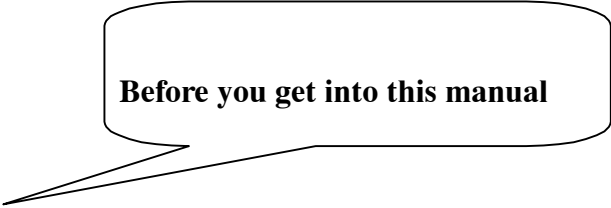

**I430TX CHIPSET
MAIN BOARD
USER'S MANUAL
(VER : 5TX2B)**



Before you get into this manual

Important Notice

The information presented in this publication has been carefully designed for reliability. However, no responsibility is assumed for inaccuracies. Specifications are subject to modification without notice.

Registered Trademarks

IBM Registered trademark of International Business Machines Corp.
Intel/Pentium Registered trademark of Intel Corp.
Award Registered trademark of Award Software Inc.

All other trademarks mentioned in this manual are registered property of the respective owners.

Copyright

This manual may not be in whole or in part, photocopied, reproduced or transmitted without the written consent of the manufacturer except for copies retained by the purchaser for personnel archival purposes.

Warning

Shut down power before the computer is completely assembled. Check if everything is ready when you turn on the computer.

TABLE OF CONTENTS

CHAPTER 1. INTRODUCTION..... 1

- 1-1 Overview1
- 1-2 Specifications.....2
- 1-3 Unpacking.....3

CHAPTER 2. INSTALLATION..... 4

- 2-1 Layout Reference.....4
- 2-2 Jumper Settings.....5
- 2-3 Over Heat Alarm.....9
- 2-4 Dram Memory Installation Procedures.....10
- 2-5 Dimm Memory Installation Procedures ..11
- 2-6 Memory Installation.....12

CHAPTER 3. BIOS Setup..... 13

- 3-1 Award BIOS CMOS Setup....13
- 3-2 Standard CMOS Setup.....14
- 3-3 Bios Features Setup.....15
- 3-4 Chipset Features Setup.....19
- 3-5 Intergrated Peripherals.....21
- 3-6 Supervisor/User Password.....23
- 3-7 Power Management Setup.24
- 3-8 PNP/PCI Configuration Setup... ..25
- 3-9 IDE HDD Auto Detection.....26
- 3-10 Load Setup Defaults.....28
- 3-11 Save & Exit Setup.....28
- 3-12 Exit Without Saving.....28
- 3-13 I/O & Memory Map.....29
- 3-14 Time & DMA Channels Map.....31
- 3-15 Interrupt Map.....31
- 3-16 RTC & CMOS RAM Map.....32

CHAPTER 1. INTRODUCTION

1-1 OVERVIEW

This main board is designed with **INTELÆPENTIUMÆI430TX** chipset which provides an integrated IDE controller with two high performance IDE interfaces for up to four IDE devices (hard devices , CD-ROM devices , etc), an USB (universal serial bus) features enhances the overall performance and expensibility for this board.

IT supports INTELÆ P54C/P55C PENTIUMÆ CPUs family running at 75 /90 /100 /120 /133 /150 /166 /180 /200 /233 MHz speed, CYRIXÆ 6X86/6X86L P120-200+, 6X86MX PR166-233MHZ /MII 300 and AMDÆ K5 75 ñ 166MHz / K6 166- 300 MHz CPUs. It also supports 512K cache memory, which is ideal for MS-DOS, WINDOWS™, WINDOW-95, WINDOW NT, NOVELL, OS/2, UNIX., softwares. The performance, speed and extensibility of this main board make it the perfect choice for building a LAN server, a high-end workstation or a multi-user system.

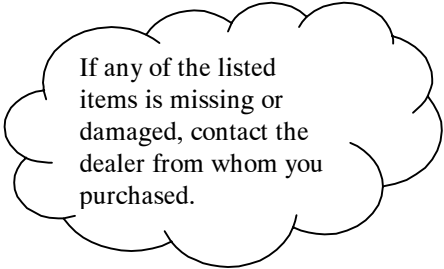
1-2 SPECIFICATIONS

CPU	<ol style="list-style-type: none">1. 75 -233 MHZ INTELÆ PENTIUMÆ P54C&P55C2. CYRIXÆ 6X86/6X86L P120- 200+ / 6X86MX166-233MHZ/MII 3003. AMDÆ K5 75 - 166 /K6 166- 300 MHZ CPUÆ
MEMORY	2 OF 72-PIN SIMMS / 2 OF 168-PIN DIMMS (DUAL-IN-LINE-MEMORY-MODULE)UP TO 128MB NOTE: SIMM CAN BE FAST PAGE, EDO DIMM FOR JEDEC 3.3V OR 5V SDRAM SYNCHRONOUS DRAM) , BURST EDO , EDO OR FAST PAGE.
EXP. SLOT	3 X ISA / 4 X PCI SLOTS
CHIPSET	INTELÆ I430 TX CHIPSET 82439TX SYSTEM CONTROLLER 82371AB PCI ISA IDE XCELERATOR
CACHE SIZE	512K
BIOS	AWARDÆ FULL PnP (PLUG & PLAY) BIOS
I/O FUNCTION	ON BOARD <ol style="list-style-type: none">1. 2 x PCI IDE DEVICES, 1 x FDC2. 2 x SERIAL PORTS (ENHANCED SERIAL PORTS)3. 1x PARALLEL PORT DEVICE SPP/EPP/ECP4. OPTIONAL USB(UNIVERSAL SERIAL BUS) CONNECTOR5. I.R(INFRA-RED) CONNECTOR
BOARD SIZE	22 CM x 23 CM

1-3 PACKAGE

The main board package contains:

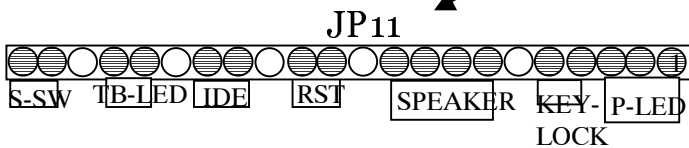
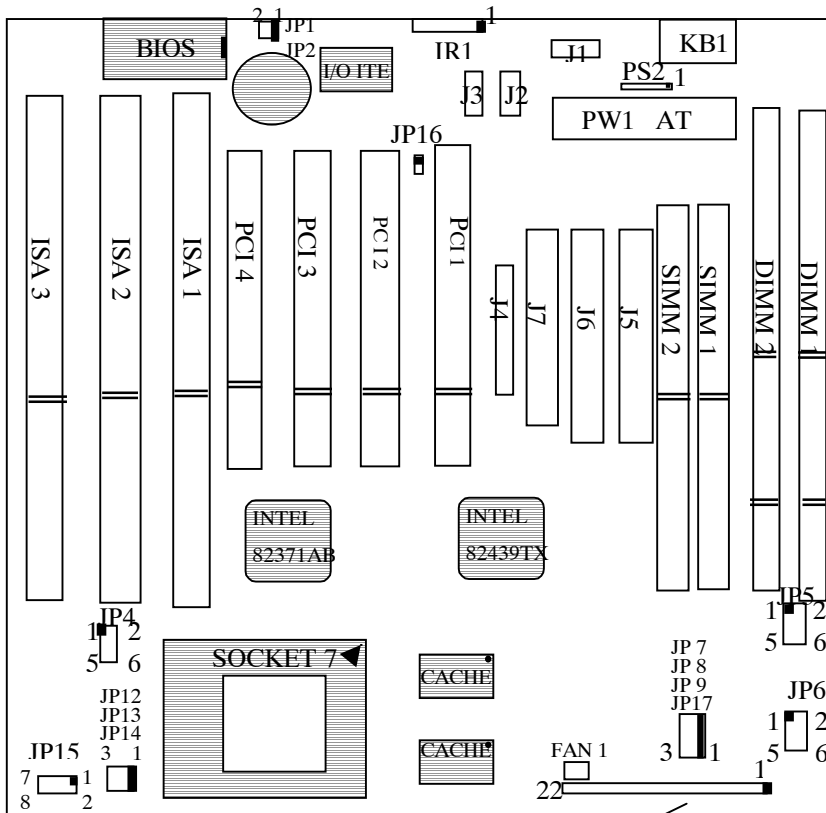
- * I430TX Main Board
- * Manual
- * Cables
- * Driver Diskette / CD
- * No Processor Included



If any of the listed items is missing or damaged, contact the dealer from whom you purchased.

CHAPTER 2. INSTALLATION

2-1 LAYOUT REFERENCE



2-2 JUMPER SETTINGS

INTEL Æ CPU	CLOCK SPEED	RATIO	JP7	JP8	JP9	JP12	JP13	JP15	JP6	JP17
P54C 75 3.3V	50MHZ	1.5	1-2	1-2	1-2	1-2	1-2	1-2,5-6,7-8	OFF	2-3
P54C 90 3.3V	60MHZ	1.5	2-3	1-2	1-2	1-2	1-2	1-2,5-6,7-8	OFF	2-3
P54C 100 3.3V	66MHZ	1.5	1-2	2-3	1-2	1-2	1-2	1-2,5-6,7-8	OFF	2-3
P54C 120 3.3V	60MHZ	2	2-3	1-2	1-2	2-3	1-2	1-2,5-6,7-8	OFF	2-3
P54C 133 3.3V	66MHZ	2	1-2	2-3	1-2	2-3	1-2	1-2,5-6,7-8	OFF	2-3
P54C 150 3.3V	60MHZ	2.5	2-3	1-2	1-2	2-3	2-3	1-2,5-6,7-8	OFF	2-3
P54C 166 3.3V	66MHZ	2.5	1-2	2-3	1-2	2-3	2-3	1-2,5-6,7-8	OFF	2-3
P55C 166 2.8/3.3V	66MHZ	2.5	1-2	2-3	1-2	2-3	2-3	7-8	1-2,3-4,5-6	2-3
P54C 180 3.3V	60MHZ	3	2-3	1-2	1-2	1-2	2-3	1-2,5-6,7-8	OFF	2-3
P54C 200 3.3V	66MHZ	3	1-2	2-3	1-2	1-2	2-3	1-2,5-6,7-8	OFF	2-3
P55C 200 2.8/3.3V	66MHZ	3	1-2	2-3	1-2	1-2	2-3	7-8	1-2,3-4,5-6	2-3
P55C 233 2.8/3.3V	66MHZ	3.5	1-2	2-3	1-2	1-2	1-2	7-8	1-2,3-4,5-6	2-3

AMD CPU	CLOCK SPEED	RATIO	JP7	JP8	JP9	JP12	JP13	JP15	JP6	JP17
PR75 3.52V	50MHZ	1.5	1-2	1-2	1-2	1-2	1-2	1-2,3-4,5-6,7-8	OFF	2-3
PR90/PR120 3.52V	60MHZ	1.5	2-3	1-2	1-2	1-2	1-2	1-2,3-4,5-6,7-8	OFF	2-3
PR100/PR133 3.52V	66MHZ	1.5	1-2	2-3	1-2	1-2	1-2	1-2,3-4,5-6,7-8	OFF	2-3
PR150 3.52V	60MHZ	2.5	2-3	1-2	1-2	2-3	2-3	1-2,3-4,5-6,7-8	OFF	2-3
PR166 3.52V	66MHZ	2.5	1-2	2-3	1-2	2-3	2-3	1-2,3-4,5-6,7-8	OFF	2-3
K6 PR166 2.9/3.3V	66MHZ	2.5	1-2	2-3	1-2	2-3	2-3	1-2,7-8	1-2,3-4,5-6	2-3
K6 PR200 2.9/3.3V	66MHZ	3	1-2	2-3	1-2	1-2	2-3	1-2,7-8	1-2,3-4,5-6	2-3
K6 PR233 3.2/3.3V	66MHZ	3.5	1-2	2-3	1-2	1-2	1-2	5-6,7-8	1-2,3-4,5-6	2-3
K6 PR233 3.3/3.3V	66MHZ	3.5	1-2	2-3	1-2	1-2	1-2	1-2, 5-6, 7-8	1-2,3-4,5-6	2-3
K6 PR266 2.2/3.3V	66MHZ	4	1-2	2-3	1-2	2-3	1-2	3-4	1-2,3-4,5-6	2-3
K6 PR300 2.2/3.45V	66MHZ	4.5	1-2	2-3	1-2	2-3	2-3	3-4	1-2,3-4,5-6	2-3
K6 ñ2 266 2.2/3.3V	66MHZ	4	1-2	2-3	1-2	2-3	1-2	3-4	1-2,3-4,5-6	2-3

CYRIXÆ CPU	CLOCK SPEED	RATIO	JP7	JP8	JP9	JP12	JP13	JP15	JP6	JP17
P120+ 3.52V	50MHZ	2	1-2	1-2	1-2	2-3	1-2	1-2,3-4,5-6,7-8	OFF	2-3
P133+ 3.52V	55MHZ	2	1-2	1-2	2-3	2-3	1-2	1-2,3-4,5-6,7-8	OFF	2-3
P150+ 3.52V	60MHZ	2	2-3	1-2	1-2	2-3	1-2	1-2,3-4,5-6,7-8	OFF	2-3
P166+ 3.52V	66MHZ	2	1-2	2-3	1-2	2-3	1-2	1-2,3-4,5-6,7-8	OFF	2-3
P200 + 3.52V	75MHZ	2	2-3	1-2	2-3	2-3	1-2	1-2,3-4,5-6,7-8	OFF	2-3
P133+ 2.8/3.3V 6X86L	55MHZ	2	1-2	1-2	2-3	2-3	1-2	7-8	1-2,3-4,5-6	2-3
P150+ 2.8/3.3V 6X86L	60MHZ	2	2-3	1-2	1-2	2-3	1-2	7-8	1-2,3-4,5-6	2-3
P166+ 2.8/3.3V 6X86L	66MHZ	2	1-2	2-3	1-2	2-3	1-2	7-8	1-2,3-4,5-6	2-3
P200 + 2.8/3.3V 6X86L	75MHZ	2	2-3	1-2	2-3	2-3	1-2	7-8	1-2,3-4,5-6	1-2
MX PR166 2.9/3.3V	60MHZ	2.5	2-3	1-2	1-2	2-3	2-3	1-2,7-8	1-2,3-4,5-6	2-3
MX PP166 2.9/3.3V	66MHZ	2	1-2	2-3	1-2	2-3	1-2	1-2,7-8	1-2,3-4,5-6	2-3
MX PR200 2.9/3.3V	75MHZ	2	2-3	1-2	2-3	2-3	1-2	1-2,7-8	1-2,3-4,5-6	1-2

MX	PR233 2.9/3.3V	75MHZ	2.5	2-3	1-2	2-3	2-3	2-3	1-2, 7-8	1-2,3-4,5-6	1-2
MII	PR300 2.9/3.3V	66MHZ	3.5	1-2	2-3	1-2	1-2	1-2	1-2,7-8	1-2,3-4,5-6	2-3

NOTE: JP14 IS RESERVED FOR CPU RATIO 4X/4.5X/5.X OR UP. PLEASE SET 2-3 FOR K6 PR266 2.2/3.3V & K6 PR300 2.2/3.3V AND 1-2 FOR OTHER CPUS.

A. EXPLANATION OF JUMPER SETTING

1. JP1: FLASH ROM VOLTAGE SELECTOR

JP1	Description
Open(5V)	WINBONDÆ, ATMELÆ, SSTÆ
Close(12V)	INTELÆ, MX1CÆ

2. JP2 : RTC

	Short	Normal(Default)
JP2	Open	RTC Clear

3. JP4 : SB LINK

4. JP5: DIMM VOLTAGE SELECTOR

	5V DIMM	3.3V DIMM
JP5	3-5, 4-6	1-3, 2-4

5. JP6 SINGLE /DUAL VOLTAGE CPU SELECTOR

	SINGLE VOLTAGE CPU	DUAL VOLTAGE CPU
JP6	Open	1-2,3-4,5-6

6. JP7, JP8, JP9 : CPU FREQUENCY SLECTOR

	50 MHZ	55 MHZ	60 MHZ	66.6 MHZ	75 MHZ
JP7	1-2	1-2	2-3	1-2	2-3
JP8	1-2	1-2	1-2	2-3	1-2
JP9	1-2	2-3	1-2	1-2	2-3

7. JP11 : CASE CONNECTOR

8. JP12/JP13 : CPU FREQUENCY RATIO SELECTOR

	1.5 X	2.0 X	2.5 X	3.0 X	3.5 X
JP12	1-2	2-3	2-3	1-2	1-2
JP13	1-2	1-2	2-3	2-3	1-2

Note : JP14 is reserved for AMDÆ K6 3D 266/K6 266 and above.

9. JP15 : VCORE VOLTAGE SELECTOR

Voltage Output	1-2	3-4	5-6	7-8
3.50V	Close	Close	Close	Close
3.40V	Open	Close	Close	Close
3.30V	Close	Open	Close	Close
3.20V	Open	Open	Close	Close
3.10V	Close	Close	Open	Close
3.00V	Open	Close	Open	Close
2.90V	Close	Open	Open	Close
2.80V	Open	Open	Open	Close
2.70V	Close	Close	Close	Open
2.60V	Open	Close	Close	Open
2.50V	Close	Open	Close	Open
2.40V	Open	Open	Close	Open
2.30V	Close	Close	Open	Open
2.20V	Open	Close	Open	Open
2.10V	Close	Open	Open	Open
2.00V	Open	Open	Open	Open

10. JP17: PCI ASYNCHRONOUS/SYNCHRONOUS SELECTOR

JP17	Description
1-2	Asynchronous
2-3	Synchronous

B. EXPLANATION OF CONNECTORS

1. J1: USB (UNIVERSAL SERIAL BUS) CONNECTOR

USB connector supports USB device.

NOTE : USB (UNIVERSAL SERIAL BUS) AND I.R.CON CONNECTOR ARE OPTIONAL.

2. J2/ J3: SERIAL PORT CONNECTOR

SERIAL port connector supports high speed communication port that send/receive 16 bytes fifos.

3. J4: PARALLEL PORT CONNECTOR

PARALLEL port connector supports standard printer port, enhanced parallel port (EPP), extended capabilities parallel port (ECP).

4. J5 / J6 : PRIMARY / SECONDARY IDE CONNECTOR

PCI IDE controller connector supports up to four hard disk drivers , CD-ROM , 120MB floppy (reserved for future BIOS) and other devices.

5. J7 : FLOPPY DISK CONNECTOR

6. STANDARD FLOPPY DISK CONNECTOR

Standard floppy disk connector supports 360K , 720K ,1.2M , 1.44M , and 2.88M floppy disk type.

7. FAN 1: FAN CONNECTOR

8. PS2: PS/2 MOUSE CONNECTOR

Mouse connector supports 5-pin PS/2 mouse .

9. I.R.1: IRCON (INFRARED) CONNECTOR

I.R. connector supports 7-pin I.R. device.

I.R. CONNECTOR PIN OUT

PIN 1 RX	PIN 2 GND	PIN 3 TX	PIN 4 +5V	PIN 5 RXH	PIN 6 VCC	PIN 7 GND
--------------------	---------------------	--------------------	---------------------	---------------------	---------------------	---------------------

NOTE : IR uses same I/O port as COM2. THERE is no any hardware jumper setting for IR/COM2 on this main board but customer needs to set proper BIOS setting for "HPSIR", "ASKIR" or "DISABLED"(DEFAULT) UNDER "INFRA RED (IR) function" of "INTEGRATED Peripheral" according to the following table:

	IRDA 1.0	ASKIR	DISABLED
(UNDER INTEGRATED IPHERALS)"INFRA RED (IR) FUNCTION "	USE IRDA 1.0 ON IRCON.	USE AMPLITUDE SHIFT KEYED IR ON IRCON .	USE COM2 (DEFAULT)

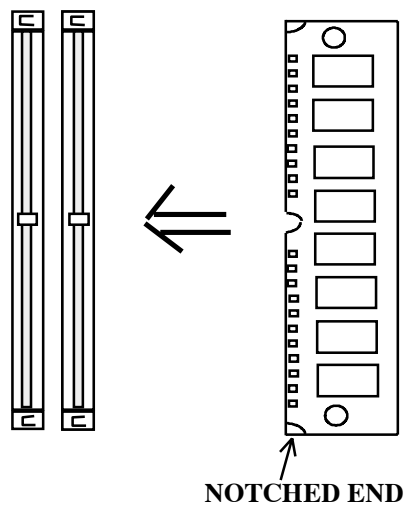
2-3 OVER HEAT ALARM (OPTIONAL)

THIS main board provides over heat alarm function. It has been set as 80 C as maximum suffering temperature, once over 80 C it will alarm. USER need to check system immediately if it happens

2-4 DRAM MEMORY INSTALLATION PROCEDURES

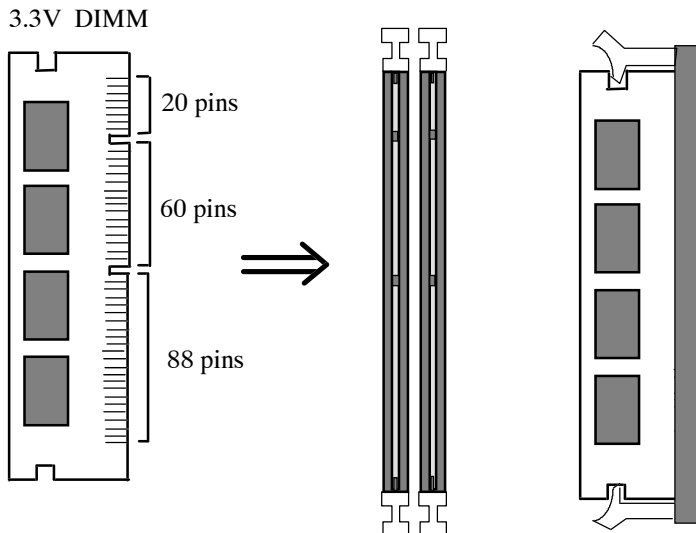
THE SIMM memory modules will only fit in one orientation as shown because of a "plastic safety tab" on one end of the SIMM slots which requires the "notched end" of the SIMM memory modules.

PRESS the memory module firmly into place starting at a 45 degree angle making sure that all the contacts are aligned with the socket.



2-5 DIMM MEMORY INSTALLATION PROCEDURES

Insert the module as shown. Due to different number of pins on either side of the breaks, the module will only fit in the orientation as shown. DRAM SIMM modules have the same pin contact on both sides. SDRAM DIMM modules have different pin contacts on each side and therefore have a higher pin density.



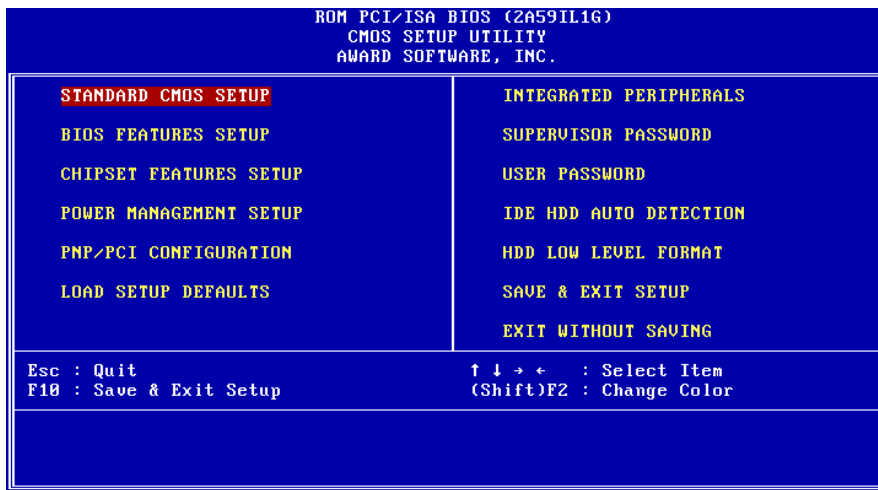
2-6 MEMORY INSTALLATION

This main board contains 2 by 72-pin SIMM sockets (SIMM1, SIMM2,) or 2 by 168-pin DIMM socket (DIMM). SIMM module sockets are divided in two banks : SIMM1, SIMM2 in one bank and SIMM3, SIMM4 in another bank, minimum user has to install two DRAM SIMMs of the same kind into one bank or install one DIMM into DIMM socket. I430TX main board has table-free (or auto-bank) feature and user can install SIMMs into any bank.

SIMM1	SIMM2	DIMM1	DIMM2	
MEMORY				
4MB	4MB	---	---	8MBytes
---	---	8MB	---	8MBytes
8MB	8MB	---	---	16MBytes
---	---	8MB	8MB	16MBytes
---	---	16MB	---	16MBytes
16MB	16MB	---	---	32MBytes
---	---	16MB	16MB	32MBytes
---	---	32MB	---	32MBytes
32MB	32MB	---	---	64MBytes
---	---	32MB	32MB	64MBytes
64MB	64MB	---	---	128MBytes
---	---	64MB	64MB	128MBytes

CHAPTER 3. BIOS SETUP

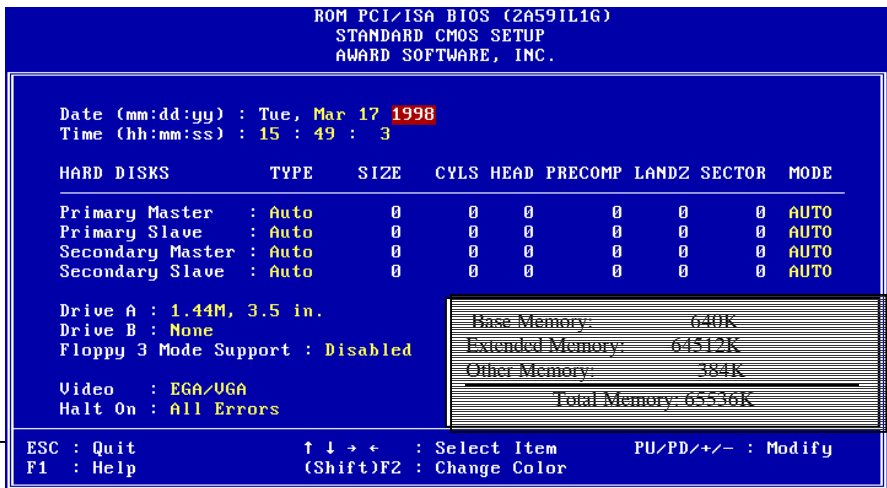
3-1. AWARD BIOS CMOS SETUP



THE menu displays all the major selection items and allows user to select any one of shown item. THE selection is made by moving cursor(press any direction key) to the item and press enter> key. AN on-line help message is displayed at the bottom of the screen as cursor is moving to various items which provides user better understanding of each function. WHEN a selection is made, the menu of selection is made. The menu of selected item will appear, so the user can modify associated configuration parameters.

3-2. STANDARD CMOS SETUP

CHOOSE "STANDARD CMOS SETUP" in the CMOS setup utility menu (figure3-1). THE STANDARD CMOS SETUP allows user to configure system setting such as current date and time, type of hard disk drive installed in the system, floppy drive type, and the type of display monitor. memory size is auto detected by the BIOS and displayed for your reference. WHEN a field is highlighted (direction keys to move cursor and nter> key to select). THE entries in the field will be changed by pressing AGEDOWN> or AGEUP> key or user can enter new data directly from the keyboard.

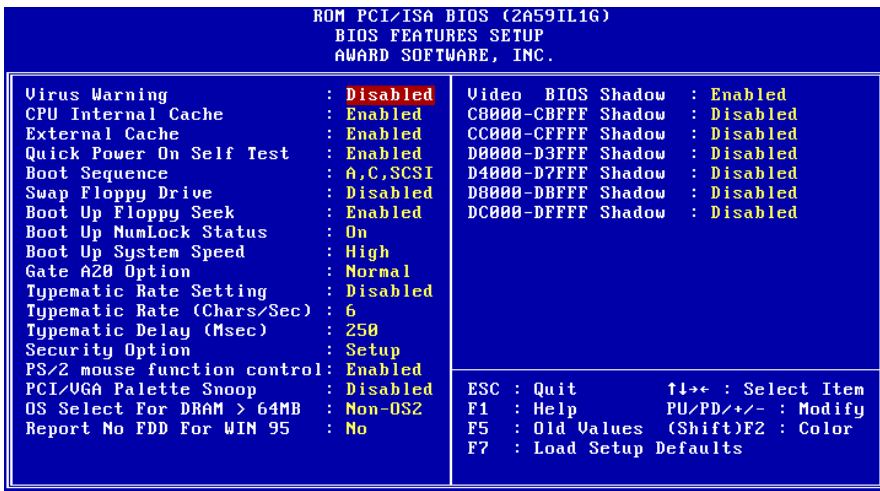


NOTE: IF HARD DISK PRIMARY MASTER/SLAVE AND SECONDARY MASTER/SLAVE WERE USED AUTO, THEN THE HARD DISK SIZE AND MODEL WILL BE AUTO DETECT ON DISPLAY DURING POST.

NOTE: THE "HALT ON:" FIELD IS TO DETERMINE WHEN TO HALT THE SYSTEM BY THE BIOS IF ERROR OCCURRED DURING POST.

3-3. BIOS FEATURES SETUP

SELECT the "BIOS FEATURES SETUP" option in the CMOS SETUP UTILITY menu allows user to change system related parameters in the displayed menu. THIS menu shows all of the manufacturer's default values of I430TX main board. again, user can move the cursor by pressing direction keys and AGEDOWN> or AGEUP> key to modify the parameters, pressing [F1] key to display help message of the selected item. THIS setup program also provide 2 convenient ways to load the default parameter data from BIOS [F6] or CMOS [F7] area if shown data is corrupted. THIS provides the system a capability to recover from any possible error.



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 SHOWN.

ENABLED : ENABLE CACHE

DISABLED: DISABLE CACHE

QUICK POWER ON SELF TEST:

THIS CATEGORY SPEEDS UP POWER ON SELF TEST. (POST) AFTER YOU POWER ON THE COMPUTER, IF IT IS SET TO ENABLE, BIOS WILL SHORTEN OR SKIP SOME CHECK ITEMS DURING POST.

ENABLED : ENABLE QUICK POST

DISABLED: NORMAL POST

BOOT SEQUENCE:

THIS CATEGORY DETERMINES WHICH DRIVE COMPUTER SEARCHES FIRST FOR THE DOS (DISK OPERATING SYSTEM). DEFAULT VALUE IS A,C.

A,C: SYSTEM WILL FIRST SEARCH FOR FLOPPY DISK DRIVE THEN HARD DISK DRIVE.

C,A: SYSTEM WILL FIRST SEARCH FOR HARD DISK DRIVE THEN FLOPPY DISK DRIVE.

CDROM,C,A: SYSTEM WILL FIRST SEARCH FOR CDROM DRIVE THEN HARD DISK DRIVE.

SWAP FLOPPY DRIVE:

THE SWAP FLOPPY DRIVE. DEFAULT VALUE IS DISABLED.

ENABLED: FLOPPY A&B WILL BE SWAPPED UNDER THE DOS.

DISABLED: FLOPPY A&B WILL BE NOT SWAPPED.

BOOT UP FLOPPY SEEK:

DURING POST, BIOS WILL DETERMINE IF THE FLOPPY DISK DRIVE INSTALLED IS 40 OR 80 TRACKS. 360K TYPE IS 40 TRACKS WHILE 720K, 1.2M AND 1.44M ARE ALL 80 TRACKS. THE DEFAULT VALUE IS ENABLED.

BOOT UP NUMLOCK STATUS:

THE DEFAULT VALUE IS ON.

ON: KEYPAD IS NUMBER KEYS.

OFF: KEYPAD IS ARROW KEYS.

BOOT UP SYSTEM SPEED:

IT SELECTS THE DEFAULT SYSTEM SPEED-THE SPEED THAT THE SYSTEM WILL RUN AT IMMEDIATELY AFTER POWER UP.

HIGH: SET THE SPEED TO HIGH.

LOW: SET THE SPEED TO LOW.

<p>NOTE: THE BOARD DEFAULT VALUE IS LOW IN THE FIELD. BOOT THE SYSTEM TO CONTROL TURBO OR DE-TURBO BY ON-BOARD (TURBO SWITCH).</p>

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 THIS 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

VIDEO BIOS SHADOW:

IT DETERMINES WHETHER VIDEO BIOS WILL BE COPIED 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

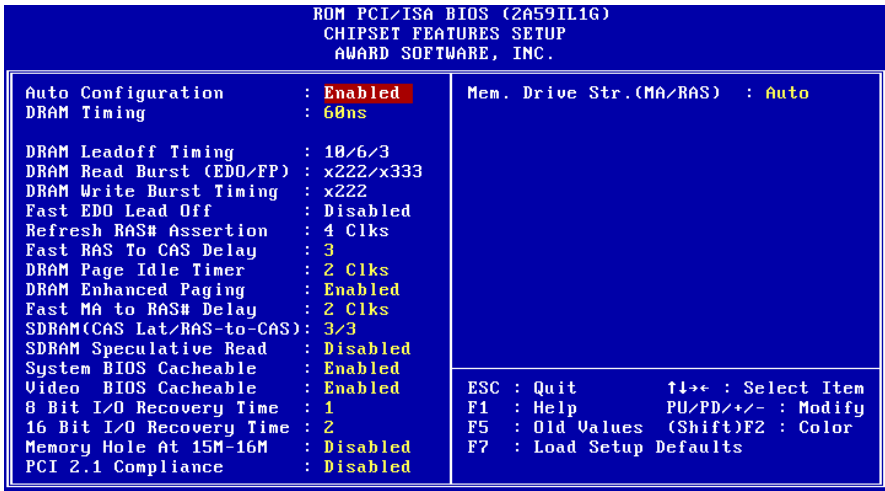
C8000-CBFFF SHADOW:
CC000-CFFFF SHADOW:
D0000-D3FFF SHADOW:
D4000-D7FFF SHADOW:
D8000-DBFFF SHADOW:
DC000-DFFFF SHADOW:

THESE CATEGORIES DETERMINE WHETHER OPTIONAL ROM WILL BE COPIED TO RAM BY 16K BYTE OR 32K BYTE PER/UNIT AND THE SIZE DEPENDS ON CHIPSET.

ENABLED : OPTIONAL SHADOW IS ENABLED.

DISABLED: OPTIONAL SHADOW IS DISABLED.

3-4. CHIPSET FEATURES SETUP



FAST RAS TO CAS Delay[Control the DRAM page miss and row miss leadoff timing.]

: 2
: 3 (default)

DRAM Read Burst (EDO/FP) [The timing used depends on the type of DRAM on a per-basis. The DRAM read burst timing is controlled by register.]

: X222/X333
: X322/X333
: X333/X444
: X444/X444 (default)

DRAM Write Burst Timing [Slower rate may be required in certain system designs to support layout with longer trace length or slower DRAM. The DRAM write burst timing are controlled by register.]

: X222
: X333
: X444(default)

System BIOS Cacheable[Define whether system BIOS area cacheable or not.]

:Enabled
:Disabled (default)

Video BIOS Cacheable[Define whether video BIOS area cacheable or not.]

:Enabled
:Disabled (default)

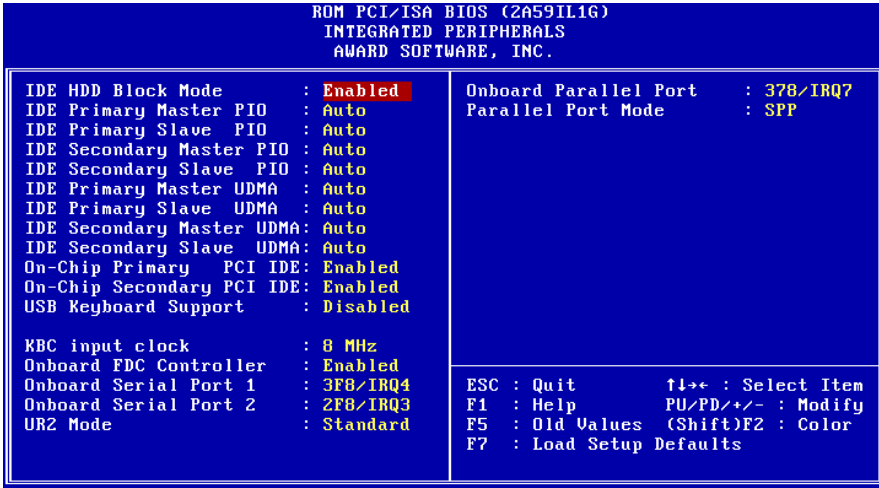
8 BIT I/O RECOVERY TIME:

THIS FIELD DEFINES THE RECOVERY TIME FROM 1 TO 8 FOR 8-BIT I/O.

16 BIT I/O RECOVERY TIME:

TO DEFINE THE RECOVERY TIME FROM 1 TO 4 FOR 16-BIT I/O.

3-5. INTEGRATED PERIPHERALS



IDE HDD Block Mode[This feature enhances hard disk performance by making multi sector transfer, instead of one sector per transfer, Most of IDE drivers, except very early designs ,can use this feature.]

:Enabled (default)

:Disabled

IDE Primary Master PIO[Detect your Primary Master hard disk device.]

:AUTO (default)

:Mode 0,1,2,3,4

IDE Primary Slave PIO[Detect your Primary Slave hard disk device.]

:AUTO (default)

:Mode 0,1,2,3,4

IDE Secondary Master PIO[Detect your Secondary Master hard disk device.]

:AUTO (default)

:Mode 0,1,2,3,4

IDE Secondary Slave PIO [Detect your Secondary Slave hard disk device.]

: AUTO (default)

: Mode 0,1,2,3,4

On-Chip Primary PCI IDE [Select use Chip support Primary PCI IDE.]

: Enabled (default)

: Disabled

On-Chip Secondary PCI IDE [Select use Chip support Secondary PCI IDE.]

: Enabled (default)

: Disabled

PCI slot IDE 2nd Channel [Use external IDE. AS ISA IDE or PCI IDE.]

: Enabled (default)

: Disabled

On-board FDD Controller : Enabled (default)

: Disabled

On-board Serial Port 1 : 3F8/IRQ4 (default)

: 2F8/IRQ3

: 3E8/IRQ4

: 2E8/IRQ3

: AUTO

: Disabled
On-board Serial Port 2 : 3F8/IRQ4
: 2F8/IRQ3(default)
: 3E8/IRQ4
: 2E8/IRQ3
: AUTO
: Disabled
On-board Parallel Port : 378H (default)
: 278H
: 3BCH
: Disabled
On-board Parallel Mode : SPP(default)
: EPP
: ECP
: ECP+EPP

3-6. SUPERVISOR/USER PASSWORD

The " SUPERVISOR/USER PASSWORD SETTING " utility sets the password. The mainboard may be shipped with the default password "award_sw" , or with the password disabled. If you want to change the password, you must first enter the current password (" award_sw " in this case). Then at the prompt, type your new password. The password is case sensitive and you can use up to 8 alphanumeric characters. Press nter> after the password . At the next prompt, confirm the new password by typing it and pressing nter> again. when you use this feature, the " security option" line in BIOS FEATURES SETUP will determine whether the password will be required. To disable the password, press the nter> key instead of entering a new password when the " Enter password" dialog box appears. A message will appear confirming that the password is disabled. You may receive your mainboard set up this way.

THERE are two kinds of password functions in the setup menu : one is **SUPERVISOR PASSWORD**, and the other is **USER PASSWORD**.

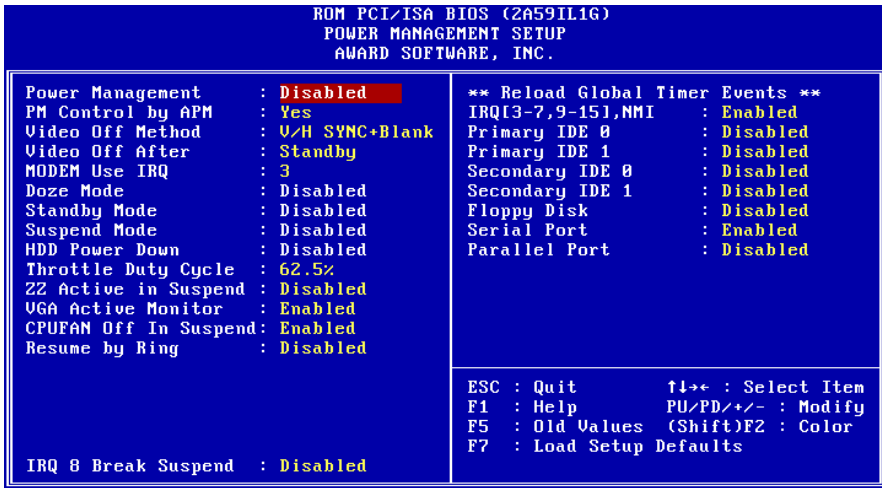
THE differences between them are:

SUPERVISOR PASSWORD:THE supervisor password function allows you the right to change the options of setup menu once you enter the setup menu.

USER PASSWORD:THE user password function only allows you to enter the setup menu but do not have the right to change the options

of the setup menu except user password, save & exit setup, and exit without saving.

3-7. POWER MANAGEMENT SETUP



POWER MANAGEMENT:

Disabled :Global Power Management will be disabled.

User Define :Users can configure their own power management.

Min.Saving :Pre-define timer value are used such that all timers are in their MAX . value

Max.Saving :Pre-define timer values are used such that all timers are in their MIN . value.

PM Control by APM:

NO : System BIOS will ignore APM.

Yes : System BIOS will wait for APM's prompt before it enter any PM mode, e.g. DOZE, STANDBY or SUSPEND.

**** NOTE **** : 1. IF APM is installed, and there is a task running, even if the timer is time out, the APM will not prompt the BIOS to put the system into any power saving mode 2. IF APM is not installed, this option has no effect.
--

Video Off Method :

Blank Screen : The system BIOS will only blanks off the screen when disabled.

V/H SYNC+Blank : BIOS will also turn off the V/H SYNC signal from VGA card to monitor.

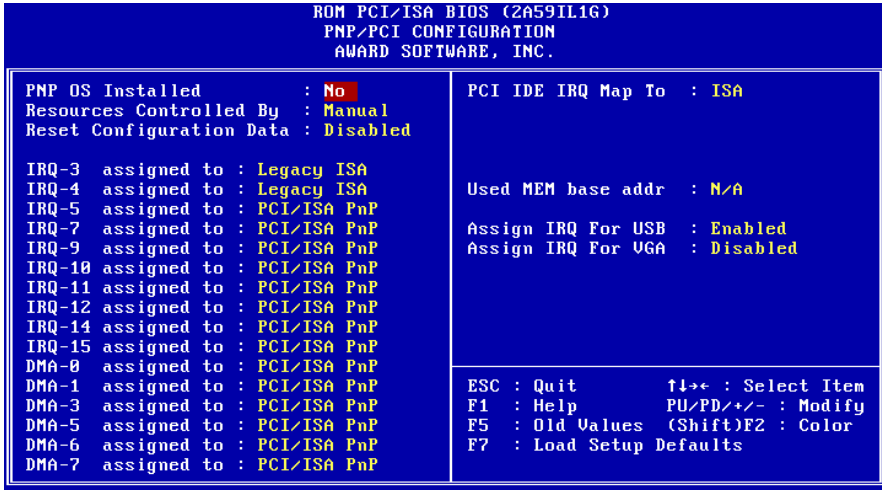
Doze Mode : disabled , 1 Min --- 1 Hour

Standby Mode : disabled , 1 Min --- 1 Hour

Suspend Mode : disabled , 1 Min --- 1 Hour

reload global timer events : To COM ports, LPT ports and Drive ports
IRQ3.....IRQ15 check point Then Into Green
function.

3-8. PNP / PCI CONFIGURATION SETUP



3-9 .IDE HDD AUTO DETECTION

THE "IDE HDD AUTO DETECTION" utility is a very useful tool especially when you do not know which kind of hard disk type you are using. YOU can use this utility to detect the correct disk type installed in the system automatically or you can set hard disk type to auto in the standard cmos setup. YOU DON'T need the "IDE HDD AUTO DETECTION" utility. THE BIOS will auto-detect the hard disk size and model on display during post.

NOTE: HDD MODES
 THE AWARD BIOS SUPPORTS 3 HDD MODES: NORMAL, LBA & LARGE

NORMAL MODE

GENERIC access mode in which neither the bios nor the ide controller will make any transformations during accessing.

THE maximum number of cylinders, head & sectors for normal mode are 1024, 16 & 63.

	no. CYLINDER	(1024)
X	no. HEAD	(16)
X	no. SECTOR	(63)
X	no. PER SECTOR	(512)
		<u>528 MEGABYTES</u>

IF user set this hdd to normal mode, the maximum accessible HDD size will be 528 megabytes even though its physical size may be greater than that!

LBA (LOGICAL BLOCK ADDRESSING) mode

A new HDD accessing method to overcome the 528 megabyte bottleneck. the number of cylinders, heads & sectors shown in setup may not be the number physically contained in the HDD.

DURING HDD accessing, the IDE controller will transform the logical address described by sector, head & cylinder into its own physical address inside the HDD.

THE maximum hdd size supported by LBA mode is 8.4 gigabytes which is obtained by the following formula:

	no. CYLINDER	(1024)
X	no. HEAD	(255)
X	no. SECTOR	(63)
X	no. BYTES PER SECTOR	(512)
		<u>8.4 GIGABYTES</u>

LARGE MODE

EXTENDED HDD access mode supported by award software. SOME IDE HDDS contain more than 1024 cylinder without LBA support (in some cases, user do not want LBA). THE AWARD BIOS provides another alternative to support these kinds of large mode:

<u>CYLS.</u>	<u>HEAD</u>	<u>SECTOR</u>	<u>MODE</u>
1120	16	59	NORMAL
560	32	59	LARGE

BIOS tricks DOS (or other os) that the number of cylinders is less than 1024 by dividing it by 2. at the same time, the number of heads is multiplied by 2. a reverse transformation process will be made inside int 12H in order to access the right HDD address.

MAXIMUM HDD SIZE:

	no. CYLINDER	(1024)
X	no. HEAD	(32)
X	no. SECTOR	(63)
X	no. BYTES PER SECTOR	(512)
	1 GIGABYTES	

NOTE: TO SUPPORT LBA OR LARGE MODE OF HDDS, THERE MUST BE SOME SOFTWARES INVOLVED. ALL THESE SOFTWARES ARE LOCATED IN THE AWARD HDD SERVICE ROUTINE (INT 13H). IT MAY BE FAILED TO ACCESS A HDD WITH LBA (LARGE) MODE SELECTED IF YOU ARE RUNNING UNDER AN OPERATING SYSTEM WHICH REPLACES THE WHOLE INT 13H. UNIX OPERATING SYSTEMS DO NOT SUPPORT EITHER LBA OR LARGE AND MUST UTILITY THE STANDARD MODE. UNIX CAN SUPPORT DRIVES LARGER THAN 528MB.

3-10 .LOAD SETUP DEFAULTS

"LOAD SETUP DEFAULTS" loads **optimized settings which are stored in the BIOS ROM.** The auto-configured settings only affect the BIOS feature setup and chipset features setup screens. there is no effect on the standard CMOS setup. To use this feature, highlight it on the main screen and press the NTER> key. A line will appear on screen asking if you want to load the setup default values. press the > key and then press the NTER> key . the setup defaults will then load. Press > if you don't want to

3-11 SAVE & EXIT SETUP

THE "SAVE & EXIT SETUP" option will bring you back to boot up procedure with all the changes, you just made which are recorded in the CMOS RAM.

3-12 EXIT WITHOUT SAVING

THE "EXIT WITHOUT SAVING" option will bring you back to normal boot up procedure without saving any data into CMOS RAM. ALL of the old data in the CMOS will not be destroyed.

3-13 I/O & MEMORY MAP

MEMORY MAP

ADDRESS RANGE	SIZE	DESCRIPTION
00000-7FFFF	512K	CONVENTIONAL MEMORY
80000-9FBFF	127K	EXTENDED CONVENTIONAL MEMORY
9FC00-9FFFF	1K	EXTENDED BIOS DATA AREA IF PS/2 MOUSE IS INSTALLED
A0000-C7FFF	160K	AVAILABLE FOR HI DOS MEMORY
C8000-DFFFF	96K	AVAILABLE FOR HI DOS MEMORY AND ADAPTER ROMS

E0000-EEFFF	60K	AVAILABLE FOR UMB
EF000-EFFFF	4K	VIDEO SERVICE ROUTINE FOR MONOCHROME & CGA ADAPTER
F0000-F7FFF	32K	BIOS CMOS SETUP UTILITY
F8000-FCFFF	20K	BIOS RUNTIME SERVICE ROUTINE (2)
FD000-FDFFF	4K	PLUG AND PLAY ESCD DATA AREA
FE000-FFFFF	8K	BIOS RUNTIME SERVICE ROUTINE (1)

I/O MAP

000-01F	DMA CONTROLLER (MASTER)
020-021	INTERRUPT CONTROLLER (MASTER)
022-023	CHIPSET CONTROL REGISTERS. I/O POSTS
040-05F	TIMER CONTROL REGISTERS
060-06F	KEYBOARD INTERFACE CONTROLLER (8042)
070-07F	RTC PORTS & CMOS I/O PORTS
080-09F	DMA REGISTER
0A0-0BF	INTERRUPT CONTROLLER (SLAVE)
0C0-0DF	DMA CONTROLLER (SLAVE)
0F0-0FF	MATH COPROCESSOR

1F0-1FB	HARD DISK CONTROLLER
278-27F	PARALLEL PORT 2
2B0-2DF	GRAPHICS ADAPTER CONTROLLER
2F8-2FF	SERIAL PORT 2
360-36F	NETWORK PORTS
378-37F	PARALLEL PORT 1
3B0-3BF	MONOCHROME & PARALLEL PORT ADAPTER
3C0-3CF	EGA ADAPTER
3D0-CDF	CGA ADAPTER
3F0-3F7	FLOPPY DISK CONTROLLER
3F8-3FF	SERIAL PORT-1

3-14 TIME & DMA CHANNELS MAP

TIME MAP: TIMER CHANNEL 0 SYSTEM TIMER INTERRUPT
 TIMER CHANNEL 1 DRAM REFRESH REQUEST
 TIMER CHANNEL 2 SPEAKER TONE GENERATOR

DMA CHANNELS: DMA CHANNEL 0 AVAILABLE
 DMA CHANNEL 1 ONBOARD ECP (OPTION)
 DMA CHANNEL 2 FLOPPY DISK (SMC CHIP)
 DMA CHANNEL 3 ONBOARD ECP (DEFAULT)
 DMA CHANNEL 4 CASCADE FOR DMA CONTROLLER 1
 DMA CHANNEL 5 AVAILABLE
 DMA CHANNEL 6 AVAILABLE
 DMA CHANNEL 7 AVAILABLE

3-15 INTERRUPT MAP

NIMI: NON-MASKABLE INTERRUPT

IRQ(H/W): 0 SYSTEM TIMER INTERRUPT FROM TIMER 0

- 1 KEYBOARD OUTPUT BUFFER FULL
- 2 CASCADE FOR IRQ8-15
- 3 SERIAL PORT2
- 4 SERIAL PORT1
- 5 PARALLEL PORT 2
- 6 FLOPPY DISK (SMC CHIP)
- 7 PARALLEL PORT 1
- 8 RTC CLOCK
- 9 AVAILABLE
- 10 AVAILABLE
- 11 AVAILABLE
- 12 PS/2 MOUSE
- 13 MATH COPROCESSOR
- 14 ONBOARD HARD DISK (IDE1) CHANNEL
- 15 ONBOARD HARD DISK (IDE2) CHANNEL

3-16 RTC & CMOS RAM MAP

RTC & CMOS:00 SECONDS

- 01 SECOND ALARM
- 02 MINUTES
- 03 MINUTES ALARM
- 04 HOURS
- 05 HOURS ALARM
- 06 DAY OF WEEK
- 07 DAY OF MONTH
- 08 MONTH

09 YEAR
0A STATUS REGISTER A
0B STATUS REGISTER B
0C STATUS REGISTER C
0D STATUS REGISTER D
0E DIAGNOSTIC STATUS BYTE
0F SHUTDOWN BYTE
10 FLOPPY DISK DRIVE TYPE BYTE
12 HARD DISK TYPE BYTE
13 RESERVE
14 EQUIPMENT TYPE
15 BASE MEMORY LOW BYTE
16 BASE MEMORY HIGH BYTE
17 EXTENSION MEMORY LOW BYTE
18 EXTENSION MEMORY HIGH BYTE
19-2D
2E-2F
30 RESERVED FOR EXTENSION MEMORY LOW BYTE
31 RESERVED FOR EXTENSION MEMORY HIGH BYTE
32 DATE CENTURY BYTE
33 INFORMATION FLAG
34-3F RESERVE
40-7F RESERVED FOR CHIPSET SETTING DATA

---END---

5TX2B