INTEL 1430 VX CHIPSET
PENTIUM SYSTEM BOARD
USER'S MANUAL
(VER VX1C)

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CHAPTER 1. INTRODUCTION

l-l 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/5 12K CACHE MEMORY IS IDEAL
FOR MS-DOS, WINDOWS, WINDOW-95, WINDOW NT, NOVELL,
OS/2, UNIX., SOFTWARES.

THE PERFORMANCE, SPEED AND EXPANDABILITY OF I43OVX
MAIN BOARD MAKES 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,
CYRIX 6x86 P120+, P133+, P150+, P166+ AMD 5K86
75 - 166 MHZ CPUs.

MEMORY : 4 OF 72-PIN SIMMs AND 1 OF 168-PIN DIMM
(DUAL IN-LINE MEMORY-MODULE)UP TO 128MB.
SIMM CAN BE FAST PAGE, ED0 OR BURST EDO,
DIMM ONLY FOR **JEDEC 3.3V (NOT 5V)** TYPES
OF SDRAM (SYNCHRONOUS DRAM), BURST ED0 ,
EDO OR FAST PAGE.

EXP. SLOT : 4 X ISA AND 3 X PC1 SLOTS.

CHIPSET : INTEL 1430 VX CHIPSET
INTEL 82437VX SYSTEM CONTROLLER
INTEL 8237 1 SB PC1 ISA IDE XCELERATOR.
INTEL 82438VX PENTIUM DATA PATH UNIT.

CACHE SIZE : OK, 256K, 512K.

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

I/O FUNCTION 1 x FDC , 2 x bOARD 2 x PCI IDE DEVICES ,
SERIAL PORTS(16550 FAST COM), Ix PARALLEL
PORT DEVICE /EPP/ECP, AND OPTIONAL USB
(UNIVERSAL SERIAL BUS) CONNECTOR.

BOARD SIZE 25CMx22CM.

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

* P55C IS INTEL'S "MMX" (MULTI-MEDIA-EXTENDED INSTRUCTION)
SETS TYPE CPU, CPU CORE IS 2.8V BUT I/O OPERATION REQUIRES
3.3V, THIS SYSTEM BOARD SUPPORTS " MMX" P55C.

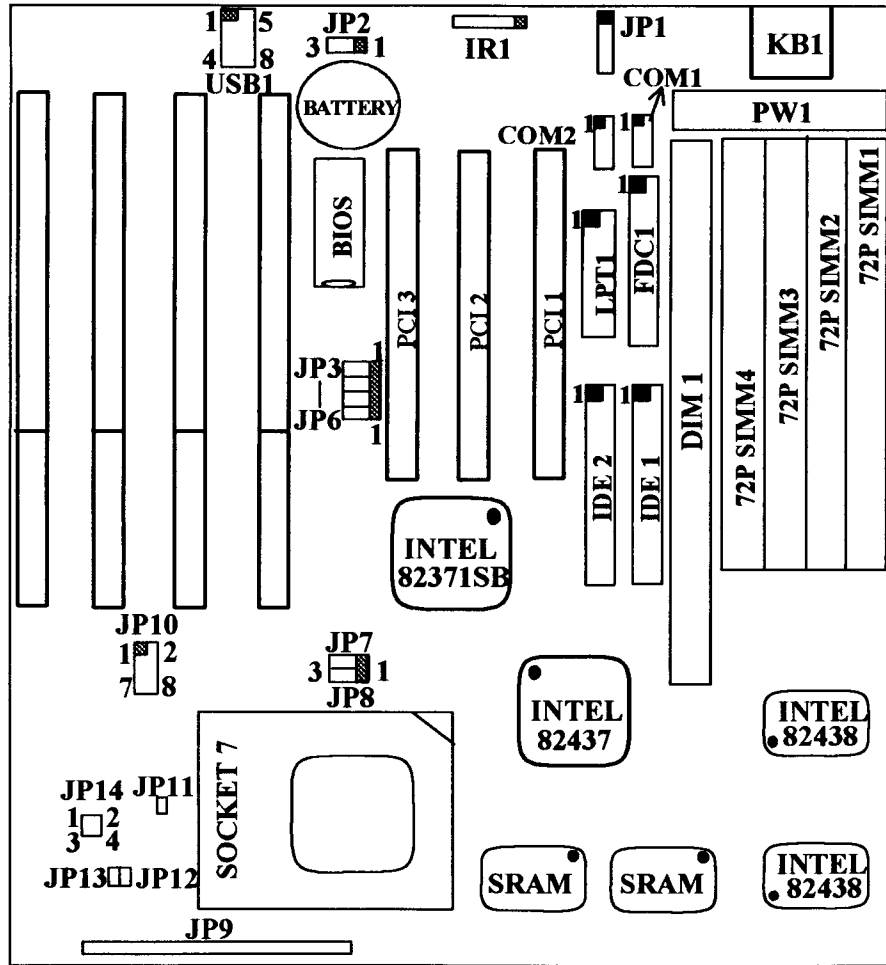### l-3 UNPACKING :
THE MAIN BOARD PACKAGE CONTAINS:

* 143OVX MAIN BOARD
* MANUAL
* CABLES

IF ANY OF THESE ITEMS IS MISSING OR DAMAGED,CONTACT THE
DEALER FROM WHOM YOU PURCHASED. LEAVE THE 143OVX IN ITS
ORIGINAL PACKING UNTIL YOU ARE READY TO INSTALL IT.

CHAPTER 2. INSTALLATION
2-1 LAYOUT REFERENCE

Layout labels: 1 5 4 8 USB1 · JP2 3 1 · IR1 · JP1 · KB1 · COM1 · BATTERY · PW1 · BIOS · COM2 · LPT1 · FDC1 · PCI3 · PCI2 · PCI1 · JP3 · JP6 · DIM 1 · IDE 2 · IDE 1 · 72P SIMM4 · 72P SIMM3 · 72P SIMM2 · 72P SIMM1 · INTEL 82371SB · JP10 1 2 7 8 · JP7 3 1 JP8 · INTEL 82437 · INTEL 82438 · SOCKET 7 · JP14 1 2 3 4 · JP11 · JP13 JP12 · SRAM · SRAM · INTEL 82438 · JP9 · SUSPEND-SW · HD-LED · SPKR · PW-LED · TB-LED · RESET · KEYLOCK

2-2 JUMPER SETTINGS

1.JP3-JP5,JP7,JP8,JP10-JP14 : INTEL/CYRIX /AMD CPU TYPE SELECTOR

INTEL CPU	CLOCK SPEED	RATIO	JP3	JP4	JP5	JP7	JP8	JP10	JP11	JP12 JP13	JP14
P54C 75 3.3V	(50MHZ)	1.5	1-2	1-2	1-2	1-2	1-2	3-4	ON	OFF	3-4
P54C 90 3.3V	(60MHZ)	1.5	2-3	1-2	1-2	1-2	1-2	3-4	ON	OFF	3-4
P54C 100 3.3V	(66MHZ)	1.5	1-2	2-3	1-2	1-2	1-2	3-4	ON	OFF	3-4
P54C 120 3.3V	(60MHZ)	2	2-3	1-2	1-2	1-2	2-3	3-4	ON	OFF	3-4
P54C 133 3.3V	(66MHZ)	2	1-2	2-3	1-2	1-2	2-3	3-4	ON	OFF	3-4
P54C 150 3.3V	(60MHZ)	2.5	2-3	1-2	1-2	2-3	2-3	3-4	ON	OFF	3-4
P54C 166 3.3V	(66MHZ)	2.5	1-2	2-3	1-2	2-3	2-3	3-4	ON	OFF	3-4
P55C 166 2.8/3.3V	(66MHZ)	2.5	1-2	2-3	1-2	2-3	2-3	7-8	OFF	ON	3-4
P54C 180 3.3V	(60MHZ)	3	2-3	1-2	1-2	2-3	1-2	3-4	ON	OFF	3-4
P54C 200 3.3V	(66MHZ)	3	1-2	2-3	1-2	2-3	1-2	3-4	ON	OFF	3-4
P55C 200 2.8/3.3V	(66MHZ)	3	1-2	2-3	1-2	2-3	1-2	7-8	OFF	ON	3-4

AMD CPU FOR (PRxxxAB)	CLOCK SPEED	RATIO	JP3	JP4	JP5	JP7	JP8	JP10	JP11	JP12 JP13	JP14
PR75 3.52V	(50MHZ)	1.5	1-2	1-2	1-2	1-2	1-2	1-2	ON	OFF	1-2
PR90/PR120 3.52V	(60MHZ)	1.5	2-3	1-2	1-2	1-2	1-2	1-2	ON	OFF	1-2
PR100/PR133 3.52V	(66MHZ)	1.5	1-2	2-3	1-2	1-2	1-2	1-2	ON	OFF	1-2
PR150 3.52V	(60MHZ)	2	2-3	1-2	1-2	2-3	1-2	1-2	ON	OFF	1-2
PR166 3.52V	(66MHZ)	2	1-2	2-3	1-2	1-2	2-3	1-2	ON	OFF	1-2

CYRIX CPU	CLOCK SPEED	RATIO	JP3	JP4	JP5	JP7	JP8	JP10	JP11	JP12 JP13	JP14
P120+ 3.52V	(50MHZ)	2	1-2	1-2	1-2	1-2	2-3	1-2	ON	OFF	1-2
P133+ 3.52V	(55MHZ)	2	1-2	1-2	2-3	1-2	2-3	1-2	ON	OFF	1-2
P150+ 3.52V	(60MHZ)	2	2-3	1-2	1-2	1-2	2-3	1-2	ON	OFF	1-2
P166+ 3.52V	(66MHZ)	2	1-2	2-3	1-2	1-2	2-3	1-2	ON	OFF	1-2
P200+ 3.52V	(75MHZ)	2	2-3	1-2	2-3	1-2	2-3	1-2	ON	OFF	1-2

4. JP6 : **PC1 BUS FREQUENCY SELECTOR** (YELLOW JUMPER CAP)

	PC1 CLOCK = 32MHZ	PC1 CLOCK = CPU CLOCK/2
JP6	1-2 (DEFAULT?)	2-3
	(PLEASE DON'T cHANGE DEFAULT VALUE)	

5. JP2 : **BATTERY SELECTOR** (BLACK JUMPER CAP)

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

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

☞ **PS/2 MOUSE CABLE IS OPTIONAL, THE PIN #l OF CABLE IS YELLOW COLOR.**

6. OTHER JUMPER SETTINGS AND CONNECTORS :
JP1 : **PS/2 MOUSE CONNECTOR.**
IR1 : Infra Red (IR) CONNECTOR.
IDE1 : PRIMARY IDE CONNECTOR.
IDE2 : SECONDARY IDE CONNECTOR
FDCl : FLOPPY DISK CONNECTOR.
COMl : SERIAL PORT 1 CONNECTOR.
COM2 : SERIAL PORT 2 CONNECTOR.
LPTl : PARALLEL PORT CONNECTOR.
USBl : USB (UNIVERSAL SERIAL BUS) CONNECTOR

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

7.USB : USB (UNIVERSAL SERIAL BUS) CONNECTOR

USB PINOUT	
USBl	USB2
PIN1 +5v	PIN5 +5v
PIN2 USBP0-	PIN6 USBP1-
PIN3 USBP0+	PIN7 USBP1+
PIN4 GND	PIN8 GND

8. IRl : IRCON (INFRARED) CONNECTOR

IR CONNECTOR PM 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 .O ON IRCON.	USE AMPLITUDE SHIFT KEYED IR ON IRCON .	USE FOI FAST IR 4MB/S	USE COM2 (DEFAULT)

2-3 MEMORY INSTALLATION

NO JUMPER SETTING IS NECESSARY FOR DRAM SETTING, BIOS WILL CHECK DRAM TYPE AND SIZE AUTOMATICALLY. **I430VX** MAIN BOARD CONTAINS 4 BY **72-PIN** SIMM SOCKETS **(SIMM1,SIMM2, SIMM3,SIMM4)** OR 2 BY 16%PIN DIMM SOCKET (DIMM). SIMM MODULE SOCKETS ARE DIVIDED IN TWO BANKS : **SIMM1**, SIMM2 IN ONE BANK AND SIMM3, SIMM4 IN ANOTIIER BANK, MINIMUN USER HAS TO INSTAI.I. TWO DRAM SIMMs OF THE SAME KIND INTO ONE BANK OR INSTALL ONE DIMM INTO DIMM SOCKET. **I430VX** MAIN BOARD HAS TABLE-FREE (OR AIJTO-BANK) FEATURE AND USER CAN INSTALL SIMMs INTO ANY BANK. BUT CANNOT MIX UP SIMM WITH DIMM SINCE CHIPS LIMITATION.

NOTE : CANNOT MIX SIMM WITH DIMM

SIMM4	SIMM3	SIMM2	SIMM1	DIM1	TOTAL
4MB	4MB	---	—	—	8MBytes
—	---	---	—	8MB	8MBytes
4MB	4MB	4MB	4MB	---	16MBytes
8MB	8MB	—	—	—	16MBytes
---	—	---	—	16MB	16MBytes
4MB	4MB	8MB	8MB	---	24MBytes
8MB	8MB	4MB	4MB	---	24MBytes
8MB	8MB	8MB	8MB	---	32MBytes
16MB	16MB	—	—	—	32MBytes
—	---	—	—	32MB	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

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	A t - + - : **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(OMB)
Secondary Master : None (OMB)
Secondary Slave : None (OMB)

Drive A : 1.2M ,  5.25  In
Drive B : 1.44M , 3.5   In

Video   : EGA/VGA
Halt On : All Errors

Esc : Quit            i t - - - : 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 MANUFACTURERS 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 [Fl] KEY TO DISPLAY HELP MESSAGE OF THE SELECTED ITEM. THIS SETUP PROGRAM ALSO PROVIDE 2 CONVINENT 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 C 8000-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 Floopy Driver         :Disabled D8000-DBFFF  Shadow           :Disabled
Boot Up Floopy Seek        :Enabled   DC000DFFFF   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 SHOWED.
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.
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 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.

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.

TYPEMA TIC 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.

TYPEMA TIC RA TE(CHARS/SEC):

6 : 6 CHARACTERS PER SECOND	8 : 8 CHARACTERS PER SECOND
IO: 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

TYPEMA TIC DELA Y (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 SHAD0 W:
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:
CCOOO-CFFFF SHADOW:
D0000-D3FFF SHADOW:
D4000-D7FFF SHADOW:
D8000-DBFFF SHADOW:
DCOOO-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

ROM **PCI** BIOS
CHIPSET FEATURES SETUP
AWARD SOFTWARE, INC.

Auto Configuration : Enabled	
DRAM **RAS#** Prccharge Time :**4**	
DRAM **R/W Leadoff** Timing :**7**	
Fast RAS TO CAS delay :**3**	
DRAM Read Burst **(EDO/FP)**:**X333/X444**	
DRAM Write Hurst Timing :**X444**	
Fast MA To **RAS#** Delay CLK :**2**	
Fast Edo Path Select :**Disabled**	
Refresh **RAS#** Assertion :**4 CLK**	
ISA Bus Clock :**Pciclk/4**	
SDRA (CAS **Lat/RAS-To-CAS**):**3/3**	
Syslem BIOS Cacheable :**Disabled**	SC : Quit ↓↑→←: Select Item
Video BIOS Cacheable :**Disabled**	: H e l p **PU/PD/+/-**: Modify
8 Bit **I/O** Recovery Time :**8**	**F5** : Old Valued (Shift) F2 : Color
16 **Bit I/O** Recovery Time :**4**	**F6** : Load Bios Defaults
Memory Hole At **15M-16M** :**Disabled**	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
is controlled by register.]
: x222
: x333
: **X333/X444** (default)

DRAM *Write Burst Timing* [Slower rate may be required in certain system de-
signs to support layout with longer trace length or
slower DRAM. The DRAM write burst timing are
controlled by register.]
: X222
: X3 33(default)
: x444

System *BZOS 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 hole 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.

Z6 BIT I/O *RECOVERY TIME:*
TO DEFINE THE RECOVERY TIME FROM 1 TO 4 FOR 16-BIT I/O.

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	
Onboard FDD Controller	:Enabled	
Onboard Serial Port 1	:COM1	
Onboard Serial Port 2	:COM2	ESC : Quit ↓↑→← : Select Item
Onboard Parallel Port	:3F8/IRQ7	F1: Help PU/PD/+/- : Modify
Onboard Parallel Mode	:SPP	F5: Old Valued (Shift) F2 : Color
ECP Mode Use DMA	:3	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 PCZ 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   : COM1 (default)
: COM2
: COM3
: COM4
: Disabled
On-board Serial Port 2   : *COM2* (default)
: COM2
: COM3
: COM4
: 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 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

ROM PCI BIOS

POWER MANAGEMENT SETUP

AWARD SOFT\ ARE, INC.

| Power Management :Disabled
PM Control By APM :Yes
Video Off Method :V/H SYNC+blank
MODEM USE IRQ :3

Doze Mode :Disabled
Standby Mode :Disabled
Suspend Mode :Disabled
HDD Power Down : Disabled

** Wake Up Events In Doze & Standby **
IRQ3 (Wake-Up Event) :ON
IRQ4 (Wake-Up Event) :ON
IRQ8 (Wake-Up Event) :ON
IRQ12 (Wake-Up Event) :ON | * * Power Down & Resume Events * *
IRQ3 (COM 2) :ON
IRQ4 (COM 1) :ON
IRQ5 (LPT 2) :Off
IRQ6 (Floppy Disk) :Off
IRQ7 (LPT 1) :Off
IRQ8 (RTC Alarm) :Off
IRQ9 (IRQ2 Redir) :Off
IRQ 10 (Reserved) :Off
IRQ 11 (Reserved) :Off
IRQ12 (PS/2 Mouse) :Off
IRQ1 3 (Coprocessor) :Off
IRQ14 (Hard Disk) :ON
IRQ 15 (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

Wakeup 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.. ... .IRQ 15 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 : Yes
Resources Controlled By : Auto
Zest Configuration Data : Disables | PCI IRQ Actived By :Level
PCI IDE Map To :Pci-Auto
 Primary IDE Int# :A
 Secondary IDE Int# :B |
| | ESC : Quit ↓↑→←: Select Item
F1: Help PU/PD/+/-: Modify
F5: Old Valued (Shift) F2 : Color
F6 : Load Bios Defaults
F7 : Load Setup Defaults |

Slot (l-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 Actived 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

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.

$$
\begin{array}{ll}
\text{no. CYLINDER} & (1024) \\
\text{X no. HEAD} & (16) \\
\text{X no. SECTOR} & (63) \\
\underline{\text{X no. PER SECTOR}} & \underline{(512)} \\
\multicolumn{2}{c}{528 \text{ Megabytes}}
\end{array}
$$

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:

$$
\begin{array}{ll}
\text{no. CYLINDER} & (1024) \\
\text{X no. HEAD} & (255) \\
\text{X no. SECTOR} & (63) \\
\underline{\text{X no. Bytes PER SECTOR}} & \underline{(512)} \\
\multicolumn{2}{c}{8.4 \text{ GIGABYTES}}
\end{array}
$$

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:

$$
\begin{array}{ll}
\text{no. CYLINDER} & (1024) \\
\text{X no. HEAD} & (32) \\
\text{X no. SECTOR} & (63) \\
\underline{\text{X no. BYTES PER SECTOR}} & \underline{(512)} \\
\multicolumn{2}{c}{1 \text{ Gigabytes}}
\end{array}
$$

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
(MT 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 WITEOUT 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	5 12K	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 110 PORTS
080-09F	DMA REGISTER
OAO-OBF	INTERRUPT CONTROLLER (SLAVE)
OCO-ODF	DMA CONTROLLER (SLAVE)
OFO-OFF	MATH COPROCESSOR
1F0-1FB	HARD DISK CONTROLLER
278-27F	PARALLEL PORT 2
2B0-2DF	GRAPHICS ADAPTER CONTROLLER
2F8-2FF	SERIAL PORT 2
360-363	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
            OA   STATUS REGISTER A
            OB   STATUS REGISTER B
            OC   STATUS REGISTER C
            OD   STATUS REGISTER D
            OE   DIAGNOSTIC STATUS BYTE
            OF   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---

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