P5VX-B

User's Manual (for Award BIOS)

V1.1

August, 1996

Notice

This mainboard requires correct configuration information; otherwise, a malfunction may result.

Static electricity can cause serious damage to integrated circuit mainboards. To avoid building up a static electric charging on your body, be sure you discharge any static electricity by grounding yourself before handling the boards. If boards are handed from one person to another, they should touch hands first, then pass the mainboards.

Information presented in this publication has been carefully checked for reliability; however, no responsibility is assumed for inaccuracies. The information contained in this document is subject to change without notice.

Contact your dealer for warranty details.

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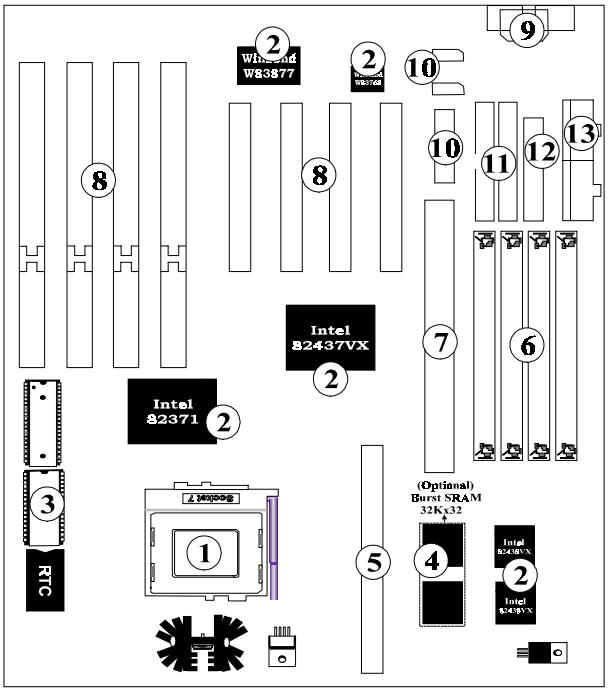
1 Introduction

Mainboard Description



① **Processor**

② **Chipset**

③ **System BIOS**

④ **L2 On-board Cache**

⑤ **L2 Cache Module Socket**

⑥ **SIMM System Memory Sockets**

⑦ **DIMM Memory Socket**

⑧ **Expansion Slots**

⑨ **AT K/B or PS/2 Mouse & Keyboard Set**

⑩ **Serial/ Parallel Ports**

⑪ **PCI IDE Connectors**

⑫ **FDD Connector**

⑬ Power Supply Connectors

P5VX-B is a Pentium PCI mainboard using Intel 430 VX PCIset [TXV (82437VX), TDX(82438VX) and PIIX3 (82371) system chipset] and Winbond I/O Chip W83877, W83768 . There are 4 ISA Bus slots and 4 PCI Bus slots. It also supports 2 banks (4 SIMMs) DRAM and 1 bank synchronous DRAM (SDRAM) with memory size up to 128MB; 1 COASt module supports 256/512KB Pipelined Burst SRAM.

1. **Processor:**

   Intel 75/90/100/120/133/150/166/180/200 MHz
   Intel Pentium with MMX technology (P55C)
   Cyrix 6x86 100/110/120/133 MHz (M1) CPU
   Cyrix 6x86 L

2. **Chipset:**

   Intel 82437VX (Host to PCI Bridge)
   Intel 82438VX (Data Buffer)
   Intel 82371 (PCI IDE ISA Xcelerator)
   Winbond 83877 (Super I/O Controller)
   Winbond 83768 (I/O TTL Integration)

3. **System BIOS:**

   Award BIOS

4. **L2 On-board Cache:**

   Provides On-board 0 K or 256K(default) pipelined Burst L2 Cache.

5. **L2 Cache Module:**

   An optional ECS “CM161” or later version of upgrade cache module can be inserted to expand the cache memory size to 256KB or 512KB.

   An “COASt 2.0” or later version specification cache module can also be used to upgrade the cache memory size.

6. **SIMM System Memory Socket:**

   Supports 72-pin SIMMs of 4MB, 8MB, 16MB or 32MB to form a memory size between 4MB to 128MB

7 **DIMM Memory Socket:**

   A DIMM socket is provided in the motherboard to support up to 32MB synchronous DRAM (SDRAM). The DIMM Socket is in compliance with JEDEC specifications for unbuffered SDRAM Module.

8. **Expansion Slot:**

   4 ISA Bus Slots.
   4 PCI Bus Slots. (with one share slot)

9. **AT K/B or PS/2 Mouse & Keyboard Set:**

   Provides Connectors for AT K/B(default) or PS/2 Keyboards & PS/2 Mouse.

10. Serial / Parallel Port:

Provides two serial ports and one parallel port.

11. PCI IDE Connector:

2 Enhanced PCI IDE up to 4 IDE Device Connectors.

12. FDD Connector:

Provides an on-board FDD Connector which supports 360KB/720KB/1.2MB/1.44MB/2.88MB type drives.

13. Power Supply Connectors:

Provides the connectors for standard PC power supply.

Features

θ **CPU:**

- Support Pentium 75/90/100/120/133/150/166/180/200 MHz CPU with On-board Regulator and Intel Overdrive CPUs.
- Intel Socket 7 approval.
- Support Pentium with MMX technology (P55C).
- Support Cyrix 6x86 100/110/120/133 MHz CPU.
- Support Cyrix 6x86 L CPU.

θ **BIOS:**

- Support Award BIOS with flash ROM.
  - Ä PNP specification V1.0a
  - Ä APM specificationV1.2
  - Ä DMI specification.
  - Ä Boot from CD-ROM

θ **Cache:**

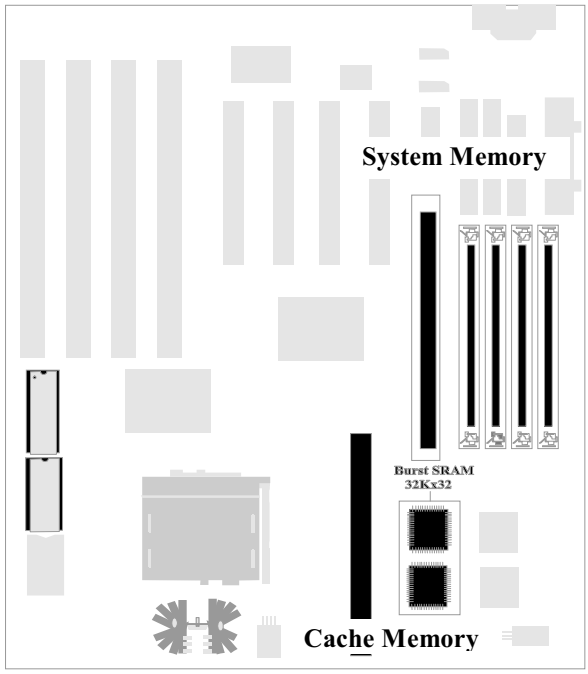
- Support the CPU's internal first level (L1) cache and external secondary level (L2) cache.
  - > **16KB Level 1 Cache inside Pentium:**
    - Ä Data Cache: supports 8KB Write-Through and Write-Back policy.
    - Ä Code Cache: supports 8KB Write-Through policy.
  - > **256KB (default) Pipelined Burst SRAM L2 Cache On Board.**
  - > **160-pin Cache Module Socket for Level 2 Cache:**
    - Ä Support COASt 2.0 or later version specification Pipelined Burst for 256KB or 512KB.

θ **Memory:**

- Support 4 pieces of 72-pin SIMM sockets and 1 piece of 168-pin DIMM socket with total memory size from 4MB to 128MB.
- Support EDO/ Fast Page Mode and Synchronous DRAM.

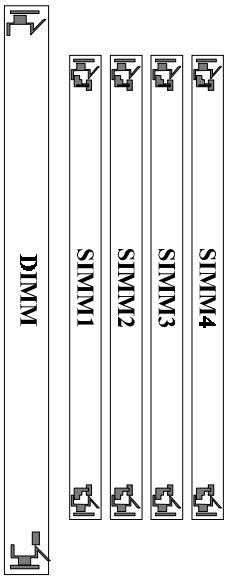
2 Memory Configurations

Thischaptercontainsthedetailedmemoryconfiguration: **System Memory and Cache Memory**.



ThediagramabovedisplaysthelocationofSIMMSockets,DIMMSocket,Burst SRAMandCacheSocketonP5VX-Bmotherboard.

System Memory



SIMM:

P5VX-BprovidestremendousflexibilityDRAM configurationsItacceptsamaximumof 128MBmemorysize. Theon-boardDRAMcanbeinstalledwithfourSIMMs (Single-In-line-MemoryModule)oroneDIMM(Dual-In-line-MemoryModule).

Therearetwomemorybankswhichsupportthe 2M/4M/8M/16M/32Mtypesingleordouble-densitymodules.

The type of SIMM1 and SIMM2 must be same if they exist at the same time; the type of SIMM3 and SIMM4 also must be same if they exist at the same time.

The different type of SIMM1 / SIMM2 and SIMM3 / SIMM4 can exist at the same time.

DIMM:

TheDIMMSocketisincompliancewithJEDECspecifications forunbuffered SDRAMModuleADIMMconnectoris providedtosupportupto32MBsynchronousDRAM (SDRAM).

To populate both 5V SIMM Modules and 3.3V DIMM module at the same time on the existing Intel 430VX PCI set-based mainboard ***are not recommended.*** *Please also make sure the DIMM module is 3.3V and unbuffered DIMM.*

According to new JEDEC Spec., the new 32MB DIMMs will not be compatible with the existing Intel 430VX PCIset-based mainboards.

ThefollowingtablelistsanumberofpossibleDRAMcombinations.

Bank 0		Bank 1		DIMM	Total
SIMM1	**SIMM2**	**SIMM3**	**SIMM4**	**DIMM1**	**Memory Size**
----	----	----	----	8MB/16MB/32MB	8MB/16MB/32MB
2MB(S)✯	2MB(S)	----	----	----	4MB
2MB(S)	2MB(S)	2MB(S)	2MB(S)	----	8MB
4MB	4MB	----	----	----	8MB
4MB	4MB	2MB(S)	2MB(S)	----	12MB
4MB	4MB	4MB	4MB	----	16MB
8MB(S)	8MB(S)	----	----	----	16MB
8MB(S)	8MB(S)	2MB(S)	2MB(S)	----	20MB
8MB(S)	8MB(S)	4MB	4MB	----	24MB
8MB(S)	8MB(S)	8MB(S)	8MB(S)	----	32MB
8MB(D)	8MB(D)	----	----	----	16MB
8MB(D)	8MB(D)	2MB(S)	2MB(S)	----	20MB
8MB(D)	8MB(D)	4MB	4MB	----	24MB
8MB(D)	8MB(D)	8MB(S)	8MB(S)	----	32MB
8MB(D)	8MB(D)	8MB(D)	8MB(D)	----	32MB
16MB	16MB	----	----	----	32MB
16MB	16MB	2MB	2MB	----	36MB
16MB	16MB	4MB	4MB	----	40MB
16MB	16MB	8MB(S)	8MB(S)	----	48MB
16MB	16MB	8MB(D)	8MB(D)	----	48MB
16MB	16MB	16MB	16MB	----	64MB

Continued.....

Bank 0		Bank 1		DIMM	Total
SIMM1	**SIMM2**	**SIMM3**	**SIMM4**	**DIMM1**	**Memory Size**
32MB(D)	32MB(D)	----	----	----	64MB
32MB(D)	32MB(D)	2MB(S)	2MB(S)	----	68MB
32MB(D)	32MB(D)	4MB	4MB	----	72MB
32MB(D)	32MB(D)	8MB(S)	8MB(S)	----	80MB
32MB(D)	32MB(D)	8MB(D)	8MB(D)	----	80MB
32MB(D)	32MB(D)	16MB	16MB	----	96MB
32MB(D)	32MB(D)	32MB(D)	32MB(D)	----	128MB

Table 2 -1. System Memory Configurations

✯ **:** (S)means:SingleSide

✯ **:** (D)means:DoubleSide

Cache Memory Subsystem

Level 1 Cache

16KBLevel1CachethatbuildsinPentiumCPUincludesDataCacheandCode Cache.

- 1DataCache:supports8KBWrite-ThroughandWrite-Backpolicy.
- 2CodeCache:supports8KBWrite-Throughpolicy.

Level 2 External Static RAM (SRAM) Cache

L2 Cache On-board	Cache Module	Total Memory Size
0KB	256KB	256KB
0KB	512KB	512KB
256KB	256KB	512KB
256KB	0KB	256KB(default)

1. Ifthereisan“On-board256KBL2Cache”inthemotherboardμsersmay eitherupgradeto512KBbyinsertingandECS“CM161”orCOASt (20orlater)upgradecachem oduleof256KB.

2. Ifthereisnotany“On-board256KBL2Cache”inthemotherboardμsers mayeitherupgradeto256KBor512KBbyinsertinganECS“CM161”or COASt(20orlater)upgradecachem oduleof256KBor512KB.

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3 Jumpers and Connectors

Setting the Jumpers

Set bus frequency and CPU frequency

Core CPU Freq. (MHz)	Host Clock	JP3	Clock Multiplier	JP11 ☆	JP12
75	50	open	15	short1-2	short1-2
90	60	short1-2	15	short1-2	short1-2
100	66	short3-4	15	short1-2	short1-2
110	55	short1-2,3-4	2	short1-2	short2-3
120	60	short1-2	2	short1-2	short2-3
133	66	short3-4	2	short1-2	short2-3
150	60	short1-2	25	short2-3	short2-3
166	66	short3-4	25	short2-3	short2-3
200	66	short3-4	3	short2-3	short1-2

Table 3 -1. Host Clock, CPU type and Speed Settings

☆ : *Cyrix 6x86 CPU does not have multiplier 1.5 and 2.5 . Leave JP11 open for Cyrix 6x86 CPU.*

Cyrix 6x86 CPU and AMD K5 CPU use P-rating as the CPU frequency. Refer the following table to get the CPU core frequency. For AMD K5 CPU, check your CPU vendor for detailed information.

Cyrix 6x86	Core CPU Frequency (MHz)
P120+	100
P133+	110
P150+	120
P166+	133

Set CPU Voltage Type

Single Voltage CPU	JP15JP16	**CPU Voltage**	JP10		
	short1-2, short1-2	**3.3V (STD) (default)**	short1-2		
		3.525V (VRE)	short3-4		
Dual Voltage CPU (split power plane CPU)	JP15JP16	**CPU I/O Voltage**	JP10	**CPU core Voltage**	JP17
	short2-3, short2-3	**3.3V (STD)**	short1-2	**2.5V**	short1-2
				2.8V	short3-4
		3.525V (VRE)	short3-4	**2.5V**	short1-2
				2.8V	short3-4

Table 3 -2 CPU Voltage Settings

☆ : *If you have split power plane CPU (There are different Voltage between CPU Core and I/O), Please check CPU vender or us in order to decide core voltage value of JP17.*

Check your processor documentation for correct voltage setting to avoid the damage of CPU.

Single Voltage CPU *: Intel Pentium and OverDrive series, Cyrix 6x86, AMD K5.*

Dual Voltage CPU*: Intel Pentium with MMX technology (P55C), Cyrix 6x86 L, M2 dual voltage, AMD K5 dual voltage CPU.*

Set Cache Memory Size

256KB (On-board 32Kx32 Burst SRAM only)	JP8	open
256KB (256KB Cache Module only)	JP8	open
512KB (512KB Cache Module only)	JP8	open
512KB (On-board 256KB Burst SRAM and 256KB Cache Module)	JP8	short

Table 3 -3 Cache Memory Size Settings

Set CMOS RAM Clear Switch

BIOSSettingvaluesandpasswordarestoredinCMOSRAMToclearCMOS Datapleaseopenyourcomputerchassis;shortJP13;poweronyoursystem carefully;poweroffyoursystem;closeyourcomputerchassis;andthenCMOS datawillbecleared.

Normal (default)	JP13	open
CMOS Data Clear	JP13	short

Table 3 -4. CMOS RAM Clear Settings

Set Flash ROM

Program Voltage	+5V (default)	JP4	short 2-3
	+12V	JP4	short 1-2

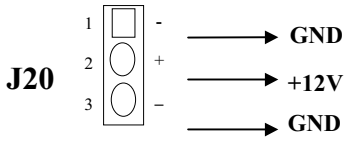
Table 3 -5. Flash ROM Settings

*"**CMOS RAM Clear Switch**" and "**Flash ROM**" jumpers should leave as default setting unless you want to clear your CMOS Data or replace the flash part.*

Green Function

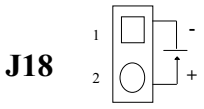
CPUCoolingFanControl

P5VX-BprovidestheabilitytoturntheCPUcoolingfanoffwhilethesystemisin low-powersuspendmodePleaseconnecttheCPUcoolingfantoJ20andenable "CPUFanPowerGreen"functioninBIOS"PowerManagementSetup"inorder tomakeitwork.

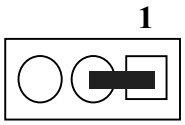


GreenFunctionIndicator

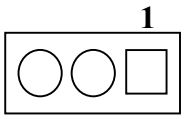
ConnecttheLEDtoJ18.TheLEDblinkingindicatesthesysteminlow-power suspendmode.



Graphic Descriptions of Jumper Settings



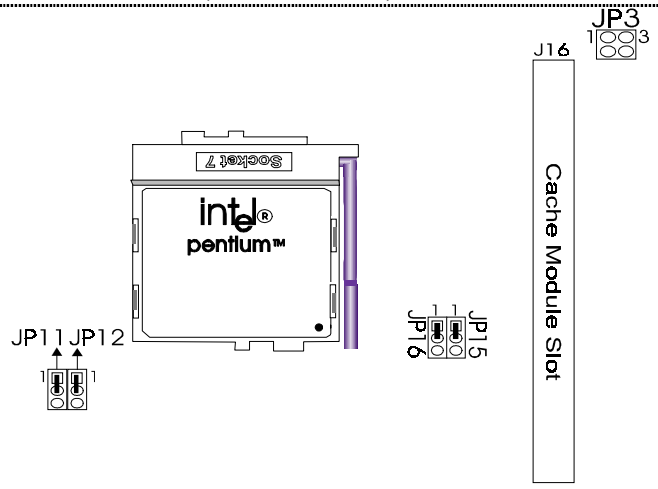
means Pin 1 & 2 are set as hort”



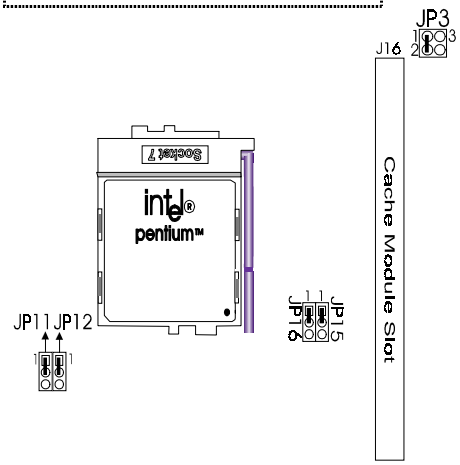
means that this jumper is set as pen”

CPU Type (The jumpers block for most used CPU)

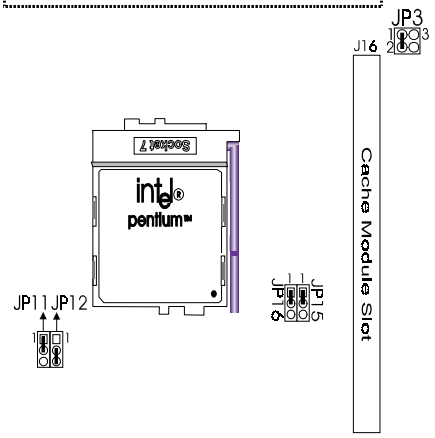
1. IntelPentium75MHzCPU(50MHzHostClock)installedonboard



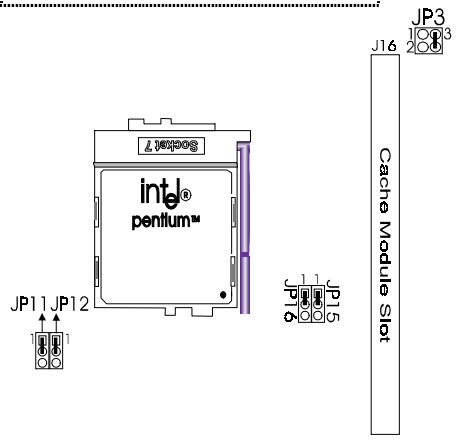
2. IntelPentium90MHzCPU (60MHzHostClock)installed onboard



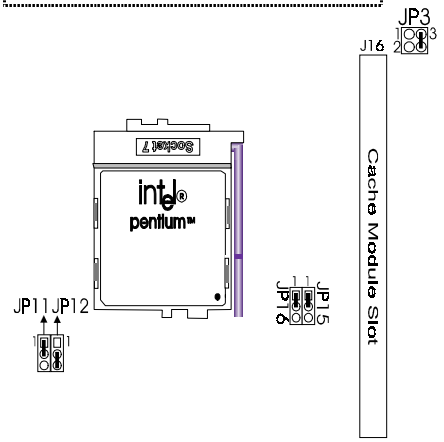
4. IntelPentium120MHzCPU (60MHzHostClock)installed onboard



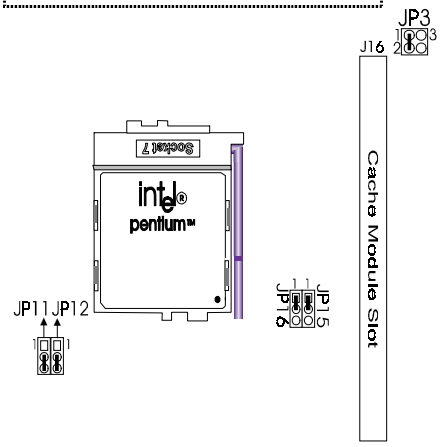
3. IntelPentium100MHzCPU (66MHzHostClock)installed onboard



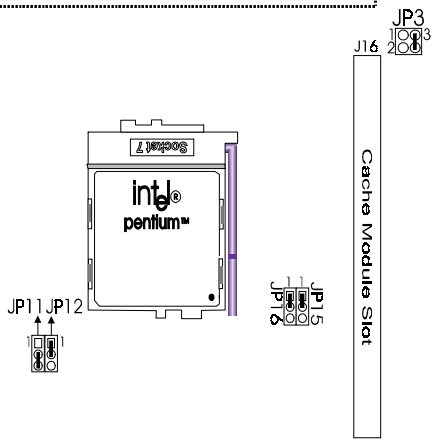
5. IntelPentium133MHzCPU (66MHzHostClock)installed onboard



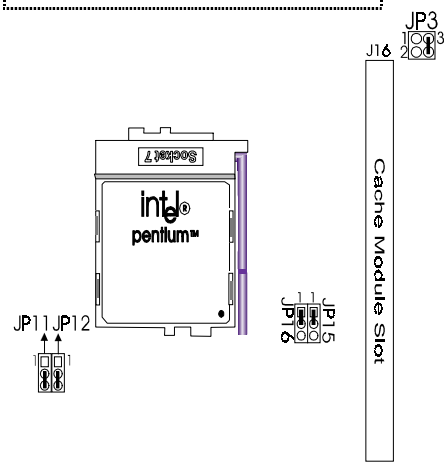
6. IntelPentium150MHzCPU (60MHzHostClock)installed onboard



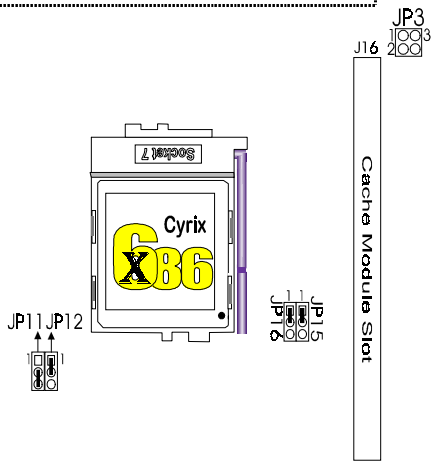
8. IntelPentium200MHzCPU (66MHzHostClock)installed onboard



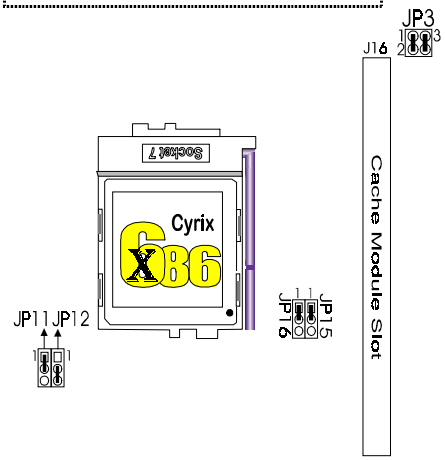
7. IntelPentium166MHzCPU (66MHzHostClock)installed onboard



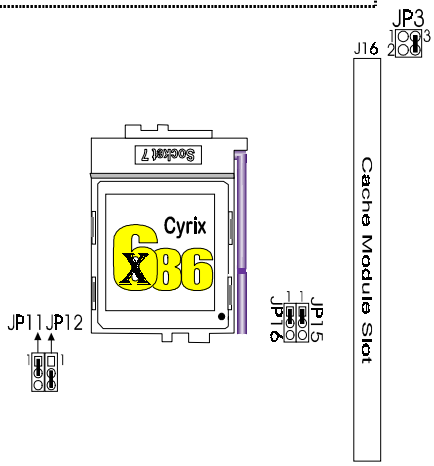
9. Cyrix6X86(M1)100MHzCPU (50MHzHostClock)installed onboard



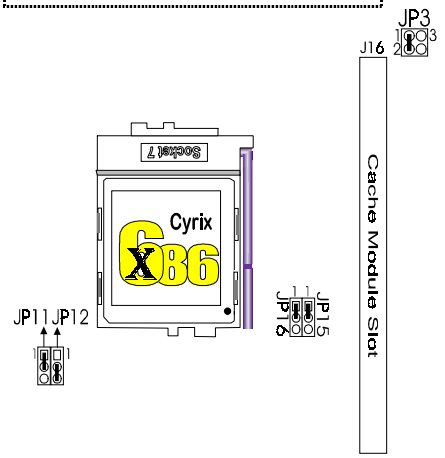
10. Cyrix6X86(M1)110MHzCPU (55MHzHostClock)installed onboard



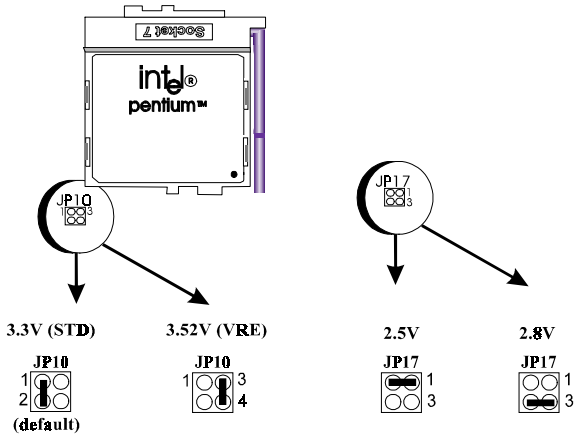
12. Cyrix6X86(M1)133MHzCPU (66MHzHostClock)installed onboard



11. Cyrix6X86(M1)120MHzCPU (60MHzHostClock)installed onboard



CPU Voltage

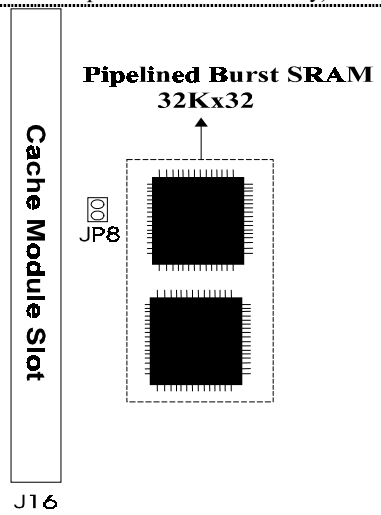


CPU Voltage for single voltage CPU or CPU I/O voltage for dual voltage CPU

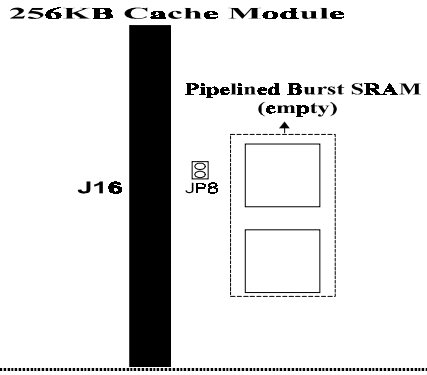
CPU core voltage for dual voltage CPU

Cache Memory Size

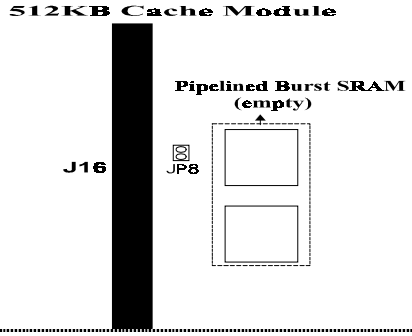
1. 256KB(On-board32Kx32PipelinedBurstSRAMonly)



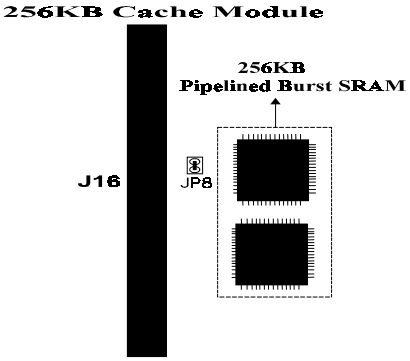
2. 256KB(256KBCacheModuleonly)



3. 512KB(512KBCacheModuleonly)



4. 512KB(On-board256KBPipelinedBurstSRAM + 256KBcacheModule)



Connectors

Thefollowingtablelistsallconnectorslocatedonthe P5VX-B.Theyareusedto connectingwithsomeperipheraldevicestoenhancetheoperatingperformanceof thesystem.Pleaserefertothemainboardlayoutfigureonthenextpageforthe positionsofalltheconnectors.

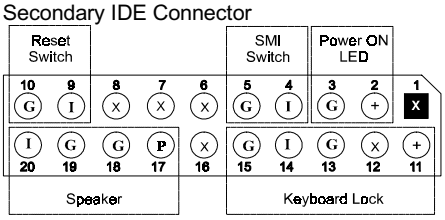
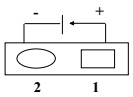
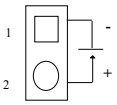
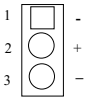
Connector	Function
J1	PS/2 Keyboard Connector (Optional)
J2	AT Keyboard Connector
J3	PS/2 Mouse Connector (Optional)
J4	COM1 Connector
J5	COM2 Connector
J6	Printer Connector
J7	5-pin Mouse Connector (used to install PS/2 mouse converter)
J8	USB Connector (Optional)
J9	FDD Connector
J10	Primary IDE Connector
J11	Secondary IDE Connector
J12	 X : No Function G : Ground I : Input P : Power
J13	HDD LED 
J14	Power Connector
J15	IR Connector (IBM Module) (Optional)
J16	Cache Module Connector
J17	IR Connector (Intel Module)
J18	Green Function Indicator (Blinking When suspend) 
J20	Fan Power (+12V) Connector 

Table 3 -6. Connectors

Board Layout

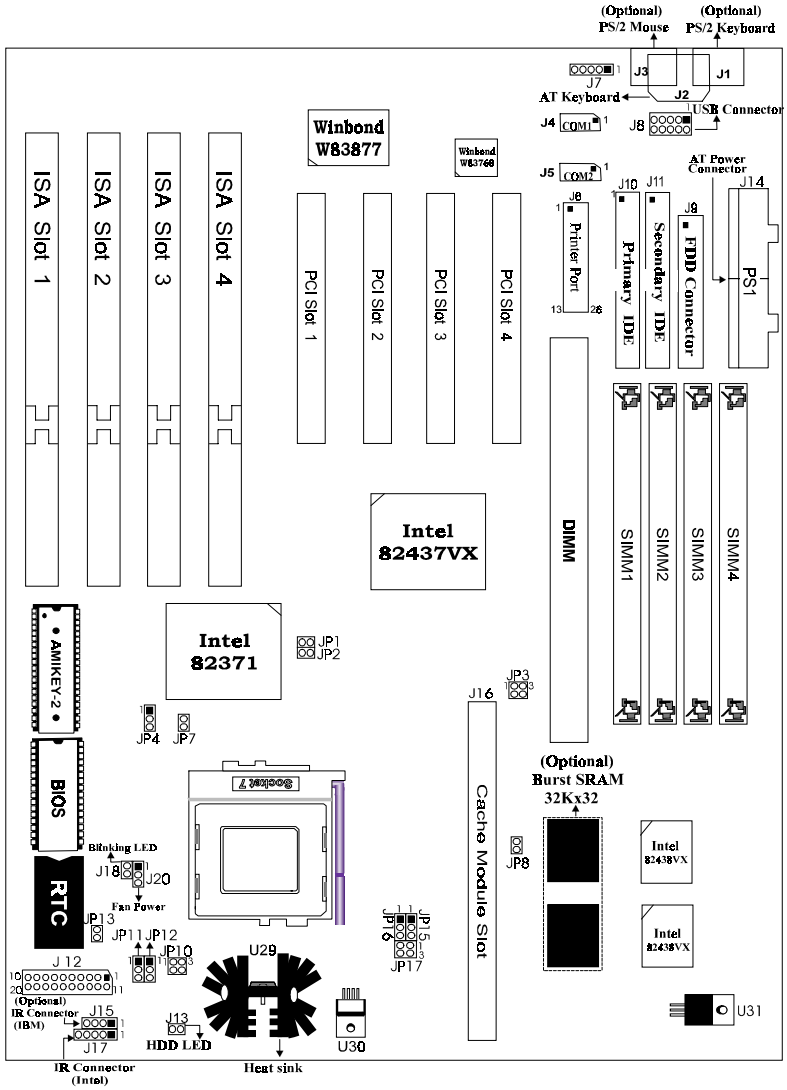


Figure 3 -1. P5VX-B Mainboard Layout

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4 Built-in BIOS Setup Program

SETUP Program

This chapter describes the Award BIOS setup for P5VX-B. The setup program uses a number of menus that you can specify changes to your hardware and turn the special features on or off.

To enter the BIOS setup program, users can turn on or reboot the system. Press the <DEL> key when the system displays " Press DEL to enter SETUP".

The following screen will be displayed.

```
                    ROM PCI/ISA BIOS (P5VX-B)
                     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	SAVE & EXIT SETUP
LOAD BIOS DEFAULTS	EXIT WITHOUT SAVING
LOAD SETUP DEFAULTS	
Esc : Quit	↑ ↓ → ← : Select Item
F10 : Save & Exit Setup	(Shift)F2 : Change Color

Time, Date, Hard Disk Type ...

Figure 4 -1. SETUP Main Menu

The instructions at the bottom of Main Menu Screen show the items of each option.

- **STANDARD CMOS SETUP**-This option allows users to check or modify the basic system configuration.
- **BIOS FEATURES SETUP**-This option is used to set the various system options for the users, including the virus warning, external cache, security option, boot operations, and video BIOS shadow, etc.
- **CHIPSET FEATURES SETUP**-This option allows users to control the features of chipset.
- **POWER MANAGEMENT SETUP**-This option allows users to set the power saving status for reducing the power consumption.

- **PNP/PCI CONFIGURATION SETUP**-Thisoptionisusedtosetthevarious systemfunctionandinternaladdressesofthePCIdevicesAllowsusersto configuresystemIRQandDMAto **PCI/ISA PnP**or **Legacy ISA**.
- **LOAD BIOS DEFAULTS**-UserscanloadtheBIOSdefaultvaluestoboot thesystemsafely.
- **LOAD SETUP DEFAULTS**-Thisoptionsupportsthebetterperformancefor thesystemItisrecommendedtochoose **SETUP Defaults** forthesetup.
- **INTEGRATED PERIPHERALS -**Thisoptionallowsuserstodecidehow manykindsperipheralsneedtochangetheirI/Otype,modeandusedornot. Thisoptionsalsoallowsusertosetthevarioussystemfunctionandonboard PCIIDEcontroller.
- **SUPERVISOR PASSWORD**-Passwordisrequiredwhenenteringand changingalloftheSETUPoptionorbootingyoursystemUserscanchange thecurrentpasswordstoredintheCMOSbyaccessingthisoption.
- **USER PASSWORD**-Passwordisrequiredwhenbootingyoursystemand enteringtochangeonlytheUSERPASSWORDUserscanchangethecurrent passwordstoredintheCMOSbyaccessingthisoption.
- **IDE HDD AUTO DETECTION**-Thisoptioncanautomaticdetectthehard diskdrivetype(s)includingthenumberofcylindersandheads,writepre-compensationtime,read/writeheadlandingzone,andnumberofsectorsper track.
- **SAVE & EXIT SETUP**-Aftersavingthechangeswhatyouhavemadeinthe SETUPprogram,thenexitandrebootthesystem.
- **EXIT WITHOUT SAVING**-Abandonallprevioussettings,thenexitand rebootthesystem.

AfterchoosinganitemfromtheSETUPmainmenu,movethecursorbyusingthe ↑,↓,→,←arrowkeysandpress<Enter>.Tomodifythesettingofanoption,simply pressthe<PgUp>or<+>andthe<PgDn>or<->keysPressthe<F2>keywhen changingthecolorsetting,<F1>foracontextsensitivehelpfunction,andthe <ESC>keywhenquittingSETUP.

Standard CMOS Setup

```
                    ROM PCI/ISA BIOS (P5VX-B)
                      STANDARD CMOS SETUP
                      AWARD SOFTWARE, INC

  Data (mm:dd:yy) : Thu, August  13 1996
  Time (hh:mm:ss) : 17 : 58 :  42
```

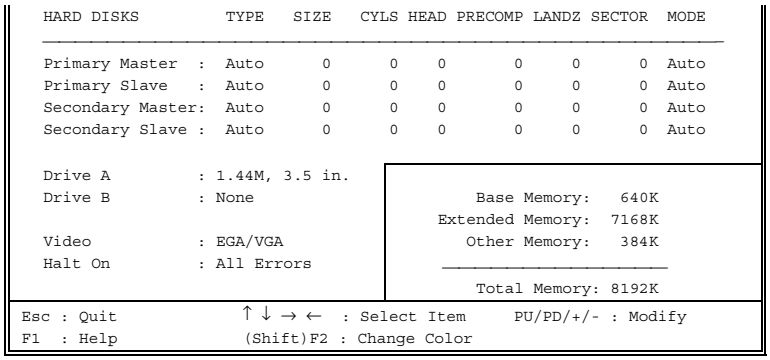

Figure 4 -2. Standard CMOS SETUP Screen

Date-Allowsmanualsettingoftheelectroniccalendaronthemainboard.

Time-Setsthesystem'sinternalclockwhichincludeshour,minutes,andseconds.

Primary Master -Specifiesthephysicalandelectronicpropertiesofthestandard harddiskdrivesinstalledRelevantspecificationsincludethetype,numberof cylinders(CYLS),heads(HEAD),writepre-compensationtime(PRECOMP), read/writeheadlandingzone(LANDZ),numberofsectorspertrack(SECTOR),and HDDmode(MODE)Selecting" ***AUTO***"intheharddisktypeitemavoidsthe necessityofloadingtheHDDspecificationsandthefunctionoftheIDEHDDAuto DetectionoptionintheMainmenu.ThesystemBIOSwillautomaticallydetectthe harddriveinstalledonthesystemuponbootup.

Drive A:/B:-Specifiesthecapacityandformatofthefloppydriveinstalledinyour system.

Video -Specifiesthedisplayadapterinstalled.

Halt On-EnablesthesystemtohaltonseveralconditionsoptionsThedefault valueissetat" ***All Errors***."

Base/Extended/Other Memory-Asmallsectioninthelowerrightcornerofthe screendisplaysimportantinformationaboutyoursystemwhichincludesthebase, extended,andothermemorysizesTheyareupdatedautomaticallybytheSETUP programaccordingtothestatusdetectedbytheBIOSself-testThissectionofthe StandardCMOSSETUPscreenisforviewingpurposeonlyandmanual modificationsarenotallowed.

BIOS Features Setup

ROM PCI/ISA BIOS (P5VX-B)
BIOS FEATURES SETUP
AWARD SOFTWARE, INC.

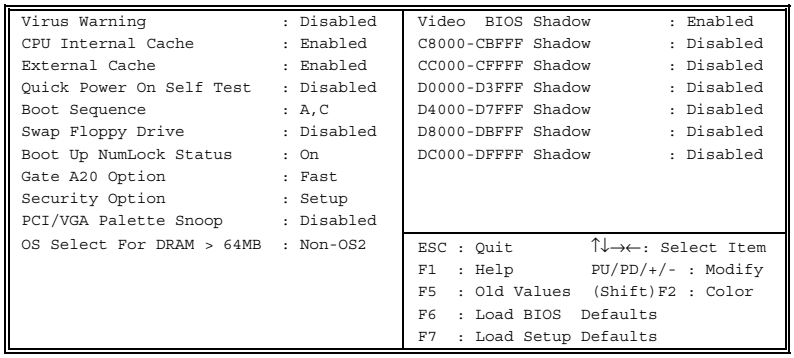

Figure4-3BIOSFeaturesSetupScreen

Virus Warning-Allowstheviruswarningfeatureforthehard diskbootsectorto displayawarningmessageandproduceabeepsoundwheneveranattemptismade towriteontheharddisk'sbootsector.Thedefaultvalueforthisoptionis "***Disabled***."

CPU Internal Cache-Enablestheinternal16KBcode/datacacheoftheIntel PentiumCPUwhensetto" ***Enabled***"(default).

External Cache-Enablestheon-boardsecondary cache(eitherstandard non-burst orburstcache)whensetto" ***Enabled***"(default).

Quick Power On Self Test-Allowsthepoweronselftesttorunateitherafastor anormalspeed.Theavailableoptionsare:

- Disabled (default)
- Enabled

Boot Sequence-Selectsthedrivewherethesystemwouldsearchfortheoperating systemtorunwith.Theavailableoptionsare:

- A,C (default)
- C,A
- C,CDROM, A
- CDROM,C,A

Swap Floppy Drive-" ***Enabled***"willeffectivelychangetheA:drivetoB:andthe B:toA:drive." ***Disabled***"(default)setsthefloppydrivesintheirdefaultstates.

Boot Up NumLock Status-Setsthe<NumLock>keytoeitheronoroffduring systemboot-up.Theavailableoptionsare:

- On (default)
- Off

Gate A20 Option-Booststheperformanceofsystemwithsoftwareusingthe 80286protectedmodesuchasOS/2orUNIX.Thisoptiondeterminesthe accessibilityoftheextendedmemory.Theavailableoptionsare:

- Fast (default)
- Normal

Security Option-Determineswhetherthepasswordwillbeaskedforineveryboot (***System***)orwhenenteringintotheSETUPprogram(***Setup***-default)Refertothe sectionentitledSUPERVISORPASSWORDforthepasswordsettingprocedure.

PCI/VGA Palette Snoop-Selects"Enabled"tosolvetheabnormalcolorin WindowswhileusingISAMPEGandPCIVGAcard.Theavailableoptionsare:

- Disabled (default)
- Enabled

OS Select For DRAM > 64MB -SelectstheOSifDRAM>64MB.Theavailable optionsare:

- Non-OS2 (default)
- OS2

Video BIOS Shadow-Enablesthesystemshadowingandachievethebest performanceofthesystem.Theavailableoptionsare:

- Enabled (default)
- Disabled

C8000-CBFFF, CC000-CFFFF, D0000-D3FFF, D4000-D7FFF, D8000-DBFFF, DC000-DFFFF Shadow -IfyouhaveashadowingoftheBIOSatanyof theabovesegments,youmaysettheappropriatememorycacheablefunctionto "***Enabled***".Otherwise,select ***"Disabled"***(default).

ChipsetFeatures Setup

```
áROM PCI/ISA BIOS (P5VX-B)
  CHIPSET FEATURES SETUP
   AWARD SOFTWARE, INC.
```

Auto Configuration	: Enabled	System BIOS Cacheable	: Enabled
DRAM Timing	: 60ns	Video BIOS Cacheable	: Enabled
		Memory Hole At 15M-16M	: Disabled
DRAM RAS# Precharge Time	: 3	Chipset NA# Asserted	: Enabled
DRAM R/W Leadoff Timing	: R10/W6	Peer Concurrency	: Enabled
Fast RAS To CAS Delay	: 2		
DRAM Read Burst <EDO/FP>	: x222/x333		
DRAM Write Burst Timing	: x222		
Fast MA to RAS# Dealy CLK	: 1		
Fast EDO Path Select	: Disabled		
Refresh RAS# Assertion	: 4 Clks		
ISA Bus Clock	: PCICLK/4		

ESC : Quit	↑↓→←: Select Item
F1 : Help	PU/PD/+/- : Modify
F5 : Old Values	(Shift)F2 : Color
F6 : Load BIOS Defaults	
F7 : Load Setup Defaults	

Figure 4 -4. Chipset Features Setup Screen

Auto Configuration-Loadsthedefaultvaluesif" ***Enabled***"(default)forthe followingDRAMandcacheoptionsOtherwise," ***Disabled***"allowsyoutoprogram eachoptionasrequired.

- Enabled (default)
- Disabled

The following items ae contolled by **Auto Configuration** *when uses select Enabled". Forthis eason, theirdefault values will be changed by the speed of CPU. These items ae :*

DRAM RAS# Pechage Time,"DRAM R/W Leadoff Timing," "Fast RAS# to CAS# Delay," DRAM Read Bust <EDO/EPM>," DRAM Wite Bust Timing" DRAM Speculative Leadoff," TunAound Insetion"and ISA Clock."

DRAM Timing -ConfigurestheDRAMread/writetimingforthemaximum performance.Theavailableoptionsare:

- 60ns (default)
- 70ns

DRAM RAS# Precharge Time -SelectsRAS#prechargetimeforDRAMaccess. Theavailableoptionsare:

- 3 (default)
- 4

DRAM R/W Leadoff Timing -DeterminestheleadofftimeforR/WtotheCache. Theavailableoptionsare:

- R10/W6 (default)
- R11/W7

Fast RAS To CAS Delay -SelectstheRAS-to-CASdelaytimeforDRAMaccess. Theavailableoptionsare:

- 2 (default)
- 3

DRAM Read Burst <EDO/FP> -Determinesthetimingforburstreadtothe cacheIfyourDRAMtypeisEDODRAM,wesuggestyouselectx 222(EDO) timingtogetabetterperformanceTheavailableoptionsare:

- x222/ x333 (default)
- x322/ x333
- x444/ x444
- x333/ x444

DRAM Write Burst Timing -DeterminesthetimingforburstwritetothecacheIf yourDRAMtypeisEDODRAM,wesuggestyouselectx222(EDO)timingtoget abetterperformanceTheavailableoptionsare:

- x222 (default)
- x333
- x444

Fast MA to RAS# Delay CLK -SelectstheoptionforDRAMaccessThe availableoptionsare:

- 1 (default)
- 2

Fast EDO Path Select -TheselectionoftheEDOfastpathforreadcyclesThe availableoptionsare:

- Disabled (default)
- Enabled

Refresh RAS# Assertion -DeterminesthenumberofclocksRAS#isassertedfor RefreshcyclesTheavailableoptionsare:

- 4 Clks (default)
- 5 Clks

ISA Bus Clock-ISAclockdivideby4or3dependingonPCIbusclockUserscan refertotheformulaforclearfigure(**ISA Clock = PCI Clock / 3 or ISA Clock = PCI Clock / 4**)Theavailableoptionsare:

- PCICLK/4 (default)
- PCICLK/3

SDRAM (CAS Lat/RAS-to-CAS)-ConfigstheSDARMCASlatencytime/RAS toCASdelayTheavailableoptionsare:

- 3/3 (default)
- 2/3
- 3/2

*" **SDRAM (CAS Lat /RAS-to-CAS)** "will be shown only when uses plug the SDRAM Module.*

System BIOS Cacheable-Allowscachingofthedifferentsegmentswherethere issystemBIOSshadowingTheavailableoptionsare:

- Enabled (default)
- Disabled

Video BIOS Cacheable-Allowscachingofthedifferentsegmentswherethereis videoBIOSshadowingTheavailableoptionsare:

- Enabled (default)
- Disabled

Memory Hole At 15M-16M -Enablesthisoptiontoreservethecertainspacein memoryforISAcards.Theavailableoptionsare:

- Disabled (default)
- Enabled

Chipset NA# Asserted -DetermineswhetherenabletheNextAddress(NA#) cycle.Theavailableoptionsare:

- Enabled (default)
- Disabled

Peer Concurrency -DetermineswhetherornottheCPUallowedtorunDRAM/L2 cycleswhennon-PHLDPCImasterdevicesaretargetingpeerdevice.The availableoptionsare:

- Enabled (default)
- Disabled

Power ManagementSetup

```
                    ROM PCI/ISA BIOS (P5VX-B)
                    Power MANAGEMENT SETUP
                    AWARD SOFTWARE, INC.

Power Management     : Disabled          ** Power Down & Resume Events **
PM Control by APM    : Yes               IRQ3  (COM 2)           : ON
Video Off Method     : DPMS              IRQ4  (COM 1)           : ON
MODEM Use IRQ        : NA                IRQ5  (LPT 2)           : ON
CPU Fan Power Green  : Disabled          IRQ6  (Floppy Disk)     : ON
                                         IRQ7  (LPT 1)           : ON
Doze Mode            : Disabled          IRQ8  (RTC Alarm)       : OFF
Standby Mode         : Disabled          IRQ9  (IRQ2 Redir)      : ON
Suspend Mode         : Disabled          IRQ10 (Reserved)        : ON
HDD Power Down       : Disabled          IRQ11 (Reserved)        : ON
                                         IRQ12 (PS/2 Mouse)      : ON
**Wake Up Events In Doze & Standby  **   IRQ13 (Coprocessor)     : ON
IRQ3 (Wake-Up Event) : ON                IRQ14 (Hard Disk)       : ON
IRQ4 (Wake-Up Event) : ON                IRQ15 (Reserved)        : ON
IRQ8 (Wake-Up Event) : OFF
IRQ12(Wake-Up Event) : ON
                                         ESC : Quit        ↑↓→←: Select Item
                                         F1  : Help        PU/PD/+/- : Modify
                                         F5  : Old Values  (Shift)F2 : Color
                                         F6  : Load BIOS Defaults
                                         F7  : Load Setup Defaults
```

Figure 4 -5. Power Management Setup Screen

Power Management-AllowsuserdeterminehowoftenthePowerSaving activing.Theavailableoptionsare:

- Disable (default)
- Max Saving
- Min Saving
- User Define

PM Control by APM-SetsthepowermanagementcontrolbytheAPM.The availableoptionsare:

- Yes (default)
- No

Video Off Method-SetsthevideopowergreenmethodTheavailableoptionsare:

- DPMS (default)
- V/H SYNC+Blank
- Blank Screen

MODEM Use IRQ-Inordertosupportresumeonringandtopass APM12, this optionisrequiredtobesetsameIRQasthemodemadd-in-cardused.Theavailable optionsare:

- NA (default)
- 3/4/5/7/9/10/11

CPU Fan Power Green -DetermineswhetherCPUFanGreensupportornot.The availableoptionsare:

- Disabled (default)
- Enabled

Doze Mode-Setsthetimeintervalaftersysteminactivitywhenthesystementers DOZEmode.Theavailableoptionsare:

- Disabled (default)
- 1 Hour
- 1/2/4/6/8/10/20/30/40 Min

Standby Mode-Setsthetimerintervalaftersysteminactivitywhenthesystem entersSTANDBYmode.Theavailableoptionsare:

- Disabled (default)
- 1 Hour
- 1/2/4/6/8/10/20/30/40 Min

Suspend Mode-Setsthetimeintervalaftersysteminactivitywhenthesystem entersSUSPENDmode.Theavailableoptionsare:

- Disabled (default)
- 1 Hour
- 1/2/4/6/8/10/20/30/40 Min

HDD Power Down -SetsthetimetopowerdownHDDisstandbymode.The availableoptionsare:

- Disabled (default)
- 1....15 Min

Wake Up Events In Doze & Standby

IRQ 3/4/8/12 (Wake-Up Event)-Setsthewake-upeventto" **ON**"or" **OFF**"while systementersthesuspendmode.

Power Down & Resume Events

Power Down Activities-ThemanualalsoliststhePowerManagementSETUP (PM)eventsbywhichthesystemwakesupfromSTANDBYorSUSPENDmodes. Switchthefollowingparametersto ***"ON"***or ***"OFF"***:

- COM Ports Accessed
- LPT Ports Accessed
- Drive Ports Accessed
- IRQ3 (COM2)
- IRQ4 (COM1)
- IRQ5 (LPT2)
- IRQ6 (Floppy Disk)
- IRQ7 (LPT 1)
- IRQ8 (RTC Alarm)
- IRQ9 (IRQ2 Redir)
- IRQ10 (Reserved)
- IRQ11 (Reserved)
- IRQ12 (PS/2 Mouse)
- IRQ13 (Coprocessor)
- IRQ14 (Hard Disk)
- IRQ15 (Reserved)

PNP/PCI CONFIGURATION Setup

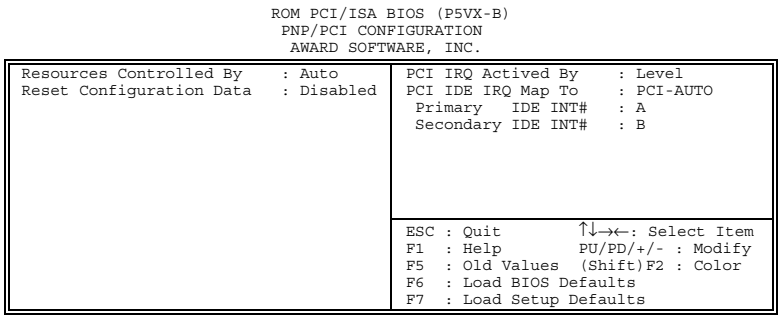

Figure 4 -6. PNP/PCI CONFIGURATION SETUP Screen

Resources Controlled By-AllowsuserwhatkindIRQsassignmenttobeused. **"Manual"**or **"Automatc"** definitionTheavailableoptionsare:

- Auto (default)
- Manual

*The default of " **Resources Controlled By"** is Auto. If uses set Manual option forthe setting ," **IRQ-3 / IRQ-4 / IRQ-5 / IRQ-7 / IRQ-9 / IRQ-10 / IRQ-11 / IRQ-12 / IRQ-14 / IRQ-15 / DMA-0 / DMA-1 / DMA-3 / DMA-5 / DMA-6 / DMA-7 assigned to**"options below will be shown on the sceen.*

Reset Configuration Data -DetermineswhetherstoreinESCDdatawanttoclear. ThisisaoneshotswitchAfterclearingtheESCD,theBIOSwillchangethevalue backto"Disabled".Theavailableoptionsare:

- Disabled (default)
- Enabled

IRQ-3 / IRQ-4 / IRQ-5 / IRQ-7 / IRQ-9 / IRQ-10 / IRQ-11 / IRQ-12 / IRQ-14 / IRQ-15 / DMA-0 / DMA-1 / DMA-3 / DMA-5 / DMA-6 / DMA-7 assigned to-Userscanselectresourcescontrolledby" **manual"**methodtofixlegacyISAcard IRQ&DMAinPlug&PlayproblemLegacycardhasthehighestprioritytouse someoneIRQ#&DMA#whichoneassignedbymanualTheavailableoptions are:

- Legacy ISA (default of IRQ-3 / IRQ-4 / IRQ-7 / IRQ-14 / IRQ-15 assigned to)
- PCI/ISA PnP (default of IRQ-5 / IRQ-9 / IRQ-10 / IRQ-11 / IRQ-12 / DMA-0 / DMA-1 / DMA-3 / DMA-5 / DMA-6 / DMA-7 assigned to)

PCI IRQ Actived By-ProgramsthePCIIRQtosingleedgeorlogiclevel. Level/Edgesensitivityisprogrammedpercontroller EveryIRQinputforagiven bankiseither" ***EDGE***"or" ***LEVEL***"(default)triggered.

PCI IDE IRQ Map To -MostofPCIIDEcardsarenon-PCIcompliantDefines theIRQRoutingtomakethemworkproperlyTheavailableoptionsare:

- PCI-AUTO (default)
- ISA

- PCI-SLOT1
- PCI-SLOT2
- PCI-SLOT3
- PCI-SLOT4

If user sets this option to "SA," both the "Primary IDE INT#" and "Secondary IDE INT#" options below will not be shown on the screen.

Primary/Secondary IDE INT# - Defines the primary/secondary IDE INT# of the PCI IDE card. The available options are:

- A (default of Primary IDE INT#)
- B (default of Secondary IDE INT#)
- C
- D

Load BIOS Defaults

In the event of a loss in memory on the configuration SETUP, the user can restore the information on the BIOS by loading its default values. Loading the BIOS defaults provides safety booting of the system.

Load Setup Defaults

SETUP defaults are considered default values with which the system will be enabled to perform better. This is due to the enabling of some options within the SETUP program. However, if problems are encountered after loading the SETUP defaults, reboot the system and load the BIOS defaults instead.

INTEGRATED PERIPHERALS

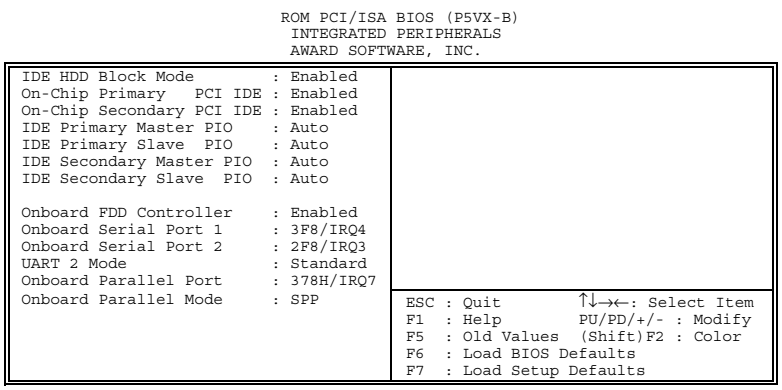

Figure 4 -7. Integrated Peripherals SETUP Screen

IDE HDD Block Mode-Determineswhetherblocktransfermodewanttouseor notTheavailableoptionsare:

- Enabled (default)
- Disabled

On-Chip Primary/Secondary PCI IDE-EnablesorDisablestheprimary/ secondaryPCIIDEofIntelIDEcontrollerSelecting" ***Disabled***"canreleaseIRQ14.

- Enabled (default)
- Disabled

IDE Primary/Secondary Master/ Slave PIO-SetstheadvancedharddiskPIO transfermodewhicheffectsyourharddisktransferrateTheprogramwillauto detectthemodeofthisoptionyouselect" ***Auto***"Otherwiseyoumustsetthis optionbyyourselfTheavailableoptionsare:

- Auto (default)
- Mode 0
- Mode 1
- Mode 2
- Mode 3
- Mode 4

Onboard FDD Controller-EnablesorDisablestheFDDcontrolleroron-boardI/O chipTheavailableoptionsare:

- Enabled (default)
- Disabled

Onboard Serial Port 1/2-SetstheI/Oaddressforserialport1/2.

- 3F8/IRQ4 (default of Onboard serial Port 1)
- 2F8/IRQ3(default of Onboard serial Port 2)
- 3E8/IRQ4
- 2E8/IRQ3
- Disabled

UART 2 Mode-DeterminesthichtypeIRmodulewanttouseTheavailable optionsare:

- Standard (default)
- ASKIR
- HPSIR

Onboard Parallel Port-SetstheI/Oaddressfortheparallelport.Theavailable optionsare:

- 378H/IRQ7 (default)
- Disabled
- 278H/IRQ5
- 3BCH/IRQ7

*If uses set this option to Disabled," the **"Onboard Parallel Mode"** option below will not be shown on the sceen.*

Onboard Parallel Mode-Selectstheworkingmodeofparallelport.Theavailable optionsare:

- SPP (default)
- ECP/EPP
- EPP/SPP
- ECP

1. *If uses set this option to SPP"and EPP/SPP," the " **ECP Mode Use DMA**"option below will not be shown on the sceen.*
2. *If uses set this option to SPP"and ECP," the " **Parallel Port EPP Type**"option below will not be shown on the sceen.*

ECP Mode Use DMA-SelectstheDMAchannelofECPModetotransferyour data.Theavailableoptionsare:

- 3 (default)
- 1

Parallel Port EPP Type-DetermineswhatversionEPPprotocalsupport.The availableoptionsare:

- EPP 1.7(default)
- EPP 1.9

SUPERVISOR PASSWORD

TheSUPERVISORPASSWORDutilityallowsyoutoset,change,anddisablethe passwordwhichisstoredintheBIOS.Tochangethepasswordsettingpress <Enter>ontheSUPERVISORPASSWORDoptionofthemainmenuandthentype thenewpassword.

ConfiguretheSecurityOptionwithintheBIOSFeaturesSetupcorrespondingtothe settinginthisutilitySUPERVISORPASSWORDaccessrighthitherthanUSER PASSWORD.

Thepasswordcanbeatmost8characterslong.Theprogramwillrequireyouto confirmthenewpasswordbeforeitexitsandwillenabletheutility.Todisablethe

SUPERVISORPASSWORDpressthe<F1>whentheprogramasksyoutoenter thenewpassword.

USER PASSWORD

USERPASSWORDonlycanbeusedwhenthesystemisbootingUsersonlycan enterSETUPscreentochangetheUSERPASSWORD.

Thepasswordcanbeatmost8characterslongTheprogramwillrequireyouto confirmthenewpasswordbeforeitexitsandenablestheutilityTodisablethe USERPASSWORDpressthe<F1>astheprogramasksyoutoenterthenew password.

IDE HDD Auto Detection

TheIDEHDDAutoDetectionprovidesautoconfigurationoftheharddrive installedinthesystemItsupportsLBALargeandNormalmodesIfthesystem's harddiskdrivehasacapacityofover528MBandsupportsLBAfunctionsyoumay enableeithertheLBAmodeortheLargemodeOntheotherhandifthedisk drive'scapacityisover528MBbutdoessupportLBAfunctionsyoumayenablethe Largemodeinordertouseover528MB.

a. The LBA and Large modes will only appear on the screen when the installed hard disk drive is specified to support the LBA mode.

b. In the case when a hard disk drive's cylinder specification exceeds 1024, and does not support the LBA functions, only the Large mode will be displayed on the screen.

c. With a hard disk drive supporting cylinders below 1024, only the Normal mode will appear on the screen. The Normal mode will also be shown on the screen under conditions a & b above.

d. Hard disk drives with less than 528MB total capacity must be set to Normal mode when combined with either old BIOS versions or the Award BIOS.

LBA and Large modes are new specifications which may not be fully supported by all operating systems. An example of which is the current version of UNIX System (R3.2.4) which is still unable to support the LBA function. Therefore, determine the specifications of your hard disk drive and operating system before selecting the drive's mode.

Afterpressingthe<Enter>keyonthisitemofthemainmenu,thedisplayscreenwill showthefollowingscreen.

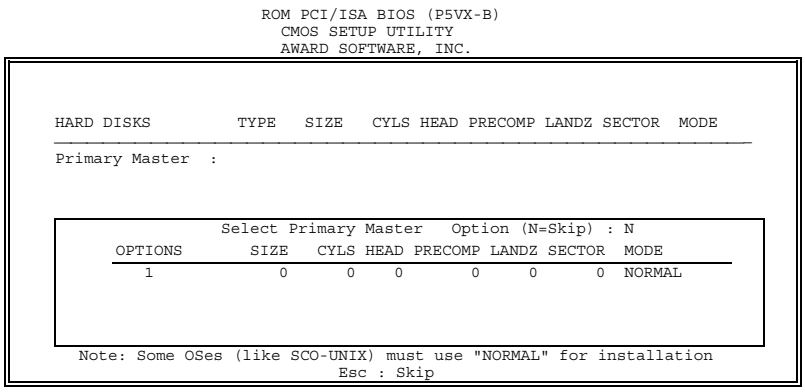

Figure 4 -8. IDE HDD Auto Detection Screen

Oncetheprogramdetectsthetypeofharddiskinstalled,itwilldisplaytherelative informationsuchasthetype,cylinders,heads,writepre-compensation,landing zone,numberofsectorspertrack,sizeandmode.Amessageaskingyoutoaccept theIDEHDDdetectedwillalsobeflashedonthescreen.

Quitng SETUP

AftermakingallmodificationsintheSETUPprogramgototheoption"Save& ExitSETUP"thenpressthe<Enter>key.Theprogramwilldisplaythefollowing screen.

Press<Y>toconfirmthechangesmade,andthe<N>orthe<ESC>keysiffurther modificationsarestillnecessarybeforeexitingtheSETUPprogram.Oncethe<Y> keyispressed,thesystemwillautomaticallyexittheprogramandreboot.However, ifyouwanttocancelallchangesmadeundertheSETUPprogramgototheoption "ExitWithoutSaving".

Press<Y>andthesystemwillexittheSETUPprogramthenrebootwithoutsaving anyofthechangesmade.

You may also use the <F10> key to save the new settings.