SIMM2), Bank 2/3 (SIMM3 + SIMM4).

See table below for allowable SIMM type configurations:

SIMM1	SIMM2	SIMM3	SIMM4
(S) type	(S) type	—	—
(D) type	(D) type	—	—
(S) type	(S) type	(S) type	(S) type
(S) type	(S) type	(D) type	(D) type
(D) type	(D) type	(S) type	(S) type
(D) type	(D) type	(D) type	(D) type
—	—	(S) type	(S) type
—	—	(D) type	(D) type

**Case connector: JFP1 & JPW**

The Turbo LED, Hardware Reset, Key lock, Power LED, Power Saving LED, Sleep Switch, Speaker, and HDD LED all connect to the JFP1 connector block as below.



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*Note : This motherboard doesn't support a Turbo Switch Function.*

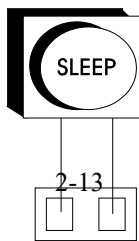
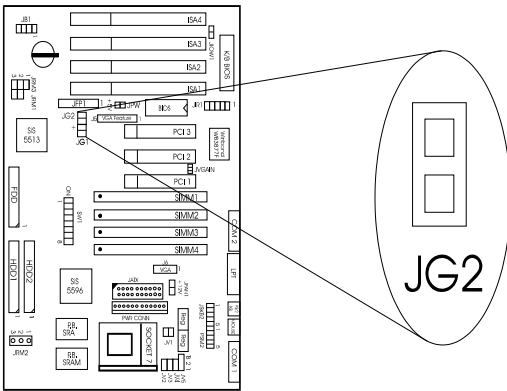
*Note: JPW is a 5V connector that is reserved for special use.*



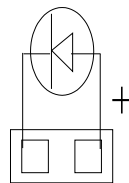
### Power Saving Switch Connector & Power Saving LED Connector: JG1 & JG2

Attach a power saving switch to this connector. When the switch is pressed, the system immediately goes into suspend mode. Press any key and the system wakes up.

*Note: you should enable the Power Management Mode (At Bios Setup) to use this function.*



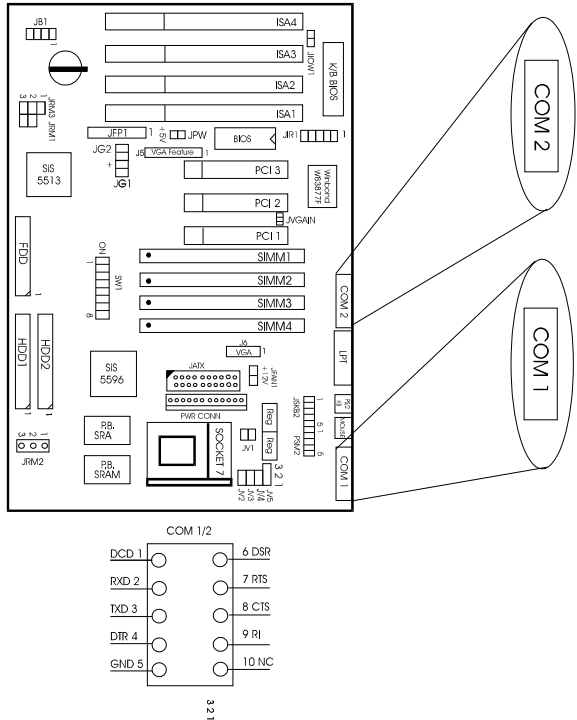
JG2



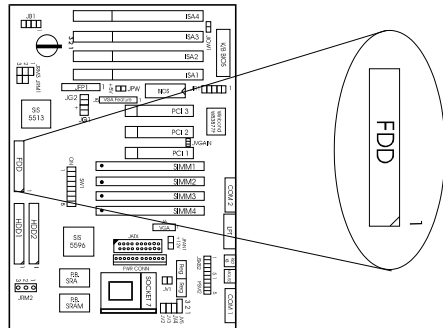
JG1

**Onboard Peripheral Connector: COM1, COM2, FDD, PRN, HDD1, HDD2, VGA and J5.**

**COM1** connector is for serial port COMA, and **COM2** is for serial port COMB. The system board has 9-PIN male serial port connectors, COMA and COMB. The two ports are 16550 high speed communication ports that send and receive 16 bytes FIFOs. You can attach a mouse or a modem cable directly to these connectors. COMA and COMB converter plugs are provided with the system board.



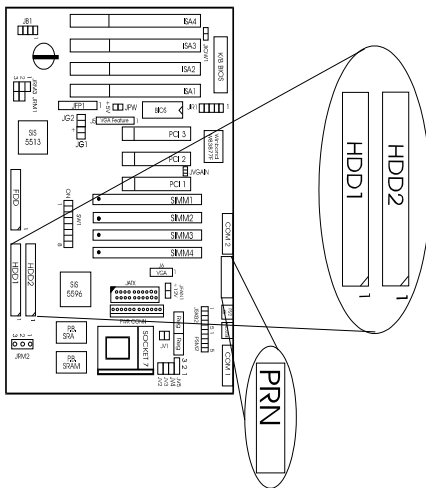
The **FDD** connector is for the floppy drive. The system board provides a standard floppy disk connector that supports 360K, 720K, 1.2M, 1.44M or 2.88M floppy disk types.



The **PRN** connector is for parallel port LPT1, LPT2, or LPT3.

**HDD1** connector is for the primary IDE channel. If you use only one hard disk it has to be connected to HDD1.

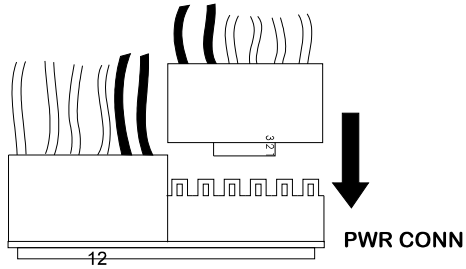
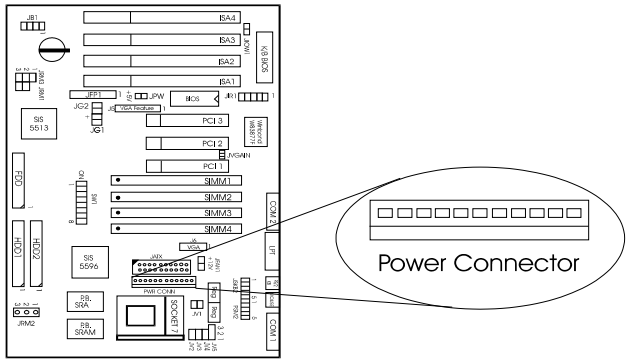
**HDD2** connector is for the secondary IDE channel.



**Power Supply Connector: PWR CONN**

## CHAPTER 2 HARDWARE INSTALLATION

Be sure to attach the connectors with the two black wires at the center, as shown below.



Pin	Description	Pin	Description
1	Power Good	7	Ground

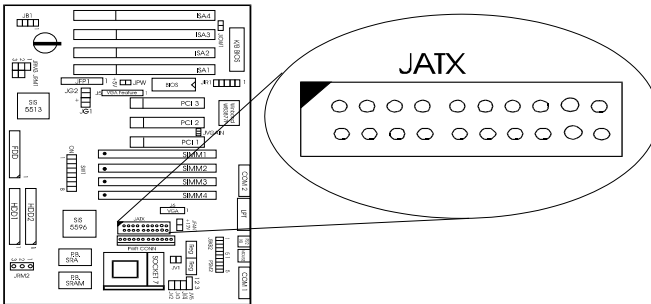
## CHAPTER 2 HARDWARE INSTALLATION

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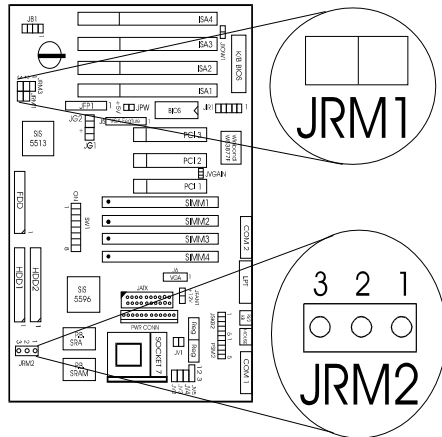
2	+5V DC	8	Ground
3	+12V DC	9	-5V DC
4	-12V DC	10	+5V DC
5	Ground	11	+5V DC
6	Ground	12	+5V DC

### ATX 20-Pin Power Connector: JATX

This type of connector already supports the remote On/Off function. When using an ATX power supply you don't need to connect JRM2.



**Remote Power On/Off Switch: JRM1**



Connects to a 2-pin push button switch. Every time the switch is shorted (by pushing it once) the power supply will change its status.

**Remote Power Connector: JRM2**

If the power supply supports a remote on/off function use this 3-pin remote power connector to connect it.

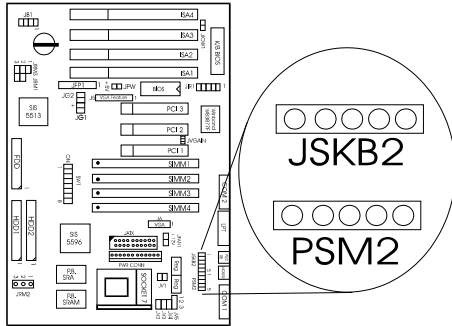
PIN	Function
1	PS-ON
2	Standby Vcc5
3	GND

**PS/2 Mouse Connector: PSM2**

**Keyboard Connector: JSKB2**

JSKB2 and PSM2 are 5-pin connectors. See description below.

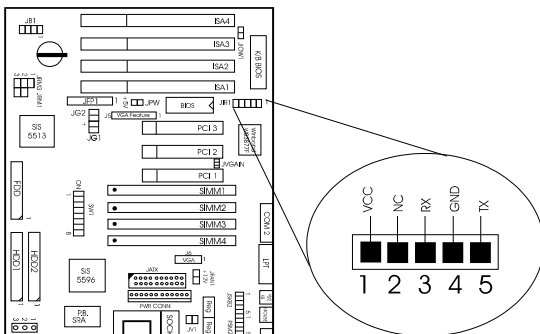
# CHAPTER 2 HARDWARE INSTALLATION



Pin 1	VCC
Pin 2	NC
Pin 3	Ground
Pin 4	Clock
Pin 5	Data

## IrDA Infrared Module Connector: JIR1

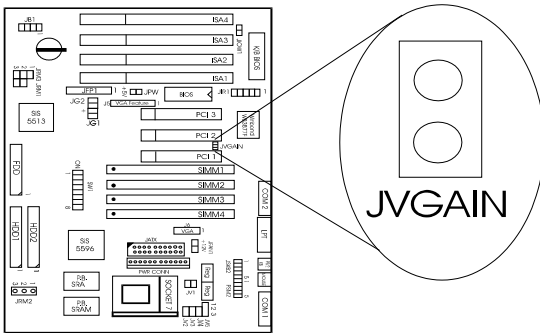
The system board provides a 5-pin infrared connector JIR1 as an optional module for wireless transmitting and receiving.





**VGA INTA Jumper: JVGAIN**

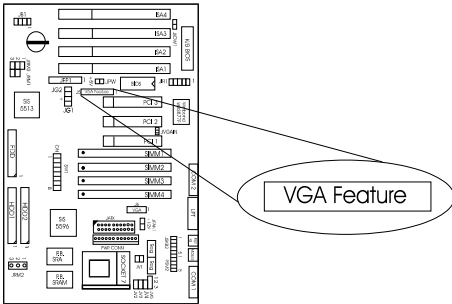
If you want to use the the onboard VGA Interrupt, short the JVGAIN, and in the BIOS Features Setup Enable “Assign IRQ for VGA.” INTA can’t use PCI Slot 2.



**The VGA Connector** is used for VGA monitors. It is used by first connecting a VGA-cable to an on-board 2x8-pin VGA connector and then plugging a VGA monitor 15-pin VGA male connector into this cable.

## CHAPTER 2 HARDWARE INSTALLATION

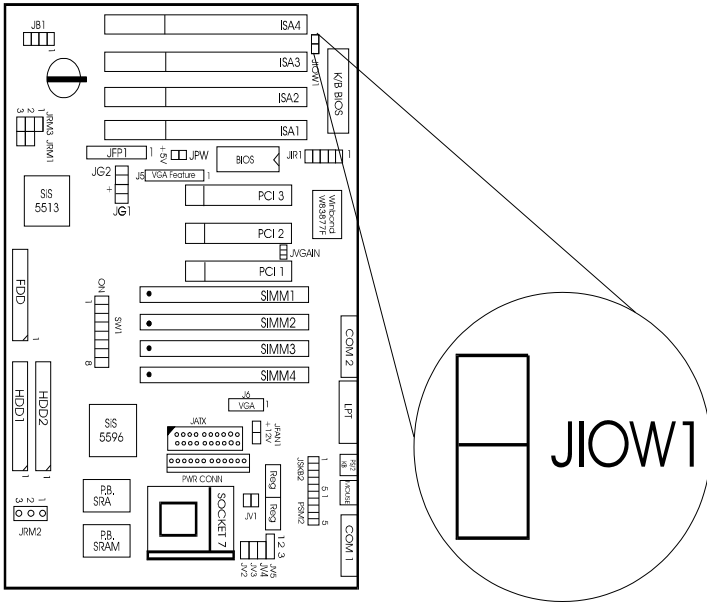
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### Special ISA4 Slot: JIOW1

When using an ESS Sound Card and a Cyrix CPU at the same time, the ESS Sound Card must be installed to ISA4 and the JIOW1 set to “open”, otherwise it will short “close” as a default.

# CHAPTER 2 HARDWARE INSTALLATION



## Chapter 3

### AWARD BIOS SETUP (Version 4.51)

Award's BIOS ROM has a built-in Setup program that allows users to modify the basic system configuration. This type of information is stored in battery-backed RAM (CMOS RAM) so that it retains the Setup information when the power is turned off.

#### *Entering Setup*

Power on the computer and press <Del> immediately will allow you to enter Setup. The other way to enter Setup is to power on the computer, when the below message appears briefly at the bottom of the screen during the POST (Power On Self Test), press <Del> key or simultaneously press <Ctrl>, <Alt>, and <Esc> keys.

TO ENTER SETUP BEFORE BOOT PRESS <CTRL-ALT-ESC> OR <DEL> KEY

If the message disappears before you respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the "RESET" button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys. If you do not press the keys at the correct time and the system does not boot, an error message will be displayed and you will again be asked to,

PRESS <F1> TO CONTINUE, <CTRL-ALT-ESC> OR <DEL> TO ENTER SETUP

#### *Getting Help*

### **Main Menu**

The on-line description of the highlighted setup function is displayed at the bottom of the screen.

### **Status Page Setup Menu/Option Page Setup Menu**

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window press <F1> or <Esc>.

*The Main Menu*

Once you enter Award BIOS CMOS Setup Utility, the Main Menu (Figure 1) will appear on the screen. The Main Menu allows you to select from ten setup functions and two exit choices. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

Figure 1 Main Menu

ROM PCI/ISA BIOS (2A5IFM49)  
 CMOS SETUP UTILITY  
 AWARD SOFTWARE, INC.

STANDARD CMOS SETUP BIOS FEATURES SETUP CHIPSET FEATURES SETUP POWER MANAGEMENT SETUP PNP/PCI CONFIGURATION LOAD BIOS DEFAULTS LOAD SETUP DEFAULTS	INTEGRATED PERIPHERALS  SUPERVISOR PASSWORD  USER PASSWORD  IDE HDD AUTO DETECTION  SAVE & EXIT SETUP  EXIT WITHOUT SAVING
Esc : Quit F10 : Save & Exit Setup	↓ → ← : Select Item (Shift) F2 : Change Color
Time, Date, Hard Disk Type...	

**Standard CMOS setup**

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

### **BIOS features setup**

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

### **Chipset features setup**

This setup page includes all the items of chipset special features.

### **Power Management setup**

This category determines how much power consumption for system after selecting below items. Default value is Disable.

### **PNP/PCI Configuration setup**

This category specifies the value (in units of PCI bus clocks) of the latency timer for this PCI bus master and the IRQ level for PCI device. Change set PNP device IRQ assignment.

### **Load BIOS defaults**

BIOS defaults indicates the most appropriate value of the system parameter which the system would be in minimum performance. The OEM manufacturer may change the defaults through MODBIN before the binary image burn into the ROM.

### **Integrated Peripherals**

Change set or disable onboard I/O, IRQ, DMA assignment.

### **Supervisor Password/User Password**

Change set or disable password. This function allows the user access to the system and setup or just setup.

### **Load setup defaults**

Chipset defaults indicates the values required by the system for the maximum performance. The OEM manufacturer may change to defaults through MODBIN before the binary image burn into the ROM.

### **IDE HDD auto detection**

Automatically configure hard disk parameters.

### **Save & exit setup**

Save CMOS value changes to CMOS and exit setup.

### **Exit without save**

Abandon all CMOS value changes and exit setup.



## *Standard CMOS Setup*

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

Figure 2 Standard CMOS Setup Menu (Support Enhanced IDE)

ROM PCI/ISA BIOS (2A5IFM49)  
STANDARD CMOS SETUP  
AWARD SOFTWARE, INC.

Date (mm:dd:yy): Fri, Apr 7, 1995							
Time (hh:mm:ss): 00:00:00							
HARD DISKS	TYPE	SIZE	CYLS	HEADS	PRECOMP	LANDZONE	SECTOR MODE
Primary Master:	Auto	0	0	0	0	0	0 AUTO
Primary Slave :	Auto	0	0	0	0	0	0 AUTO
Secdry Master :	Auto	0	0	0	0	0	0 AUTO
Secdry Slave :	Auto	0	0	0	0	0	0 AUTO
Drive A : 1.44M, 3.5 in.				Base Memory: 640K			
Drive B : None				Extended Base Memory: 15360K			
Video : EGA/VGA				Other Memory: 384K			
Halt On : All Errors				Total Memory: 16384K			
ESC : Quit		↓ → ← : Select Item		PU/PD/+/-:Modify			
F1 : Help		(Shift)F2 : Change Color					

**Date**

The date format is <day><month> <date> <year>.

day	Day of the week, from Sun to Sat, determd. by BIOS, read only
month	The month Jan through Dec
date	The date from 1 to 31 can be keyed by numeric function keys
year	The year, depends on the year of the BIOS

**Time**

The time format is <hour> <minute> <second>. which accepts both function key or numerical key.

**PrimaryMaster/PrimarySlave****SecondaryMaster/Secondary Slave\_**

The categories identify the types of 2 channels that have been installed in the computer. There are 45 pre-defined types and 4 user definable types are for Enhanced IDE BIOS. Type 1 to Type 45 are pre-defined. Type User is user-definable.

Press PgUp/<+> or PgDn/<-> to select a numbered hard disk type or type the number and press <Enter>. Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category. If your hard disk drive type is not matched or listed, you can use Type User to define your own drive type manually.

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>. This information should be provided in the documentation from your hard disk vendor or the system manufacturer.

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If the controller of HDD interface is ESDI, the selection shall be "Type 1".

If the controller of HDD interface is SCSI, the selection shall be "None".

If the controller of HDD interface is CD-ROM, the selection shall be "None".

CYLS.	number of cylinders
HEADS	number of heads
PRECOMP	write precomp
LANDZONE	landing zone
SECTORS	number of sectors
MODE	HDD access mode

*BIOS Features Setup*

ROM PCI/ISA BIOS (2A69HM49)  
 BIOS FEATURES SETUP  
 AWARD SOFTWARE, INC.

Virus Warning : Disabled CPU Internal Cache : Enabled External Cache : Enabled Quick power on Self Test : Disabled Boot Sequence : A,C Swap Floppy Drive : Disabled Boot up Floppy Seek : Enabled Boot up NumLock status : On Boot up System Speed : High Gate A20 Option : Fast  Typematic Rate Setting : Disabled Typematic Rate(char/sec) : 6 Typematic Delay(Msec) : 250 Security Option : Setup PCI/VGA palette snoop : Disabled Assign IRQ for VGA : Disabled 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  Esc : Quit    ↓ → ← : Select    : item F1 : Help        PU/PD/+/- : modify F5 : Old Value    (Shift)F2 : Color F6 : Load BIOS Defaults F7 : Load Setup Defaults
--	---

**Virus Warning**

This category flashes on the screen. During and after the system boots up, any attempt to write to the boot sector or partition table of the hard disk drive will halt the system and the following error message will appear, in the mean time, you can run an anti-virus program to locate the problem.

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

Disabled (default)	No warning message to appear when anything attempts to access the boot sector or hard disk partition table.
Enabled	Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector of hard disk partition table.

*Note: This function is available only for DOS and other OS that do not trap INT13.*

### **CPU Internal Cache/External Cache**

These two categories speed up memory access. However, it depends on CPU/chipset design. The default value is Enabled. If your CPU is without Internal Cache then this item "CPU Internal Cache" will not be show.

Enabled (default)	Enable cache
Disabled	Disable cache

### **Quick Power On Self Test**

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

Enabled	Enable quick POST
Disabled (default)	Normal POST

### **Boot Sequence**

This category determines which drive the computer searches first for the disk operating system (i.e., DOS). Default value is A,C.

C,A	System will boot from hard disk drive then floppy disk drive
A,C (default)	System will boot from floppy disk drive then hard disk drive
C, CDROM, A	System will boot from hard disk drive C, then CDROM and then from floppy disk drive A
CDROM, C, A	System will boot from CDROM first, then hard disk drive C, and then floppy drive A

### **Swap Floppy Drive**

Switches the floppy disk drives between being designated as A and B. Default is Disabled.

### **Boot Up Floppy Seek**

During POST, BIOS will determine if the floppy disk drive installed is 40 or 80 tracks. 360K type is 40 tracks while 720K, 1.2M and 1.44M are all 80 tracks.

Enabled (default)	BIOS searches for floppy disk drive to determine if it is 40 or 80 tracks. Note that BIOS can not tell from 720K, 1.2M or 1.44M drive type as they are all 80 tracks.
Disabled	BIOS will not search for the type of floppy disk drive by track number. Note that there will not be any warning message if the drive installed is 360K.

### **Boot Up NumLock Status**

The default value is On.

On (default)	Keypad is number keys
Off	Keypad is arrow keys

### **Boot Up System Speed**

It selects the default system speed - the speed that the system will run at immediately after power up.

High (default)	Set the speed to high
Low	Set the speed to low

### Gate A20 Option

Normal	The A20 signal is controlled by keyboard controller or chipset hardware.
Fast (default)	Default : Fast. The A20 signal is controlled by Port 92 or chipset specific method.

### Typematic Rate Setting

This determines the typematic rate.

Enabled	Enable typematic rate and typematic delay programming
Disabled (default)	Disable typematic rate and typematic delay programming. The system BIOS will use default value of this 2 items and the default is controlled by keyboard.

### Typematic Rate (Chars/Sec)

6 (default)	6 characters per second
8	8 characters per second
10	10 characters per second
12	12 characters per second
15	15 characters per second
20	20 characters per second
24	24 characters per second
30	30 characters per second

### Typematic Delay

Choose the length of delay from the time you press a key and the character repeating. (units are mil-secs)



### Security Option

This category allows you to limit access to the system and Setup, or just to Setup.

System	The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt.
Setup (default)	The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt.

*Note: To disable security, select PASSWORD SETTING at Main Menu and then you will be asked to enter password. Do not type anything and just press <Enter>, it will disable security. Once the security is disabled, the system will boot and you can enter Setup freely.*

### PCI VGA Palette Snooping

Choose Disabled or Enabled. Some graphic controllers which are not VGA compatible, take the output from a VGA controller and map it to their display as a way to provide the boot information and the VGA compatibility.

However, the color information coming from the VGA controller is drawn from the palette table inside the VGA controller to generate the proper colors, and the graphic controller needs to know what is in the palette of the VGA controller. To do this, the non-VGA graphic controller watches for the Write access to the VGA palette and registers the snoop data. In PCI based systems, where the VGA controller is on the PCI bus and a non-VGA graphic controller is on an ISA bus, the Write Access to the palette will not show up on the ISA bus if the PCI VGA controller responds to the Writes.

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In this case, the PCI VGA controller should not respond to the Write, it should only snoop the data and permit the access to be forwarded to the ISA bus. The non-VGA ISA graphic controller can then snoop the data on the ISA bus. Unless you have the above situation, you should disable this option.

Disabled (default)	Disables the function
Enabled	Enables the function

### OS Selection for DRAM > 64MB

Allows OS2 to be used with > 64 MB of DRAM. Settings are Non-OS2 (default) and OS2.

### Video BIOS Shadow

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

Enabled (default)	Video shadow is enabled
Disabled	Video shadow is disabled

### C8000 - CFFFF Shadow/E8000 - EFFFF Shadow

These categories determine whether optional ROM will be copied to RAM by 16K byte or 32K byte per/unit and the size depends on chipset.

Enabled	Optional shadow is enabled
Disabled (default)	Optional shadow is disabled

*Note: For C8000-DFFFF option-ROM on PCI BIOS, BIOS will automatically enable the shadow RAM. User does not have to select the item.*

*Chipset Features Setup*

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The Chipset Features Setup option is used to change the values of the chipset registers. These registers control most of the system options in the computer.

*Note: Change these settings only if you are familiar with the chipset.*

Choose the “CHIPSET FEATURES SETUP” from the Main Menu and the following screen will appear.

ROM PCI/ISA BIOS(2A5IFM49)  
CMOS SETUP UTILITY  
CHIPSET FEATURES SETUP

Auto Configuration	: Enabled	System Bios Cacheable	:Enabled
L2 Cache Udate Mode	: WB	Video BIOS Cacheable	:Enabled
SRAM Back to Back	: Enabled	Memory Hole15M-16M	: Disbl'd
SRAM Leadoff	:3CK	CPU-PCI Post Write Rate	:3CK
Timing		CPU-PCI Burst Mem Write	:Enabled
DRAM Leadoff Timing	: 5CK	CPU-PCI Post Mem Write	:Enabled
FP DRAM CAS Prec.	: 1CK	VGA Shared Memory Size	:1MB
Timing		VGA Memory Clock	:55MHz
EDO CAS Pulse Width	:R1 W2CK		
EDO CAS Timing	: 1CK		
ISA Bus Clock	PCICLK/4		
Frequency			
Slow Refresh	Disabled		
		ESC : Quit ↓ → ← Select Item	
		F1 : Help PU/PD/+/- : Modify	
		F5 : Old Values (Shift)F2 : Color	
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

### Auto Configuration

Choosing Enabled (default) will automatically configure chipset features using default settings. Choose Disable to customize setup.

### **L2 Cache Update Mode**

Sets the SRAM Write-back or Write-through. Default is write-back for good performance.

### **SRAM Back to Back**

Set to enable the SRAM with back to back 3-1-1-1-1-1..., disable with 3-1-1-1-2-1-1-1...

### **SRAM Leadoff timing**

Set to 3CK for 12 ns Tag RAM speed, 4CK for 15 ns Tag RAM speed.

### **DRAM Leadoff timing**

Set to 5CK for 12 ns Tag RAM speed, 6CK for 15ns Tag RAM speed.

### **FP DRAM CAS Prec. timing**

Set to 1CK for general FP DRAM and 2CK for slower FP DRAM.

### **EDO CAS Pulse Width**

Set to R1/W2 for general EDO DRAM, but some DRAM must set to R2/W2 for stability. R1/W1 is the setting to achieve the best performance.

### **ISA Bus Clock Frequency\_**

The ISA bus frequency Spec. is 6MHz to 8MHz, your selection must meet this Spec. When PCICLK IS 33MHz you can choose PCICLK/4.

### **Slower refresh (1:4)\_**

Choose Enabled to increase system performance.

### **System BIOS Cacheable**

By choosing Disabled the system BIOS will be shadowed into DRAM only. Enabled will have the system BIOS shadowed and cacheable.

### **Video BIOS Cacheable**

Same as system BIOS Cacheable.

### **Memory Hole At 15M-16M:**

Choosing Enabled will enable a memory hole in the DRAM space. The CPU cycle matching the enabled hole will be passed on to the PCI. PCI cycles matching an enabled hole are ignored. Disabled (default) will disable this function.

*Note: A selected (Enabled) hole is not remapped.*

### **CPU-PCI Post Write Rate:**

Set to 3CK for 12ns Tag RAM Speed, 4CK for 15ns Tag RAM Speed.

### **CPU-PCI Burst Mem Write:**

Set to enable for good performance.

### **CPU-PCI Post Mem Write:**

Set to enable for good performance. The 5596 chipset supports 4 quad word deep buffer.

### **VGA Shared Memory Size:**

The VGA shared memory size supports 1MB to 2MB.

### **VGA Memory Clock:**

The VGA DRAM Access timing default is 55MHz. EDO DRAM can be set to 65MHz.

***Power Management Setup***

The Power management setup will appear on your screen like this:

ROM PCI/ISA BIOS (2A5IFM49)  
 POWER MANAGEMENT SETUP  
 AWARD SOFTWARE, INC.

Power Management	: Disable	VGA activity	: Disable
PM Control by APM	: Yes	IRQ3 (COM 2)	: Enable
Video Off Optiond	: Susp,Stby->ff	IRQ4 (COM 1)	: Enable
Video Off Method	:DPMS	IRQ5 (LPT 2)	: Enable
	Supported		
Suspend Switch	Enable	IRQ6 (Flpy Disk)	: Enable
		IRQ7 (LPT 1)	: Enable
		IRQ8 (RTC Alarm)	: Disable
		IRQ9 (IRQ2 Redir)	: Enable
MODEM Use IRQ	: 3	IRQ10(Reserved)	: Enable
* PM Timers	*	IRQ11(Reserved)	: Enable
HDD Off After	: Disable	IRQ12(PS/2 Mouse)	: Enable
Doze Mode	: Disable	IRQ13(Coprocessor)	: Enable
Standby Mode	: Disable	IRQ14(Hard Disk)	: Enable
Suspend Mode	: Disable	IRQ15(Reserved)	: OFF
		Esc : Quit	↓ → ← Select Item
*PM Events	*	F1 : Help	PU/PD/+/-: Modify
COM PortsActivity	Enable	F5 : Old	(Shift)F2 Color
		Values	
LPT Ports Activity	Enable	F6 : Load BIOS Defaults	
HDD Ports Activity	Disable	F7 : Load Setup Defaults	
PCI/ISA Master	Enable		
Act.			
IRQ1-15 Activity	Enable		

**Power Management\_**

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This category determines how much power consumption for the system after selecting the below items. Default value is Disable. The following pages tell you the options of each item & describe the meanings of each options.

Item	Options	Descriptions
<b>Power Management</b>	1. Disable (Min. Saving)	Global Power Management will be disabled.
	2. User Define (Max. Saving)	Users can configure their own power management.
	3. Min Saving	Pre-defined timer values are used such that all timers are in their MAX value.
	4. Max Saving	Pre-defined timer values are used such that all timers MIN value.

<b>PM Control by APM</b>	1. No	System BIOS will ignore APM when power managing the system.
	2. Yes	System BIOS will wait for APM's prompt before it enter any PM mode e.g. DOZE, STANDBY or SUSPEND. Note: If APM is installed, & if there is a task running, even the timer is time out, the APM will not prompt the BIOS to put the system into any power saving mode!
	Note: – if APM is not installed, this option has no effect.	
<b>Video Off</b>	1. Blank Screen	The system BIOS will only



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<b>Method</b>		blanks off the screen when disabling video.
	2. V/H SYN C+Blank	In addition to (1), BIOS will also turn off the V-SYNC & H-SYNC signals form VGA cards to monitor.

Item	Options	Descriptions
<b>Video Off Method (cont.)</b>	3. DPMS	This function is enabled for only the VGA card supporting DPMS.
	Note: Green monitors detect the V/H SYNC signals to turn off its electron gun.	
<b>Doze Mode</b>	1. Disable	System will never enter DOZE mode.
	2. 1 Min 5 Min 10 Min 15 Min 20 Min 30 Min 40 Min	Defines the continuous idle time before the system entering DOZE mode.  If any item defined in The options of “PM Events” is enabled & active, DOZE timer will be reloaded. When the system had entered in the Doze mode, any of the items that are defined in “PM Events ” will trigger the system to wake up.
	Note: Normally, STANDBY mode puts the system into low speed.	

Item	Options	Description
<b>Standby Mode</b>	1. Disable	System will never enter STANDBY mode.

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	2. 1 Min 5 Min 10 Min 15 Min 20 Min 30 Min 40 Min	Defines the continuous idle time before the system entering STANDBY mode.  If any item defined in The Options of “PM Events” is enabled & active, STANDBY timer will be reloaded. When the system has entered the Standby mode , any of the events defined in “PM Events” occur the system will be woken up from the Standby Mode,
		Note: Normally, STANDBY mode puts the system into low speed.

Item	Options	Descriptions
<b>Suspend Mode</b>	1. Disable	System will never enter SUSPEND mode.
	2. 1 Min 5 Min 10 Min 15 Min 20 Min 30 Min 40 Min	Defines the continuous idle time before the system entering SUSPEND mode. If any item defined in the Options of “PM Events” is enabled & active, SUSPEND timer will be reloaded when the system has not entered the Suspend Mode yet or if the system has been woken up from the Suspend Mode because the suspend mode’s timer was in time out.
		Note: Normally,SUSPEND mode puts the system into low speed,
Item	Options	Descriptions
<b>HDD Power Down</b>	1. Disable	HDD’s motor will not shut off.

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	2. 1 Min	Defines the continuous HDD idle time before the HDD enters the power saving mode (motor off). BIOS will turn off the HDD's motor when time is out.
	2 Min	
	3 Min	
	4 Min	
	5 Min	
	6 Min	
	7 Min	
	8 Min	
	9 Min	
	10 Min	
	11 Min	
	12 Min	
	13 Min	
	14 Min	
	15 Min	

PM Events	
IRQ3 (COM 2)	:Enable
IRQ4 (COM 1)	:Enable
IRQ5 (LPT 2)	:Enable
IRQ6 (Floppy Disk)	:Enable
IRQ7 (LPT 1)	:Enable
IRQ8 (RTC Alarm)	:Enable
IRQ9 (IRQ2 Redir)	:Enable
IRQ10 (Reserved)	:Enable
IRQ11 (Reserved)	:Enable
IRQ12 (PS/2 Mouse)	:Enable
IRQ13 (Coprocessor)	:Enable
IRQ14 (Hard Disk)	:Enable
IRQ15 (Reserved)	:Enable

The system will wake up from Doze Mode , Standby Mode, or Suspend Mode when any of the above options has been selected “Enable” and the events have occurred.

### *PNP/PCI Configuration Setup*

## CHAPTER 3 AWARD BIOS USER'S GUIDE

You can manually configure the PCI Device's IRQ. The following pages tell you the options of each item & describe the meanings of each options.

ROM PCI/ISA BIOS (2A69HM49)  
PNP/PCI CONFIGURATION SETUP  
AWARD SOFTWARE, INC.

PnP OS Installed:	: No	PCI IRQ Activated By	Level
Resources Controlled By	: Manual		
Reset Configuration Data	: Disabled	PCI IDE 2nd Channel	Enabled
		PCI IDE IRQ Map To	PCI-Auto
IRQ-3 assigned to :	Leagcy ISA	Primary IDE INT#	: A
IRQ-4 assigned to :	Leagcy ISA	Secondary IDE INT#	: B
IRQ-5 assigned to :	PCI/ISA PnP		
IRQ-7 assigned to :	PCI/ISA PnP		
IRQ-9 assigned to :	PCI/ISA PnP		
IRQ-10 assigned to :	PCI/ISA PnP		
IRQ-11 assigned to :	PCI/ISA PnP		
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		
DMA-3 assigned to :	PCI/ISA PnP	ESC : Quit	↓ → ← : Select Item
DMA-5 assigned to :	PCI/ISA PnP	F1 : Help	PU/PD/+/-: Modify
DMA-6 assigned to :	PCI/ISA PnP	F5 : Old Values	(Shift)F2 Color
DMA-7 assigned to :	PCI/ISA PnP	F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

**PnP OS Installed: No/Yes**

The system BIOS provides PNP features for the system's resource management. Choose "No" if the operating system don't supports the PnP feature. Choose Yes if the operating system supports the PnP feature. Some cards may only operate while using the "Yes" setting under Win95.

### Resources Controlled By

By Choosing “Auto” the system BIOS will detect the system resource and automatically assign the relative IRQ and DMA Channel for each peripheral.

*Note: There are limitations to this function. For example when choosing “Auto” you must be sure that all of the system add-on cards are PnP type.*

By Choosing “Manual”(default), the user will need to assign IRQ & DMA for add-on cards. Be sure that there is no conflict IRQ/DMA and I/O ports.

### Reset Configuration Data

The system BIOS supports the PnP feature so the system needs to record which resource is assigned and protect resources from conflict. Every peripheral device has a node which is called ESCD. This node records which resources are assigned to it. The system needs to record and update ESCD to the memory locations. These locations (4K) are reserved at the system BIOS.

If Disabled (default) is chosen the system's ESCD will update automatically when the new configuration varies from the last one.

If Enabled is chosen the system will be forced to update ESCDs if the system configuration has changed and then auto set this option to the “Disabled” mode.

IRQ-3	assigned to : Legacy ISA
IRQ-4	assigned to : Legacy ISA
IRQ-5	assigned to : PCI/ISA PnP
IRQ-7	assigned to : Legacy ISA
IRQ-9	assigned to : PCI/ISA PnP
IRQ-10	assigned to : PCI/ISA PnP
IRQ-11	assigned to : PCI/ISA PnP
IRQ-12	assigned to : PCI/ISA PnP
IRQ-14	assigned to : PCI/ISA PnP

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IRQ-15	assigned to	:	PCI/ISA	PnP
DMA-0	assigned to	:	PCI/ISA	PnP
DMA-1	assigned to	:	PCI/ISA	PnP
DMA-3	assigned to	:	PCI/ISA	PnP
DMA-5	assigned to	:	PCI/ISA	PnP
DMA-6	assigned to	:	PCI/ISA	PnP
DMA-7	assigned to	:	PCI/ISA	PnP

The above settings will be shown on the screen only if “Manual” is chosen for the *Resources Controlled By* function.

Legacy is the term which signifies that a resource is assigned to the ISA Bus and provides for non PnP ISA add-on card. PCI/ISA PnP signifies that a resource is assigned to the PCI Bus or provides for ISA PnP add-on cards and peripherals.

**PCI IRQ Activated By :**      **Level/Edge**

PCI IRQs use level or edge trigger, most PCI card use level trigger.

**Secondary PCI IDE:**      **Enabled/Disabled**

The system provides for a On-Board On-Chipset PCI IDE controller that supports Dual Channel IDE (Primary and Secondary). A maximum of 4 IDE devices can be supported. If the user to install the Off-Board PCI IDE controller (i.e. add-on cards), the user must choose which channels will be disabled. This will depend on which channel will be used for the Off-Board PCIIDE add-on card.

**PCI IDE IRQ Map To:**

**PCI-Auto:**      This setting is for off-board PCI IDE card and is fully compatible with PCI specifications.

**ISA:** This setting is used if the off-board PCI IDE card uses an edge trigger and IRQ routes directly to the ISA Bus.

*Note: The user will need to disable the on-board on-chipset PCI IDE controller when installing off-board PCI IDE add-on cards. (see the INTEGRATED PERIPHERALS SETUP) These two options choose the primary and secondary IDE Channel interrupts when the user installs off-board PCI IDE add-on cards.*

### *Load BIOS/Setup Defaults*

This Main Menu item loads the default system values. If the CMOS is corrupted the defaults are loaded automatically. Choose this item and the following message appears:

" Load Setup Defaults (Y / N) ? N "

To use the Setup defaults, change the prompt to "Y" and press < Enter >

*Note: The Setup defaults can be customized to increase performance. However the BIOS defaults can always be used as a back up if there is some problem with the system board operation.*

## *Integrated Peripherals*

ROM PCI/ISA BIOS (2A69HM49)  
 INTEGRATED PERIPHERALS  
 AWARD SOFTWARE, INC.

Intennal PCI/IDE	:Both		
IDE Primary Master PIO	: Auto		
IDE Primary Slave PIO	: Auto	PS/2 mouse	:Enabled funciton
IDE Secondary Master PIO	: Auto		
IDE Secondary Slave PIO	: Auto		
Primary IDE Prefetch	: Enabled		
Secondary IDE Prefetch	: Enabled		
IDE Burst Mode	: Enabled		
IDE Post Mode	: Enabled		
IDE HDD Block Mode	: Enabled		
Onboard FDD controller	: Enabled		
Onboard Serial Port 1	: 3F8/IRQ4		
Onboard Serial Port 2	: 2F8/IRQ3		
UART 2 Mode	: Standard		
		ESC : Quit	↓→← : Select Item
Onboard Parallel Port	: 378H/IRQ7	F1 : Help	PU/PD/+/-: Modify
Onboard Parallel Mode	: SPP	F5 : Old Values	(Shift)F2 Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	



**Internal PCI:**           **Both/Primary/Secondary/Disabled  
/IDE**

The system provides for a On-Board On-Chipset PCI IDE controller that supports Dual Channel IDE (Primary and Secondary). A maximum of 4 IDE devices can be supported.

**Master PIO:**           **Auto/Mode0/Mode1-4**

**IDE Primary  
Slave PIO:**           **Auto/Mode0/Mode1-4**

**IDE Secondary  
Master PIO:**         **Auto/Mode0/Mode1-4**

**IDE Secondary  
Slave PIO:**         **Auto/Mode0/Mode1-4**

For these 4 IDE option choose “Auto” to have the system BIOS auto detect the IDE HDD operation mode for PIO access.

*Note: Some IDE HDD can not operate at the responding HDD's mode. When the user has selected “Auto” and the system BIOS has accepted the HDD response mode the user may degrade the HDD's operation mode. Ex: IF the HDD reported it can operate in mode 4 but it is not operating properly the user will have to manually change the operation mode to mode 3.*

Choosing Mode 1-4 will have the system ignore the HDD's reported operation mode and use the mode selected instead.

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*Note: According to ATA specs, Mode 4 transfer rate is > Mode 3 > Mode 2 > Mode 1 > Mode 0. If the user's HDD can operate at Mode 3 the user can also select a slower Mode (ie Mode 0-2) but not a faster Mode (ie Mode 4).*

**Primary IDE Prefetch : Eabled/Disabled**

**Secondary IDE Prefetch: Enable/Disabled**

**IDE Burst Mode : Enable/Disabled**

**IDE Post Mode : Enable/Disabled**

The On-Board PCI/IDE supports prefetch, Burst, and Post function to increase performance for IDE devices..

### **IDE HDD**

**Block Mode: Enabled/Disabled**  
Enabled allows the Block mode access for the IDE HDD. Disable if not needed.

**Onboard FDD**

**Controller:**

**Enabled/Disabled**

The system has an on-board Super I/O chip with a FDD controller that supports 2 FDDs for 360K/720 K/1.2M/1.44M/2.8M. Choose "Enabled" to use the on-board FDD controller for accessing the FDD. Otherwise choose "Disabled" to use the off-board FDD controller.

**Onboard Serial**

**Port 1:**

**Disabled/(3F8/IRQ4)/(2F8/IRQ3)/  
(3E8/IRQ4)/(2E8/IRQ3)**

**Onboard Serial**

**Port 2:**

**Disabled/(3F8/IRQ4)/(2F8/IRQ3)/  
(3E8/IRQ4)/(2E8/IRQ3)**

The system has an On-board Super I/O chipset with 2 serial ports. The On-board serial ports can be selected as:

Disabled	
3F8/IRQ4	COMM1 uses IRQ4
2F8/IRQ3	COMM2 uses IRQ3
3E8/IRQ4	COMM3 uses IRQ4
2E8/IRQ3	COMM4 uses IRQ3

*Note: Because the ISA Bus Interrupt accepts low to high edge trigger, the interrupt request line can not be shared by multiple sources. If an off-board ISA add-on card with a serial port the user may have to disable the on-board serial port because it will conflict with IRQ request line for the off-board serial port.*

**UART 2**

**MODE:** **Standard/ASKIR/HPSIR(i.e. IrDA)**  
The system's built-in IR (Infra Red) is on the on-board Super I/O chipset and shares serial port 2 with UART 2. Only one option can be selected for serial port 2, either the IR or UART. Selecting the IR mode will prompt the following message:

**IR Function**

**Duplex:** **Half/Full**  
Users can choose between operating the IR in Half duplex or Full duplex mode. Half duplex designates one IR as a receiver and one as a transmitter simultaneously. Full duplex mode designates that the two IRs receive and transmit data together simultaneously.

**RxD, TxD**

**Active:** **Hi-Hi/Hi-Lo/Lo-Hi/Lo-L0**  
The user can choose between the preceding RxD (Receive Data), TxD (Transmit Data) activity levels.

**Onboard**

**Parallel Port:** **Disabled/(3BCH/IRQ7)/  
(278H/IRQ5)/(378H/IRQ7)**  
There is a built-in parallel port on the on-board Super I/O chipset that provides Standard, ECP, and EPP features. It has the following options:

Disable	
3BCH/IRQ7	Line Printer port 0

278H/IRQ5	Line Printer port 2
378H/IRQ7	Line Printer port 1

### Onboard

**Parallel Port: SPP/(EPP/SPP)/ECP(ECP/EPP)**

**SPP : Standard Parallel Port**

**EPP : Enhanced Parallel Port**

**ECP : Extended Capability Port**

To operate the onboard parallel port as Standard Parallel Port only choose "SPP." To operate the onboard parallel port in the ECP and SPP modes simultaneously choose "ECP/SPP." By choosing "ECP" the onboard parallel port will operate in ECP mode only. Choosing "ECP/EPP" will allow the onboard parallel port to support both the ECP and EPP modes simultaneously. The ECP mode has to use the DMA channel so choose the onboard parallel port with the ECP feature. After selecting it the following message will appear: "ECP Mode Use DMA" At this time the user can choose between DMA channels 3 or 1. The onboard parallel port is EPP Spec. compliant so after the user chooses the onboard parallel port with the EPP function and the following message will be displayed on the screen: "Parallel Port EPP Type." At this time either EPP 1.7 spec. or EPP 1.9 spec. can be chosen.

### *Supervisor/User Password Setting*

This Main Menu item lets you configure the system so that a password is required each time the system boots or an attempt is made to enter the Setup

program. Supervisor Password allows you to change all CMOS settings but the User Password setting doesn't have this function. The way to set up the passwords for both Supervisor and User are as follow:

1. Choose "Change Password" in the Main Menu and press <Enter>. The following message appears:

"Enter Password:"

2. The first time you run this option, enter your password up to only 8 characters and press <Enter>. The screen does not display the entered characters. For no password just press <Enter>.
3. After you enter the password, the following message appears prompting you to confirm the password:

"Confirm Password:"

4. Enter exact the same password you just typed again to confirm the password and press <Enter>.
5. Move the cursor to Save & Exit Setup to save the password.
6. If you need to delete the password you entered before, choose the Supervisor Password and press <Enter>. It will delete the password that you had before.
7. Move the cursor to Save & Exit Setup to save the option you set, otherwise the old password will still be used then next time you use your machine.

***IDE HDD Auto Detection***

You can use this utility to automatically detect the characteristics of most hard drives.

When you enter this utility, the screen asks you to select a specific hard disk for Primary Master. If you accept a hard disk detected by the BIOS, you can enter "Y" to confirm and then press <Enter> to check next hard disk. This function allows you to check four hard disks and you may press the <Esc> after the <Enter> to skip this function and go back to the Main Menu.

ROM ISA BIOS  
 CMOS SETUP UTILITY  
 AWARD SOFTWARE, INC.

HARD DISKS	TYPE	SIZE	CYLS	PRECOMP	LANDZ	SECTOR	MODE
Primary Master	:None	0	0	0	0	0	----
Primary Slave	:None	0	0	0	0	0	----
Secondary Master	:None	0	0	0	0	0	----
Secondary Slave	:None	0	0	0	0	0	----
Select Drive C				Option	: N		
				(N=Skip)			
OPTIONS	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
1Y	0	0	0	0	0	0	Normal
Note: Some Oses (Like SCO-UNIX) must use "Normal" for installation							
ESC : Skip							

## **Chapter 4**

### **VGA DRIVER**

#### **DOS Utility**

##### **1.Install Program: INSTDRV.EXE**

1. Most of the **SiS** drivers are in packed file form. You must unpack them before beginning installation.
2. To help you unpack and setup VGA drivers We provide an unpack and copy program **INSTDRV.EXE**.
3. **INSTDRV.EXE** can unpack and copy drivers to any desired location. For some software packages, **INSTDRV.EXE** can even complete setup for you.
4. To use **INSTDRV.EXE** use the following procedures:
  - (1) Insert **SiS SVGA Drivers-Setup diskette** in drive A or drive B.
  - (2) Change the current disk drive to the drive in which the disk has been inserted.
  - (3) Run the **INSTDRV.EXE** program:  
**A:\>instdrv            <Enter>**
  - (4) From the main menu, select the desired application software.
  - (5) Follow the instructions on the screen to complete the process.



- (6) After completion, exit the INSTDRV.EXE program.
- (7) You may start your software program by either:
  - (a) using the newly installed driver, or by
  - (b) continuing the installation in order to completely install the driver.
5. Take Note: For some software packages (e.g. ADI packages), the driver files can be placed in any desired directory.

**You should pay special attention to the "drive:\directory" assigned for these drivers. Otherwise, the installation may fail.**

## **2. SVGAUTL.EXE**

### **2.1 General Description**

SVGAUTL.EXE is one of the utilities of SiS 5596 display function. It supports three functions:

- (1) Video Mode Setting
- (2) Frame Rate Setting
- (3) Power Saving Setting

Since SiS 5596 VGA supports many enhanced Text Mode and Graphic Mode, you can use SVGAUTL.EXE to select the desired video mode. For 720x400, 640x480, 800x600, 1024x768, and 1280x1024 resolutions,

SiS 5596 VGA supports multiple frame rates. If your monitor can synchronize with these frame rates, you can use SVGAUTL.EXE to increase performance.

SiS 5596 also supports VESA DPMS Power Saving Modes. SVGAUTL.EXE can help you to set these functions.

### 2.2 Unpack & Copy

To unpack and copy "SVGAUTL.EXE" and related files to the desired locations, please use the following procedures:

1. Insert "Driver Setup" diskette in drive A or drive B.
2. Run "INSTDRV.EXE" program on drive A or drive B:

**A:>INSTDRV <Enter>**

3. In "SiS 5596 Super VGA Drivers Installation" menu, select "J. Utilities" to unpack and copy related files.(To select, type "H".)
4. In "Unpack & Copy Utilities" screen, key in the desired: **"drive:\directory"**.

Program will unpack & copy all related files to the assigned destination.

5. After "unpack and copy" is completed exit the INSTDRV.EXE program.

### 2.3 How to Use?

To use SVGAUTL.EXE:

1. Type SVGAUTL in the directory where it resides. For example,

**C:\> SVGAUTL <Enter>**  
(supposing that SVGAUTL.EXE resides in C:\)

2. The Main Menu will appear and direct you to configure SiS 5596.
3. When you complete configuration, you may save your preferences to "AUTOEXEC.BAT file and use it as your power-on (or hardware reset) default environment.

### 2.4 Understanding the Parameters?

The meaning of parameters used by SVGAUTL.EXE are explained below:

Syntax:

```
>SVGAUTL [/D:mode_no] [/F1:n1] [/F2:n2] [/F3:n3] [/F4:n4] [/  
PA:ta] [/PB:tb]
```

where

/D: Set the Video Mode to be mode\_no which is a hex number.

For example: Set 1024x768 256 color graphic mode.

```
>SVGAUTL /D:38 <Enter>
```

/F1: For 640x480, set frame rate to be n1 Hz. Three available frame rates are 60, 72, and 75 Hz.

For example : Set 640x480 graphic mode with 60Hz frame rate

```
>SVGAUTL /F1:60 <Enter>
```

/F2: For 800x600, set frame rate to be  $n_2$  Hz. Four available frame rates are 56, 60, 72, and 75 Hz.

For example : Set 800x600 graphic mode with 72Hz frame rate.

```
>SVGAUTL /F2:72 <Enter>
```

/F3: For 1024x768, set frame rate to be  $n_3$  Hz. Four available frame rates are 87 (Interlace), 60, 70, and 75 Hz.

For example : Set 1024x768 graphic mode with 60Hz frame rate.

```
>SVGAUTL /F3:60 <Enter>
```

/F4: For 1280x1024, set frame rate to be  $n_4$  Hz. Two available frame rates are 87 (Interlace) and 60 Hz.

For example : Set 1280x1024 graphic mode with 60Hz frame rate.

```
>SVGAUTL /F4:60 <Enter>
```

/PA: Set Standby Timer to be  $t_a$  minutes. ( $0 < t_a < 15$  min.)

For example : Set Standby Timer be 5 minutes.

```
>SVGAUTL /PA:5 <Enter>
```

/PB: Set Suspend Timer to be  $t_b$  minutes. ( $0 < t_b < 15$  min.)

For example : Set Suspend Timer be 5 minutes.

```
>SVGAUTL /PB:5 <Enter>
```

Note:

## CHAPTER 4 VGA SOFTWARE DRIVER

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1. Suspend Time would be " $t_a + t_b$ ". (i.e. standby time + suspend time)
2. They are not very accurate and should be considered as approximate indicators.

### 3. Video Modes

#### 3.1 Standard VGA Modes

MODE	TYPE	DISPLAY SIZE	COLORS SHADES	ALPHA FORMAT	BUFFER START	BOX SIZE	MAX. PAGES
0	A/N	320x200	16	40x25	B800	8x8	8
0*	A/N	320x350	16	40x25	B800	8x14	8
0+	A/N	360x400	16	40x25	B800	9x16	8
1	A/N	320x200	16	40x25	B800	8x8	8
1*	A/N	320x350	16	40x25	B800	8x14	8
1+	A/N	360x400	16	40x25	B800	9x16	8
2	A/N	640x200	16	80x25	B800	8x8	8
2*	A/N	640x350	16	80x25	B800	8x14	8
2+	A/N	720x400	16	80x25	B800	9x16	8
3	A/N	640x200	16	80x25	B800	8x8	8
3*	A/N	640x350	16	80x25	B800	8x14	8
3+	A/N	720x400	16	80x25	B800	9x16	8
4	APA	320x200	4	40x25	B800	8x8	1
5	APA	320x200	4	40x25	B800	8x8	1
6	APA	640x200	2	80x25	B800	8x8	1
7	A/N	720x350	4	80x25	<b>B000</b>	9x14	8
7+	A/N	720x400	4	80x25	<b>B000</b>	9x16	8
0D	APA	320x200	16	40x25	A000	8x8	8
0E	APA	640x200	16	80x25	A000	8x8	4
0F	APA	640x350	2	80x25	<b>B000</b>	8x14	2
10	APA	640x350	16	80x25	A000	8x14	2
11	APA	640x480	2	80x30	A000	8x16	1
12	APA	640x480	16	80x30	A000	8x16	1
13	APA	320x200	256	40x25	A000	8x8	1

**Note:** 1. A/N: Alpha/Numeric

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### 2. APA: All Point Addressable (Graphic)

MODE	DISPLAY SIZE	COLORS SHADES	FRAME RATE.	H-SYNC.	VIDEO FREQ.
0	320x200	16	70	31.5 K	25.1 M
0*	320x350	16	70	31.5 K	25.1 M
0+	360x400	16	70	31.5 K	28.3 M
1	320x200	16	70	31.5 K	25.1 M
1*	320x350	16	70	31.5 K	25.1 M
1+	360x400	16	70	31.5 K	28.3 M
2	640x200	16	70	31.5 K	25.1 M
2*	640x350	16	70	31.5 K	25.1 M
2+	720x400	16	70	31.5 K	28.3 M
3	640x200	16	70	31.5 K	25.1 M
3*	640x350	16	70	31.5 K	25.1 M
3+	720x400	16	70	31.5 K	28.3 M
4	320x200	4	70	31.5 K	25.1 M
5	320x200	4	70	31.5 K	25.1 M
6	640x200	2	70	31.5 K	25.1 M
7*	720x350	4	70	31.5 K	28.3 M
7+	720x400	4	70	31.5 K	28.3 M
0D	320x200	16	70	31.5 K	25.1 M
0E	640x200	16	70	31.5 K	25.1 M
0F	640x350	2	70	31.5 K	25.1 M
10	640x350	16	70	31.5 K	25.1 M
11	640x480	2	60	31.5 K	25.1 M
12	640x480	16	60	31.5 K	25.1 M
13	320x200	256	70	31.5 K	25.1 M

**Note :** i - interlaced mode

n - noninterlaced mode

### 3.2 Enhanced Video Modes

<b>MODE</b>	<b>TYPE</b>	<b>DISPLAY SIZE</b>	<b>COLORS SHADES</b>	<b>ALPHA FORMAT</b>	<b>BUFFER START</b>	<b>BOX SIZE</b>	<b>MAXP GS</b>
22	A/N	1056x352	16	132x44	B800	8x8	2
23	A/N	1056x350	16	132x25	B800	8x14	4
24	A/N	1056x364	16	132x28	B800	8x13	4
25	APA	640x480	16	80x60	A000	8x8	1
26	A/N	720x480	16	80x60	B800	9x8	3
29	APA	800x600	16	100x37	A000	8x16	1
2A	A/N	800x600	16	100x40	B800	8x15	4
2D	APA	640x350	256	80x25	A000	8x14	1
2E	APA	640x480	256	80x30	A000	8x16	1
2F	APA	640x400	256	80x25	A000	8x16	1
30	APA	800x600	256	100x37	A000	8x16	1
37	APA	1024x768	16	128x48	A000	8x16	1
38	APA	1024x768	256	128x48	A000	8x16	1
39	APA	1280x1024	16	160x64	A000	8x16	1
3A	APA	1280x1024	256	160x64	A000	8x16	1
40	APA	320x200	32K	40x25	A000	8x8	1
41	APA	320x200	64K	40x25	A000	8x8	1
42	APA	320x200	16.8M	40x25	A000	8x8	1
43	APA	640x480	32K	80x30	A000	8x16	1
44	APA	640x480	64K	80x30	A000	8x16	1
45	APA	640x480	16.8M	80x30	A000	8x16	1
46	APA	800x600	32K	100x37	A000	8x16	1
47	APA	800x600	64K	100x37	A000	8x16	1
48	APA	800x600	16.8M	100x37	A000	8x16	1
49	APA	1024x768	32K	128x48	A000	8x16	1
4A	APA	1024x768	64K	128x48	A000	8x16	1
4B	APA	1024x768	16.8M	128x48	A000	8x16	1
4C	APA	1280x1024	32K	160x64	A000	8x16	1
4D	APA	1280x1024	64K	160x64	A000	8x16	1



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MODE	DISPLAY SIZE	COLORS SHADES	FRAME RATE.	H-SYNC.	VIDEO FREQ.
22	1056x352	16	70	30.5 K	40.0 M
23	1056x350	16	70	30.5 K	40.0 M
24	1056x364	16	70	30.5 K	40.0 M
25	640x480	16	60	31.5 K	25.1 M
26	720x480	16	60	31.5 K	25.1 M
29	800x600	16	56	35.1 K	30.0 M
29*	800x600	16	60	37.9 K	40.0 M
29+	800x600	16	72	48.0 K	50.0 M
29#	800x600	16	75	46.8 K	50.0 M
2A	800x600	16	56	35.1 K	36.0 M
2D	640x350	256	70	31.5 K	25.1 M
2E	640x480	256	60	31.5 K	25.1 M
2E*	640x480	256	72	37.9 K	31.5 M
2E+	640x480	256	75	37.5 K	31.5 M
2F	640x400	256	70	31.5 K	25.1 M
30	800x600	256	56	35.1 K	36.0 M
30*	800x600	256	60	37.9 K	40.0 M
30+	800x600	256	72	48.0 K	50.0 M
30#	800x600	256	75	46.8 K	50.0 M
37i	1024x768	16	87	35.5 K	44.9 M
37n	1024x768	16	60	48.4 K	65.0 M

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37n+	1024x768	16	70	56.5 K	75.0 M
37n#	1024x768	16	75	60.2 K	80.0 M
38i	1024x768	256	87	35.5 K	44.9 M
38n	1024x768	256	60	48.4 K	65.0 M
38n+	1024x768	256	70	56.5 K	75.0 M
38n#	1024x768	256	75	60.2 K	80.0 M
39i	1280x1024	16	89	48.8 K	80.0 M
39n	1280x1024	16	60	65.0 K	110.0 M
3Ai	1280x1024	256	89	48.8 K	80.0 M
3An	1280x1024	256	60	65.0 K	110.0 M
40	320x200	32K	70	31.5 K	25.1 M
41	320x200	64K	70	31.5 K	25.1 M
42	320x200	16.8M	70	31.5 K	25.1 M
43	640x480	32K	60	31.5 K	25.1 M
43*	640x480	32K	72	37.9 K	31.5 M
43+	640x480	32K	75	37.5 K	31.5 M
44	640x480	64K	60	31.5 K	25.1 M
44*	640x480	64K	72	37.9 K	31.5 M
44+	640x480	64K	75	37.5 K	31.5 M
45	640x480	16.8M	60	31.5 K	25.1 M
45*	640x480	16.8M	72	37.9 K	31.5 M
45+	640x480	16.8M	75	37.5 K	31.5 M

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46	800x600	32K	56	35.1 K	36.0 M
46*	800x600	32K	60	37.9 K	40.0 M
46+	800x600	32K	72	48.0 K	50.0 M
46#	800x600	32K	75	46.8 K	50.0 M
47	800x600	64K	56	35.1 K	36.0 M
47*	800x600	64K	60	37.9 K	40.0 M
47+	800x600	64K	72	48.0 K	50.0 M
47#	800x600	64K	75	46.8 K	50.0 M
48	800x600	16.8M	56	35.1 K	36.0 M
48*	800x600	16.8M	60	37.9 K	40.0 M
48+	800x600	16.8M	72	48.0 K	50.0 M
48#	800x600	16.8M	75	46.8 K	50.0 M
49i	1024x768	32K	87	35.5 K	44.9 M
49n	1024x768	32K	60	48.4 K	65.0 M
49n+	1024x768	32K	70	56.5 K	75.0 M
49n#	1024x768	32K	75	60.2 K	80.0 M
4Ai	1024x768	64K	87	35.5 K	44.9 M
4An	1024x768	64K	60	48.4 K	65.0 M
4An+	1024x768	64K	70	56.5 K	75.0 M
4An#	1024x768	64K	75	60.2 K	80.0 M
4Bi	1024x768	16.8M	87	35.5 K	44.9 M
4Ci	1280x1024	32K	89	48.8 K	80.0 M

4Di	1280x1024	64K	89	48.8 K	80.0 M
-----	-----------	-----	----	--------	--------

**Note:** i - interlaced mode

n - noninterlaced mode

- For the limitation of memory bandwidth in 1MB DRAM configuration, the following video modes is not supported in 1MB configuration: modes 45\*, 45+, 46+, 46#, 47+, and 47#.

## Software Drivers

### 1. Windows 3.1

#### 1.1 Driver Files

1. The enclosed SiS 5596 Windows 3.1 driver contains the following files (in compressed format) :

**Setup Programs** A group of programs used to setup drivers.

<b>VGA800.DR_</b>	800x600	16-color driver
<b>VGA1024.DR_</b>	1024x768	16-color driver
<b>VGA1280.DR_</b>	1280x1024	16-color driver
<b>VGA256.DR_</b>	256-color driver (for all resolution)	
<b>VGA32K.DR_</b>	32K-color driver (for all resolution)	
<b>VGA64K.DR_</b>	64K-color driver (for all resolution)	
<b>VGA16M.DR_</b>	16M-color driver (for all resolution)	
<b>VDD SIS.386</b>	Graber file for all resolution and color	

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**OEMSETUP.INF** OEMSETUP file for setup procedure

**OEMSYS.INF** Same content as OEMSETUP.INF for setup procedure

**DCI Related Programs** DCI driver files

2. The amount of video memory required for each resolution are as follow:

<b>Resolution</b>	<b>1MByte DRAM</b>	<b>2MByte DRAM</b>
640x480x8	√	√
640x480x16	√	√
640x480x24	√	√
800x600x4	√	√
800x600x8	√	√
800x600x16	√	√
800x600x24	X	√
1024x768x4	√	√
1024x768x8	√	√
1024x768x16	X	√
1280x1024x4	√	√
1280x1024x8	X	√

**Note:**1. x4 (4 bit/pixel): 16-color mode,  
x8 (8 bit/pixel): 256-color mode,  
x16 (16 bit/pixel): 64K-color mode,  
x24 (24 bit/pixel): 16M-color mode.

2. For 32K-color mode, it uses 15 bit/pixel (x15) and requires the same amount of memory as 64K-color mode (x16).

3. If you setup a mode that requires more video memory than you have installed on your adapter the result will be unpredictable.

### 1.2 Installation

#### 1.2.1 Unpack & Copy

To unpack and copy drivers to the desired location, please use the following procedures:

1. Boot up Windows using standard VGA mode.
2. Insert "SiS 5596 Drivers Disk # 3" into drive A or drive B.
3. In Windows Program Manager Screen, choose "File" item.
4. In "File Item List", choose "Run" item.
5. In "Run" Screen, key-in "a:\setup" or "b:\setup".
6. Follows the directions appeared on the screen to complete the un-pack & copy procedures.
7. After unpack & copy is completed, a "SiS Multimedia Vx.xx" program group would be created and shown on screen.

#### 1.2.2 Graphics Setup

1. In "SiS Multimedia Vx.xx" program group, choose "SiS Multimedia Package" icon to enter setup screen.
2. In "Setup" Screen, choose "Graphics" to enter the graphics setup screen.
3. In "Graphics" setup screen, choose the desired options.
4. After completing your selections, choose "OK" to activate.

5. Choose "Restart Windows" to re-boot Windows using new settings. Or, choose "Continue" to continue your current Windows processes.

(Upon rebooting Windows your new settings will activate.)

### 1.2.3 Power Saving Setup in Windows

1. In the "Graphics" setup screen choose "power\_saver" to the enter the power\_saver setup screen.
2. In "Power\_Saver Setup" Screen, choose the desired options.
3. After completing the selections, choose "OK" to activate selections.
4. After completing setup, the power\_saver would take effect as you requested and use the normal process for continuing use.

### 1.2.4 Zoom\_Key Setup

In the "Graphics" setup screen choose "zooming" to define "hot keys" for zoom-in or zoom-out screen without entering the setup program.

The operation principles of zoom-in and zoom-out are as follows:

- (1) The resolution change sequence for zoom-in is  
 $1024 \times 768 \implies 800 \times 600 \implies 640 \times 480$  .
- (2) The resolution change sequence for zoom-out is  
 $640 \times 480 \implies 800 \times 600 \implies 1024 \times 768$  .
- (3) But you must first be able to zoom-in before you may zoom-out, that means you can not get a resolution larger than one you have setup.

To use this feature use the following procedures.

1. In the "Graphics" setup screen, choose "zooming" to enter the "Zooming Hotkey" screen.
2. In the "Zooming Hotkey" Screen, choose which "hot key" you would like to use and enable it.
3. After completion, choose "OK" to activate selections.
4. After you complete setup, you may use your own defined hot keys to zoom-in or zoom-out on the screen.

### 1.2.5 Notes

1. The setup programs should be placed on the root of the diskette and the drivers should be placed on the subdirectory "\windows".
2. All the driver files (i.e. "VGA\*.DRV") are in compressed format, therefore you can't use Windows Setup Program to setup them before they are de-compressed.
3. The power saver's timer settings would be effective even when exiting Windows and returning to DOS.

## 1.3 Video Operations

### 1.3.1 DCI Function

SiS 5596 supports DCI driver for software MPEG playback and other media player programs which can take advantage of DCI.

The SiS 5596 DCI driver is automatically loaded during the "Windows Driver Unpack & Copy" process. Therefore it should be transparent to the end-user and any media players can take advantage of it.

### 1.3.2 SiS MMPlay (SW MPEG)



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To make SW MPEG playback more user friendly than the original SW MPEG player provided, SiS provides an MMPlay application program to provide an VCP-like (Video Cassette Player) interface.

**To take advantage of the SiS MMPlay, you must first install one SW MPEG Playback program such as "Xing SW MPEG Player". Si has only provided an interface but not a SW MPEG Player. There must be an SW MPEG Player or the Si MMPlay will not work.**

To use the Si MMPlay, you follow the procedures below:

1. In "Si Multimedia Vx.xx" program group, choose the "Si Multimedia Package" icon to enter the setup screen.
2. In "Setup" Screen, choose "Video" to enter the "Video Utilities" or the "Video Configuration" operations screen.
3. In "Video Utilities" or "Video Configuration" operations screen, choose "SW MPEG" item and the "Si MMPlay" icon (VCP-like icon) will appear.
4. Use the SW MPEG playback as you like.

### 1.3.3 Notes on DCI & MMPlay

SM=Support Mode

NS=Not Support

IM=Insufficient Memory

TL=Threshold Limitation

VGA Mem.	Resolution	Color	Frame Rate	
512 KB	640X480	16	60	NS
		256	60	IM
			72	IM

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			75	IM
			85	IM
512 KB	800X600	16	56	NS
			60	NS
VGA Mem.	Resolution	Color	Frame	
			75	NS
			85	NS
		256	56	IM
			60	IM
			72	IM
			75	IM
			85	IM
512 KB	1024X768	16	60	NS
			70	NS
			75	NS
			85	NS
			87 I	NS
1 MB	640X480	16	60	NS
		256	60	SM

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			72	SM
			75	SM
			85	SM
		32/64K	60	IM
VGA Mem.	Resolution	Color	Frame	
			72	IM
			75	IM
			85	IM
		16.7M	60	IM
1 MB	800X600	16	56	NS
			60	NS
			72	NS
			75	NS
			85	NS
		256	56	SM
			60	SM
			72	SM
			75	SM
			85	SM

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		32/64K	56	IM
			60	IM
1 MB	1024X768	16	60	NS
			70	NS
VGA Mem.	Resolution	Color	Frame	
			75	NS
1 MS	1024X768	16	85	NS
			87 I	NS
		256	60	SM
			70	SM
			75	SM
			85	TL
			87 I	NS
1 MB	1280X1024	16	60	NS
			75	NS
			87 I	NS
1.5 MB	640X480	16	60	NS
		256	60	SM
			72	SM

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			75	SM
			85	SM
		32/64K	60	SM
			72	SM
VGA Mem.	Resolution	Color	Frame	
			75	SM
			85	SM
		16.7M	60	SM
			72	SM
			75	SM
			85	SM
1.5 MB	800X600	16	56	NS
			60	NS
			72	NS
			75	NS
			85	NS
		256	56	SM
			60	SM
			72	SM

## CHAPTER 4 VGA SOFTWARE DRIVER

---

			75	SM
			85	SM
		32/64K	56	SM
			60	SM
VGA Mem.	Resolution	Color	Frame	
			72	SM
			75	SM
			85	SM
		16.7M	56	IM
			60	IM
			72	IM
			75	IM
			85	IM
1.5 MB	1024X768	16	60	NS
			70	NS
1.5 MB	1024X768	16	75	NS
			85	NS
			87 I	NS
		256	60	SM

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---

			70	SM
			75	SM
			85	TL
			87 I	NS
VGA Mem.	Resolution	Color	Frame	
		32/64K	60	IM
			70	IM
			75	IM
			85	IM
			87 I	NS
1.5 MB	1280X1024	16	60	NS
			75	NS
			87 I	NS
		256	60	IM
			75	IM
			87 I	NS
2 MB	640X480	16	60	NS
		256	60	SM
			72	SM

## CHAPTER 4 VGA SOFTWARE DRIVER

---

			75	SM
			85	SM
		32/64K	60	SM
			72	SM
VGA Mem.	Resolution	Color	Frame	
			75	SM
			85	SM
		16.7M	60	SM
			72	SM
			75	SM
			85	SM
2 MB	800X600	16	56	NS
			60	NS
			72	NS
			75	NS
			85	NS
2 MB	800X600	256	56	SM
			60	SM
			72	SM



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---

			75	SM
			85	SM
		32/64K	56	SM
			60	SM
VGA Mem.	Resolution	Color	Frame	
			72	SM
			75	SM
			85	SM
		16.7M	56	SM
			60	SM
			72	SM
			75	SM
			85	SM
2 MB	1024X768	16	60	NS
			70	NS
			75	NS
			85	NS
			87 I	NS
		256	60	SM

## CHAPTER 4 VGA SOFTWARE DRIVER

---

			70	SM
			75	SM
			85	TL
			87 I	NS
VGA Mem.	Resolution	Color	Frame	
		32/64K	60	SM
			70	SM
			75	SM
			85	TL
			87 I	NS
2 MB	1280X1024	16	60	NS
			75	NS
			87 I	NS
		256	60	IM
			75	IM
			87 I	NS

### MMPLAY.EXE Button Description

## CHAPTER 4 VGA SOFTWARE DRIVER

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Power On/Off



Open File & Type Control



Minimize This Application



Eject CD Title



Fast Backward



Fast Forward



Mark in



Mark out



Pause



Play



Stop



End



Begin



Volume increase



: Volume decrease

### Operation Notes

1. Sometimes the user cannot use the “open CD Movie” selection to open a CD title the first time. It seems that some CD-players do not work well with the XING Driver. However, once the CD title has been opened by the “open file” selection, the “open CD Movie” selection will work with no problem.
2. The application is not working with Mediamatics’ software MPEG driver in this version.
3. The “normal size” and “full screen” are not supported in some modes. If any one of these two selections is not shown on the list, it implies that it is not supported by DCI in the current mode. If shown, they are working well with DCI. To check which mode is supported, please refer to the table above.
4. The user of the shared memory mother board should note that the video performance when using two slots of DRAM configuration is better than that of a one slot configuration.

## 2. OS/2 V3.0 (Warp)

### 2.1 Driver Files

1. The SiS 5596 OS/2 3.0 driver files resides on the "SiS 5596 Driver Diskette #5 Sub-directory OS2WARP (i.e. \ OS2WARP)".

2. The enclosed SiS 5596 OS/2 3.0 driver contains the following files:

**SISINST.CMD**    Si driver install program  
**SVGA.EXE**        Si PMI Generator  
**S768256.DL@**    Si IBMDEV32.DLL Display Driver  
**OTHERS** other files required during installation

### 2.2 Installation

#### Before install SiS 5596 OS/2 drivers:

1. Install your OS/2 system using "**VGA display**" option (i.e. standard VGA).
2. Start your OS/2 system.

#### Install SiS 5596 OS/2 Warp drivers as following procedures:

1. Enter "OS/2 window" or "OS/2 full screen".
2. Insert "**SiS 5596 Driver**" diskette #5 in drive A or drive B.
3. Change to the directory which contains the **SiS 5596 OS/2 3.0** display drivers and type

SISINST [drive] <Enter>, (where [drive] is the boot drive character).

For example:    A:\ SISINST C

(suppose drive C is the boot drive)

4. All the Driver Files will be copied to a subdirectory C:\SISDRV.
5. The "Display Driver Install" menu appears. Choose the "Primary Display Adapter" option. Click "OK".
6. The "Primary Display Adapter Type" menu appears. "**SiS 5596**" Super VGA Driver" is shown in the box. Click "OK" to continue.

7. The "Display Driver Install" menu appears again. Click "OK" to continue.
8. The "Select Display Resolution" menu appears. The following display drivers shown in the box:  
640x480 256 colors driver (default resolution)  
Choose this display driver.
9. The "Source Directory" menu is shown on screen. Specify the "drive:\directory" holds the **SiS 5596** OS/2 3.0 display drivers.  
(You can choose C:\SISDRV in this case)  
The program would install the selected display driver for you and would create an "SiS Setup" icon for your further changing modes.
10. When the display driver installation is completed, shut down the system and restart your OS/2 3.0.
11. After OS/2 restart in 640x480x256-color completed, you may select "SiS Setup" icon to change resolution, color, and frame rate. After completing your selection, you must restart OS/2 to make your selection active.
12. **SiS 5596** supports the following resolutions:

640x480	256-colors
800x600	256-colors
1024x768	256-colors
1280x1024	256-colors (only suits for 2MB)
640x480	64K-colors
800x600	64K-colors
1024x768	64K-colors (only suits for 2MB)
640x480	16.7M-colors

800x600            16.7M-colors (only suits for 2MB)

### **3. Autodesk ADI 4.2-Protected Mode**

#### **3.0 General Description**

##### **3.0.1 Driver Files**

1. The enclosed **SiS 5596** ADI driver contains the following file:

**RCPSIS.EXP** Si ADI Driver (for all resolutions & colors)

Note: This version of the ADI driver does not support 16-color operation.

2. This driver can be used for a series of Autodesk Inc. products including:
  - (1) AutoCAD/386 R11
  - (2) AutoCAD/386 R12
  - (3) AutoShade/386 V2.0
  - (4) 3D Studio V3.0
3. The installation process varies from one program to another, but the first step of installation is the same for all these programs:

"To unpack and copy drivers to the desired location".
4. As to the real installation procedures for each program, we will give a detailed description in Sec. 3.1 to Sec. 3.4.

##### **3.0.2 Unpack & Copy**

To unpack and copy drivers to desired locations use the following procedures:

1. Insert "Driver Setup" diskette in drive A or drive B.

2. Run "INSTDRV.EXE" program on drive A or drive B.

For example,

**A:\>INSTDRV <Enter>**

3. In "SiS 5596 Super VGA Drivers Installation" menu, select "G. ADI 4.2" to unpack and copy drivers.(To select, type "G".)
5. In "Unpack & Copy ADI 4.2 Drivers" screen,  
key in the "**drive:\directory**" of the desired locations.  
(default C:\ADI42).Program would unpack & copy all related driver files to where you assign.
6. After "unpack and copy" is completed, exit the INSTDRV.EXE program.
7. Refer to Sec. 3.1 to Sec. 3.4 for the complete installation procedures of each program.

### 3.1 AutoCAD R11 Setup

1. The following procedures assume that:
  - (1) You have completed the "unpack & copy" procedure.
  - (2) Your ADI 4.2 drivers are located in C:\ADI42.
2. Add the following setting to your own batch file for AutoCAD R11 (say ACADR11.BAT) or to your "AUTOEXEC.BAT" file:  
**SET DSPADI=\ADI42\RCPSIS.EXP <Enter>**
3. Delete the configure file ACAD.CFG resides in \ACAD directory.
4. Type **ACADR11 <Enter>**  
to configure your AutoCAD R11 system.



5. In "Select Display Device:" item, choose "ADI P386 V4.0/4.1 display."
6. In "Select Display Resolution" screen choose the desired display driver.
7. Complete all the instructions, and the system will start with the desired display setting.

### 3.2 AutoCAD R12 Setup

1. The following procedures assume that
  - (1) You have completed the "unpack & copy" procedure.
  - (2) Your Si ADI 4.2 drivers are located in C:\ADI42.
  - (3) Your AutoCAD R12 program is located in C:\ACADR12.
  - (4) Your AutoCAD R12 default drivers are located in C:\ACADR12\DRV.
  - (5) Your AutoCAD R12 configure file ACAD.CFG is located in C:\ACADR12.
2. Copy the following driver file to C:\ACADR12\DRV:

**RCPSIS.EXP**

You may complete this step by

**COPY C:\ADI42\RCPSIS.EXP C:\ACADR12\**

**DRV**

3. Delete your original ACAD.CFG file. You may complete this step by

**C:\ACADR12\ACAD.CFG**
4. Restart your AutoCAD R12 program as usual.
5. AutoCAD R12 will ask you to complete the configuration procedures since it can't find the configure file ACAD.CFG.

6. Follow the instructions of AutoCAD R12 to complete configuration.
7. In "Available Video Displays:" choose the "Si Super VGA ADI v4.2 Display and Rendering driver" item.
8. In "Select Display Resolution" screen, choose the desired display driver.
9. Complete the entire process and the system will utilize the new settings.

### 3.3 AutoShade R2.0 Setup

1. The following procedures assume that:
  - (1) You have completed the "unpack & copy" procedure.
  - (2) Your ADI 4.2 drivers are located in C:\ADI42.
2. Add the following settings to your batch file for AutoShade R2.0 (say SHADE2.BAT) or to your "AUTOEXEC.BAT" file.
  - (a) For display driver setting,

**SET DSPADI=\ADI42\RCPSIS.EXP**

- (b) For rendering driver setting,

**SET RDPADI=\ADI42\RCPSIS.EXP**

3. Delete the configure file SHADE.CFG.
4. Type **SHADE2** <Enter> to re-configure the AutoShade.
5. While prompting "Select display device:", choose "P386 AutoDesk Device Interface display driver."
6. While prompting "Select rendering display driver:", choose "P386 AutoDesk Device Interface rendering driver."

7. Complete the entire process and the system will utilize the new settings.

### 3.4 3D Studio Version 3.0 Setup

1. The following procedures assume that:
  - (1) You have completed "unpack & copy" procedure.
  - (2) Your ADI 4.2 drivers are located in C:\ADI42.
2. Create your own **3D Studio V3.0 batch file (say 3DS3.BAT)** and add the following settings to it, or add the following settings to your "AUTOEXEC.BAT" file.
  - (1) **SET RCPADI=C:\ADI42\RCPSIS.EXP**
  - (2) **SET RDPADI=C:\ADI42\RCPSIS.EXP**
3. Execute the new 3DS batch file or reboot the computer using the new "AUTOEXEC.BAT" as to make the new settings effective.
4. Change your current working directory to \3DS3 (where your 3D Studio V3.0 usually resides).
5. Delete original configuration file "3DADI.CFG".
6. Type **3DS VIBCGF <Enter>** to configure your display environment.
7. After the "Company Register Screen" appears, press **<Enter>** to continue.
8. The "Video Environment Configuration Screen" will appear. Please follow the following procedures to configure your video display environment.
  - (1) In "Main-Display" item,
    - (a) Press **<Enter>** The selection menu will appear.
    - (b) In selection menu, move cursor to "**RCPADI**". Press **<Enter>** to select.

- (2) In "Material-Display" item,
  - (a) Press <Enter> The selection menu will appear.
  - (b) In selection menu, move cursor to "**RCPADI**". Press <Enter> to select.
- (3) In "Render-Display" item,
  - (a) Press <Enter> The selection menu will appear.
  - (b) In selection menu, move cursor to "**RCPADI**" or "**RDPADI**". Press <Enter> to select.
- (4) Complete the other selections and exit configuration.
9. After exiting configure, 3DS will boot automatically using the environment you just selected.
10. If your previous configuration is OK, 3DS will ask you to make a detailed configuration for **SiS 5596** drivers.

If this doesn't happen, please check your previous procedures or contact the technical support people.
11. In the detail configuration for **SiS 5596** drivers, just follow the instructions appear on the screen and make your own choice. If you have any problems contact the technical support personnel.
12. After detail configuration, you will enter the 3DS main display screen and you may begin your 3D Studio work in the environment of your selection.
13. After completing the detail configuration you may enter 3D Studio in the same configuration simply by typing:

\3DS\3DS <Enter>
14. If you want to change your video configuration follow the procedures mentioned before to re-configure.

## **10. Windows NT 3.1 & 3.5**

### **10.1 Driver Files**

1. The enclosed SiS 5596 Windows NT 3.1 drivers are:

**SISTAG**

**SISV.SYS**

**SISV256.DLL**

**SISV.DLL**

**OEMSETUP.INF**

2. All the 16-color, 256-color, 32K/64K-color, and 16M-color drivers are available.
3. There is no "Unpack & Copy" procedure in Windows NT 3.1 driver installation.

## **10.2 Installation**

### **10.2.1 Windows NT Setup**

1. Boot up Windows NT.
2. Run the following procedures:
  - a) Windows NT setup
  - b) Options
  - c) Change Systems Settings
  - d) Display
  - e) Other

Then respond to installation prompts.

## **11. Windows 95**

### 11.1 Driver Files

1. The enclosed SiS 5596 Windows 95 drivers files are:
  - SISMINI.VXD**
  - SIS596.INF**
  - SIS596.DRV**
  - SISTOOL.EXE**
2. All the 16-color, 256-color, 32K/64K-color, and 16M-color drivers are available.
3. There is no "Unpack & Copy" procedure in Windows 95 driver installation. Just follow the installation procedure to complete it.
4. After you have completed the driver installation, you may build an icon for "SISTOOL.EXE" and take advantage of this program to change resolution, color, frame rate, and font size.
5. To take advantage of "SISTOOL.EXE", we recommend installing the driver from hard disk, i.e. copy driver files from floppy to one hard disk directory, e.g. \SIS5596.

### 11.2 Installation

1. Boot up Windows 95.
2. In Windows 95 "Booted" Screen, select "Start" item.
3. In "Start" Screen, select "Settings" item.
4. In "Settings" Screen, select "Control Panel" item.
5. In "Control Panel" Screen, select "Display" icon.
6. In "Display Properties" Screen, select "Settings" item.
7. In refreshed "Display Properties" Screen select "Change Display\_Type" item.

8. In "Change Display Type" Screen select "Adapter Type ==> Change" item.
9. In "Select Device" Screen, select "Have Disk..." item.
10. In "Install From Disk" Screen, select your driver source e.g. C:\SIS5596
11. In new "Select Device" Screen, "SiS 5596" will appear. Select "OK". Windows 95 will perform the driver installation.
12. After completing installation, Windows 95 will go back to "Change Display Type" Screen, select "Close" item.
13. Windows 95 will return to "Display Properties" Screen and you may select desired resolutions by changing the "Desktop area" pointer, desired color by changing "Color Palette" value, and desired font size by changing "Font size".
14. After completing selection choose "Apply" to complete the whole installation.
15. Windows 95 will ask "Do you want to restart Windows?". Choose "Restart" to make your selection active and work in your selected mode.

### 11.3 Use "SISTOOL.EXE"

You must complete driver installation and set to one of the video modes before taking advantage of the "SISTOOL.EXE" The "SISTOOL" icon will automatically be added to the Windows 95 desktop during driver setup in the Win95 Driver Rev. 1.04A or later.

1. To use "SISTOOL.EXE" select the "SISTOOL" icon and click your mouse twice to execute this program. The "SiS 5596 VGA Tool" screen will appear and you may select resolution, color, frame rate, and font size from this screen.

2. After completing your selection, select "OK" and restart your Windows 95 program.

If you don't have the desired settings check the settings again.