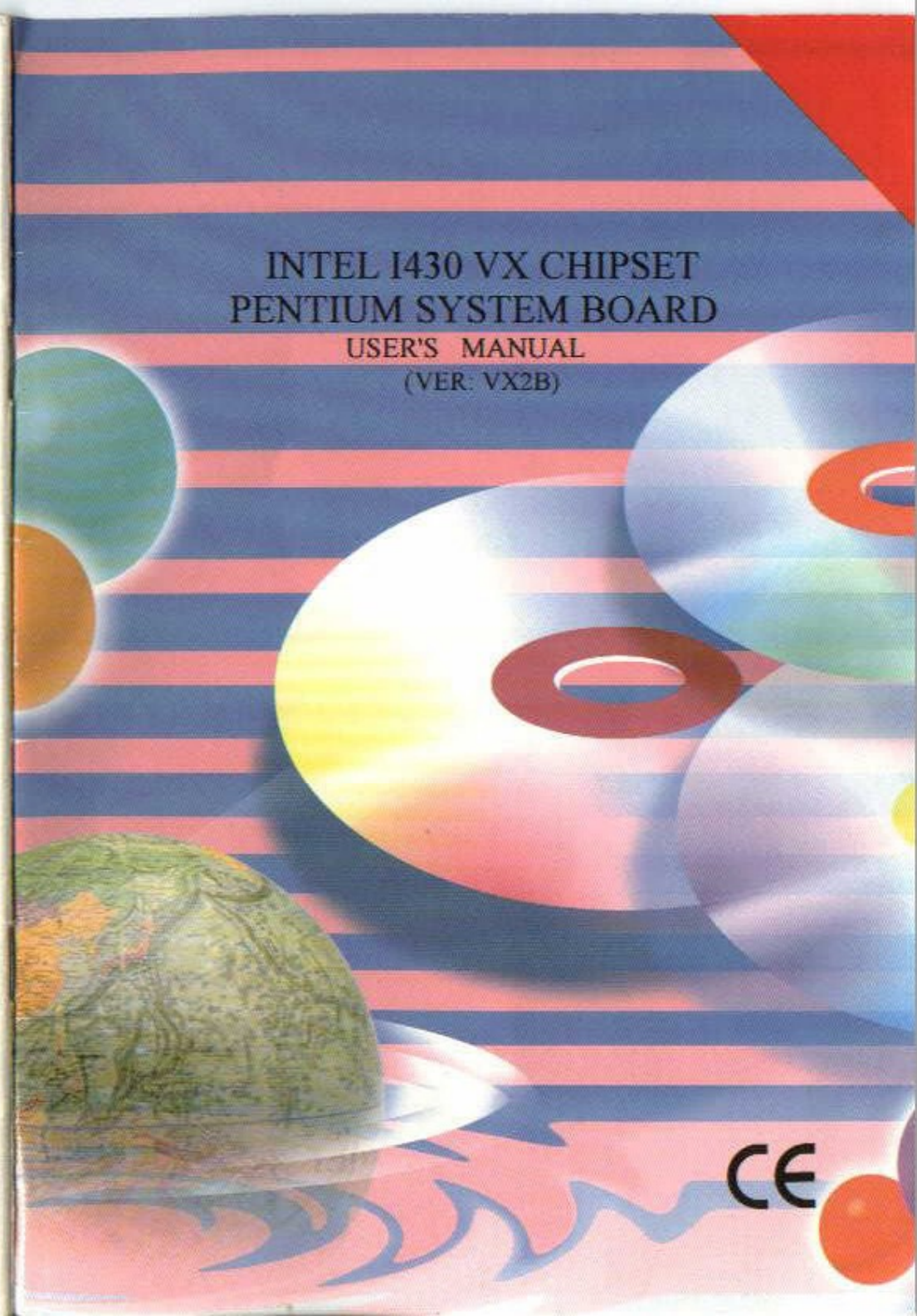


INTEL I430 VX CHIPSET  
PENTIUM SYSTEM BOARD

USER'S MANUAL  
(VER: VX2B)



851256  
3MU-5IVX2BLS- 860325

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## CHAPTER 1: INTRODUCTION

### I-1 OVERVIEW :

THE I430VX MAIN BOARD IS DESIGNED WITH INTEL 82430VX PCISET 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 INTEL P54CX/P55CX PENTIUM CPUs FAMILY RUNNING AT 75 /90 /100 /120 /133 /150 /166 /180 /200 MHz SPEED, CYRIX 6x86 P120+ /P133+ /P150+ /P166+ AND AMD 5K86 75 - 166 MHz CPUs, SUPPORTS 256K/512K CACHE MEMORY IS IDEAL FOR MS-DOS, WINDOWS, WINDOW-95, WINDOW NT, NOVELL, OS/2, UNIX., SOFTWARES.

THE PERFORMANCE, SPEED AND EXPENSIBILITY OF I430VX 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** : 75 - 200 MHZ. INTEL PENTIUM P54C /P55C (OPTIONAL), CYRIX 6x86 P120+, P133+, P150+, P166+, AMD 5K86 75 - 166 MHZ CPUs.

**MEMORY** : 4 OF 72-PIN SIMM<sub>s</sub> UP TO 128MB. SIMM CAN BE FAST PAGE, EDO OR BURST EDO.

**EXP. SLOT** : 4 X ISA AND 3 X PCI SLOTS.

**CHIPSET** : INTEL **1430 VX** CHIPSET  
INTEL 82437VX SYSTEM CONTROLLER  
INTEL 82371SB PCI ISA IDE XCELERATOR.  
INTEL 82438VX PENTIUM DATA PATH UNIT.

**CACHE SIZE** : 0K, 256K, 512K.

**BIOS** : AWARD FULL. **PnP** (PLUG & PLAY) BIOS.

**I/O FUNCTION** : ON BOARD 2 x PCI IDE DEVICES , 1 x FDC , 2 x SERIAL PORTS(16550 FAST COM), 1x PARALLEL PORT DEVICE /EPP/ECP2E, AND OPTIONAL USB (UNIVERSAL SERIAL BUS) CONNECTOR.

**BOARD SIZE** : 22 CM x 22.3 CM.

**GREEN FUNCTION** : COMPLIED WITH **APM** (ADVANCED POWER MANAGEMENT).

\* P55C IS INTEL'S "MMX" (MULTI-MEDIA-EXTENDED INSTRUCTION) SETS TYPE CPU, CPU CORE IS 2.5V-2.9V BUT I/O OPERATION REQUIRES 3.3V, THIS FUNCTION IS OPTIONAL FOR THIS MAIN BOARD.

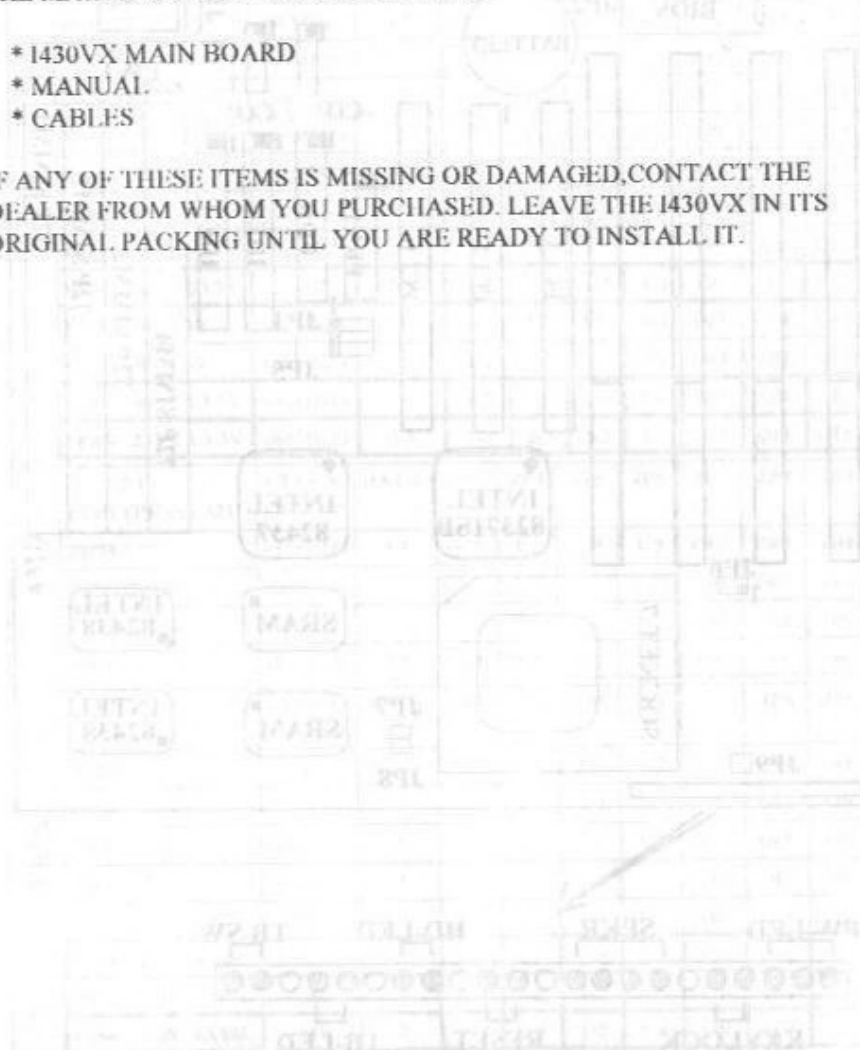
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**1-3 UNPACKING :**

THE MAIN BOARD PACKAGE CONTAINS:

- \* 1430VX MAIN BOARD
- \* MANUAL.
- \* CABLES

IF ANY OF THESE ITEMS IS MISSING OR DAMAGED, CONTACT THE DEALER FROM WHOM YOU PURCHASED. LEAVE THE 1430VX IN ITS ORIGINAL PACKING UNTIL YOU ARE READY TO INSTALL IT.





## EXPLANATION OF JUMPER SETTING

## JP3-JP5 CPU &amp; PCI BUS FREQUENCY SELECTOR

	50 MHZ	55 MHZ	60 MHZ	66.6 MHZ	75MHZ
JP3	1-2	1-2	2-3	1-2	2-3
JP4	1-2	1-2	1-2	2-3	1-2
JP5	1-2	2-3	1-2	1-2	2-3

## JP6 : CPU VCORE VOLTAGE SELECTOR

	3.52V	3.3V	2.8V
JP6	1-2	3-4	5-6

## JP7,JP8 CPU CLOCK SELECTOR

	1.5 X	2.0 X	2.5 X	3.0 X	3.5 X
JP7	OFF	ON	ON	OFF	OFF
JP8	OFF	OFF	ON	ON	OFF

## JP9 : SECOND REGULATOR VOLTAGE SELECTOR (OPTIONAL)

	3.52V	3.3V
JP9	ON	OFF

NOTE : INTEL P55C MMX CPU AND CYRIX 6X86L SET "OFF"

## 2. JP2 : BATTERY SELECTOR (BLACK JUMPER CAP)

	NORMAL	CLEAR CMOS
JP2	1-2 (DEFAULT)	2-3

CUSTOMER NEEDS TO CLEAR CMOS, THEN RECONFIGURE IT IF FORGETS PASSWORD FOR BIOS SETUP.

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## 3. OTHER JUMPER SETTINGS AND CONNECTORS :

- IDE1 : PRIMARY IDE CONNECTOR.
- IDE2 : SECONDARY IDE CONNECTOR
- JP1 : PS/2 MOUSE CONNECTOR.
- CN3 : SERIAL PORT 1 CONNECTOR.
- CN4 : SERIAL PORT 2 CONNECTOR.
- CN5 : FLOPPY DISK CONNECTOR .
- CN6 : PARALLEL PORT CONNECTOR.

## 4. CN2 : IRCON (INFRARED) CONNECTOR

IR CONNECTOR PIN OUT						
PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7
RX	GND	TX	+5V	RXH	VCC	GND

NOTE:IRCON USES SAME I/O PORT AS COM2. THERE IS NO ANY HARDWARE JUMPER SETTING FOR IRCON/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	FIR	DISABLED
(UNDER INTEGRATED PERIPHERALS)"Infrared (IR) FUNCTION "	USE IRDA 1.0 ON IRCON.	USE AMPLITUDE SHIFT KEYED IR ON IRCON .	USE FOR FAST IR 4MB/S	USE COM2 (DEFAULT)

NOTE : USB (UNIVERSAL SERIAL BUS) AND IRCON CONNECTOR ARE OPTIONAL.

## 5. USB1 : USB (UNIVERSAL SERIAL BUS) CONNECTOR

USB PIN OUT			
USB1		USB2	
PIN1	+5V	PIN2	+5V
PIN3	USBP0-	PIN4	USBP1-
PIN5	USBP0+	PIN6	USBP1+
PIN7	GND	PIN8	GND

**2-3 MEMORY INSTALLATION**

THERE ARE NO JUMPERS FOR THE DRAM CONFIGURATION. THE BIOS WILL TEST THE DRAM TYPE AND SIZE AUTOMATICALLY. THERE ARE TWO BANKS(\*) FROM SIMM1 TO SIMM4 ON MAIN BOARD. PLEASE FOLLOW SIMM1, THEN 2,3,4 TO INSTALL MEMORY. DRAM SPEED MUST BE 70NS OR FASTER. BOTH TYPES OF DRAM SIMM WITH PARITY (X36) OR NON-PARITY (X32) ARE ACCEPTABLE.

SIMM4	SIMM3	SIMM2	SIMM1	TOTAL
4MB	4MB	---	---	8MBytes
4MB	4MB	4MB	4MB	16MBytes
8MB	8MB	---	---	16MBytes
4MB	4MB	8MB	8MB	24MBytes
8MB	8MB	4MB	4MB	24MBytes
8MB	8MB	8MB	8MB	32MBytes
16MB	16MB	---	---	32MBytes
16MB	16MB	4MB	4MB	40MBytes
8MB	8MB	16MB	16MB	48MBytes
16MB	16MB	8MB	8MB	48MBytes
16MB	16MB	16MB	16MB	64MBytes
32MB	32MB	---	---	64MBytes
8MB	8MB	32MB	32MB	80MBytes
32MB	32MB	8MB	8MB	80MBytes
16MB	16MB	32MB	32MB	96MBytes
32MB	32MB	16MB	16MB	96MBytes
32MB	32MB	32MB	32MB	128MBytes

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**CHAPTER 3. BIOS SETUP**

**3-1. AWARD BIOS CMOS SETUP**

ROM PCI BIOS  
CMOS SETUP UTILITY  
AWARD SOFTWARE, INC.

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

THE MENU DISPLAYS ALL THE MAJOR SELECTION ITEMS AND ALLOW 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 <ENTER> KEY TO SELECT), THE ENTRIES IN THE FIELD WILL BE CHANGED BY PRESSING <PAGEDOWN> OR <PAGEUP> KEY OR USER CAN ENTER NEW DATA DIRECTLY FROM THE KEYBOARD.

ROM PCI BIOS  
STANDARD CMOS SETUP  
AWARD SOFTWARE, INC.

Date (mm:dd:yy) : Wed Jun 1, 1995								
Time (hh:mm:ss) : 00 : 00 : 00								
HARD DISK	TYPE	SIZE	CYLS	HEADS	PRECOMP	LANDZ	SECTOR	MODE
Primary Master	: User	(428MB)	899	15	65535	898	62	NORMAL
Primary Slave	: None	(0MB)						
Secondary Master	: None	(0MB)						
Secondary Slave	: None	(0MB)						
Drive A : 1.2M , 5.25 In								
Drive B : 1.44M , 3.5 In								
Floppy 3 Mode Support : Disabled								
Video : EGA/VGA								
Halt On : All Errors								
Esc : Quit		↓↑→← : Select Item			PU/PD/+/- : Modify			
F1 : Help		(Shift) F2 : Change Color						

**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 IS 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 i430VX MAIN BOARD. AGAIN, USER CAN MOVE THE CURSOR BY PRESSING DIRECTION KEYS AND <PAGEDOWN> OR <PAGEUP> 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.

ROM PCI BIOS  
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	: C, A	D4000-D7FFF Shadow	: Disabled
Swap Floppy Driver	: Disabled	D8000-DBFFF Shadow	: Disabled
Boot Up Floppy Seek	: Enabled	DC000-DFFFF Shadow	: Disabled
Boot Up Numlock Status	: on		
Boot Up System Speed	: High		
Gate A20 Option	: Fast		
Typematic Rate Setting	: Disabled	ESC : Quit	↓↑→← : Select Item
Typematic Rate(Chars/Sec)	: 6	F1 : Help	PU/PD/+/- : Modify
Typematic Delay(Msec)	: 250	F5 : Old Valued	(Shift) F2 : Color
Security Option	: Setup	F6 : Load Bios Defaults	
PS/2 mouse function control	: Enabled	F7 : Load Setup Defaults	
PCI VGA Palette Snoop	: Disabled		
OS Select For DRAM > 64MB	: Non-OS2		

**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

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**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.

**ENABLE :** 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 DRIVER THEN HARD DISK DRIVE & FLOPPY 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.

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**NOTE:** THE BOARD DEFAULT VALUE IS LOW IN THE FIELD. BOOT THE SYSTEM TO CONTROLLER TURBO OR DE-TURBO BY ON-BOARD (TURBO SWITCH).

**GATE A20 OPTION:**

THE DEFAULT VALUE IS FAST.

**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.

**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.

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**3-4. CHIPSET FEATURES SETUP**

ROM PCI BIOS

CHIPSET FEATURES SETUP

AWARD SOFTWARE, INC.

AUTO Configuration	:Enabled	
DRAM Timing	:70ns	
DRAM RAS# Precharge Time	:4	
DRAM R/W Leadoff Timing	:7	
Fast RAS TO CAS delay	:3	
DRAM Read Burst (EDO/FP)	:X444/X444	
DRAM Write Burst Timing	:X444	
Fast MA To RAS# Delay CLK	:2	
Fast Edo Path Select	:Disabled	
Refresh RAS# Assertion	:4 CLK	
ISA Bus Clock	:Pciclk/4	
System BIOS Cacheable	:Disabled	
Video BIOS Cacheable	:Disabled	
8 Bit I/O Recovery Time	:8	ESC : Quit    ↓↑→← : Select Item
16 Bit I/O Recovery Time	:4	F1 : Help    PU/PD+/- : Modify
Memory Hole At 15M-16M	:Disabled	F5 : Old Valued (Shift)    F2 : Color
Peer Concurrency	:Disabled	F6 : Load Bios Defaults
Memory Address Drive Str	:16ma	F7 : Load Setup Defaults

**DRAM RAS# Precharge Time** [The DRAM Precharge time by RAS.]

: 4 (default)

: 3

**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 are controlled by register.]

: X222/X333

: X322/X333

: X444/X444

: X333/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 (default)  
: X444

**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)

**Memory Hole AT 15M-16M**[This field enable a memory hole in main memory space. CPU cycles matching an enabled hold are passed on to PCI. Note that a selected can not be changed while the L2 cache is enabled.]

: Enabled  
: Disabled (default)

#### 8/16 BIT I/O RECOVERY TIME:

THE DEFAULT VALUE IS 1.

#### 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.

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### 3-5. INTEGRATED PERIPHERALS

ROM PCI BIOS  
INTEGRATED PERIPHERALS  
AWARD SOFTWARE, INC.

IDE HDD Block Mode	: Enabled	
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	
On-Chip Secondary PCI IDE	: Enabled	
PCI Slot IDE 2nd Channel	: Enabled	
USB Controller	: Disabled	
KBC Input Clock	: 8Mhz	
Onboard FDD Controller	: Enabled	
Onboard Serial Port 1	: 3F8/IRQ4	
Onboard Serial Port 2	: 2F8/IRQ3	
Ur2 Mode	: Standard	
Onboard Parallel Port	: 378/IRQ7	
Onboard Parallel Mode	: SPP	
		ESC : Quit      ↓↑←→ : Select Item
		F1 : Help      PU/PD/+/- : Modify
		F5 : Old Valued (Shift)    F2 : Color
		F6 : Load Bios Defaults
		F7 : Load Setup Defaults

**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 <Enter> after the password . At the next prompt, confirm the new password by typing it and pressing <Enter> 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 <Enter> key instead of entering a new password when the " Enter password" dialog box appears. A message will appear confirming that the password is disable. 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.

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## 3-7. POWER MANAGEMENT SETUP

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ROM PCI BIOS

POWER MANAGEMENT SETUP

AWARD SOFTWARE, INC.

Power Management	: Disabled	<b>** Power Down &amp; Resume Events **</b>	
PM Control By APM	: Yes	IRQ3 (COM 2)	: ON
Video Off Method	: V/H SYNC+Blank	IRQ4 (COM 1)	: ON
Doze Mode	: Disabled	IRQ5 (LPT 2)	: Off
Standby Mode	: Disabled	IRQ6 (Floppy Disk)	: Off
Suspend Mode	: Disabled	IRQ7 (LPT 1)	: Off
HDD Power Down	: Disabled	IRQ8 (RTC Alarm)	: Off
		IRQ9 (IRQ2 Redir)	: Off
		IRQ10 (Reserved)	: Off
<b>** Wake Up Events In Doze &amp; Standby **</b>		IRQ11 (Reserved)	: Off
IRQ3 (Wake-Up Event)	: ON	IRQ12 (PS/2 Mouse)	: Off
IRQ4 (Wake-Up Event)	: ON	IRQ13 (Coprocessor)	: Off
IRQ8 (Wake-Up Event)	: ON	IRQ14 (Hard Disk)	: ON
IRQ12 (Wake-Up Event)	: ON	IRQ15 (Reserved)	: Off
		ESC : Quit	↓↑→← : Select Item
		F1 : Help	PU/PD/+/- : Modify
		F5 : Old Valued	(Shift) F2 : Color
		F6 : Load Bios Defaults	
		F7 : Load Setup Defaults	

**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.

DPMS : Display Power Management by VGA Card support.

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

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

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

HDD Power Down : disabled , 1 Min ---15 Min

Wake-up Event : TO IRQ3, IRQ4 , IRQ8 , IRQ12 check point.

Any activity. The system will wake up.

Power down Activities : To COM ports, LPT ports and Drive ports

IRQ3.....IRQ15 check point Then Into Green function.

## 3-8. PNP / PCI CONFIGURATION SETUP

ROM PCI BIOS

PNP / PCI CONFIGURATION SETUP

AWARD SOFTWARE, INC.

PNP OS Installed	: No	PCI IRQ Activated By	: Level
Resources Controlled By	: Manual	PCI IDE IRQ Map	: Pci-Auto
Rest Configuration Data	: Disabled	Primary IDE INT#	: A
		Secondary IDE INT#	: B
		Used MEM Base Addr	: N/A
IRQ-3 assigned to	: Legacy ISA		
IRQ-4 assigned to	: Legacy ISA		
IRQ-5 assigned to	: PCI/ISA PnP		
IRQ-7 assigned to	: PCI/ISA PnP		
IRQ-9 assigned to	: PCI/ISA PnP		
IRQ-10 assigned to	: PCI/ISA PnP		
IRQ-11 assigned to	: PCI/ISA PnP		
IRQ-12 assigned to	: PCI/ISA PnP		
IRQ-14 assigned to	: PCI/ISA PnP		
IRQ-15 assigned to	: PCI/ISA PnP		
DMA-0 assigned to	: PCI/ISA PnP		
DMA-1 assigned to	: PCI/ISA PnP		
DMA-3 assigned to	: PCI/ISA PnP		
DMA-5 assigned to	: PCI/ISA PnP		
DMA-6 assigned to	: PCI/ISA PnP		
DMA-7 assigned to	: PCI/ISA PnP		
		ESC : Quit	↓↑→← : Select Item
		F1 : Help	PU/PD/+/- : Modify
		F5 : Old Valued	(Shift) F2 : Color
		F6 : Load Bios Defaults	
		F7 : Load Setup Defaults	

Slot (1-3) Using INT# : Auto (A, B, C, D)  
 (1-3) Available IRQ : ( Na, 3, 4, 5, 7, 9, 10, 11, 12, 13, 14, 15)  
 PCI IRQ Activated By : Level  
 PCI IDE IRQ Map To : PCI-AUTO (PCI-SLOT 1, 2, 3)  
 Primary IDE INT# : A (B, C, D)  
 Secondary IDE INT# : B (C, D, A)  
 PCI Slots Routing Method:  
 PCI 1: A, B, C, D  
 PCI 2: B, C, D, A  
 PCI 3: C, D, A, B

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### 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)
	528 Megabytes	

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)
	8.4 GIGABYTES	

#### 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:

CYLS.	HEAD	SECTOR	MODE
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 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 <ENTER> KEY. A LINE WILL APPEAR ON SCREEN ASKING IF YOU WANT TO LOAD THE SETUP DEFAULT VALUES. PRESS THE <Y> KEY AND THEN PRESS THE <ENTER> KEY. THE SETUP DEFAULTS WILL THEN LOAD. PRESS <N> 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 III DOS MEMORY
C8000-DFFFF	96K	AVAILABLE FOR HI DOS MEMORY AND ADAPTER ROMS
E0000-EFFFF	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)

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## 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

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## 3-14 TIME &amp; 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--