5V-1B
MAIN BOARD
AT FORM FACTOR
USER'S MANUAL
(VER : 1.1)

Warning and disclaimer
This manual is designed to provide information about the Pentium® main board. Every effort has been made to make this manual as accurate as possible, but no warranty or fitness is implied. All the information is provided on an 'as is' basis. The author and his corresponding publishing company shall have neither liability nor responsibility to any person or entity with respect to any loss or damages arising from the information contained in this manual or from the use of the system board that accompanies it. Information contained in this manual is subject to change without notice. The manufacturer of the system board will not be held responsible for technical or editorial omissions made herein, nor for the incidental or consequential damages resulting from its furnishing, performance, functionality or use. Subsequent changes to this manual will be incorporated into the next edition. We welcome any suggestion regarding this manual or our computer products.

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Chapter 1 Introduction

1-1Overview

The VT82C580VPX mainboard combines the advanced capabilities of the VIA Apollo VPX chipset with a high performance concurrent PCI local bus architecture to provide the ideal platform for unleashing the unsurpassed speed and power of the Intel Pentium® processor, Cyrix® 6x86 and AMD ® K5/K6 processors, and can be easily upgraded for 321 pin ZIF socket.

The processor's advanced performance is complemented by a second level write back PB-SRAM up to 1024KB and main memory up to 512MB RAM. The main memory is initialed using the board's two 72-pin SIMM sockets and two 168-pin DIMM sockets that accept either the new high performance EDO, BEDO, Fast Page mode DRAM, or synchronous DRAM(SDRAM).

The VT82C580VPX integrates a full set of I/O features on board, including two 16550 UART compatible serial ports, one EPP/ECP capable port, one floppy disk controller, and one infra-red communication controller. On chip built in Enhanced IDE controller provides convenient, high speed PCI bus Master connection capable of four IDE devices, including Hard disk and CD-ROM.

1-2 Main Features

Item	Description
Socket 7	Supports CPUin a 321- pin ZIF socket A. Intel® Pentium® P54C /P55C MMX CPU B. Cyrix® 6x86/6x86L/6x86MX/6x86MII C. AMD ® K5/K6/K6-2 processors
Chipset	VIA® Apollo VPX chipset
Cache	256K; 512K; 1024K
Memory	2 DIMM/ 2 SIMM DIMM: A. EDO RAM or Synchronous DRAM with 168-pin DIM modules of 8,16, 32, 64MB, 128MB for 66MHz(5V or 3.3V) SIMM: take up to 256MB RAM in one bank, using 7 SIMM modules of 1, 2, 4, 8, 16, 32, or 64MB supports for EDO, BEDO or fast page mode memory
Exp. Slot	3*16-bit ISA slots and 4* 32-bit PCI expansion slots
I/O	Integrrted ITE IT8661F/RF multi I/O chipset tha two 16550 UART compatible serial ports, one EP capable port, one floppy disk drive connector, connector
Flash ROM	128KB
Size	22.0 x 24.0 cm
Special feature	AT power connector

1-3 Notice of Hardware Installation

A. Check the package before hardware installation

The main board package contains:

* 5V-1B main board
* manual
* cables
* driver & utility / CD

If any of these items is missing or damaged, contact the dealer from whom you purchase. Leave this main board in its original package until you are ready to install it.

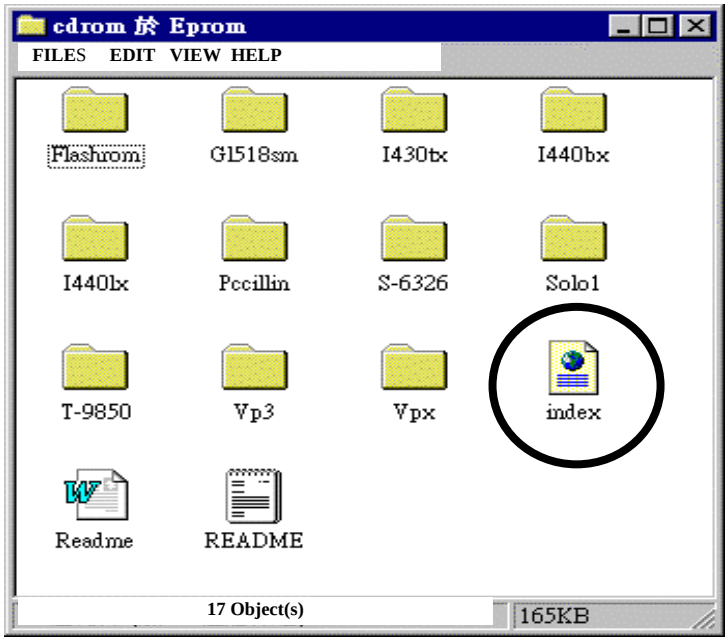
B. Make Sure power is off during hardware installation

C. No guarantee for CPU over-clock setup because system chipset does not support.

1-4 Notice of CD Driver Installation

This CD contains below drivers:
A. main boards:I440BX®, I440EX®, I440LX®, I430TX®, VIA® VPX, VP3, and MVP3 main boards
B. AGP cards: S- 6326 and T-985
C. Solo-1:Ess-solo-1 sound driver
D. GL518SM: CPU voltage /temperature and fan speed detection software
E. PCcillinanti- virus protection software

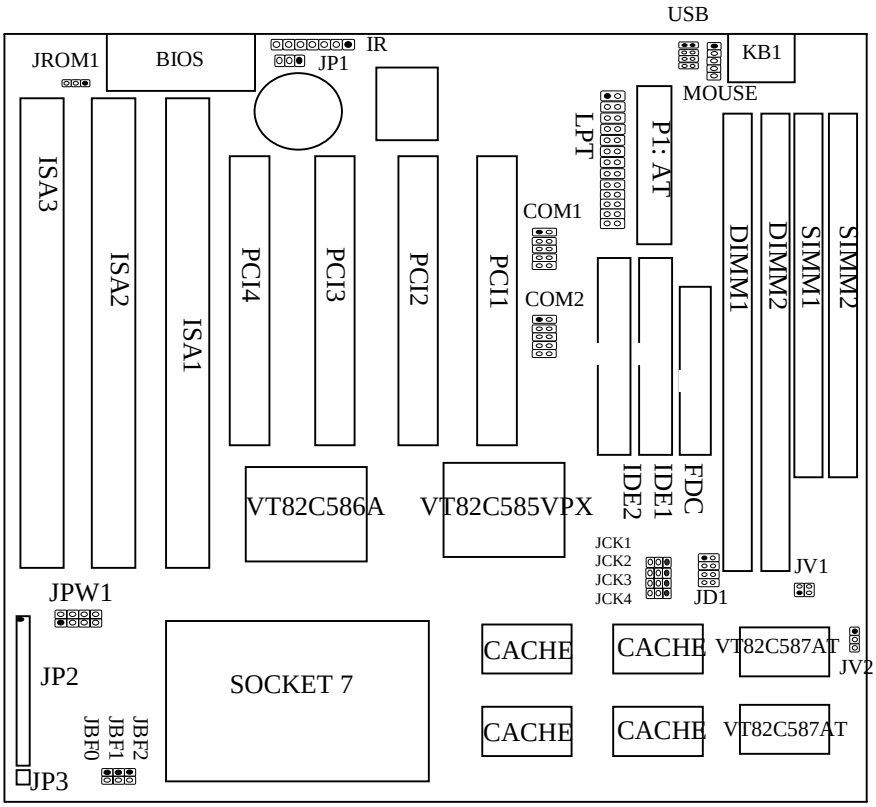
The below drivers are not all suitable for 5V-1B. Please read "Index"before installing required drivers. "Index" offers all t information on the below files.



Read "Index"before installing required drivers.
"Index" file is HTML format.

Chapter 2 Installation

2-1 Motherboard Layout



2-2 Jumper Setting

Intel® Pentium® Processor Installation

CPU CLOCK	SYS. CLOCK	RATIO	JCK				JBF			JPW1	JV1	JV2
			1	2	3	4	0	1	2			
P54C 75 MHz 3.3V	50 MHz	1.5X	2-3	2-3	2-3	1-2	OFF	OFF	OFF	1-2,5-6,7-8	OFF	1-2
P54C 90 MHz 3.3V	60 MHz	1.5X	1-2	2-3	2-3	2-3	OFF	OFF	OFF	1-2,5-6,7-8	OFF	1-2
P54C 100 MHz 3.3V	66 MHz	1.5X	2-3	1-2	2-3	2-3	OFF	OFF	OFF	1-2,5-6,7-8	OFF	1-2
P54C 120 MHz 3.3V	60 MHz	2X	1-2	2-3	2-3	2-3	ON	OFF	OFF	1-2,5-6,7-8	OFF	1-2
P54C 133 MHz 3.3V	66 MHz	2X	2-3	1-2	2-3	2-3	ON	OFF	OFF	1-2,5-6,7-8	OFF	1-2
P54C 150 MHz 3.3V	60 MHz	2.5X	1-2	2-3	2-3	2-3	ON	ON	OFF	1-2,5-6,7-8	OFF	1-2
P54C 166 MHz 3.3V	66 MHz	2.5X	2-3	1-2	2-3	2-3	ON	ON	OFF	1-2,5-6,7-8	OFF	1-2
P55C 166 MHz 2.8V/3.3	66 MHz	2.5X	2-3	1-2	2-3	2-3	ON	ON	OFF	7-8	1-2,3-4	1-2
P54C 180 MHz 3.3V	60 MHz	3X	1-2	2-3	2-3	2-3	OFF	ON	OFF	1-2,5-6,7-8	OFF	1-2
P54C 200 MHz 3.3V	66 MHz	3X	2-3	1-2	2-3	2-3	OFF	ON	OFF	1-2,5-6,7-8	OFF	1-2
P55C 200 MHz 2.8V/3.3	66 MHz	3X	2-3	1-2	2-3	2-3	OFF	ON	OFF	7-8	1-2,3-4	1-2
P55C 233 MHz 2.8V/3.3	66 MHz	3.5X	2-3	1-2	2-3	2-3	OFF	OFF	OFF	7-8	1-2,3-4	1-2

AMD ® K5/K6/K6-2 Processor Installation

CPU CLOCK	SYS. CLOCK	RATIO	JCK				JBF			JPW1	JV1	JV2
			1	2	3	4	0	1	2			
K5-PR 75 3.52V	50 MHz	1.5X	2-3	2-3	2-3	1-2	OFF	OFF	OFF	1-2,3-4,5-6,7	OFF	1-2
K5-PR 90/PR120 3.52V	60 MHz	1.5X	1-2	2-3	2-3	2-3	OFF	OFF	OFF	1-2,3-4,5-6,7	OFF	1-2
K5-PR100/PR133 3.52V	66 MHz	1.5X	2-3	1-2	2-3	2-3	OFF	OFF	OFF	1-2,3-4,5-6,7	OFF	1-2
K5-PR166 3.52V	66 MHz	2.5X	2-3	1-2	2-3	2-3	ON	ON	OFF	1-2,3-4,5-6,7	OFF	1-2
K6-PR166 2.9V/3.3V	66 MHz	2.5X	2-3	1-2	2-3	2-3	ON	ON	OFF	1-2,7-8	1-2,3-4	1-2
K6-PR200 2.9V/3.3V	66 MHz	3X	2-3	1-2	2-3	2-3	OFF	ON	OFF	1-2,7-8	1-2,3-4	1-2
K6-PR233 3.2V/3.3V	66 MHz	3.5X	2-3	1-2	2-3	2-3	OFF	OFF	OFF	5-6,7-8	1-2,3-4	1-2
K6-PR233 3.3V/3.3V	66 MHz	3.5X	2-3	1-2	2-3	2-3	OFF	OFF	OFF	1-2,5-6,7-8	1-2,3-4	1-2
K6-PR266 2.2V/3.3V	66 MHz	4X	2-3	1-2	2-3	2-3	ON	OFF	ON	3-4	1-2,3-4	1-2
K6-PR300 2.2V/3.45V	66 MHz	4.5X	2-3	1-2	2-3	2-3	ON	ON	ON	3-4	1-2,3-4	2-3
K6-2 266 2.2V/3.3V	66 MHz	4X	2-3	1-2	2-3	2-3	ON	OFF	ON	3-4	1-2,3-4	1-2
(+)K6-2 300 2.2V/3.3V	66 MHz	4.5X	2-3	1-2	2-3	2-3	ON	ON	ON	3-4	1-2,3-4	1-2

Cyrix® 6x86 Processor Installation

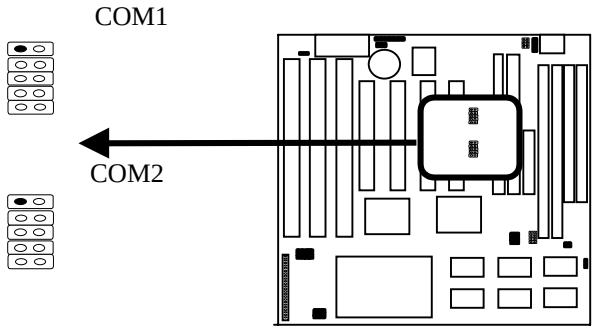
CPU CLOCK	SYS. CLOCK	RATIO	JCK				JBF			JPW1	JV1	JV2
			1	2	3	4	0	1	2			
P120+ M1 3.52V	50 MHz	2X	2-3	2-3	2-3	1-2	ON	OFF	OFF	1-2,3-4,5-6,7	OFF	1-2
P133+ M1 3.52V	55 MHz	2X	2-3	2-3	1-2	2-3	ON	OFF	OFF	1-2,3-4,5-6,7	OFF	1-2
P150+ M1 3.52V	60 MHz	2X	1-2	2-3	2-3	2-3	ON	OFF	OFF	1-2,3-4,5-6,7	OFF	1-2
P166+ M1 3.52V	66 MHz	2X	2-3	1-2	2-3	2-3	ON	OFF	OFF	1-2,3-4,5-6,7	OFF	1-2
P133+ 2.8V/3.3V	55 MHz	2X	2-3	2-3	1-2	2-3	ON	OFF	OFF	7-8	1-2,3-4	1-2
P150 + 2.8V/3.3V	60 MHz	2X	1-2	2-3	2-3	2-3	ON	OFF	OFF	7-8	1-2,3-4	1-2
P166+ 2.8V/3.3V	66 MHz	2X	2-3	1-2	2-3	2-3	ON	OFF	OFF	7-8	1-2,3-4	1-2
P200+ 2.8V/3.3V	75 MHz	2X	1-2	2-3	1-2	2-3	ON	OFF	OFF	7-8	1-2,3-4	1-2
MX PR 166 2.9V/3.3V	66 MHz	2X	2-3	1-2	2-3	2-3	ON	OFF	OFF	1-2,7-8	1-2,3-4	1-2
MX PR 200 2.9V/3.3V	75 MHz	2X	1-2	2-3	1-2	2-3	ON	OFF	OFF	1-2,7-8	1-2,3-4	1-2
MX PR 233 2.9V/3.3V	75 MHz	2.5X	1-2	2-3	1-2	2-3	ON	ON	OFF	1-2,7-8	1-2,3-4	1-2
MII PR 300 2.9V/3.3V	66 MHz	3.5X	2-3	1-2	2-3	2-3	OFF	OFF	OFF	1-2,7-8	1-2,3-4	1-2

Double check the jumper setting and make sure it is correct.

(+)Chipset specification does not support100 MHz system clock CPU like AMD® K6-2 300 and K6-2 350, and there is no guarantee for over-clock setup beyond chipse spec. The above K6-2 300 is only for reference and needs to set under 66 Mhz.

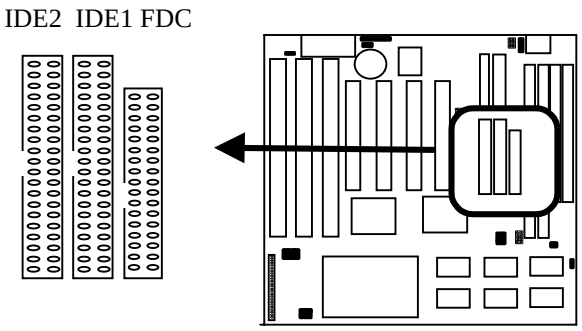
2-3 Connectors and Jumpers

COM1/COM2: Serial port connector
Serial Port connector supports 16550a high speed communication port that send/receive 16 bytes FIFOs.



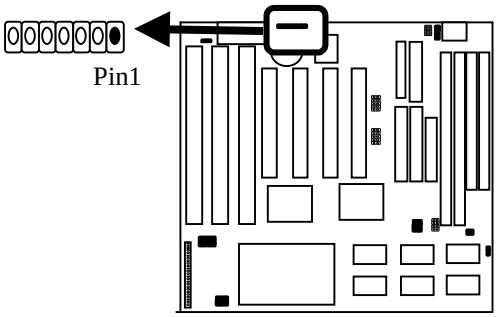
IDE1, IDE2: Primary, Secondary IDE connector
PCI IDE controller supports up to four hard disk drivers, CD ROM, 128MB floppy and other devices.

FDC: Floopy disk connector



IR: I.R.(Infra-red) connector

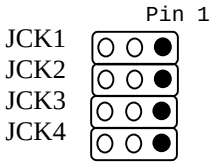
I.R Connector Pin Out						
Pin1 RX	Pin2 GND	Pin3 TX	Pin 4 +5V	Pin5 RXH	Pin6 VCC	Pin7 GND

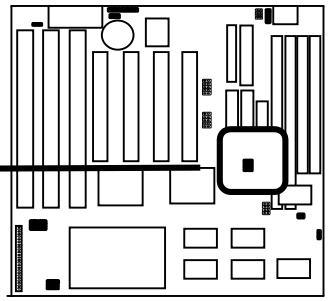


IR uses the same I/O port as COM2. There is no hardware jumper setting for I.R./COM2 on this main board and user needs to set proper BIOS (refer to page 32) setup for “HP SIR,” “ASKIR,” or “Disabled” (default) under “IR Address Selection” of intergrated Peripherals according to the following table.

BIOS: Integrated Peripherals	IRDA 1.0	ASKIR	Disabled (default)
I.R Function	Use IRDA 1.0 on I.R.connector	Use Amplitude shift keyed I.R. on I.R. connect	Use COM2

JCK1 – JCK3: CPU speed selector





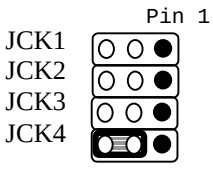
CPU (MHz)	JCK1	JCK2	JCK3	Demo.
50	2-3	2-3	2-3	
55	2-3	2-3	1-2	
60	1-2	2-3	2-3	

CPU (MHz)	JCK1	JCK2	JCK3	Demo.
66	2-3	1-2	2-3	
75	1-2	2-3	1-2	

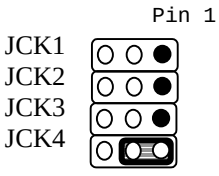
NOTE: JCK4 is PCI working frequency selector.

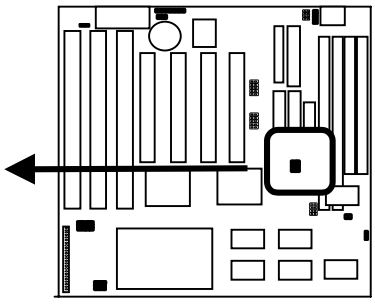
JCK4: PCI working frequency

32 Mhz: 2-3



CPU/2: 1-2

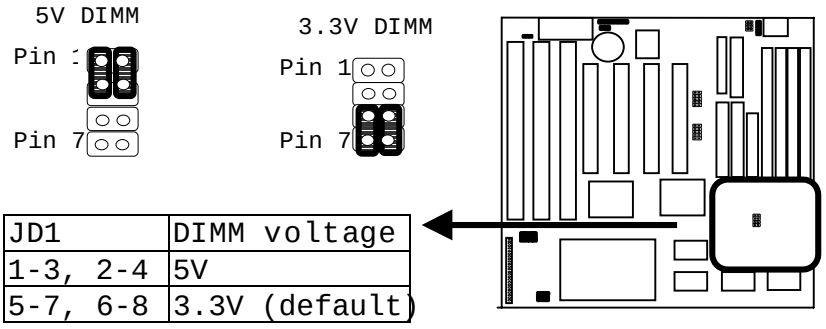




JCK4	PCI working frequency
1-2	CPU/2

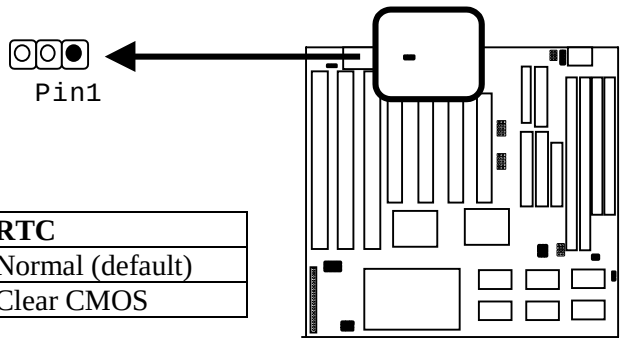
2-3	32 MHz (default)

JD1: DIMM voltage selector



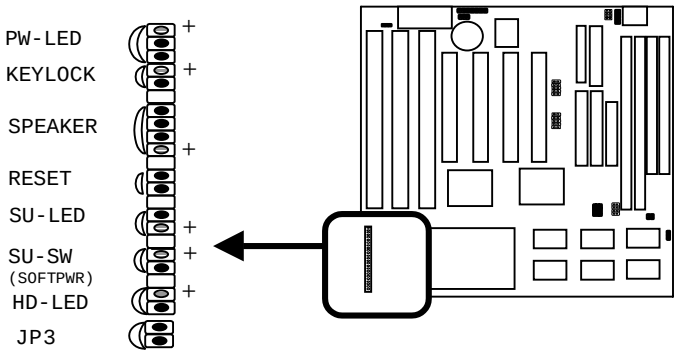
JD1	DIMM voltage
1-3, 2-4	5V
5-7, 6-8	3.3V (default)

JP1: RTC



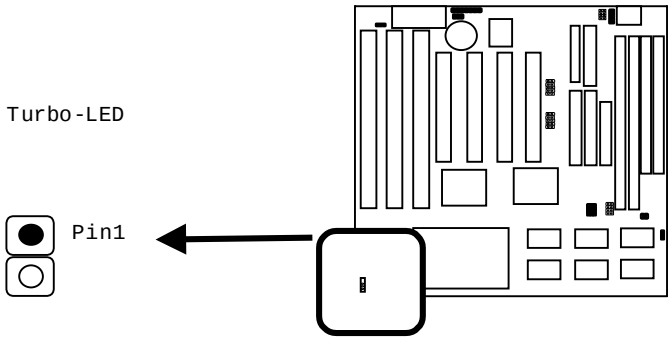
JP1	**RTC**
1-2	Normal (default)
2-3	Clear CMOS

JP2: Case connector

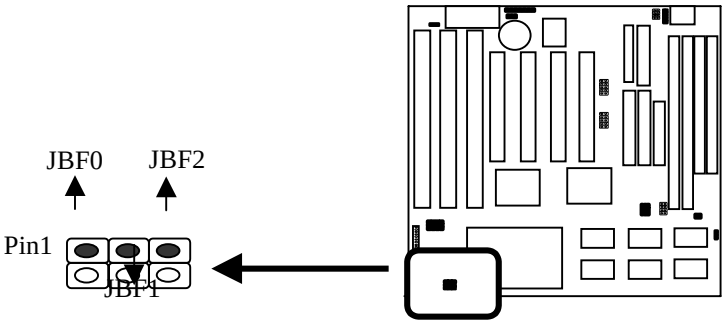


SU-SW: Suspend Mode Interrupt of 2-pin connector
When SU-SW is "Break switch setting", SU-SW is turned from open to close and back to open(touch the 2-pin jumper once), the system will enter suspend mode.

JP3: Turbo-LED



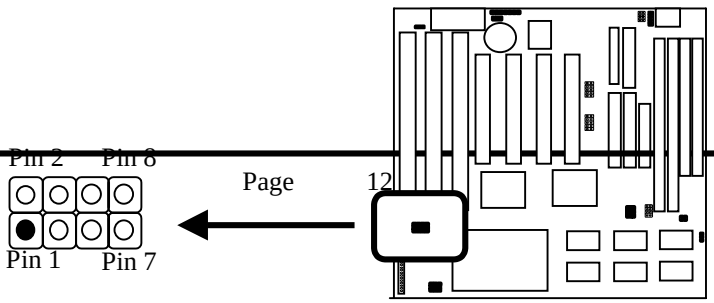
JBF0- JBF2: CPU ratio selector

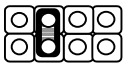
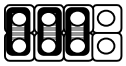
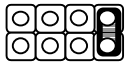
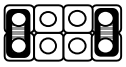


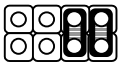
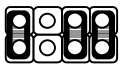
JBF0	JBF1	JBF2	CPU Ratio	Demo.
off	off	off	1.5x/3.5x	
on	off	off	2x	
on	on	off	2.5x	
off	on	off	3x	
on	off	on	4x	
on	on	on	4.5x	
off	on	on	5.0 x	
off	off	on	5.5x	

CPU ratio 5x and 5.5x are only for references.

JPW1: CPU Vcore seletor

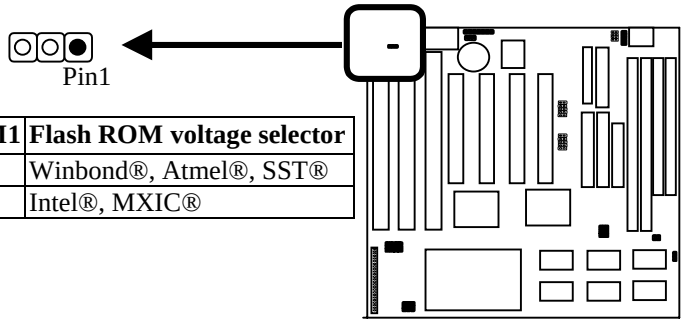


JPW1	V-core	Demo.
3-4	2.2V	
1-2,3-4,5-	2.7V	
7-8	2.8V	
1-2,7-8	2.9V	

JPW1	V-core	Demo.
5-6,7-8	3.2V	
1-2,5-6,7-8	3.3V	
1-2,3-4,5-6,7-	3.5V	

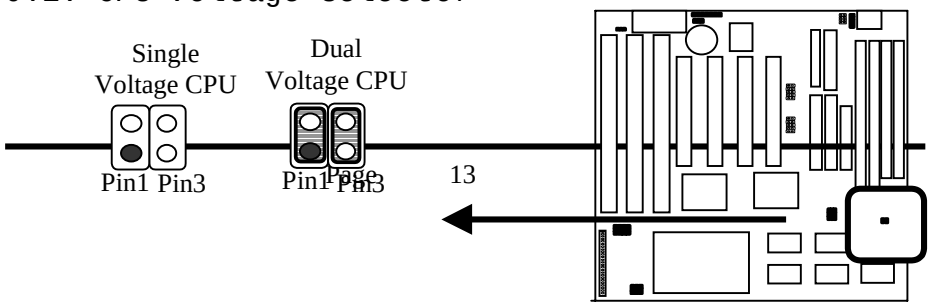
Be sure to set the right jumper setting for CPU Vcore.

JROM1: Flash ROM voltage selector



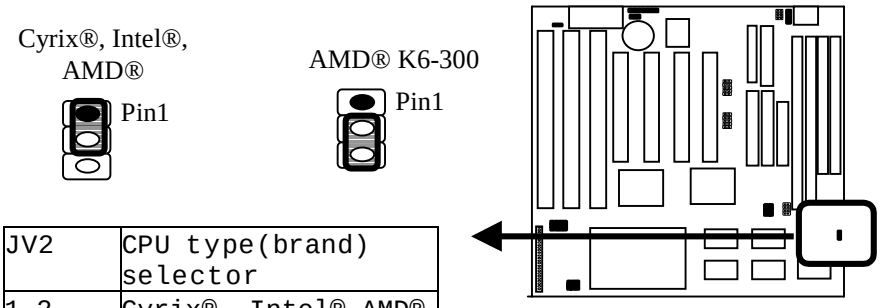
JROM1	Flash ROM voltage selector
1-2	Winbond®, Atmel®, SST®
2-3	Intel®, MXIC®

JV1: CPU voltage selector



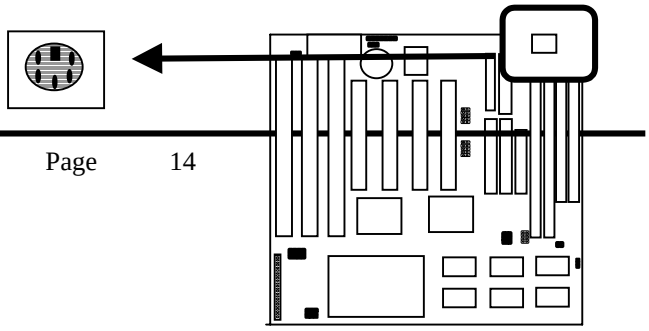
JV1	CPU voltage selector
Off	Single voltage
1-2,3-4	Dual voltage

JV2: CPU type selector



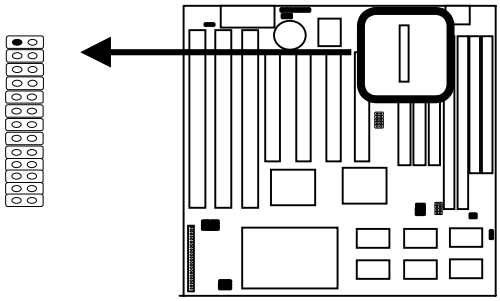
JV2	CPU type(brand) selector
1-2	Cyrix®, Intel® AMD®
2-3	AMD® K6-300

KB1: Keyboard Connector

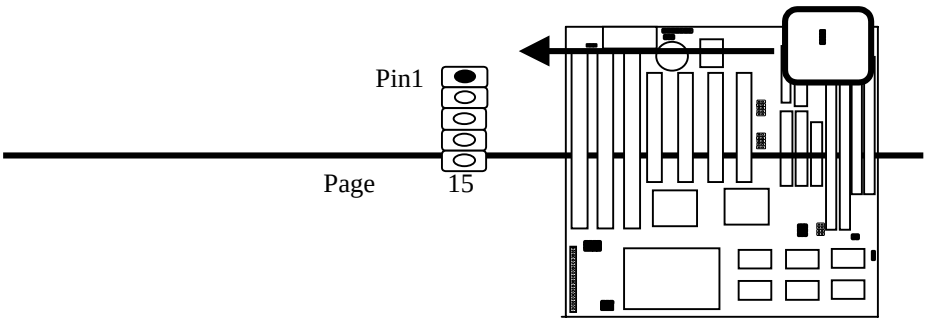


Pin	Description
1	Keyboard Clock
2	Keyboard Data
3	N.C.
4	Ground
5	+5 Vcc

LPT: Parallel Port Connector
Parallel Port connector supports standard printer port, enhanced parallel port, extended capabilities parallel (ECP).

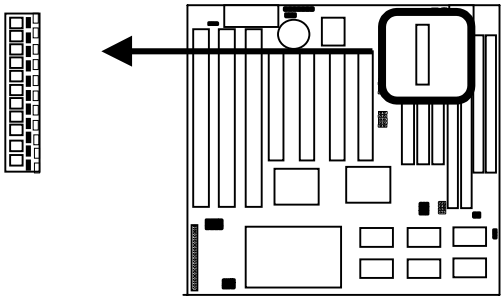


Mouse: PS/2 mouse connector
Mouse connector support 5-pin PS/2 mouse



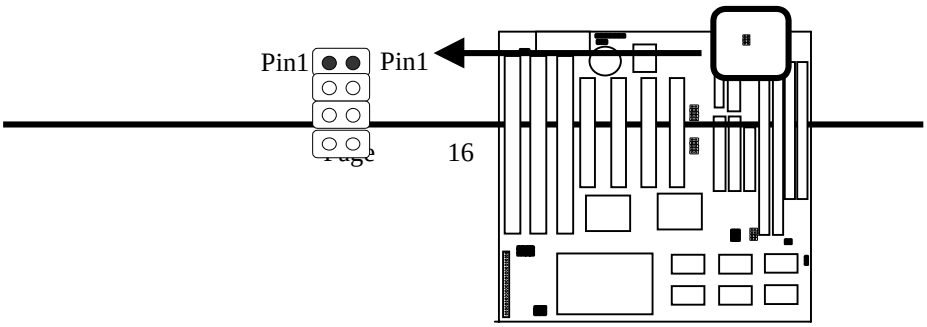
Mouse	PS /2 mouse
Pin1	MS CLK
Pin2	MS Data
Pin3	NC
Pin4	GND
Pin5	VCC

P1: AT power connector



Pin	Description	Pin	Description
1	Power Good	7	GROUND
2	+5V DC	8	GROUND
3	+12V DC	9	-5V DC
4	-12V DC	10	+5V DC
5	GROUND	11	+5V DC
6	GROUND	12	+5V DC

USB(Universal Serials Bus) connector
USB connector supports USB devices.

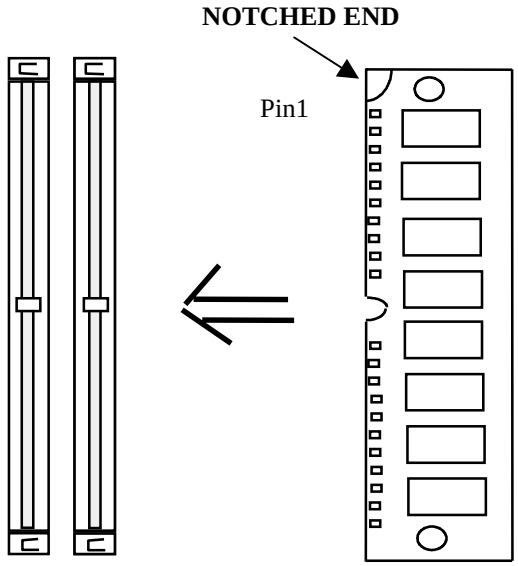


USB Pint Out	
USB1	USB2
Pin 1 +5V	Pin 1 +5V
Pin 2 USBP0-	Pin 2 USBP1-
Pin 3 USB P0+	Pin 3 USBP1+
Pin 4 GND	Pin 4 GND

2-4 SIMM Installation Procedures

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.

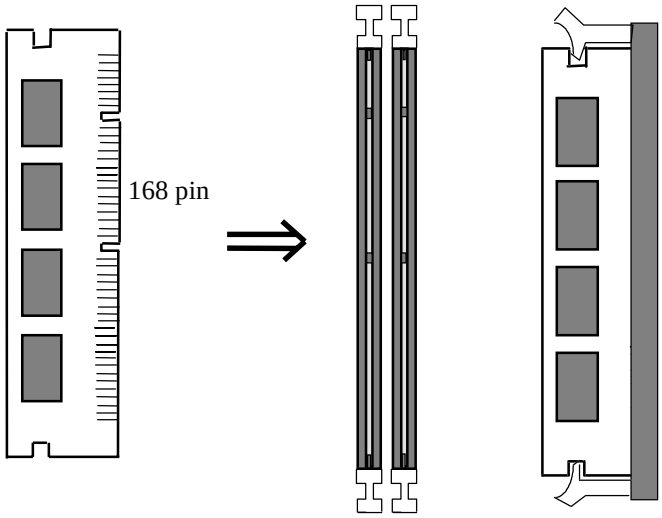


2-5 DIMM Installation Procedures

Insert the module as shown. Due to different number of pins on either side of the breaks, the module will only fit in th 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.

EDO DIMM supports either 3.3V or 5V.



2-6 Memory Chart

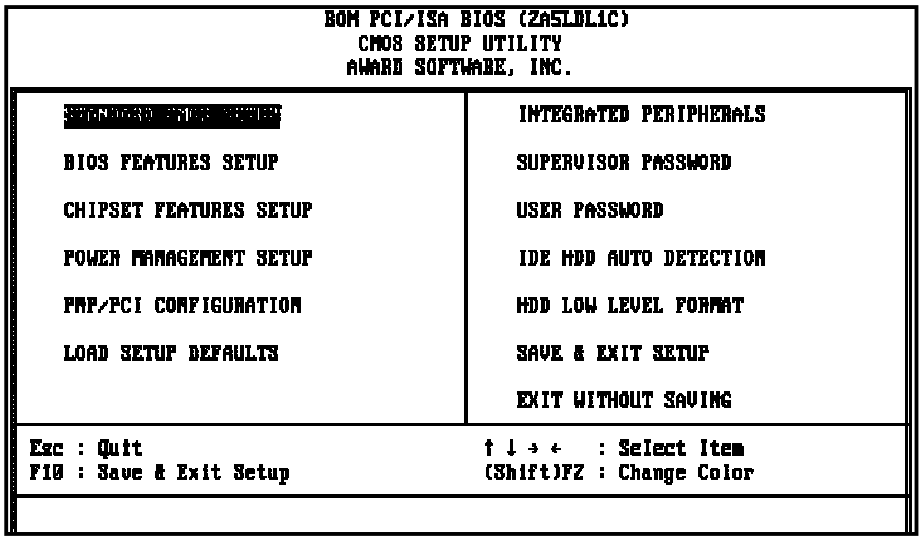
System memory RAM is comprised of industrial 2 standard 72-pin single in-line memory modules (SIMMs) and 2 168-pin DIMMs. TheVIA Apollo VPXchipset is able to support

standard FPM (fast page mode), EDO (extended data out), BEDO (burst extended data out), and synchronous DRAM(SDRAM). Memory can be installed in a variety of cong., as shown in the following table:

Total memory	Bank 0 (DIMM)	Bank 1 (DIMM2)	Bank2 (SIMM1, SIMM2)
8MB	8MB		
8MB			4MB&4MB
12MB	8MB	4MB	
16MB	8MB	8MB	
16MB			8MB&8MB
24MB	16MB	8MB	
32MB	16MB	16MB	
32MB	32MB		
32MB			16MB&16MB
40MB	32MB	8MB	
48MB	32MB	16MB	
64MB	32MB	32MB	
64MB			32MB&32MB
64MB	64MB		
72MB	64MB	8MB	
80MB	64MB	16MB	
96MB	64MB	32MB	
128MB	64MB	64MB	
128MB			64MB&64MB

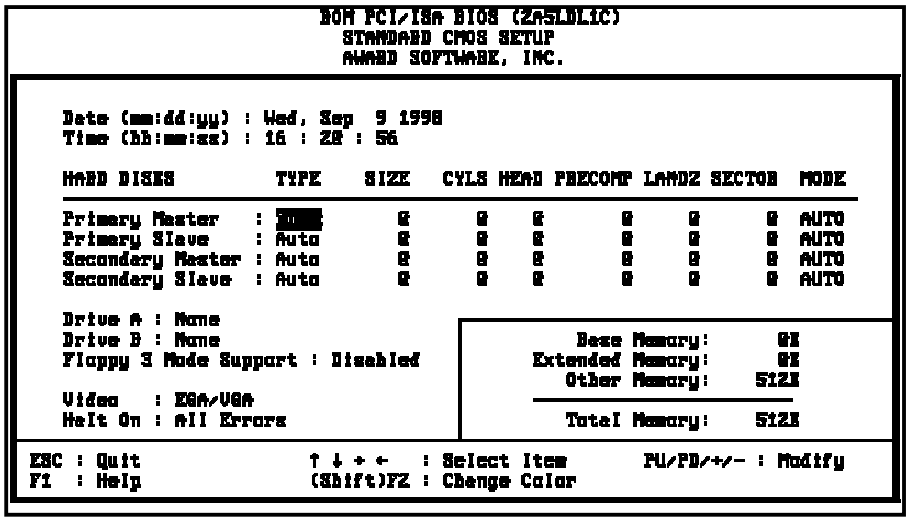
Chapter 3 BIOS Setup

3-1. Award® BIOS CMOS Setup



The menu displays all the major selection items and allow user to select any 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 selected item will appear. So the user can modify associated configuration parameters.

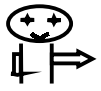
3-2. Standard CMOS Setup



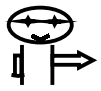
The "Standard CMOS Setup" allows user to configure system setting such as current date and time, type of hard disk drive installed in the system, floppy drive type and the type of display monitor. Memory size is auto detected by the BIOS and displayed for your reference. When a field is highlighted (direction keys to move cursor and <Enter> key to select). The entries in the field will be changed by <PageDown> or <PageUp> key or user can enter new data directly from the keyboard.

Hard Disk Configurations

TYPE : select from "1" to "45" to fill remaining fields with redefined values of disk drives. "USER" Select to fill the remaining fields. Select "AUTO" to detect the HDD type automatically.
SIZE : the hard disk size. The unit is mega byte(MB).
CYLS : the cylinder number of the hard disk.
HEAD : the read/write head number of hard disk. The range is from "1" to "16".
PRECOMP the cylinder number at which the disk drive changes the write timing.
LANDZ : the cylinder number that the disk drive heads (read/write) are seated when the disk drive is parked.
SECTOR : the sector number of each track defined on the hard disk. The range is from "1" to "64".
MODE : select "AUTO" to detect the mode type automatically. If your hard disk supports the LBA mode, select "LBA" or "LARGE". However, if your hard disk cyclinder is more than 1024 and does not support the lba function, you have to set at "LARGE." Select "NORMAL" if your hard disk supporting cylinder is below 1024.



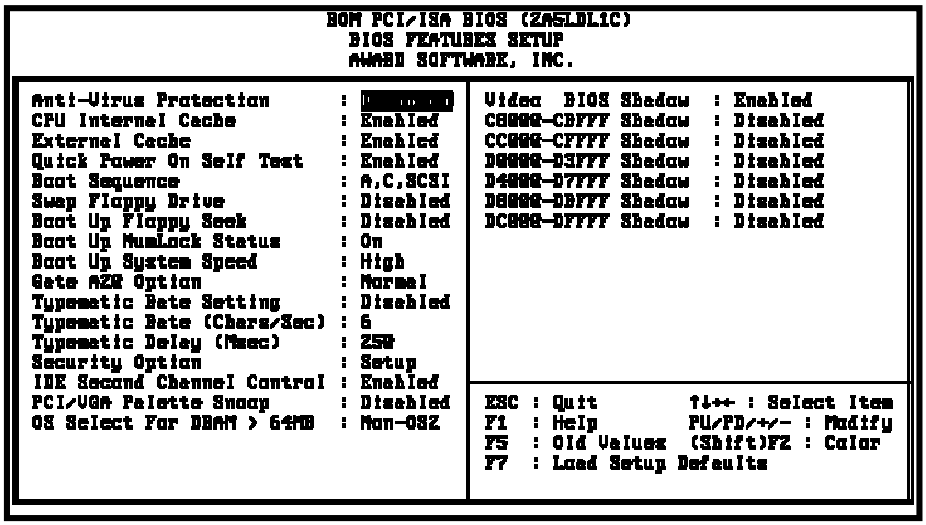
If hard disk primary master/slave and secondary master/slave were set "AUTO," then the hard disk size and model will be automatically detected on display during post.



"Halt on" has options as below: "No Errors," "All, But Keyboard," "All, But Diskette," "All, But Disk/key." The system can detect hard disk setup errors during boot-up. For example, "All errors" means to detect all the setup errors. "All, But Keyboard" means all except keyboard error. Default value is "All Errors."

3-3. BIOS Features Setup

Menu below shows all of the manufacturer's default values of this main board. 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.



Anti-Virus Protection
:Enabled
:Disabled (default)

CPU Internal Cache
Enabled : enable cache
Disabled: disable cache

External Cache
Enabled(default): enable cache

Disabled: disable cache

Quick Power On Self Test
This category speeds up power on self test. After you power on the computer, if it is set to enable, during post.
Enabled : BIOS will shorten or skip some check items.
Disabled: normal speed

Boot sequence
This category determines which drive the system searches first. Take "A,C,SCSI" for example. System will first search for floppy disk drive; second is hard disk drive, and finally SCSI drive. Default value is "A,C,SCSI." .Options are as below:
A,C,SCSI; C,A,SCCI, C,CDROM,A; CDROM,C,A; D,A,SCSI; E,A,SCSI; F,A,SCSI; SCSI,A,C; SCSI,C,A; C Only; LS/ZIP,C.

Swap Floppy Drive
Enabled: floppy A&B will be swapped.
Disabled (default): floppy A&B will be not swapped.

Boot Up Floppy Seek
BIOS will determine if the floppy disk drive is 40 or 80 tracks 360k type is 40 tracks while 720K/ 1.2M and 1.44M are all 80 tracks. Default value is enabled.

Boot Up Numlock Status:
:On(default)
:Off

Boot Up System Speed
It selects the default system speed which the system will run immediately after power up.
High(default): set the speed to high.
Low: set the speed to low.

Gate A20 Speed
:Normal (default)

:Fast

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(default)
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)
This is the interval between the first and second character displayed.
250 250 msec (default)
500 500 msec
750 750 msec
1000 1000 msec

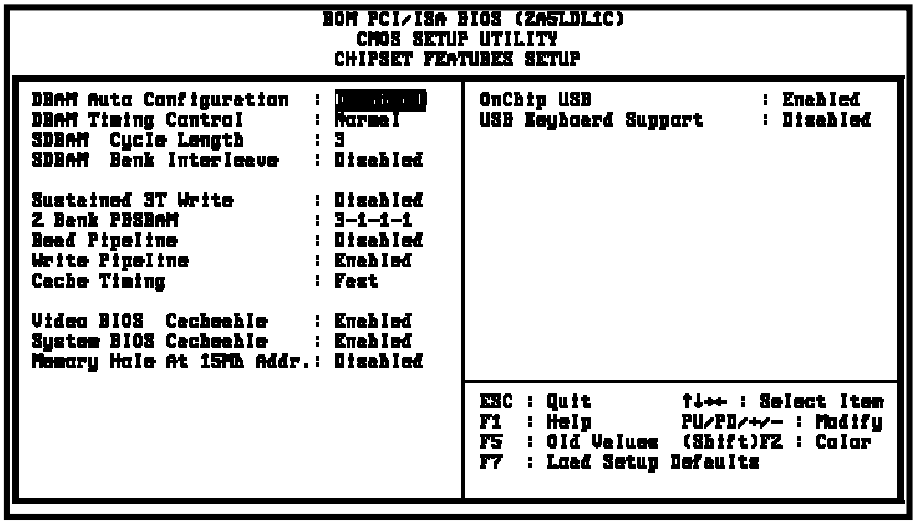
Security Option (refer to page 36)
:Setup(default)--- security protection in CMOS setup menu
Setting password in BIOS CMOS "Supervisor Password" or User Password," the user needs to key in password if entering BIOS CMOS setup.
:System---security protection in system boot-up & BIOS setup
This function secures both system boot-up and BIOS setup.

Assign IRQ for VGA
:Enabled(default)
:Disabled

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(default)
Disabled: Video Shadow is disabled

C8000-CBFFF Shadow, CC000-CFFF Shadow, D0000-D3FFF Shadow: D4000-D7FFF Shadow, D8000-DBFFF Shadow, DC000-DFFF Shadow
These are categories determine whether optional ROM will be copied to RAM by 16KB or 32KB per unit and the size depends on chipset.
:Enabled
:Disabled(default)

3-4. Chipset Features Setup



DRAM Auto Configuration: the BIOS will automatically detect the CPU speed and will auto-configurate the bus frequency, DRAM speed, cache and read/write cycle.
:Disabled
:Enabled

SDRAM Cycle Length: control the DRAM page missing and row miss leadoff timing.
:2
:3(default)

SDRAM Bank Interleave
:Disabled(default)
:2 bank
:4 bank

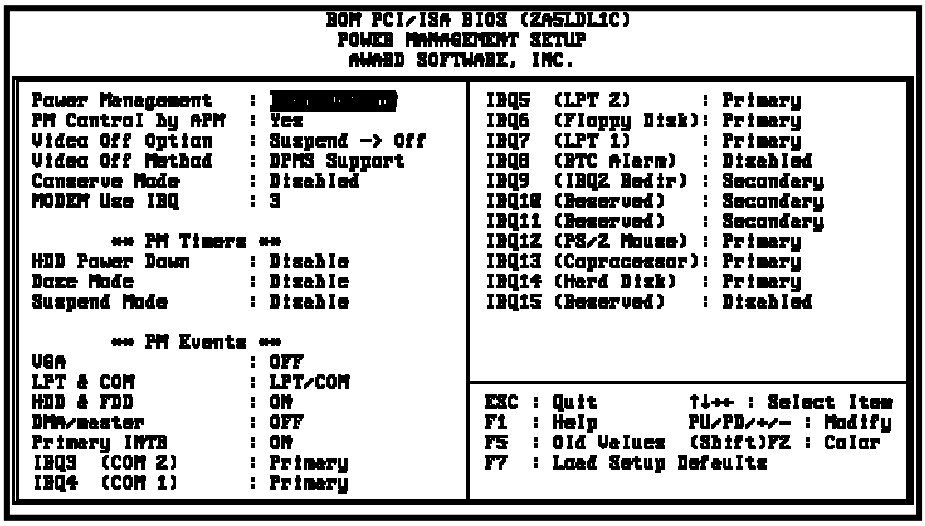
System BIOS Cacheable
Define whether system BIOS area cacheable or not.
:Enabled
:Disabled (default)

Video BIOS Cacheable
Define whether video BIOS area cacheable or not.
:Enabled
:Disabled (Default)

Memory Hole At 15MB: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)

USB Keyboard Support:
Default value is Disable. If the system uses USB keyboard, please set "Enable" for this item and "Assign IRQ for USB" (refer to page 31).

3-5. Power Management Setup



Power Management
:User defineUsers can configure their own power management
:Min Saving
:Max Saving
:Disabled

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.

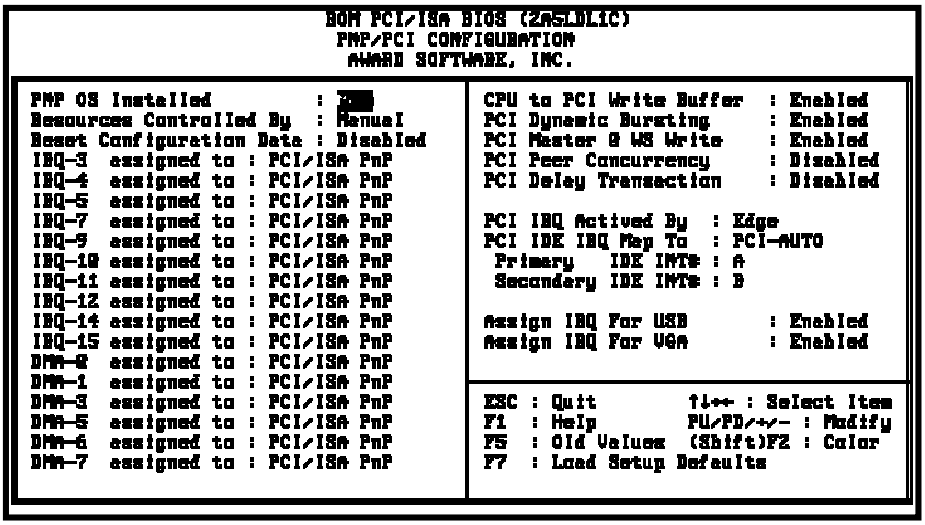
Video Off Method
:DPMS Support, Blank Screen, V/H Sync+Blank

Video Off After
:Standby, Doze, NA, Suspend

Modem Use IRQ
3, 4, 5, 7, 9,10,11,NA

IRQ3 – IRQ15
:Primary, Secondary, Disabled

3-6. PNP / PCI Configuration Setup



PNP OS Installed
:No(default)
OS will not recognize PnP devices.
:Yes
OS will be responsible to arrange the setup of PnP devices.

Resources Controlled By
:Manual(default)
The table will show the below items: "Reset Configuration Data, IRQ-3 assigned to, DMA-0 assigned to" the user can adjust the shown items as required.
:Auto
The table will not show the above items, and the system will automatically assign the above setup.

IRQ-3 Assigned To---- IRQ-15 Assigned To
: PCI/ISA PnP(default)
: Legacy ISA

DMA-0 Assigned To--- DMA-7 Assigned To
: PCI/ISA PnP(default)
: Legancy ISA

PCI IRQ Actived By
There are 2 modes in activing PCI IRQ.
:Edge(default)
:Level

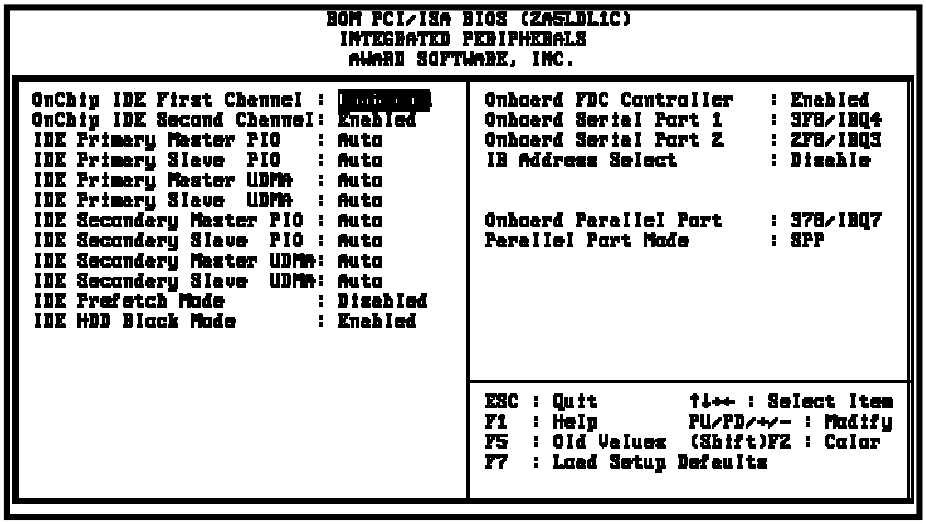
PCI IDE IRQ Map to:
The table will show the below items.
:PCI-AUTO(default), PCI-SLOT1, PCI-SLOT2, PCI-SLOT3, PCI-SLOT4, ISA

Choosing either PCI-SLOT1, PCI-SLOT2, PCI-SLOT3, PCI-SLOT4, PCI-AUTO, there are 2 more options.
---Primary IDE INT#(default A)
B,C,D
---Secondary IDE INT#(default B)
B,C,D

Assign IRQ for USB
: Enable(default)
: Disable

Assign IRQ for VGA
: Enable(default)
: Disable

3-7. Integrated Peripherals



IDE Primary Master PIO/ IDE Primary Slave PIO
Detect your primary master hard disk device.
:Auto (default)
:Mode 0,1,2,3,4

IDE HDD Block Mode
This feature enhances hard disk performance by making multi sector transfer instead of one sector per transfer. Most of ID drivers, except very early designs ,can use this feature.
:Enabled(default)
:Disabled

IDE Secondary Master PIO/ IDE Secondary Slave PIO
This feature detects your secondary master hard disk device.
:Auto (default)
:Mode 0,1,2,3,4

On-Chip Primary PCI IØEOn-Chip Secondary PCI IDE

Select use chip support primary PCI IDE.
: Enabled(default)
: Disabled

On-Board FDD Controller
: Enabled(default)
: Disabled

On-Board Serial Port 1/ On-Board Serial Port 2
: 3F8/IRQ4 (default)
: 2F8/IRQ3
: 3E8/IRQ4
: 2E8/IRQ3
: Auto
: Disabled

IR Address Select
:Disabled(default)
:3F8H/2F8H/3E8H/2E8H
Choosing any of these items except “disabled”, there are 2 more options:
IR mode:HP Sir/Askir/IRDA 1.0
IRQ Select: IRQ10(default),3,4,11

On-Board Parallel Port
: 378/IRQ7 (default)
: 278H/IRQ5
: Disabled

Parallel Port Mode
: SPP(Default)
: EPP
: ECP
Choosing this item, there is another line shown:
ECP Mode Use DMA: 3(default),1
: ECP+EPP
Choosing this item, there is one more option shown:
ECP Mode Use DMA: 3(default), 1

3-8. Supervisor/User Password

The "Supervisor/User Password setting" utility sets the security protection. There are two kinds of password functions in the setup menu : one is "Supervisor Password," and the other is "User Password." Their difference is

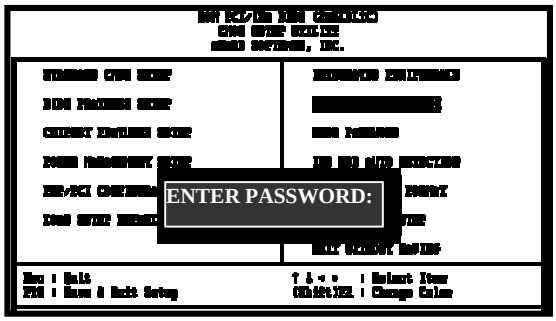
Supervisor Password: this function allows you the right to change the options of setup menu once you enter the setup menu.

User Password: this 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."

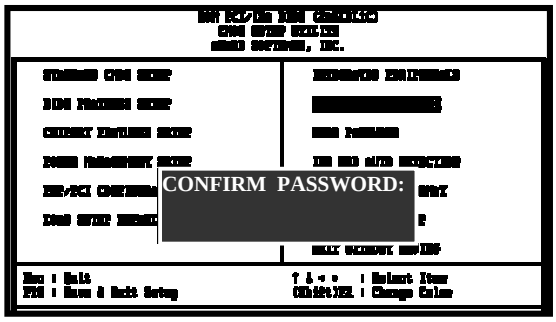
How to set "Supervisor Password" & "User Password"

The setup of "Supervisor Password" and "User Password" has the same steps.

Step 1: Enter Password in either "SUPERVISOR PASSWORD" or "USER PASSWORD"
Press <Enter> after appointing the password.

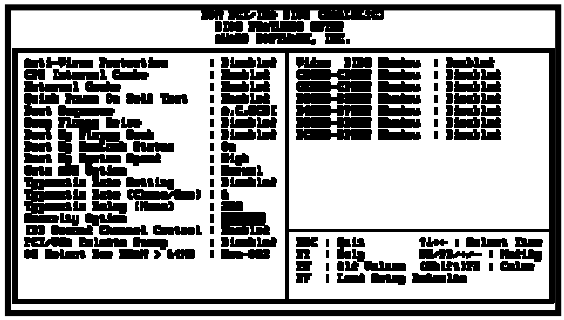


Step 2: Confirm Password
Typing the password again and press <Enter>.



Step 3: Set "Security Option" in "BIOS Features Setup" (refer to page 26).

After setting password, enter "Security Option" in "BIOS Features Setup." There are 2 options "Setup" & "System." "Setup" will only secure CMOS setup through password. "System" is to secure PC sytem and password is required during system boot- up in addition to CMOS setup..

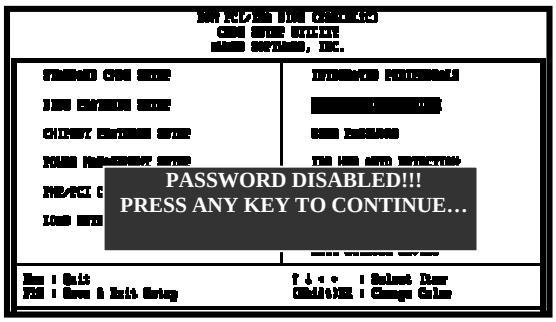


If you forget password, please clear CMOS (refer to page 10 for JP1 of RTC)

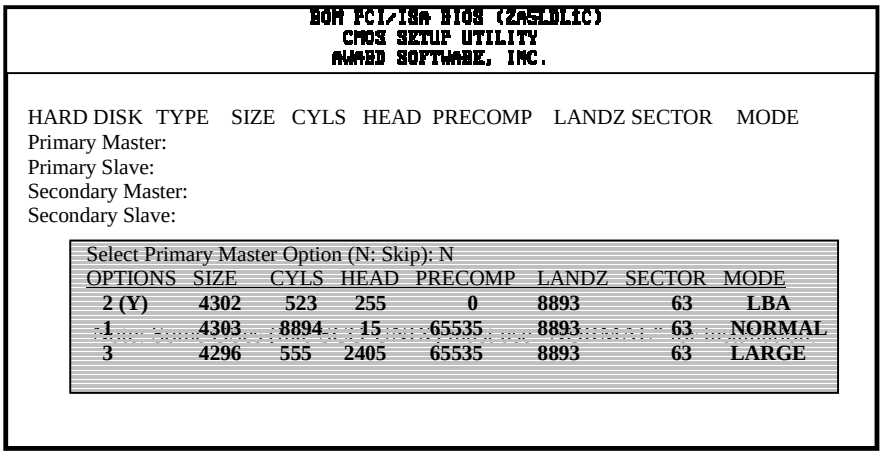
How to Disable "Supervisor Password" & "User Password"

Step 1: Go to CMOS Setup Menu (need to key in password first)

Setp 2: Enter "Supervisor Password" or "User Password" After enter, it shows "Enter Password." Press <Enter> key instead of entering a new password when "ENTER PASSWORD" appears. It will instead "PASSWORD DISABLED PRESS ANY KEY TO CONTINUN." Thus, press any key as instructed. You may disable the password this way.



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 corre 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 Aauto Detection"utility. The BIOS will auto-detect the hard disk size and model on display during post.

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 are1024, 16 & 63.

No. Cylinder (1024)
X No. Head (16)

X No. Sector (63)
X No. Per Sector (512)
528 MB

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

LBA (Logical Block Addressing) Mode
A new HDD accessing method to overcome the 528 MB 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 ow physical address inside the HDD.

The maximum HDD size supported by LBA mode is 8.4 GB which is obtained by the following formula:

No. Cylinder
X No. Head
X No. Sector
X No. Bytes Per Sector (512)
8.4 GB

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

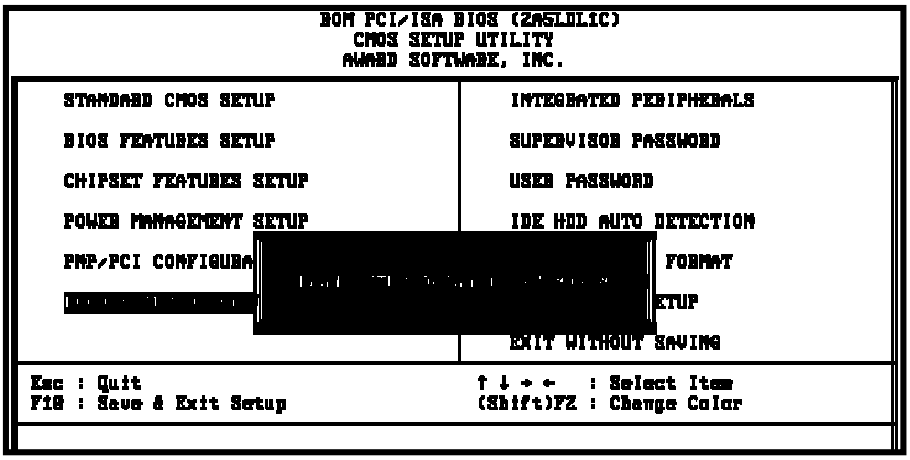
process will be made inside int 12h in order to access the right HDD address the right HDD address!

Maximum HDD Size=

No. Cylinder
X No. Head
X No. Sector
X No. Bytes Per Sector (512)
1 GB

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 perating 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.

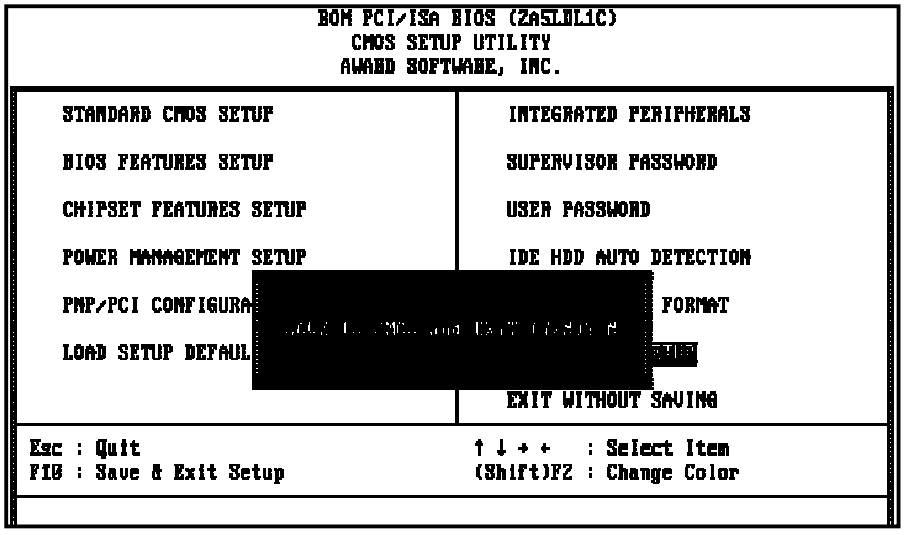
3-10. Load Setup Defaults



"Load Setup Defaults" loads optimized settings which are stored in the BIOS ROM. The auto-configured settings only affect "BIOS Features 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 <Y> key and then press the<Enter>key . The setup defaults will then load. Press <N> if you don't want to

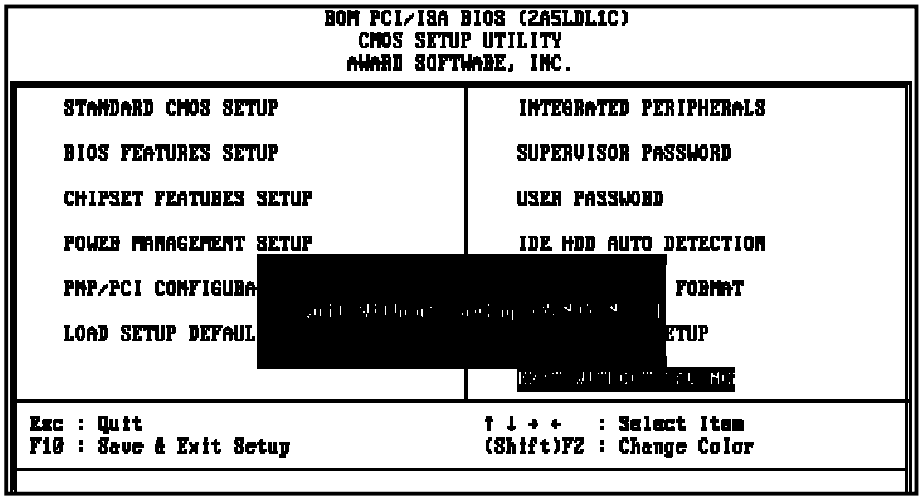
3-11 Save & Exit Setup

The "Save & Exit Setup" option will bring you back to boot up procedure with all the changes, you have made which are recorded in the CMOS RAM.



3-12 Quit Without Saving

The "Quit 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.



Chapter 4. Index

4-1 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 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
FD000-FDFFF	4K	Plug And Play Escd Data Area
FE000-FFFFF	8K	Bios Runtime Service Routine

4-2 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

4-3 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

4-4 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

4-5 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	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	

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