Table of Contents

2

Section 1   Introduction

1-1 How To Use This Manual

This manual provides information necessary for Original Equipment Manufacturers (OEMs) to build a PC-AT compatible system using the Pentium PCI motherboard. For the end-users, this manual is a good reference to understand and properly use the motherboard. Section 1 gives an overview of the SQ599 all-in-one motherboard. Section 2 guides user through configuration and installation. Section 3 provides the information for the system setup procedure. Section 4 provides the Basic Input Output System (BIOS) firmware related information. Section 5 provides the VGA software driver installation procedure.

1-2 Overview

The Pentium PCI motherboard is designed by SiS 5511/5512/5513 chipset which is developed by *SiS*. The *SiS* chipset provides an integrated IDE controller with two enhanced PCI IDE interfaced up to four devices. The Winbond W83787F supports super I/O function and floppy. The I/O provides two enhanced UART 16C550 fast serial ports and one parallel port with EPP/ECP capability.

The motherboard supports Write-Back cache, which can be 256KB/512KB/1MB, and Pipeline Burst cache to provide workstation level computing performance. A Pentium OverDrive^{TM} socket provides access to future performance enhancements, and SIMM sockets support 8MB of system memory up to 128MB DRAM or EDO RAM.

The SQ599 motherboard supports the 75/90/100/120/133/150/166/200MHz Pentium CPU as well as the Cyrix 6x86 line. It can be upgrade by P55C CPU.

1-3 Product Specification

CPU
- *intel* Pentium 75-200MHz processors, Cyrix 6x86
- *intel* Pentium P55C processor

System Chipset
- High performance SiS5511/5512/5513 chipset

VGA Chipset
- SiS6205 64 bit VGA with Playback function
- Share system memory up to 2MB which can be choiced by BIOS setup

Memory/Cache
- High performance direct mapped cache controller with write-back scheme
- 256KB SRAM on board to 512KB/1MB SRAMs or 256/512K Pipeline Burst
- Support 72-pin Fast Page and EDO DRAM SIMM.
- Support four 72-pin memory sockets up to 128MB on board by using 2MB, 4MB and 8MB x 32/36 parity or non-parity SIMM modules.
  4MB - 1MBx32/36   8MB - 2MBx32/36   16MB - 4MBx32/36
  32MB - 8MBx32/36
- Supports FLASH EPROM for Windows 95 Plug & Play

Expansion Bus
- Three PCI slots and four ISA slots

I/O Devices
- Two PCI enhanced IDE to Mode 4 and interface for four devices
- 1.2/1.44MB Floppy
- Two faster serial ports
- One parallel port with EPP/ECP capability
- One AT keyboard connector and PS/2 mouse connector

Software Compatibility
- Compatible with UNIX, NOVELL, WINDOWS 3.X, WINDOWS 95, WINDOW NT, OS/2, and DOS etc.

BIOS
- AWARD BIOS **-** Flash EPROM

1-4 Board Layout

Section 2 Configuration Guide

2-1 Memory Configuration

The SQ599 motherboard supports standard Fast Page DRAM or EDO DRAM improve the DRAM read performance. The motherboard provides four 72-pin SIMM sockets.It can be 1MBx32/36(4MB), 2MBx32/36(8MB), 4MBx32/36(16MB) and 8MBx32/36(32MB). The memory requires 70ns for fast Page DRAM and 60ns for EDO DRAM. It can use 1piece SIMM module which must be setup on "SIMM1" If you use 2 pieces SIMM modules, you must setup on "SIMM 1 & SIMM 2" or "SIMM 3 & SIMM 4". Please refer the board layout drawing on page 5.

2-2 Jumper Settings

There are several jumper blocks that are used to configure the mainboard.

2-2-1 CPU TYPE SELECTION

CPU Speed	Clock Speed	J14	J15	JP16	JP17
75MHz	50MHz	Open	Open	Open	Close
90MHz	60MHz	Open	Open	Close	Open
100MHz	66MHz	Open	Open	Close	Close
110MHz	55MHz	Open	Close	Open	Open
120MHz	60MHz	Open	Close	Close	Open
133MHz	66MHz	Open	Close	Close	Close
150MHz	60MHz	Close	Close	Close	Open
166MHz	66MHz	Close	Close	Close	Close
200MHz	66MHz	Close	Open	Close	Close

Cyrix 6x86 - Set as Intel and **Close** Jumper 22

    example - 6x86 133/P166 set as Intel 133MHz and close JP22

2-2-2 OTHER JUMPER SETTING

JP1	Open	Color	(DEFAULT)
	Close	Mono	
JP19	1-2	Normal	(DEFAULT)
	2-3	Clear CMOS	
JP24	Open	EPOM BIOS	
	Close	FLASH BIOS	
JP20		External RTC Connector	
J1		Key Board Connector	
J3		VGA Port Connector	
J4		Printer Port Connector	
J5		COM 1 Connector	
J6		COM 2 Connector	
J7		VGA Feature Connector	
J8		IDE 1 Connector - Secondary	
J9		IDE 0 Connector - Primary	
J10		Floppy Connector	
J11		Reset Button Connector	
J13		Suspend Green Button Connector	
J16		Key Lock Connector	
J17		Green LED Connector	
J18		HDD LED Connector	
J20		Turbo Switch LED Connector	
J21		Speaker Connector	
J23		PS/2 Mouse Connector	

Section 3   System Setup

This section provides the information for the system setup procedure and also briefs the setup procedures for system BIOS.

3-1 SYSTEM SETUP

The system BIOS supports an internal ROM-based system setup utility. When the first time you power up the system, the system CMOS memory contains incorrect configuration information and the BIOS prompts you to get into the SETUP utility. The system requires correct configuration information stored in the CMOS memory. The SETUP utility will guide you to properly configure the system in a simple and straightforward way. A typical setup procedure is as follows:

1. Properly install the system.
   A basic system should include at least
   - the SQ599 motherboard with CPU and cooler installed
   - a standard AT case with power supply
   - an AT compatible keyboard
   - the floppy driver and hard disk
   - the monitor
   - minimum one SIMM module with total 8MB memory

2. Turn the system power on.

3. The system BIOS will run Power-On-Self-Test(POST). When the test is completed, the system prompts you to go through the system SETUP utility. You can ignore the prompt if system setup has been configured correctly.

4. Follow the on-screen instructions provided by the SETUP utility to
   - Set Date and Time
   - Select correct floppy disk type and number
   - Select correct hard disk type and number
   - Set the advanced features if necessary

5. Exit the SETUP utility when done

6. System starts to reboot.

7. The system should have correct configuration information by now and should have no problem booting up the operating system from floppy or hard disk. If not, check the peripheral types, memory size and connections and go through the SETUP utility again.

3-2 PCI Device Setup

PCI device setup allows user to allocate IRQs and specify IRQ's sensitivity for PCI and ISA devices. Follow the on-screen setup instructions and refer to the manual provided with the PCI device for proper installation.

SECTION 4   BIOS SETUP

4-1 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

4-2 Control Key

Up arrow	Move to previous item
Down arrow	Move to next item
Left arrow	Move to the item in the left hand
Right arrow	Move to the item in the right hand
Esc key	Main Menu -- Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu - Exit current page and return to Main Menu
PgUp / "+" key	Increase the numeric value or make changes
PgDn / "–" key	Decrease the numeric value or make changes
F1 key	General help, only for Status Page Setup Menu and Option Page Setup Menu
(Shift)F2 key	Change color from total 16 colors. F2 to select color forward, (Shift) F2 to select color backward
F3 key	Reserved
F4 key	Reserved

10

F5 key	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
F6 key	Load the default CMOS value from BIOS default table, only for Option Page Setup Menu
F7 key	Load the Setup default, only for Option Page Setup Menu
F8 key	Reserved
F9 key	Reserved
F10 key	Save all the CMOS changes, only for Main Menu

4-3 The Main Manual

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.

```
            ROM PCI/ISA BIOS (2A4IBG33)
               CMOS SETUP UTILITY
             AWARD SOFTWARE, INC.
┌──────────────────────────────────────────────────────────────┐
│                                                                │
│   STANDARD CMOS SETUP          │  PASSWORD SETTING             │
│                                │                               │
│   BIOS FEATURES SETUP          │  IDE HDD AUTO DETECTION       │
│                                │                               │
│   CHIPSET FEATURES SETUP       │  SAVE & EXIT SETUP            │
│                                │                               │
│   POWER MANAGEMENT SETUP       │  EXIT WITHOUT SAVING          │
│                                │                               │
│   PCI CONFIGURATION SETUP      │                               │
│                                │                               │
│   LOAD SETUP DEFAULTS          │                               │
│                                                                │
├──────────────────────────────────────────────────────────────┤
│  Esc : Quit                    ↑↓→← : Select Item              │
│  F10 : Save & Exit Setup         (Shift) F2 : Change Color     │
├──────────────────────────────────────────────────────────────┤
│            Time, Date,    Hard Disk Type...                    │
└──────────────────────────────────────────────────────────────┘
```

Figure 1: Main Menual

Standard CMOS setup

This setup page includes all the items in a standard compatible BIOS. See Page 13 to Page 17 for details.

BIOS Features setup

This setup page includes all the items of Award special enhanced features. See Page 17 to Page 21 for details.

VGA Memory setup

This setup page tell you how to select VGA memory by 1MB or 2MB. See Page 22 for detail.

Power Management setup

This category determines how much power consumption for system after selecting below items. Default value is Disable. See Page 23 to Page 28 for details.

PCI Configuration setup

This category specifies the bale (in units of PCI bus clocks) of the latency timer for this PCI bus master and the IRQ level for PCI device. See Page 28 to Page 30 for details.

Load setup defaults

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

Password setting

Change, set, or disable password. It allows you to limit access to the system and Setup, or just to Setup. See Page 30 to Page 31 for details.

IDE HDD auto detection

Automatically configure hard disk parameters. See Page 31 to Page 32 for details.
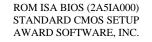
Save & exit setup

Save CMOS value changes to CMOS and exit setup.

Exit without save

Abandon all CMOS value changes and exit setup.

4-4 Standard CMOS Setup

The items in Standard CMOS Setup Menu divide into 10 categories. Each category includes no, one or more than one setup item. 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.

```
                        ROM ISA BIOS (2A5IA000)
                        STANDARD CMOS SETUP
                        AWARD SOFTWARE, INC.
```

```
┌─────────────────────────────────────────────────────────────────────┐
│ Date (mm:dd:yy) : Fri, Apr 7 1995                                     │
│ Time(hh:mm:ss)  : 00:00:00                                            │
│                                                                       │
│                    CYLS   HEADS   PRECOMP  LANDZONE  SECTOR  MODE      │
│ Drive C   :  User (105MB)  755    16       65535     754      17   Normal │
│ Drive D   :  None( 0MB)    0      0        0         0        0    ---------- │
│                                                                       │
│ Drive A   :  1.2M , 5.25in.                   Base Memory :  640K     │
│ Drive B   :  None                         Extended Memory : 3328K     │
│ Video     :  EGA / VGA                        Other Memory :  128K    │
│                                                                       │
│ Halt On   :  All Errors                      Total Memory : 4096K     │
│                                                                       │
│   ESC : Quit           ↑↓→← : Select Item      PU / PD / + / - : Modify │
│   F1  : Help        (Shift) F2 : Change Color                          │
└─────────────────────────────────────────────────────────────────────┘
```

Figure 2 Standard CMOS Setup Menu (Support 2HD)

13

```
                    ROM PCI/ISA BIOS (2A5IA000)
                       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   HEAD   PRECOMP   LANDE   SECTOR   MODE
 Primary Master   :  None    0      0      0        0        0       0       0
 Primary Slave    :  None    0      0      0        0        0       0       0
 Secondary Master :  None    0      0      0        0        0       0       0
 Secondary Slave  :  None    0      0      0        0        0       0       0

 Drive A : 1.2M , 5.25in.                       Base Memory  :  640K
 Drive B : None                             Extended Memory  : 3328K
 Video   : EGA / VGA                           Other Memory  :  128K

 Halt On : All Errors                          Total Memory  :  4096K


  ESC : Quit            ↑↓→← : Select Item          PU / PD / + / - : Modify
  F1  : Help            (Shift) F2 : Change Color
```

Figure 3   Standard CMOS Setup Menu (Support Enhanced IDE)

Date
The date format is <day>, <date> <month> <year>. Press <F3> to show the calendar.

day	The day of week, from Sun to Sat, determined by the BIOS, is read only
date	The date, from 1 to 31 (or the maximum allowed in the month), can key in the numerical / function key
month	The month, Jan through Dec
year	The year, depend on the year of BIOS

Time
The time format is <hour> <minute> <second>. Which accepts both function keys or numerical key. The time calculated which base on the 24-hour military-time clock. For example, 1 p.m. Is 13:00:00.

Drive C type/Drive D type
The categories identify the types of hard disk drive C or drive D that has been installed in the computer. There are 45 predefined types and 2 user definable types are for Normal BIOS.. Type 1 to Type 45 are predefined. Type User is user-definable.

14

Primary Master/Primary Slave/Secondary Master/Secondary Slave
The categories identify the types of 2 channels that have been installed in the computer. There are 45 predefined types and 4 user definable types are for Enhanced IDE BIOS. Type 1 to Type 45 are predefined. 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 does not match or list, 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 provide in the documentation from your hard disk vendor or the system manufacturer.

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 precom
LANDZONE	landing zone
SECTORS	number of sectors
MODE	HDD access mode

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

Drive A type/Drive B type
The category identifies the types of floppy disk drive A or drive B that have been installed in the computer.

None	No floppy drive installed
360K, 5.25 in	5-1/4 inch PC-type standard drive; 360 kilobyte capacity
1.2M, 5.25 in	5-1/4 inch AT-type high-density drive; 1.2 megabyte capacity
720K, 3.5 in	3-1/2 inch double-sided drive; 720 kilobyte capacity
1.44M, 3.5 in	3-1/2 inch double-sided drive; 1.44 megabyte capacity

15

Video

The category selects the type of adapter used for the primary system monitor that must match your video display card and monitor. Although secondary monitors supported, you do not have to select the type in Setup.

You have two ways to boot up the system:
1. When VGA as primary and monochrome as secondary, the selection of the video type is "VGA Mode".
2. When monochrome as primary and VGA as secondary, the selection of the video type is "Monochrome Mode".

EGA/VGA	Enhanced Graphics Adapter/Video Graphics Array. For EGA, VGA, SEGA, or PGA monitor adapters.
CGA 40	Color Graphics Adapter, power up in 40 column mode
CGA 80	Color Graphics Adapter, power up in 80 column mode
MONO	Monochrome adapter, includes high resolution monochrome adapters

Error halt

The category determines whether the computer will stop if an error is detected during power up.

No errors	Whenever the BIOS detects a non-fatal error the system will stop and you will prompt.
All errors	The system boot will not stop for any error that may detect.
All, But Keyboard	The system boot will not stop for a keyboard error; it will stop for all other errors.
All, But Diskette	The system boot will not stop for a disk error; it will stop for all other errors.
All, But Disk/Key	The system boot will not stop for a keyboard or disk error; it will stop for all other errors.

Memory

The category is display-only which is determined 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

16

512K for systems with 512K memory installed on the motherboard, or 640K for systems with 640K or more memory installed on the motherboard.

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.

Other Memory This refers to the memory located in the 640K to 1024K address space. This is memory that can be used for different applications. DOS uses this area to load device drivers to keep as much base memory free for application programs. Most use for this area is Shadow RAM.

Total Memory System total memory is the sum of basic memory, extended memory, and other memory.

4-5 BIOS Feature Setup

ROM PCI/ISA BIOS (2A4IBG33)
BIOS FEATURES SETUP
AWARD SOFTWARE, INC.

Virus Warning	: Disabled	Video BIOS Shadow	:	Enabled
CPU Internal Cache	: Enabled	C8000-CFFFF Shadow	:	Disabled
External Cache	: Enabled	D0000-D7FFF Shadow	:	Disabled
Quick Power On Self Test	: Disabled	D8000-DFFFF Shadow	:	Disabled
Boot Sequence	: A ,C			
Swap Floppy Drive	: Disabled			
Boot Up Floppy Seek	: Enabled			
Boot Up NumLock Status	: On			
Gate A20 Option	: Fast			
Typematic Rate Setting	: Disabled			
Typematic Rate (Chars/Sec)	: 6			
Typematic Delay (Msec)	: 250			
Security Option	: Setup			

ESC : Quit   ↑↓ → ←: Select Item
F1 : Help   PU/PD/+/- : Modify
F5 : Old Values   (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

17

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.

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

Note: This function is available only for DOS and other OSes 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 Enable. If your CPU without Internal Cache then this item "CPU Internal Cache" will not be show.

Enabled	Enable cache
Disabled	Disable cache

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

Enabled	Enable quick POST
Disabled	Normal POST

Boot Sequence
This category determines which drive computer searches first for the disk Operating System (i.e., DOS). Default value is A,C.

C,A	System will first search for hard disk drive then floppy disk drive.

18

A,C	System will first search for floppy disk drive then hard disk drive.

Note: This function is only available for IDE type
For SCSI type is always boot from A.

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 760K, 1.2M and 1.44M are all 80 tracks.

Enabled	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	Keypad is number keys
Off	Keypad is arrow keys

IDE HDD Block Mode

Enabled	Enable IDE HDD Block Mode. The BIOS will detect the block size of the HDD and send block command automatically.
Disabled	Disable IDE HDD Block Mode

Gate A20 Option

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

Memory Parity Check

Enabled	Normal memory parity check. System DRAM is no parity bit then the system will display "RAM parity error".

19

| Disabled | Ignore memory parity check even the DRAM has no parity bit. The system will not display "RAM parity error". |

Typematic Rate Setting

This determines the typematic rate.

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

Typematic Rate (Chars/Sec)

6	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 (Msec)

When holding a key, the time between the first and second character displayed.

250	250 msec
500	500 msec
750	750 msec
1000	1000 msec

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. Setup will deny if the correct password does not enter at the prompt.
Setup	The system will boot, but access to Setup will deny if the correct password does not enter at the prompt.

21

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 securities disable, the system will boot and you can enter Setup freely.

System BIOS Shadow
It determines whether system BIOS copies to RAM or the system BIOS is always shadow to support LBA HDD.

Enabled	System shadow is enabled
Disabled	System shadow is disabled

Video BIOS Shadow
It determines whether video BIOS will copy to RAM, however, it is optional from chipset design. Video Shadow will increase the video speed.

Enabled	Video shadow is enabled
Disabled	Video shadow is disabled

C8000 - CFFFF Shadow/E8000 - EFFFF Shadow
These categories determine whether optional ROM will copy to RAM by 16K byte or 32K byte per/unit and the size depends on chipset..

Enabled	Optional shadow is enabled
Disabled	Optional shadow is disabled

Note: 1. For C8000-DFFFF option-ROM on PCI BIOS, BIOS will automatically Enable the shadow RAM. User does not have to select the item.
2. IDE second channel control:
   Enable: enable secondary IDE port and BIOS will assign IRQ15 for this port
   Disable: Disable secondary IDE port and IRQ15 is available for other device
   The item is optional only for PCI BIOS.
3. Some of the sound cards have an onboard CD-ROM controller that uses IDE Secondary Port. In order to avoid PCI IDE conflict, the IDE secondary channel control has to select "disable" then CD-ROM can work.

4-6 VGA Memory Setup

The VGA memory setup will appear on your screen like this

```
                    ROM PCI/ISA BIOS (2A51DB3A)
                       CHIPSET FEATURES SETUP
                       AWARD SOFTWARE, INC.
```

Auto Configuration	: Enabled	Slow Refresh (1:4)	:	Disabled
	:	ISA Bus Clock Frequency	:	PCICLK/4
L1 Cache Update Mode	: WB	System BIOS Cacheable	:	Disabled
L2 Cache Update Mode	: WB	Video BIOS Cacheable	:	Disabled
L2 (WB) Tag Bit length	: 7 bits	Memory Hole At 15M-16M	:	Disabled
		VGA Shared Memory Size	:	**1MB**

```
F1  : Help              PU/PD/+/-  : Modify
F5  : Old Value         (Shift) F2    : Color
F6  : Load BIOS Defaults
F7  : Load Setup Defaults
```

Note : You can choice the VGA memory with **1MB** or **2MB** by

"VGA Share Memory Size   : 1MB "

23

4-7 Power Management Setup

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

```
                    ROM PCI/ISA BIOS (2A4IBG33)
                    POWER MANAGEMENT SETUP
                       AWARD SOFTWARE, INC.
┌─────────────────────────────────────┬─────────────────────────────────┐
│ Power Management  : Max Saving        │ IRQ4 (COM 1)       : Enable     │
│ PM Control by APM : Yes               │ IRQ5 (LPT 2)       : Enable     │
│ Video Off Option  : Susp, Stby -> Off │ IRQ6 (Floppy Disk) : Enable     │
│.Video Off Method  : V/H SYNC + Blank  │ IRQ7 (LPT 1)       : Enable     │
│ Suspend Switch    : Enable            │ IRQ8 (RTC Alarm)   : Disable    │
│                                       │ IRQ9 (IRQ2 Redir)  : Enable     │
│            ** PM Timers **            │ IRQ10 (Reserved)   : Enable     │
│ HDD Off After    : Disable            │ IRQ11 (Reserved)   : Enable     │
│ Doze Mode        : 10 Sec             │ IRQ12 (PS/2 Mouse) : Enable     │
│ Standby Mode     : 10 Sec             │ IRQ13 (Coprocessor): Enable     │
│ Suspend Mode     : 10 Sec             │ IRQ14 (Hard Disk)  : Enable     │
│                                       │ IRQ15 (Reserved)   : Enable     │
│            ** PM Events **            │                                 │
│ PCI Master Activity  : Enable         │                                 │
│ COM Ports Activity   : Enable         │                                 │
│ LPT Ports Activity   : Enable         │ ESC: Quit       ↑↓→←: Select Item│
│ HDD Ports Activity   : Enable         │ F1 : Help     PU / PD / + / - : Modify│
│ DMA Ports Activit    : Enable         │ F5 : Old Values (Shift)F2  : Color│
│ VGA Activity         : Disable        │ F6 : Load BIOS Defaults         │
│ IRQ3 (COM 2)         : Enable         │ F7 : Load Setup Defaults        │
└─────────────────────────────────────┴─────────────────────────────────┘
```

Power Management
This category determines how much power consumption for system after selecting 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
A. Power Management	1. Disable	Global Power Management will be disabled
	2. User Define	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

Item	Options	Descriptions
B. PM Control by APM	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, & 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
C. Video Off Option	1. Always On	System BIOS will never turn off the screen
	2. Suspend −> Off	Screen off when system is in SUSPEND mode
	3. Susp, Stby −> Off	Screen off when system is in STANDBY or SUSPEND mode
	4. All Modes −> Off	Screen off when system is in DOZE, STANDBY or SUSPEND mode
		Note: The M/B markers are recommended to fix this item to (2) or (3) & hidden it by using MODBIN Utility
D. Video Off Method	1.Blank Screen	The system BIOS will only 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
	3. DPMS	This function is enabled for only the VGA card supporting DPM
		Note: Green monitors detect the V/H SYNC signals to turn off its electron gun
E. Suspend Switch	1. Disable	The External Suspend Switch is disabled

25

SQ599

	2. Enable	The External Suspend Switch is enabled
F. HDD Off After (#) Remark 2	1. Disable	HDD's motor will not off
	2. 1 Min 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	Defines the continuous HDD idle time before the HDD entering power saving mode (motor off)
	3.When Suspend	BIOS will turn the HDD's motor off when system is in SUSPEND mode
		Note: − (2) & (3) can't be selected at the same time − When HDD is in power saving mode, any access to the HDD will wake the HDD up

Item	Options	Descriptions
G. Doze Mode (*) Remark 1	1. Disable	System will never enter DOZE mode
	2. 10 Sec 20 Sec 30 Sec 40 Sec 1 Min 3 Min 5 Min 10 Min 15 Min 20 Min	Defines the continuous idle time before the system entering DOZE mode. if any item defined in (J) is enabled & active, DOZE timer will be reloaded

26

	30 Min 40 Min 1 Hr 2 Hr 3 Hr	
		Note: Normally,STANDBY mode puts the system into low speed or 8 MHz, screen may be off depend on (E)
H. Standby Mode (*) Remark 1	1. Disable	System will never enter STANDBY mode
	2. 10 Sec 20 Sec 30 Sec 40 Sec 1 Min 3 Min 5 Min 10 Min 15 Min 20 Min 30 Min 40 Min 1 Hr 2 Hr 3 Hr	Defines the continuous idle time before the system entering STANDBY mode. if any item defined in (J) is enabled & active, STANDBY timer will be reloaded
		Note: Normally, STANDBY mode puts the system into low speed or 8 MHz, screen may be off depend on (E)

Item	Options	Descriptions
I. Suspend Mode	1. Disable	System will never enter SUSPEND

(*) Remark 1		mode
	2. 10 Sec 20 Sec 30 Sec 40 Sec 1 Min 3 Min 5 Min 10 Min 15 Min 20 Min 30 Min 40 Min 1 Hr 2 Hr 3 Hr	Defines the continuous idle time before the system entering SUSPEND mode. if any item defined in (J) is enabled & active, SUSPEND timer will be reloaded
		Note: Normally,SUSPEND mode puts the system into low speed or 8 MHz, clock is stopped, screen may be off depend on (E)
J. PCI Master Activity COM Ports Activity LPT Ports Activity	1. Disable	The specified event's activity will not affect the PM timers
HDD Ports Activity DMA Ports Activity VGA Activity IRQ3 (COM 2) IRQ4 (COM 1) IRQ5 (LPT 2) IRQ6 (Floppy Disk) IRQ7 (LPT 1) IRQ8 (RTC Alarm) IRQ9 (IRQ2 Redir) IRQ10 (Reserved) IRQ11 (Reserved) IRQ12 (PS/2 Mouse) IRQ13 (Coprocessor) IRQ14 (Hard Disk)	2. Enable	The specified event's activity causes the PM Timers to be reloaded. i.e. the Power Management Unit(PMU) monitors the specified activities as PM events

28

IRQ15 (Reserved)		

* Remark 1: All items mark with (*) in this menu, will be loaded with predefined
               values as long as the item 'Power Management' is not configured to
               'User Defined'

           These items are:

               Item 'System Doze' , 'System Standby' & 'System Suspend'

* Remark 2: Although the item 'HDD Power Down' is not controlled by item
             'Power Management' in terms of timer value, the HDD (s) will not power
             down if the global power management is disabled!

4-8 PCI Configuration Setup

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 (2A4IBG33)
PCI CONFIGURATION SETUP
AWARD SOFTWARE, INC.

```
Slot 1 Using INT#       : AUTO
Slot 2 Using INT#       : AUTO
Slot 3 Using INT#       : AUTO

1st   Available IRQ     : 9
2nd  Available IRQ      : 10
3rd  Available IRQ      : 11
PCI IRQ Actived By      : Edge
PCI IDE 2nd Channel  : Enable
PCI IDE IRQ Map To  : PCI-AUTO
Primary      IDE INT#  : A
Secondary    IDE INT#  : B


Master Arbitration Protocol    : Weak
CPU->PCI Mem Post Write Buf : Disable
CPU->PCI Memory Burst Write: Disable
PCI Master Burst Read/Write  :  Disable
```

```
ESC: Quit          ↑↓→←: Select Item
F1  : Help          PU / PD / + / - : Modify
F5  : Old Values   (Shift)F2       : Color
F6  : Load BIOS Defaults
F7  : Load Setup Defaults
```

29

The following pages tell you the options of each item & describe the meanings of each options.

Item	Options	Descriptions
A. Slot 1 Using INT# Slot 2 Using INT# Slot 3 Using INT#	AUTO A B C D	A,B,C,D : These options are reserved for "Dirty" cards from which the system BIOS cannot tell which INT does it use!
		Note: − Choose "AUTO" for all devices unless you know exactly which card is a dirty device & which INTs does that card uses! − Choose only "AUTO" for Multi-Func PCI devices because options A, B, C, D will force the BIOS to assign IRQs for function 0 only!
B. 1st Available IRQ 2nd Available IRQ 3rd Available IRQ	3 4 5 7 9 10 11 12 14 15 NA	The system BIOS will assign these 4 available IRQs to the found PCI devices
C. PCI IRQ Activated by	Edge Level	To tell the chipset the IRQ signals input is level or edge trigger
D. PCI IDE 2nd Channel	Enable Disable	Enable/disable 2nd channel of PCI/IDE card. It includes I/O port (170H~177H) and IRQ 15 assignment
E. PCI IDE IRQ Map To	PCI-AUTO PCI-SLOT1 PCI-	PCI-AUTO The BIOS will: − scan for PCI IDE devices &

30

SQ599

	SLOT2 PCI-SLOT3 ISA	determine the location of the PCI IDE device (See below item) PCI-SLOT1 PCI-SLOT2 PCI-SLOT3 − assign IRQ 14 for primary IDE INT# IRQ 15 for secondary IDE INT# for the specified slot <u>ISA</u> − The BIOS will not assign any IRQs even if PCI IDE card is found! Because some IDE cards connect the IRQ 14 & 15 directly from ISA slot thru a cord. (This cord is called Legacy Header)
F. Primary IDE INT# Secondary IDE INT#	A B	To tell which INT3 does the PCI IDE card is using for its interrupts

Remarks: Master Arbitration Protocol, CPU->PCI Mem Post Write Buf, CPU->PCI Memory Burst Write, and PCI Master Burst Read/Write please see the reference: Chipset Data Sheet.

4-9 Password Setting

When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

ENTER PASSWORD:

Type the password, up to eight characters, 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.

31

To disable password, just press <Enter> when you prompt to enter password. A message will confirm the password being disabled. Once the passwords disable, the system will boot and you can enter Setup freely.

        PASSWORD DISABLED.

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.

4-10 IDE HDD Auto Detection

Award BIOS includes the Enhanced IDE feature.

    1. Setup Changes

<I> Auto-detection

        •BIOS setup will display all possible modes that supported by the HDD including NORMAL, LBA & LARGE.

        •if HDD does not support LBA modes, no 'LBA'option will be shown.

        •if no of cylinders is less than or equal to 1024, no 'LARGE' option will be show

        •Users can select a mode that is appropriate for them.

ROM/PCI/ISA BOPS (2XXXXXXX)
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
Primary Master :								

Select Primary Master Option (N = Skip) : N

OPTION	SIZE	CYLS	HEADS	PRECOMP	LANDZONE	SECTORS	MODE
1(Y)	516	1120	16	65535	1119	59	NORMAL
2	516	524	32	0	1119	63	LBA
3	516	560	32	65535	1119	59	LARGE

32

<II> Standard CMOS Setup

			CYLS	HEADS	PRECOMP	LANDZONE	SECTOR	MODE
Drive C	:	User (516MB)	1120	16	65535	1119	59	NORMAL
Drive D	:	None(203MB)	684	16	65535	685	38	----------

When HDD type is in 'user' type, the "MODE" option will be opened for user to select their own HDD mode.

2 HDD Modes

The Award BIOS supports 3 HDD modes : NORMAL, LBA & LARGE

4-11 Power-On Boot

After you have made all the changes to CMOS values and the system cannot boot with the CMOS values selected in Setup, restart the system by turning it OFF then ON or Pressing the "RESET" button on the system case. You may also restart by simultaneously press <Ctrl>, <Alt>, and <Delete> keys. Upon restart the system, immediately press <Insert> to load BIOS default CMOS value for boot up.

4-12: BIOS Reference - Post Message

When the BIOS encounters an error that requires the user to correct something, either a beep code will sound or a message will be displayed in a box in the middle of the screen and the message PRESS F1 TO CONTINUE, CTRL-ALT-ESC OR DEL TO ENTER SETUP will be shown in the information box at the bottom.

POST Beep

Currently there are two kinds of beep codes in BIOS. The one code indicates that a video error has occurred and the BIOS cannot initialize the video screen to display any additional information. This beep code consists of a single long beep followed by three short beeps. The other one code indicates that your DRAM error has occurred. This beep code consists of a single long beep repeatedly.

Error Messages

One or more of the following messages may be displayed if the BIOS detects an error during the POST. This list indicates the error messages for all Award BIOSes:

CMOS BATTERY HAS FAILED

CMOS battery is no longer functional. It should be replaced.

33

CMOS CHECKSUM ERROR

Checksum of CMOS is incorrect. This can indicate that CMOS has become corrupt. This error may cause a weak battery. Check the battery and replace if necessary.

DISPLAY SWITCH IS SET INCORRECTLY

Display switch on the motherboard can be set to either monochrome or color. This indicates the switch set to a different setting than indicated in Setup. Determine which setting is correct, and then either turn off the system and change the jumper, or enter Setup and change the VIDEO selection.

FLOPPY DISK(S) fail (80) → Unable to reset floppy subsystem.

FLOPPY DISK(S) fail (40) → Floppy Type dismatch.

Hard Disk(s) fail (80)   **→ HDD reset failed**

Hard Disk(s) fail (40)   **→ HDD controller diagnostics failed.**

Hard Disk(s) fail (20)   **→ HDD initialization error.**

Hard Disk(s) fail (10)   **→ Unable to recalibrate fixed disk.**

Hard Disk(s) fail (08)   **→ Sector Verify failed.**

Keyboard is locked out - Unlock the key.

BIOS detects the keyboard is locked. P17 of keyboard controller is pulled low.

Keyboard error or no keyboard present.

Cannot initialize the keyboard. Make sure the keyboard is attached correctly and no keys are being pressed during the boot.

Manufacturing POST loop.

System will repeat POST procedure infinitely while the P15 of keyboard controller is pull low. This is also used for M/B burn in test.

BIOS ROM checksum error - System halted.

The checksum of ROM address F0000H-FFFFFH is bad.

Memory test fail.

BIOS reports the memory test fail if the onboard memory is tested error.

34

Section 5 VGA Installation

5-1 SiS 6205 VGA Feature

- Supports 64-bit PCI local bus standard Revision 2.1
- Supports full motion picture up to 1024x768x256 mode
- Supports graphics/video overlay function by color-key operation
- Supports Microsoft Video For Windows
- Real-Magic MPEG API compatible for interactive title
- Supports VESA Display Power Management Signaling (DPMS) compliant VGA monitor for power management
- Built-in 30 min. standby and suspend timers with keyboard, hardware cursor, and/or video memory read/write as activation source
- Follows the plug & play specification for display controller
- Supports 135 MHz pixel clock
- Supports super high resolution graphic modes
  - 640x480   256/32K/64K/16M colors NI
  - 800x600   16/256/32K/64K/16M colors NI
  - 1024x768   16/256/32K/64K colors NI
  - 1280x1024 16/256 colors NI
- Supports 80/132 columns text mode in 25, 30, 44 or 60 rows and other modes
- Supports 75Hz vertical refresh rate

5-2 DOS Utility

5-2-1 Install Program: INSTDRV.EXE

1. The SiS drivers are in packed file form. You can use **INSTDRV.EXE** to unpack them before beginning installation.
2. To use INSTDRV.EXE, please follow the procedures below:
   (1) Insert **SiS SVGA Drivers** in drive A or drive B.
   (2) Run INSTDRV.EXE program.
       A:\>instdrv   <Enter>
   (3) From the main menu, select the desired application software.
   (4) Follow the instructions from the screen to complete the process.
   (5) After complete the process, exit INSTDRV.EXE program.

3.   You should realize

35

(1) For some software packages (e.g. ADI packages, PCAD), their driver
files can be put to any directory you prefer.
(2) For some software packages (e.g. WordPerfect, GEM/Ventura,
VersaCAD/386, Lotus 1-2-3), the driver files must be put to where main
program resides.
(3) For some software packages (e.g. OrCAD Rel. 4), they have their
default directory for the drivers to reside.

Therefore, you should be very careful of the "drive:\directory" you assign for these
drivers. Otherwise, the installation will fail.

5-2-2 SVGAUTL.EXE

SVGAUTL.EXE can support three functions:

Video Mode Setting SiS 6205 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,
Frame Rate Setting SiS 6205 supports multiple frame rates. If your
monitor could synchronize with these frame rates,
Power Saving Setting SiS 6205 also supports VESA DPMS Power Saving
Modes. SVGAUTL.EXE can help you to set the capability

To use SVGAUTL.EXE,
1. Type SVGAUTL in the directory where it resides.
   C:\> SVGAUTL   <Enter>   (suppose SVGAUTL.EXE resides in C:\)
2. The Main Menu would appear and direct you to configure SiS 6205.
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.

You can use SVGAUTL>EXE to default the parameter as you want. Follow the
below procedure.
Syntax:
>SVGAUTL [/D:mode_no] [/F0:n0] [/F1:n1] [/F2:n2] [/F3:n3] [/F4:n4] [/PA:ta]
[/PB:tb]
/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>

/F0: *Set the frame rate to be n0 Hz.*

For example : Set 720x400 color text mode with 84Hz frame rate.
> >SVGAUTL /F0:84 <Enter>

/F1: *Set frame rate to be n1 Hz.*
> For example : Set 640x480 graphic mode with 60Hz frame rate
> >SVGAUTL /F1:60 <Enter>

/F2: *Set frame rate to be n2 Hz.*
> For example : Set 800x600 graphic mode with 72Hz frame rate.
> >SVGAUTL /F2:72 <Enter>

/F3: *Set frame rate to be n3 Hz.*
> For example : Set 1024x768 graphic mode with 60Hz frame rate.
> >SVGAUTL /F3:60 <Enter>

/F4: Set frame rate to be n4 Hz.
> For example : Set 1280x1024 graphic mode with 60Hz frame rate.
> >SVGAUTL /F4:60 <Enter>

/PA: Set Standby Timer to be ta minutes. (0 < ta < 15 min.)
> For example : Set Standby Timer be 5 minutes.
> >SVGAUTL /PA:5 <Enter>

/PB: Set Suspend Timer to be tb minutes. (0 < tb < 15 min.)
> For example : Set Suspend Timer be 5 minutes.
> >SVGAUTL /PB:5 <Enter>

Note:
1. Suspend Time would be "ta + tb". (i.e. standby time + suspend time)
2. The timers will not be very accurate and would just be around the time.

5-3-3 Video Mode Table

The SiS6205 VGA Video Mode is shown as below. This table is the refercnce for you to use the **SVAGUTL.EXE** utility.

Standard Mode

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

38

Enhanced Mode

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
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

39

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
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

Note: 1. i - interlaced mode   n - noninterlaced mode

2. 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#.

5-3 Software Drivers

To make use of the advance features of SiS 6205, extended graphic and text modes are supported by software application drivers developed by SiS. The following applications are currently supported:

- 3D Studio Ver. 3.0
- AutoCAD/386 Release 11, 12
- Auto Shade/386 Ver. 2.0
- GEM 3.0/Ventura 2.0
- Lotus 1-2-3/Symphony Ver. 2.x
- MicroSoft Windows 3.1/3.11
- MicroSoft Windows NT Ver. 3.5
- MicroSoft Windows 95
- OrCad (SDT/VST/PCB) Rel 4
- OS/2 Presentation Manager 3.0
- P-CAD Ver. 6.06
- VersaCAD/386 Ver. 2.1
- Word Perfect 5.x & 6.0

5-3-1 Windows 3.1/3.11

Driver Files

The enclosed SiS 6205 Windows 3.1/3.11 driver contains the following files (in compressed format) :

Setup Programs	A group of programs used to setup drivers.
VGA800.DRV	800x600 16-color driver
VGA1024.DRV	1024x768 16-color driver
VGA1280.DRV	1280x1024 16-color driver
VGA256.DRV	256-color driver (for all resolution)
VGA32K.DRV	32K-color driver (for all resolution)
VGA64K.DRV	64K-color driver (for all resolution)
VGA16M.DRV	16M-color driver (for all resolution)
VDDSIS.386	Graber file for all resoution and color
OEMSETUP.INF	OEMSETUP file for setup procedure
OEMSIS.INF	Same content as OEMSETUP.INF for setup procedure

41

Windows Setup

1. In "SiS VGA Driver" program group, choose "Setup" icon to enter setup screen. choose which options you would like to use.
2. After completing your selections, choose "OK".
3. Choose "Restart Winodws"   to re-boot Windows using new settings.
   Or, choose "Continue" to continue your current Windows processes.
   (But when you re-boot Windows, the new settings would take effect.)

Power Saving Setup in Windows

1. In "SiS VGA Driver" program group, choose "power_saver" icon to enter
   power_saver setup screen, select which options you would like to use.
2. After completing the selections, choose "OK".

Define_Key

"Define_Key" is used to define "hot keys" for zoom-in or zoom-out screen without entering setup program.
The operation principles of zoom-in and zoom-out are as follow:
(1) The resolution change sequence for zoom-in is
     1024x768 ===> 800x600 ===> 640x480 .
(2) The resolution change sequence for zoom-out is
     640x480 ===> 800x600 ===> 1024x768 .
(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 that you setup.

To use this feature, please follow the following procedures.
1. In "SiS VGA Driver" program group, choose "Define Key" icon to enter "hot
   key" define screen. select which "hot key" you would like to use and enable it.
2. After completing the selections, choose "OK".

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 exit Windows back to
   DOS.

5-3-2 OS/2 3.0

42

Driver Files

The OS/2 3.0 driver files resides on the "SiS 6205 Driver Diskette Sub-directory OS2WARP (i.e. \OS2WARP)". The enclosed SiS 6205 OS/2 3.0 driver contains the following files:

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

OS/2 Setup

1. Install your OS/2 system using **"VGA display"** option (i.e. standard VGA). Then start your OS/2 system.
2. Enter "OS/2 window" or "OS/2 full screen".
3. Insert "SiS 6205 Driver" diskette, enty to OS/2 3.0 display driver directory and type
     SISINST [drive] <Enter>, (where [drive] is the boot drive character).
     For example,

            A:\OS2WARP>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 6205 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 6205 OS/2 3.0 display drivers. (You can choose either A:\OS2WARP or C:\SISDRV in this case) The program would install the selected display driver for you.
10. When the display driver installation is completed, shut down the system and restart your OS/2 3.0.
11. SiS 6205 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.)

12. If you want to change resolution, run system icon of System Setup Group in PM, highlight the resolution you want to use and quit, shut down the system and restart again.

5-5-3 Autodesk ADI 4.2 -Protected Mode

Driver Files

The enclosed SiS 6205 ADI driver contains the following file:

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

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

This driver fits 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

Their installtion procedures are different from one program to the others.
But the first step of installation is the same for all these programs, that is
"To unpack and copy drivers to where you would like them to reside."
Therefore, we will state this step below.

AutoCAD R11 Setup

1. The following procedures assume that
   (1) You have complete "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 which display driver you want to use.

44

SQ599

7. Go through the whole instructions, and the system would start with the desired display setting.

AutoCAD R12 Setup

1. The following procedures assume that
    (1) You have complete "unpack & copy" procedure.
    (2) Your SiS 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
       DEL 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 proceed configuration.
7. In "Available Video Displays:" item,
choose the "SiS Super VGA ADI v4.2 Display and Rendering driver" item.
8. In "Select Display Resolution" screen, choose display driver you want to use.

AutoShade R2.0 Setup

1. The following procedures assume that
    (1) You have complete "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.".

45

6. While prompting "Select rendering display driver:",
   choose "P386 AutoDesk Device Interface rendering driver.".

3D Studio Version 3.0 Setup

1. The following procedures assume that
   (1) You have complete "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.

46

(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 exit configure, 3DS will boot automatically using the environment you just select.
10. If your previous configuration is OK, 3DS will ask you to make detail configuration for SiS 6205 drivers. If this didn't happen, please check your previous procedures or contact the technical support people.
11. In the detail configuration for SiS 6205 drivers, just follow the instructions appear on the screen and make your own choice. If you are confused in anything, contact the technical support people for solution.
12. After detail configuration, you will enter the 3DS main display screen and you may begin your 3D Studio work in the environment you make before.
13. Once completing the detail configuration, you may enter 3D Studio in the same configuration simply by type
          \3DS3\3DS   \<Enter\>
   next time.
14. If you want to change your video configuration,
    just follow the procedures mentioned before to re-configure.

5-3-4 WordPerfect V5.1

Driver File

1. The enclosed SiS 6205 WordPerfect driver (packed file) is **"WP51.1"**.
2. Being unpacked, the SiS 6205 WordPerfect driver **"WPSIS.VRS"** supports

Graphic Mode Resolution
640x350   16 Colors
640x480   16 Colors

800x600   16 Colors
1024x768   16 Colors
1280x1024 16 Colors

Text Mode Resolution
132x25

132x28
132x44
3. Use "INSTDRV.EXE" to unpack and copy drivers to where they should resides,

WordPerfect Setup

1. Run WordPerfect.
2. From the Main menu, choose File menu.
3. From the File menu, choose Setup menu.
4. From the Setup menu, choose Display menu.
5. For graphic mode configuration,
   (1) From the "Setup: Display" menu, choose "Graphics Screen Type".
   (2) From the "Setup: Graphics Driver" menu, choose "SiS 6205 SVGA (16 Color)"
   (3) From the "Setup: Graphics Driver" menu, choose one of the following:
      SiS 1024x768 16 Color
      SiS 1280x1024 16 Color
      SiS 640x350 16 Color
      SiS 640x480 16 Color
      SiS 800x600 16 Color
6. for text mode configuration,
   (1) From the "Setup: Display" menu, choose "Text Screen Type",
   (2) From the "Setup: Text Driver" menu, choose "SiS 6205 SVGA"
   (3) From the "Setup: Text Driver" menu, choose from
      SiS 132x25 16 Color Save Font
      SiS 132x28 16 Color Save Font
      SiS 132x44 16 Color Save Font
7. Exit from the menus and restart WordPerfect.

5-3-5 GEM 3.0 / Ventura 2.0

Driver Files

1. The enclosed SiS 6205 GEM / Ventura drivers (packed files) are
   (1) **GEMDRV.1**
   (2) **GEMDRV.2**

2. Being unpacked, the SiS 6205 GEM / Ventura drivers contain the following files:
   (1) **SDFSIS86.VGA:**   800x600   16-color
   (2) **SDFSIS1K.VGA:**   1024x768   16-color
3. Use "INSTDRV.EXE" to
   (1) unpack and copy drivers to where they should resides,

48

(2) create new VP.BAT file.

Ventura Setup --- Create New VP.BAT

To create new VP.BAT, please follow the following procedures:
1. In "Install and Setup GEM 3.0 / Ventura 2.0 Drivers" menu,
   select "B. Setup Ventura Batch File VP.BAT" to create new Ventura batch file
   VP.BAT using new driver. (To select, type "B".)
2. Fom the "Setup Ventura Batch File" screen, keyin the drive letter for the hard
   disk where Ventura software resides.
3. From the "Setup Ventura Batch File" menu, choose from
	800x600	16 Colors
	1024x768	16 Colors
4. After the message
   "Are you sure (Y/N) ?"
   appears on the screen, keyin
   'Y' <Enter>.
5. After setup completes, exit INSTDRV.EXE program.
6. Use new "VP.BAT" to start your Ventura progarm.

5-3-6 PCAD 6.06

Driver Files
1. The enclosed SiS 6205 PCAD drivers (packed files) are
   (1) **PCAD.1**
   (2) **PCAD.2**
   (3) **PCAD.3**
2. Being unpacked, the SiS 6205 PCAD drivers contain the following files:
(1)	**PSIS800.REX:**	800x600	16 Colors
(2)	**PSIS1K.REX:**	1024x768	16 Colors
(3)	**PSIS12.REX:**	1280x1024	16 Colors
3. Use "INSTDRV.EXE" to
   (1) unpack and copy drivers to where they should resides,
   (2) create new PCADDRV.SYS file.

Setup --- Create New PCADDRV.SYS

To create new PCADDRV.SYS, please follow the following procedures:
1. In "Install and Setup PCAD 6.06 Drivers" menu,
   select "B. Setup Configure File PCADDRV.SYS" to create new
   PCADDRV.SYS using new driver. (To select, type "B".)

49

2. From the "Setup PCAD Config File" screen, keyin the drive letter of the hard disk where PCAD software resides.

3. From the "Setup PCAD Config File" screen, keyin the directory where the PCAD drivers reside.

4. From the "Setup PCAD Config File" menu, choose from

800x600	16 Colors
1024x768	16 Colors
1280x1024	16 Colors

5. After the message

   "Are you sure (Y/N) ?"

   appears on the screen, keyin

           'Y'   **<Enter>**

6. After setup completes, exit INSTDRV.EXE program.

7. Restart your PCAD program.

5-3-7 VersaCAD/386 2.1

Driver Files

1. The enclosed SiS 6205 VersaCAD/386 drivers (packed files) are
   (1) **VCAD.1**
   (2) **VCAD.E**

2. Being unpacked, the SiS 6205 VersaCAD/386 driver **"VSIS.EXE"** supports

640x480	16 Colors
800x600	16 Colors
1024x768	16 Colors
1280x1024	16 Colors

3. This driver is a TSR (Terminate and Stay Resident) type program.
   You just need to execute once each time your computer is powered up.
   For this reason, it is recommended that this driver should be placed in your "AUTOEXEC.BAT" file.

4. Use "INSTDRV.EXE" to

   (1) unpack and copy driver VSIS.EXE
   (2) unpack and copy configure file VSIS.CFG
   to where they should resides

VersaCAD/386 Setup

1. Change the current "drive:\directory" path to where VersaCAD/386 resides.
2. Run this driver VSIS.EXE.

50

For example:
C:\VCAD386>VSIS   <Enter>

3. Run ENVIRO program.
   For example:
     C:\VCAD386>ENVIRO <Enter>

4. From "ENVIRONMENT MENU" screen,
   press 'S' key to select screen configuration.

5. In prompt mode, select "SiS 6205" display driver.
   You can select various display resolution.

6. After selecting screen configuration,
   press 'X' key to save configuration

7. Exit ENVIRO program.

8. Restart your VersaCAD program.

5-3-8 OrCAD Rel. 4

Driver Files

1. The enclosed SiS 6205 OrCAD drivers (packed files) are
   (1) **ORCAD.1**
   (2) **ORCAD.2**
   (3) **ORCAD.3**

2. Being unpacked, the SiS 6205 OrCAD drivers contain the following files:

(1) **ORSIS86.DRV:**	800x600	16 Colors
(2) **ORSIS1K.DRV:**	1024x768	16 Colors
(3) **ORSIS12.DRV:**	1280x1024	16 Colors

3. Use "INSTDRV.EXE" to
   (1) unpack and copy drivers to where they should resides,
   (2) create new SDT.CFG file.

OrCAD Display Setup

To setup SiS display driver for OrCAD, please follow the following procedures:

1. Enter OrCAD "Main Menu" screen.

2. For "Schematic Tools Configure", choose "Schematic Design Tools"
   to enter "Schematic Design Tools" screen.

3. In "Schmatic Design Tools" screen, choose "draft" block.

4. "Draft Menu" will appear, choose "Configure Schematic Tools" item
   to configure schematic tools.

5. "Configure Schematic Tools" screen will appear, choose "Driver Prefix" item
   and keyin where SiS OrCAD drivers reside (e.g. \ORCADESP\DRV\).

6. In the same "Configure Schematic Tools" screen, choose "Configured Display Driver" item and keyin one of the SiS OrCAD drivers' name which you would like to use.

7. If you want to configure anything else, do as you like.

8. When you complete all the configuration, choose "OK" item to ask OrCAD program to save your configuration.

9. After configuration completes, you may use your OrCAD schematic tools in the configuration you just setup.

10.For all other tools configuration, please follow the Step 1 to the Step 9 stated before.

Note: If you install your OrCAD program using default settings, it's sreommended you should use default settings when you install SiS OrCAD drivers.

OrCAD SDT.CFG Setup

To create new SDT.CFG file, please follow the following procedures:

1. In "Install and Setup OrCAD rel 4 Drivers" menu,
   select "B. Setup Configure File SDT.CFG"
   to create new SDT.CFG using new driver. (To select, type "B".)

2. From the "Setup OrCAD r4 Driver Config File" screen,
   keyin the "drive:\directory" where your OrCAD program resides
   (default C:\ORCADEXE).

3. From the "Setup OrCAD r4 Driver Config File" screen,
   keyin the "drive:\directory" where the SiS OrCAD drivers reside
   (default C:\ORCADESP\DRV).

4. From the "Setup OrCAD Config File" menu, choose from
800x600	16 Colors
1024x768	16 Colors
1280x1024	16 Colors

5. After the message
   "Are you sure (Y/N) ?"

   appears on the screen, keyin
   'Y'   <Enter>

6. After setup completes, exit INSTDRV.EXE program.

7. Restart your OrCAD DRAFT.EXE program.

Note: If you install your OrCAD program using default settings, it's reommended you should use default settings when you install SiS OrCAD drivers.

52

5-3-9 Lotus 2.x

Driver Files

1. The enclosed SiS 6205 Lotus 1-2-3 drivers (packed files) are
    (1) **LOTUS.1**
    (2) **LOTUS.2**
    (3) **LOTUS.3**
    (4) **LOTUS.4**
2. Being unpacked, the SiS 6205 Lotus 1-2-3 drivers contain the following files:
    (1) **TXT13225.DRV:**   132x25 Text
    (2) **TXT13228.DRV:**   132x28 Text
    (3) **TXT13244.DRV:**   132x44 Text
    (4) **TXT8060.DRV:**   80x60 Text
3. Use "INSTDRV.EXE" to unpack and copy drivers to where they should resides.

Lotus 1-2-3 Setup

1. Change the current "drive:\directory" path to where Lotus 1-2-3 software
   resides.
2. Run Lotus 1-2-3 install program.
      For example:
                    C:\123>install   <Enter>
3. Several menu choices will be presented on screen.
   Follow the instructions to add SiS drivers to the library:
    (1) Press **<Enter>** key to begin.
    (2) From the main menu, choose "Advanced Options".
    (3) From the "Advanced Options" menu, choose "Add New Drivers to the
        Library".
    (4) Press **<Enter>** key twice to return to the "Advanced Options" menu.

4. After returning to "Advanced Options" menu, follow the instructions to select
   the desired driver.
    (1) Choose "Modify Current Driver Set" option.
    (2) From the configuration menu, choose "Text Display" option.
    (3) From the "Text Display" menu, select the desired driver.
    (4) After returning to configuration menu, choose "Return to menu".
5. After returning to "Advanced Options" menu,
   follow the instructions to exit the INSTALL program.
    (1) Choose "Save Changes" to save the changed configuration.
    (2) Press RETURN key to accept the current set name.

    (3) Press RETURN key again.

    (4) From "Exit" menu, choose "Yes" option to terminate the INSTALL
        program.

6. Restart your Lotus 1-2-3 program.

5-3-10 Windows NT 3.5

Driver Files

1. The enclosed SiS 6205 Windows NT 3.5 drivers are:

        SISTAG
        SISV.SYS
        SISV256.DLL
        SISV.DLL
        OEMSETUP.INF

2. At present only 16-color and 256-color drivers are available.

3. There is no "Unpack & Copy" procedure in Windows NT 3.5 driver
   installation.

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.

5-3-11 WINDOWS 95

Driver Files

1. The enclosed SiS 6205 Windows NT 95 drivers are:

        SIS205.INF
        SIS205.DRV
        SISMINI.VXD

2. At present 16-color, 256, 64K and 16.7M colors drivers are available.

Windows 95 Setup

1. Install and start your Windows 95 system.
2. Choose the "START**"** from the screen and select "SETTINGS", then choose **"**CONTROL PANEL".
3. In "CONTROL PANEL" screen, choose the **"**DISPLAY" icon, you can see the "DISPLAY PROPERTIES" screen.
4. Choose "SETTINGS" and select "CHANGE DISPLAY TYPE". You can see the "CHANGE DISPLAY TYPE" screen.
5. In "CHANGE DISPLAY TYPE" screen, choose "CHANGE", you can see the "SELECT DEVICE" screen.
6. In "SELECT DEVICE" screen, choose "HAVE DISK". Select the SiS Windows 95 driver diskette path. After the system copy the SiS6205 driver, the screen will show the "SiS205".
7. Reboot the Windows 95.
8. After completing reboot process, if you want to change the color and resolution, Please follow the item 2, 3 procedure, in the "DISPLAY PROPERTIES TYPE" screen, you can change colors by "COLORS PALLETTE" and change the resolution by "DESKTOP AREA".

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