

5IS
SYSTEM BOARD
(VER. 2.x)

OPERATION MANUAL

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NOTE

The "LOAD SETUP DEFAULTS" function loads the default settings directly from BIOS default table, these default settings are the best-case values that should optimize system performance. This function will be necessary when you accept this system board, or the system CMOS data is corrupted.

By pressing "Enter" key, while "LOAD SETUP DEFAULTS" is highlighted, then presses "Y" and "Enter" key. the SETUP default values will be loaded. (Please refer to the Chapter 5 AWARD BIOS SETUP procedures in this manual.)

FEATURES

The 5IS system board supports (or includes) the following features:

- Pentium P54C/P54CT/P54CS/P55C/P55CT based, PC/AT compatible system board with ISA Bus and PCI Local Bus.
- Designed based on the Intel Triton 82430FX PCIset (82437FX, 82438FX) and 82371FB system chipset and SMC FDC37C665GT (or FDC37C665IR or FDC37C669) I/O chipset.
- Supports the most part Pentium CPUs and OverDrive CPUs designed and manufactured by Intel.
- Supports adjustable System Clock : 50/60/66.6 MHz.
- Supports multi-spec. CPU VCC voltage, includes Standard, VR and VRE specification. Supports VRM (Voltage Regulator Module) 30-Pin Header.
- Supports True GREEN function.
- Supports PS/2 Mouse connector (option), PS/2 Keyboard connector (option) and AT Keyboard connector.
- DRAM Memory : Two banks, each bank could be single or double sided, using 4x72-Pin SIMM socket, supports 8 MB up to 128 MB main memory. Both standard fast page (FP) mode and Extended Data Out (EDO) memory are supported.
- Cache Memory : Supports 256/512KB Direct-mapped L2 cache memory. Both Write Back and Write Through cache policy are supported. The SRAM configuration using either burst, pipelined burst or standard (asynchronous) SRAMs. The burst and pipelined burst SRAMs are supported via a 160-Pin slot and the special SRAM modules.
- Shadow RAM : Software-controlled Shadow RAM for video BIOS and optional Adapter BIOS. (System BIOS Shadow RAM is fixed)
- BIOS : Using AWARD System BIOS, v4.50G or v4.50PG. (Both Normal BIOS and Plug & Play BIOS are supported)
- IDE ports : Supports two channels PIO and Bus Master PCI IDE port, up to Mode 4 timing, transfer rates to 22 MBytes/s, and maximum connected four IDE devices.
- I/O ports : Supports two high speed serial ports (UARTs, with Send/Receive 16 byte FIFOs). One multimode parallel port for standard (Normal), enhanced (EPP) and high speed (ECP) modes. One Floppy Disk Control port.
- IR Port (option) : Supports IR (Infrared Rays) functions. Both IrDA (HPSIR) and Amplitude Shift Keyed IR (ASKIR) are supported. (Only when the I/O Chip is used FDC37C665IR or FDC37C669. If the I/O Chip is used FDC37C665GT , the IR functions are not supported.)
- Expansion slots : Four 32-bit PCI Local Bus slots and four 16-bit ISA Bus slots.
- Dimension : 4-layers PCB, 220x290mm.
- Software compatibility : MS-DOS, WindowsNT, OS2, XENIX, UNIX, NOVELL, CAD/CAM, Windows, Windows 95....etc.

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SPECIFICATIONS

- **Chipset**
Intel Triton 82430FX (82437FX, 82438FX), 82371FB and SMC FDC37C665GT (or FDC37C665IR or FDC37C669).
- **CPU**
Intel Pentium processor and OverDrive processor (P54C/P54CT/P54CS/P55C/P55CT)
75/90/100/120/133/150/180/200 MHz.
- **CPU VCC**
Multi-spec. CPU VCC voltage, supports Standard, VR and VRE specification. Supports VRM Header.
- **System Clock**
50/60/66.6 MHz adjustable.
- **Memory**
DRAM : Two banks, each bank could be single or double sided, 8MBup to 128 MB. Supports both standard fast page (FP) mode and Extended Data Out (EDO) memory.
SRAM : One bank, 256/512KB Direct-Mapped write back cache memory, supports either burst, pipelined burst or standard (asynchronous) SRAMs
- **BIOS**
AWARD System BIOS. 128KBx8, EPROM or Flash ROM.
(EPROM for Normal BIOS, Flash ROM for Plug & Play BIOS)
- **Expansion Slots**
PCI Slots : 32-bit x 4 (All Master/Slave)
ISA Slots : 16-bit x 4
- **IDE Ports**
Two channels PIO and Bus Master PCI IDE port, maximum connected 4 IDE Hard Disk and ATAPI CD-ROM device.
- **Super I/O Ports**
 1. Two high speed NS16C550 compatible serial ports (UARTs).
 2. One parallel port, supports Normal/EPP/ECP mode.
 3. One Floppy Disk Control port.
- **IR Port (option)**
One HPSIR and ASKIR compatible IR transmission connector (4-pin).
- **Mouse and Keyboard**
Supports PS/2 Mouse connector (option), PS/2 Keyboard connector (option) and AT Keyboard connector.
- **Dimension**
4-layers PCB, 220mm x 290mm.
- **Software compatibility**
MS-DOS, WindowsNT, OS2, XENIX, UNIX, NOVELL, CAD/CAM, Windows, Windows 95....etc.

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PERFORMANCE

With 256KB external Cache Memory (Async.) and 16MB DRAM (FP), Without Autoexec.bat and Config.sys

Test Programs	CPU Type				
	P54C-75	P54C-90	P54C-100	P54C-120	P54C-133
Landmark speed V.2.0	432.88	519.48	574.58	692.64	766.11
Norton S I V7.0	237.7	285.2	315.4	380.3	420.6
Power Meter V.1.7	51.3	61.9	68.4	81.2	90.6
Byte V.2.2 (Desktop Index)	3.05	3.06	3.79	3.75	4.06

Note : The different hardware and software configuration will result in different testing results.

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2. SPECIFICATIONS

- **CPU**
Intel Pentium processor and OverDrive processor (P54C/P54CT/P54CS/P55C/P55CT)
75/90/100/120/133/150/166/180/200 MHz.
- **CPU VCC**
Multi-spec. CPU VCC voltage, supports Standard, VR and VRE specification.
VRM (Voltage Regulator Module) 30-pin header on board.
- **WORD SIZE**
Data Path : 8-bit, 16-bit, 32-bit, 64-bit
- **Chipset**
Intel Triton 82430FX PCIset (82437FX, 82438FX, 82371FB) and SMC FDC37C665GT (or
FDC37C665IR or FDC37C669).
- **System Clock**
50/60/66.6 MHz adjustable.
- **Memory**
DRAM : Two banks, each bank could be single or double sided, 8MB up to 128 MB.
Supports both standard fast page (FP) mode and Extended Data Out (EDO) memory.
SRAM : One bank, 256/512KB Direct-Mapped write back cache memory, supports either
burst, pipelined burst or standard (asynchronous) SRAMs.
- **BIOS**
AWARD or AMI System BIOS. 128KBx8, EPROM or Flash ROM.
(EPROM for Normal BIOS, Flash ROM for Plug & Play BIOS)
- **Expansion Slots**
PCI Slots : 32-bit x 4 (All Master/Slave)
ISA Slots : 16-bit x 4
- **IDE Ports**
Two channels PIO and Bus Master PCI IDE port, maximum could be connected 4 IDE Hard
Disk and ATAPI CD-ROM device.
- **Super I/O Ports**
 1. Two high speed NS16C550 compatible serial prots (UARTs).
 2. One parallel port, supports Normal/EPP/ECP mode.
 3. One Floppy Disk Control port.

- **IR Port (option)**
One HPSIR and ASKIR compatible IR transmission connector (4-pin).

- **Mouse and Keyboard**
Supports PS/2 Mouse connector (option), PS/2 Keyboard connector (option) and AT Keyboard connector.

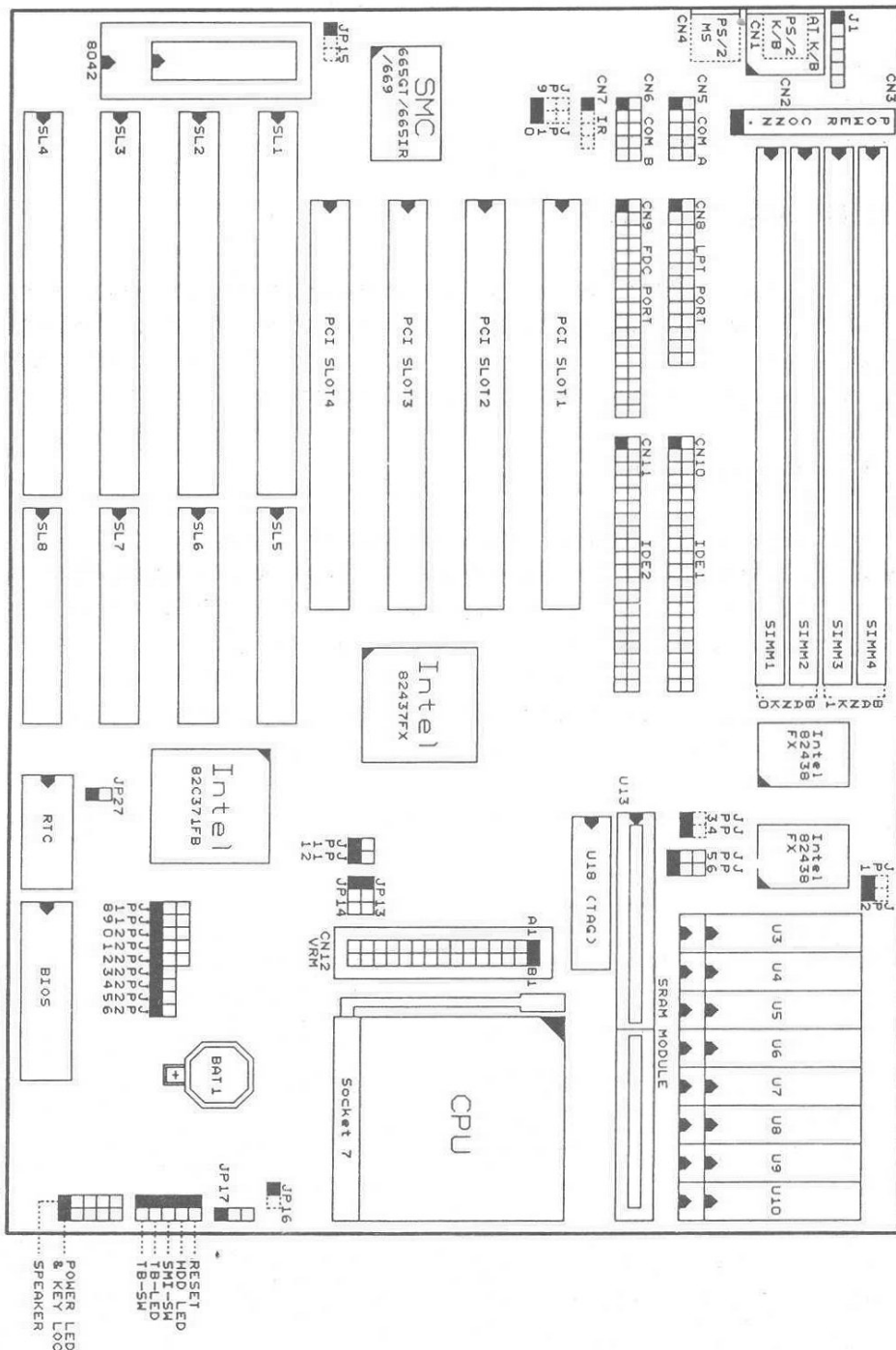
- **DIMENSION**
 - Width & Length** : 220 mm x 290 mm.
 - Height** : 3/4 inches with components mounted, but without expansion boards and cables.
 - PCB Thickness** : 4 layers, 0.05 inches normal.
 - Weight** : 21.5 ounces.

- **ENVIRONMENT**
 - Operating Temperature** : 10°C to 40°C. (50°F to 104°F)
 - Required Airflow** : 50 linear feet per minute across 80486 CPU.
 - Storage Temperature** : - 40°C to 70°C. (- 40°F to 158°F)
 - Humidity** : 0 to 90% noncondensing.
 - Altitude** : 0 to 10,000 feet.

3. SYSTEM BOARD LAYOUT

5IS Ver. 2.0

Explanation : All connectors, jumpers and components which marks by a black point on the corner means the Pin-1 side of the connector, jumper and component.



4. HARDWARE SETUP

4.1 UNPACKING

The system board package should contain the following parts:

- The 5IS system board.
- OPERATION MANUAL.
- Cable set for IDE and I/O device.

4.2 HARDWARE CONFIGURATION

Before the system board is ready to operate, the hardware must be configured to allow for various functions within the system. To configure the 5IS system board is a simple task, only a few jumpers, connectors, cables and sockets needs to be selected and installed. For the detailed locations of each component please refer to the system board layout figure which appears in the page 3-1.

4.2.1 DRAM INSTALLATION

The 5IS system board will support two banks main memory (bank0 and bank 1) on board, (using four 72-Pin SIMM socket, SIMM 1 - 4), each bank could be single or double sided. With the use of 1MBx36(32)-S, 2MBx36(32)-D, 4MBx36(32)-S or 8MBx36(32)-D SIMM modules, 8MB up to 128 MB of local memory can be attained. Both standard fast page (FP) mode and Extended Data Out (EDO) memory are supported, but they cannot be mixed within the same memory bank. The speed of FP DRAMs must be used 70ns or faster than 70ns and the speed of EDO DRAMs must be used 60ns or faster than 60ns. (*Note :S = Single sided , D = Double sided*)

There are no jumper needed for DRAM configuration, the following table provides all possible memory combination.

Total Size	Bank 0	Bank 1	Total Size	Bank 0	Bank 1
	SIMM1, SIMM2	SIMM3, SIMM4		SIMM1, SIMM2	SIMM3, SIMM4
8 MB	1MBx36(32)-S	Empty	32 MB	4MBx36(32)-S	Empty
16 MB	1MBx36(32)-S	1MBx36(32)-S	40 MB	4MBx36(32)-S	1MBx36(32)-S
24 MB	1MBx36(32)-S	2MBx36(32)-D	48 MB	4MBx36(32)-S	2MBx36(32)-D
40 MB	1MBx36(32)-S	4MBx36(32)-S	64 MB	4MBx36(32)-S	4MBx36(32)-S
72 MB	1MBx36(32)-S	8MBx36(32)-D	96 MB	4MBx36(32)-S	8MBx36(32)-D
16 MB	2MBx36(32)-D	Empty	64 MB	8MBx36(32)-D	Empty
24 MB	2MBx36(32)-D	1MBx36(32)-S	72 MB	8MBx36(32)-D	1MBx36(32)-S
32 MB	2MBx36(32)-D	2MBx36(32)-D	80 MB	8MBx36(32)-D	2MBx36(32)-D
48 MB	2MBx36(32)-D	4MBx36(32)-S	96 MB	8MBx36(32)-D	4MBx36(32)-S
80 MB	2MBx36(32)-D	8MBx36(32)-D	128 MB	8MBx36(32)-D	8MBx36(32)-D

4.2.2 CACHE MEMORY INSTALLATION AND JUMPER SETUP

The 5IS system board will support one bank direct-mapped L2 cache memory which provides either 256KB or 512KB cache memory size. Both Write Back and Write Through cache update policy are supported. The SRAM configuration using either burst, pipelined burst or standard (asynchronous) SRAMs, but they cannot be mixed at the same time. The burst and pipelined burst SRAMs are supported via a 160-pin slot and a special SRAM modules. The standard (asynchronous) SRAMs are supported via either the on board SRAM sockets or the special SRAM modules.

4.2.2.1 ON BOARD CACHE MEMORY CONFIGURATION

The on board cache memory system just supports the standard (asynchronous) SRAMs which consists of two parts, one is TAG SRAM, the other is DATA SRAM. The TAG SRAM type used in this system board is 8Kx8, 16Kx8 or 32Kx8, the DATA SRAM type is 32Kx8 or 64Kx8.

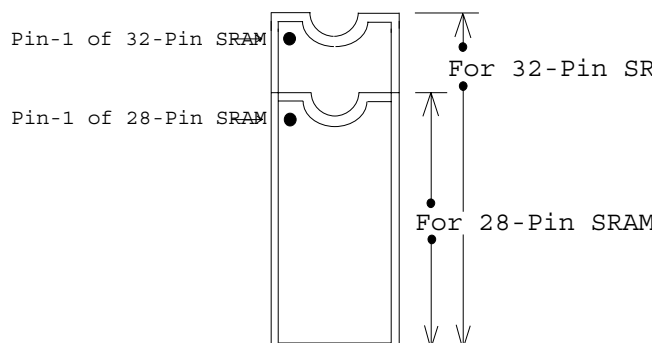
The following table lists the detailed combination and the jumper settings about on board cache memory size selection.

Cache Size	DATA SRAM	TAG SRAM	JP19	JP20	JP21	JP22
	U3 through U10	U18				
No Cache	Empty	Empty	x	1-2	1-2	2-3
256 KB	eight pieces 32Kx8	8Kx8 or 16Kx8 or 32Kx8	1-2	2-3	1-2	2-3
512 KB	eight pieces 64Kx8	16Kx8 or 32Kx8	2-3	1-2	2-3	2-3

x : Don't care

The following figure is an example which shows how to use the DATA SRAM socket. For 32-pin-300-mil SRAMs (64KBx8), uses all pins of socket. For 28-pin-300-mil SRAMs (such as 32KBx8), uses a part pins of socket.

Please make certain that the pin-1 of SRAM must be match with the pin-1 of Socket when the cache SRAM is installed.



4.2.2.2 SRAM MODULE CACHE MEMORY CONFIGURATION

The SRAM module cache memory configuration using either burst, pipelined burst or standard (asynchronous) SRAMs, the following table lists the jumper settings about SRAMs type and cache memory size selection.

SRAM Type	Cache Size	JP5	JP6	JP20	JP21	JP22
Asynchronous SRAM	256 KB	1-2	1-2	2-3	1-2	2-3
	512 KB	1-2	1-2	1-2	2-3	2-3
Burst SRAM	256 KB	2-3	2-3	2-3	1-2	1-2
	512 KB	2-3	2-3	1-2	2-3	1-2
Pipelined Burst SRAM	256 KB	2-3	2-3	2-3	1-2	1-2
	512 KB	2-3	2-3	1-2	2-3	1-2

Note : The 5IS system board supports just one bank L2 cache memory, which means you could not use the "on board cache memory system" and the "SRAM module cache memory system" at the same time.

4.2.3 CONNECTORS

A connector is two or more pins that are used make connections to the system standard accessories (such as power, battery ,...etc.) The following is a list of connectors on board, as well as descriptions of each individual connector.

(A) BAT1 Non-Rechargeable battery (Using 3 Vlots Lithium battery : CR2032)

Pin # Assignment

- Battery Positive
- Ground

(B) CN1 PS/2 Keyboard connector (option)

Pin # Assignment Pin # Assignment

- | | | | |
|---|---------------|---|----------------|
| 1 | Keyboard Data | 4 | +5V DC |
| 2 | No Connection | 5 | Keyboard Clock |
| 3 | Ground | 6 | No Connection |

(C) CN2 AT Keyboard connector

Pin # Assignment Pin # Assignment

- | | | | |
|---|----------------|---|--------|
| 1 | Keyboard Clock | 4 | Ground |
| 2 | Keyboard Data | 5 | +5V DC |
| 3 | No Connection | | |

(D) CN3 Power connector

<u>Pin #</u>	<u>Assignment</u>	<u>Pin #</u>	<u>Assignment</u>	<u>Pin #</u>	<u>Assignment</u>
1	Power Good	5	Ground	9	-5V DC
2	+5V DC	6	Ground	10	+5V DC
3	+12V DC	7	Ground	11	+5V DC
4	-12V DC	8	Ground	12	+5V DC

(E) CN4 PS/2 Mouse connector (option) & J1 PS/2 Mouse converted connector

<u>Pin #</u>	<u>Assignment</u>	<u>Pin #</u>	<u>Assignment</u>
1	Mouse Data	1	Mouse Data
2	No Connection	2	No Connection
3	Ground	3	Ground
4	+5V DC	4	+5V DC
5	Mouse Clock	5	Mouse Clock
6	No Connection	6	No Connection

(F) CN5 COM A (Serial Port 1) connector
(COM1/2/3/4, selected by BIOS setup, using IRQ4 or 3)

<u>Pin #</u>	<u>Assignment</u>	<u>Pin #</u>	<u>Assignment</u>
1	DCD (Data Carrier Detect)	2	RD (Received Data)
3	TD (Transmit Data)	4	DTR (Data Terminal Ready)
5	Ground	6	DSR (Data Set Ready)
7	RTS (Request To Send)	8	CTS (Clear To Send)
9	RI (Ring Indicator)	10	NC (No Connection)

(G) CN6 COM B (Serial Port 2) connector
(COM1/2/3/4, selected by BIOS setup, using IRQ3 or 4)

<u>Pin #</u>	<u>Assignment</u>	<u>Pin #</u>	<u>Assignment</u>
1	DCD (Data Carrier Detect)	2	RD (Received Data)
3	TD (Transmit Data)	4	DTR (Data Terminal Ready)
5	Ground	6	DSR (Data Set Ready)
7	RTS (Request To Send)	8	CTS (Clear To Send)
9	RI (Ring Indicator)	10	NC (No Connection)

(H) CN7 IR (Infrared Rays) transmission connector
(Available, only when the I/O Chip is used FDC37C665IR or FDC37C669 . If the I/O chip is used FDC37C665GT , the IR functions are not supported and this connector is removed.)

<u>Pin #</u>	<u>Assignment</u>	<u>Pin #</u>	<u>Assignment</u>
1	IR Receive	3	IR Transmit
2	Ground	4	+5V DC

(I) CN8 Parallel Port connector
(Supports Normal/EPP/ECP mode, selected by BIOS setup, using IRQ7, ECP using DMA channel 3)

(J) CN9 Floppy Disk Control Port connector (Using IRQ6, DMA channel 2)

(K) CN10 IDE 1 connector (Primary IDE Port, using IRQ14)

(L) CN11 IDE 2 connector (Secondary IDE Port, using MIRQ0)

(M) CN12 VRM (Voltage Regulator Module) connector

Note : If the Voltage Regulator Module is not installed, the "pin-A6 & pin-A7 " and "pin-B6 & pin-B7" must be connected by a plastic connector plug (mini-jumper) individually.

(N) RS Reset Button connector

<u>Pin #</u>	<u>Assignment</u>	<u>Pin1&2</u>	<u>Function</u>
1	Ground	Open	No action
2	Reset Control	Short	Reset

(O) HL IDE HDD LED connector

<u>Pin #</u>	<u>Assignment</u>
1	Pullup (+5V DC)
2	Signal Pin

(P) SS External SMI button connector

<u>Pin #</u>	<u>Assignment</u>	<u>Pin1&2</u>	<u>Function</u>
1	SMI Control	Open	For normal operation
2	Ground	Short	To get into Suspend mode

(Q) TL Turbo LED connector

<u>Pin #</u>	<u>Assignment</u>
1	Pullup (+5V DC)
2	Signal Pin

(R) TS Turbo Switch connector

<u>Pin #</u>	<u>Assignment</u>	<u>Pin1&2</u>	<u>Function</u>
1	Ground	Open	Turbo
2	Turbo Control	Short	Normal

(S) SPEAKER Speaker connector

<u>Pin #</u>	<u>Assignment</u>	<u>Pin #</u>	<u>Assignment</u>
1	+5V DC	4	Speaker Data Signal
2	No Connection	5	No Connection
3	No Connection		

(T) KEY LOCK Front Panel Power LED & Key-Lock connector

<u>Pin #</u>	<u>Assignment</u>
1	Pullup (+5V DC for Power LED)
2	No Connection
3	Ground
4	Keyboard Lock
5	Ground

4.2.4 JUMPERS

A jumper is two, three or more pins which may or may not be covered by a plastic connector plug (mini-jumper). A jumper is used to select different system options. **Please make sure all jumpers at correct position before this system board be used.**

(A) JP1, JP2 & JP3, JP4 On board DATA SRAM VCC voltage selection

Voltage	JP1, JP2	JP3, JP4	Remark
+3.3V DC	open	short	For pure 3.3V SRAM
+5V DC	short	open	For pure 5V and mixed mode SRAM

(B) JP5-JP6 & JP19-JP22 Cache memory configuration
Please refer to page 4-2 & page 4-3 for detailed informations.

(C) JP11, JP12, JP14 Frequency selection

Frequency (unit : MHz)						Remark
System	PCI Bus	AT Bus	JP11	JP12	JP14	(CPU Type)
50	25	8.33	open	open	1-2	For P5-75, 6x86-100
60	30	7.5	open	short	2-3	For P5-90/120/150/180, 6x86-120 (default)
66.6	33.3	8.33	short	short	2-3	For P5-100/133/166/200, 6x86-133

(D) JP25, JP26 CPU-to-System Frequency ratio selection

Ratio	JP25	JP26	Remark (CPU Type)
3/2 (x 1.5)	open	open	For P5-75/90/100 (default)
2/1 (x 2)	short	open	For P5-120/133, 6x86-100/120/133
5/2 (x 2.5)	short	short	For P5-150/166
3/1 (x 3)	open	short	For P5-180/200

(E) JP17, JP16 CPU VCC voltage Selection

CPU VCC	JP17	JP16	Remark
+ 3.3 V	1-2	open	For standard & VR spec. (default)
+ 3.5 V	2-3	short	For VRE spec.

Note : The CPU VCC voltage is selected by either JP17 or JP16. There is only one jumper exists on board at the same time between JP17 and JP16.

- (F) JP9, JP10 IR Function selection
(Available, only when the I/O chip is used FDC37C665IR (B). If the I/O chip is used FDC37C665IR (C) or FDC37C665GT or FDC37C669, these pin-connector and mini-jumper are removed and the settings are fixed on 1-2.)
- | <u>Pin #</u> | <u>Function</u> |
|--------------|---|
| 1-2 | Enable COM B (CN6, Serial Port 2) function and Disable IR (CN7) function. |
| 2-3 | Disable COM B (CN6, Serial Port 2) function and Enable IR (CN7) function. |
- (G) JP13 Clock generator VCC voltage selection
- | <u>Pin #</u> | <u>Function</u> |
|--------------|-----------------|
| 1-2 | + 5V (default) |
| 2-3 | + 3.3V |
- (H) JP18 ROM BIOS Selection
- | <u>Pin #</u> | <u>Function</u> |
|--------------|--------------------------|
| 1-2 | For +5V FLASH ROM, EPROM |
| 2-3 | For +12V FLASH ROM |
- (I) JP23 CPU Internal Cache Write Back / Write Through selection
- | <u>Pin #</u> | <u>Function</u> |
|--------------|---|
| open | CPU Internal Cache Write Back (default) |
| short | CPU Internal Cache Write Through |
- (J) JP24 CPU Pipelined function selection
- | <u>Pin #</u> | <u>Function</u> |
|--------------|--------------------------------|
| open | CPU Pipelined Disable |
| short | CPU Pipelined Enable (Default) |
- (K) JP27 CMOS Discharge button
- | <u>Pin #</u> | <u>Function</u> |
|--------------|------------------|
| open | Normal operation |
| short | CMOS Discharge |
- (L) CN12 Pin A6-A7 and Pin B6-B7
- | <u>Pin #</u> | <u>Function</u> |
|--------------|-----------------------------|
| open | VRM installed |
| short | VRM non-installed (default) |

5. AWARD BIOS SETUP

5.1 GETTING STARTED

When the system is first powered on or reset, the BIOS will enter the Power-On Self Test routines (POST : Display a copyright message on the first line of the screen followed by a diagnostics and initialization procedure.) (If an EGA or VGA card is installed, the copyright message of the video card maybe displayed on the screen first.) The BIOS will indicate any error or malfunction by a series of beeps or display the error message on screen.

Normally, the simulate figure 5-1 will display on the screen when the system is powered on.

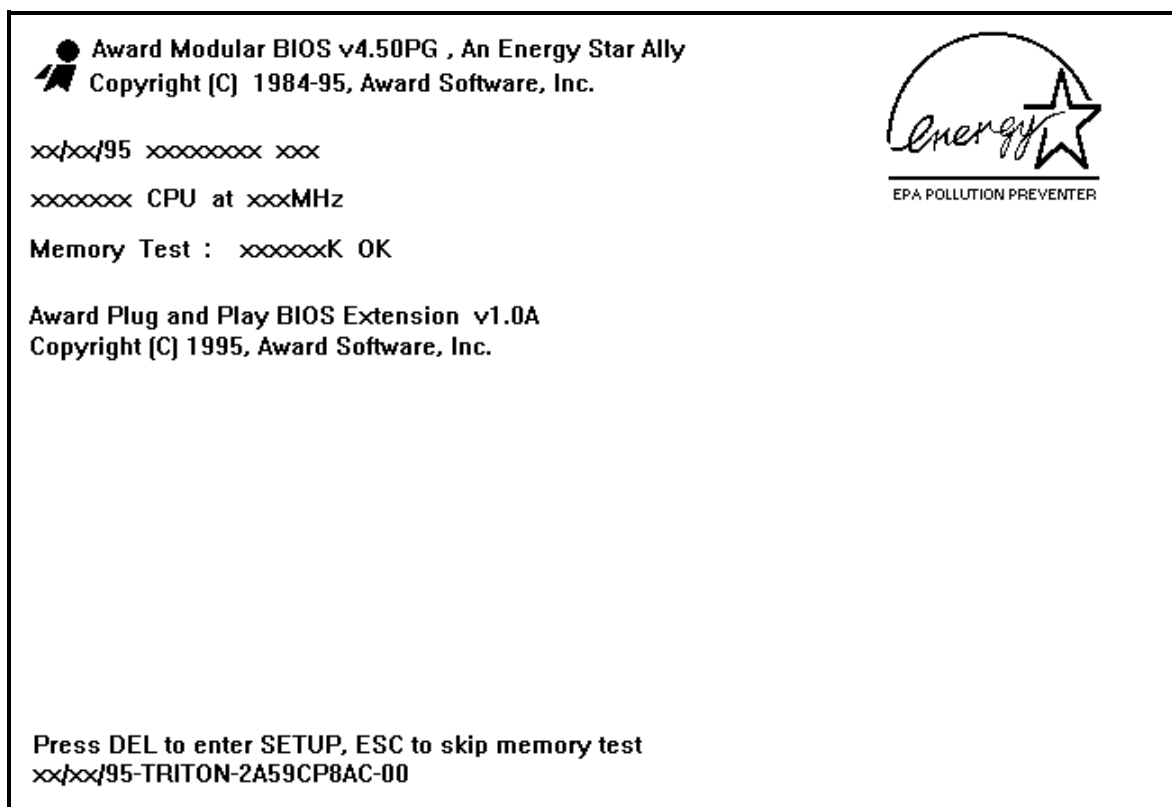


Fig. 5-1 Initial Power-On screen.

After the POST routines are completed, the following message appears :

" Press **DEL** to enter SETUP "

To progress the Award BIOS Setup program, press **DEL** key. The simulate screen in figure 5-2 MAIN MENU will be displayed at this time.

5.2 MAIN MENU

ROM PCI / ISA BIOS (2A59CP8A)
 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 ...	

Fig. 5-2 BIOS SETUP MAIN MENU screen.

Ranges or options for each feature will be listed below in prompt box in the bottom of the CMOS Setup MAIN MENU, as shown in above figure.

5.3 CONTROL KEYS

Listed below is an explanation of the keys displayed at the bottom of the screens accessed through the BIOS SETUP program :

- Arrow Keys** : Use the arrow keys to move the cursor to the desired item.
- Enter** : To Select the desired item.
- F1** : Display the help screen for the selected feature.
- (Shift)F2** : To change the screen color, total 16 colors.
- ESC** : Exit to the previous screen.
- PgUp(-)/PgDn(+)** : To modify the default value of the options for the highlighted feature.
- F5** : Retrieves the previous CMOS values from CMOS, only for the current option page setup menu.
- F6** : Loads the BIOS default values from BIOS default table, only for the current option page setup menu.
- F7** : Loads the SETUP default values from BIOS default table, only for the current option page setup menu.
- F10** : Save all changes made to CMOS RAM, only for the MAIN MENU.

The following pages will show the simulate screens of CMOS SETUP, each figure contains the setup items and the default settings of them. Below each figure may or may not be contained a lists of function description for commonly used settings. For the other settings' function description you needed, connet to us please.

5.4 STANDARD CMOS SETUP

ROM PCI/ISA BIOS (2A59CP8A)
STANDARD CMOS SETUP
AWARD SOFTWARE, INC.

Date (mm : dd : yy) : Wed, Sep 27 1995																		
Time (hh : mm : ss) : 9 : 27 : 27																		
HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE										
Primary Master	None	0	0	0	0	0	0	-----										
Primary Slave	None	0	0	0	0	0	0	-----										
Secondary Master	None	0	0	0	0	0	0	-----										
Secondary Slave	None	0	0	0	0	0	0	-----										
Drive A : 1.2M , 5.25 in.				<table border="1"> <tr> <td>Base Memory :</td> <td>640 K</td> </tr> <tr> <td>Extended Memory :</td> <td>xxxxxx K</td> </tr> <tr> <td>Other Memory :</td> <td>xxxxxx K</td> </tr> <tr> <td><hr/></td> <td></td> </tr> <tr> <td>Total Memory :</td> <td>xxxxxx K</td> </tr> </table>					Base Memory :	640 K	Extended Memory :	xxxxxx K	Other Memory :	xxxxxx K	<hr/>		Total Memory :	xxxxxx K
Base Memory :	640 K																	
Extended Memory :	xxxxxx K																	
Other Memory :	xxxxxx K																	
<hr/>																		
Total Memory :	xxxxxx K																	
Drive B : None																		
Video : EGA/VGA																		
Halt On : All Errors																		
ESC : Quit			↑↓→← : Select Item			PU/PD/+/- : Modify												
F1 : Help			(Shift)F2 : Change Color															

Fig. 5-3 STANDARD CMOS SETUP screen.

MODE :

For IDE hard disks, this BIOS provides three modes to support both normal size IDE hard disks and also disks size larger the 528MB:

- NORMAL : For IDE hard disks size smaller then 528MB.
- LBA : For IDE hard disks size larger then 528MB and up to 8.4GB (Giga Bytes) that use Logic Block Addressing (LBA) mode.
- Large : For IDE hard disks size larger then 528MB that do not use LBA mode. Large mode is a new specifition which may not be fully supported by all operation systems. Now it can only be used with the MS-DOS and is uncommon.

Note : Some OSes (like SCO-UNIX) must use "NORMAL" for installation.

5.5 BIOS FEATURES SETUP

ROM PCI/ISA BIOS (2A59CP8A)
 BIOS FEATURES SETUP
 AWARD SOFTWARE, INC.

Virus Warning	: Disabled	Video BIOS Shadow	: Enabled
CPU Internal Cache	: Enabled	C8000-CBFFF Shadow	: Disabled
External Cache	: Enabled	CC000-CFFFF Shadow	: Disabled
Quick Power On Self Test	: Enabled	D0000-D3FFF Shadow	: Disabled
Boot Sequence	: A, C	D4000-D7FFF Shadow	: Disabled
Swap Floppy Drive	: Disabled	D8000-DBFFF Shadow	: Disabled
Boot Up Floppy Seek	: Enabled	DC000-DFFFF Shadow	: Disabled
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		
PCI/VGA Palette Snoop	: Disabled		
		ESC : Quit	↑↓→← : Select Item
		F1 : Help	PU/PD/+/- : Modify
		F5 : Old Values	(Shift)F2 : Color
		F6 : Load BIOS Default	
		F7 : Load Setup Default	

Fig. 5-4 BIOS FEATURES SETUP screen.

Virus Warning :

This feature 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 an error message will appear, in the mean time, you can run anti-virus program to locate the problem. Default values is "Disabled"

Enabled : Activate 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.

CPU Internal Cache :

This option enables CPU's internal (L1) cache memory. If you want to use the internal (L1) cache memory and external (L2) cache memory, this option must be enabled.

External Cache :

This option enables L2 (secondary) external cache memory. If none external cache memory on board you must set this option to "disabled", otherwise, you can select enabled or disabled.

5.6 CHIPSET FEATURES SETUP

ROM PCI/ISA BIOS (2A59CP8A)
 CHIPSET FEATURES SETUP
 AWARD SOFTWARE, INC.

DRAM RAS# Precharge Time : 4	PCI Concurrency : Enabled
DRAM R/W Leadoff Timing : 8/6	PCI Streaming : Enabled
DRAM RAS to CAS Delay : 3	PCI Bursting : Enabled
DRAM Read Burst Timing : x2222	Onboard FDC Controller : Enabled
DRAM Write Burst Timing : x3333	Onboard Serial Port 1 : COM1
	Onboard Serial Port 2 : COM2
System BIOS Cacheable : Enabled	Onboard Parallel Port : 378H
Video BIOS Cacheable : Enabled	Parallel Port Mode : Normal
8 Bit I/O Recovery Time : 1	
16 Bit I/O Recovery Time : 1	
Memory Hole At 15M-16M : Disable	
IDE HDD Block Mode : Disabled	
IDE Primary Master PIO : Auto	
IDE Primary Slave PIO : Auto	
IDE Secondary Master PIO : Auto	
IDE Secondary Slave PIO : Auto	
On-Chip Primary PCI IDE : Enabled	ESC : Quit ↑↓→← : Select Item
On-Chip Secondary PCI IDE : Enabled	F1 : Help PU/PD/+/- : Modify
PCI Slot IDE 2nd Channel : Enabled	F5 : Old Values (Shift)F2 : Color
	F6 : Load BIOS Default
	F7 : Load Setup Default

Fig. 5-5 CHIPSET FEATURES SETUP screen.

WARNING : *The CHIPSET FEATURES SETUP in this screen are provided so that technical professionals can modify the Chipset to suit their requirement. If you are not a technical engineer, do not use this program !*

IDE HDD Block Mode :

This feature enhances hard disk performance, making multi-sector transfers instead of one sector per transfer. Most IDE drives, except the very early designs can use this feature. Default is "Disabled".

5.7 POWER MANAGEMENT SETUP

ROM PCI/ISA BIOS (2A59CP8A)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.

Power Management : User Define	IRQ 3 (COM 2) : ON
PM Control by APM : No	IRQ 4 (COM 1) : ON
Video Off Method : Blank Screen	IRQ 5 (LPT 2) : OFF
	IRQ 6 (Floppy Disk) : ON
Doze Mode : 20 Min	IRQ 7 (LPT 1) : ON
Standby Mode : 20 Min	IRQ 8 (RTC Alarm) : OFF
Suspend Mode : 10 Min	IRQ 9 (IRQ2 Redir) : OFF
HDD Power Down : Disable	IRQ 10 (Reserved) : OFF
	IRQ 11 (Reserved) : OFF
IRQ3 (Wake-Up Event) : ON	IRQ 12 (PS/2 Mouse) : ON
IRQ4 (Wake-Up Event) : ON	IRQ 13 (Coprocessor) : OFF
IRQ8 (Wake-Up Event) : OFF	IRQ 14 (Hard Disk) : ON
IRQ12 (Wake-Up Event) : ON	IRQ 15 (Reserved) : OFF
Power Down Activities	
COM Ports Accessed : ON	ESC : Quit ↑↓→← : Select Item
LPT Ports Accessed : ON	F1 : Help PU/PD/+/- : Modify
Drive Ports Accessed : ON	F5 : Old Values (Shift)F2 : Color
	F6 : Load BIOS Default
	F7 : Load Setup Default

Fig. 5-6 POWER MANAGEMENT SETUP screen.

WARNING : *The POWER MANAGEMENT SETUP in this screen are provided so that technical professionals can modify the Chipset to suit their requirement. If you are not a technical engineer, do not use this program !*

Power Management :

This setting controls the Power Management functions. "User Define" allows the values of all parameters could be modified. "Min Saving", "Max Saving" or "Optimize" fixed the values of three parameters, including "Doze Mode", "Standby Mode" and "Suspend Mode". "Disable" disabled all Power Management functions. Default is "User Define".

5.8 PCI CONFIGURATION SETUP

ROM PCI / ISA BIOS (2A59CP8A)
 PCI CONFIGURATION SETUP
 AWARD SOFTWARE, INC.

PnP BIOS Auto-Config	: Enabled	
Slot 1 Using INT#	: AUTO	
Slot 2 Using INT#	: AUTO	
Slot 3 Using INT#	: AUTO	
Slot 4 Using INT#	: AUTO	
1st Available IRQ	: 9	
2nd Available IRQ	: 10	
3rd Available IRQ	: 11	
4th Available IRQ	: 12	
PCI IRQ Activated By	: Edge	
PCI IDE IRQ Map To	: PCI-AUTO	
Primary IDE INT#	: A	
Secondary IDE INT#	: B	
		ESC : Quit ↑↓→← : Select Item
		F1 : Help PU/PD/+/- : Modify
		F5 : Old Values (Shift)F2 : Color
		F6 : Load BIOS Default
		F7 : Load Setup Default

Fig. 5-7 PCI CONFIGURATION SETUP screen.

WARNING : *The PCI CONFIGURATION SETUP in this screen are provided so that technical professionals can modify the PCI Configuration to suit their requirement. If you are not a technical engineer, do not use this program !*

PnP BIOS Auto-Config :

When Enabled, this parameter locks several settings (1st Available IRQ through 4th Available IRQ) and adjusts the available IRQs automatically. When Disabled, it allows the user to adjust the available IRQs individually.

Some suggestions for PCI IDE card setup :

1. PCI IDE with "Legacy Header" or simply No PCI IDE Device :
 - Choose option "ISA" in item "PCI IDE IRQ Map To".
2. Dirty PCI IDE without "Legacy Header" and without a accurate Cfg Space :
 - Check which slot is this card plug and choose PCI-SLOT1 --- PCI-SLOT4.
 - Determine the INTs for primary and secondary channel by checking the IDE cards manual or simply ask the IDE card vender or supplier.
3. Identifiable PCI IDE :
 - Choose "PCI-AUTO" for these cards.
 - Determine the INTs for primary and secondary channel by checking the IDE cards manual or simply ask the IDE card vender or supplier.

5.9 LOAD SETUP DEFAULTS

This option loads the SETUP default values from BIOS default table. By pressing "Enter" key, while "LOAD SETUP DEFAULTS" is highlighted, then presses "Y" and "Enter" key. the SETUP default values will be loaded. The SETUP default settings are the best-case values that should optimize system performance. If CMOS RAM is corrupted, the SETUP DEFAULTS settings are loaded automatically.

5.10 PASSWORD SETTING

Type the Password and press "Enter" repeat. Enters up to eight alphanumeric characters. By pressing "Enter" key twice, without any alphanumeric character enters, the PASSWORD will be disabled.

5.11 IDE HDD AUTO DETECTION

By pressing "Enter" key, while "IDE HDD AUTO DETECTION" is highlighted causes the system to attempt to detect the type of hard disk. If successful, then presses "Y" (or 1, 2, ...) and "Enter" key, it fills in the remaining fields on this menu and the correlated fields in the STANDARD CMOS SETUP menu.

5.12 SAVE & EXIT SETUP

This option saves all setup values to CMOS RAM & EXIT SETUP routine, by moving the cursor to "SAVE & EXIT SETUP" and pressing "Enter" key, then types "Y" and "Enter" key, the values will be saved, the setup program will be terminated and the system will be reboot.

5.13 EXIT WITHOUT SAVING

This option exits setup routine without saves any changed values to CMOS RAM, by moving the cursor to "EXIT WITHOUT SAVING" and pressing "Enter" key, then types "Y" and "Enter" key, the setup program will be terminated and the system will be reboot.