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■ Table Of Contents

1 Introduction

586F52 Mainboard Features

The 586F52 is a high performance, function enhanced computer mainboard that combines the power of Intel Pentium CPU and the PCI Local bus. The features integrated onto the 586F52 mainboard are as follows:

. Supports Intel Pentium 75/90/100/120/133 MHz CPU.
. Intel Triton PCI chipset.
. Optional 256KB/512KB external cache.
. 72-pin DRAM SIMM modules in multiple configurations up to 128MB. EDO (Extended Data Output) and Asymmetric DRAM's are also supported.
. On-board PCI Bus Master IDE controller with two connectors supporting up to 4 IDE devices.
. On-board super I/O controller supporting 2 16550 Fast UART compatible serial ports, one parallel port with EPP and ECP capabilities and a floppy disk drive connector.
. Award Pentium PCI BIOS.
. System and Video BIOS relocateable to RAM area to enhance performance.
. Fast A20, fast reset and hidden DRAM refresh to boost system performance.
. Four 16-bit ISA and four 32-bit Bus Master PCI expansion slots, with one slot shared between ISA and PCI.
. Three Power Saving Modes: Doze, Standby, and Suspend.

Power Supply for 586F52 Mainboard

A clean steady power source is necessary to get reliable performance from the system. With the high clock speeds of the CPU (running at 50 MHz or above) the quality of the power supply becomes even more important. *Most power supplies on the market meet the standards required by the CPU. However some have been found to be out of specifications.* To be certain of the highest performance by your system, be sure your power supply provides a **voltage range from 5.25 volt maximum to 4.95 volt minimum**.

In areas with noisy power transmission, we suggest the use of a line noise filter between the power and the computer.

2 Hardware Guide

Before You Begin

Before removing the mainboard from its anti-static bag, you need to eliminate any static electricity that may be accumulated on your body. The charge that can build up in your body may be more than enough to damage integrated circuits on the system board. Therefore, it is important to observe basic precautions whenever you handle or use computer components. Although areas with humid climate are much less prone to static build-up, it is best to always safeguard against accidental damage that may lead to costly repairs. The following measures should be sufficient to protect your equipment from static discharge:

. After removing the system cover, discharge any static electricity that might have accumulated in your body by touching a grounded or anti-static surface (e.g. anti-static pads). If nothing is available, touch the power supply housing. This assumes the system unit is plugged into the AC outlet. Be certain to do this before removing components from their anti-static coverings.

. When handling separate cards, boards or modules, be cautious to avoid contacting with the components on them, and also with the "gold finger" connectors that plug into the expansion slot. It is best to handle them either by their edges or by mounting brackets that attach to the slot opening in the system cases. However, the above recommendation are just intended to avoid the static discharge problem.

. Make certain that everything connects to the system case, including the power supply, is unplugged before doing the installation work.

586F52 Mainboard Layout
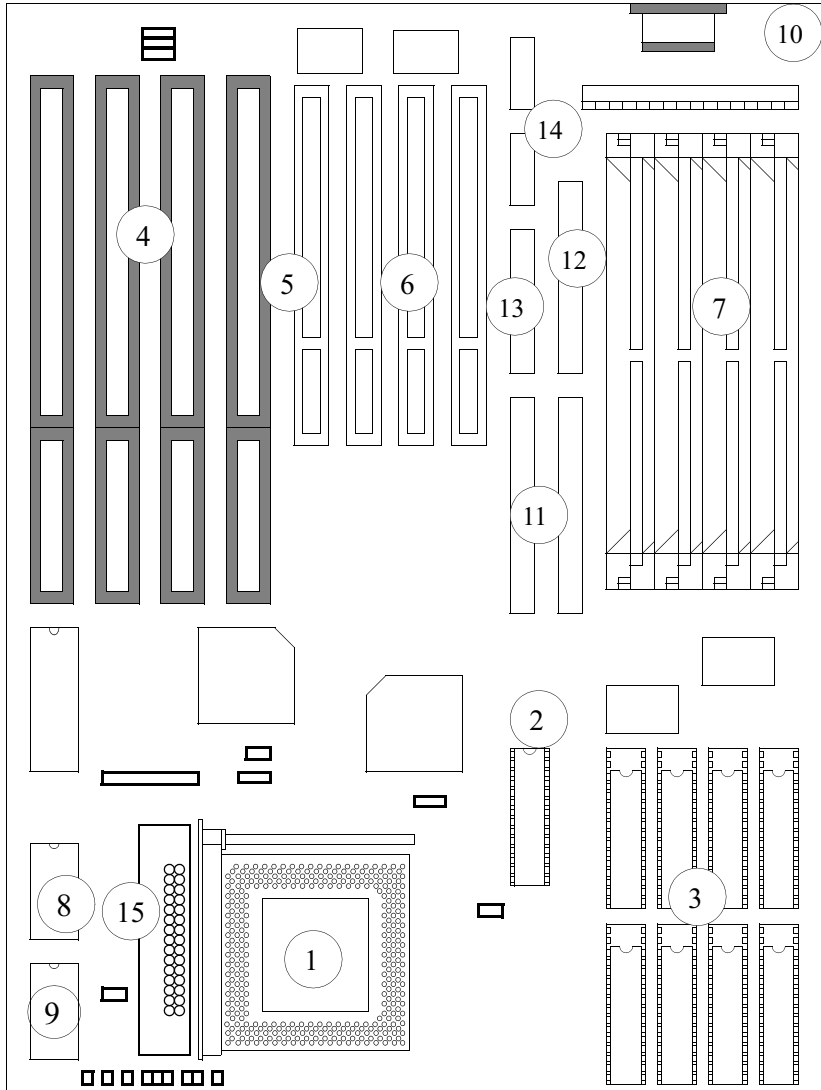
1:CPU
2:TAG SRAM Chip
3:Cache SRAM Chips
4:ISA Expansion Slots
5:PCI/ISA Shared Slot
6:PCI Expansion Slots
7:SIMM Module Sockets
8:BIOS ROM
9:Dallas Compatible RTC
10:Keyboard Connector
11:IDE Connectors
12:Floppy Drive Connector
13:Parallel Port Connector
14:Serial Port Connectors
15:VRM Header (Option)

586F52 Mainboard Jumper Location
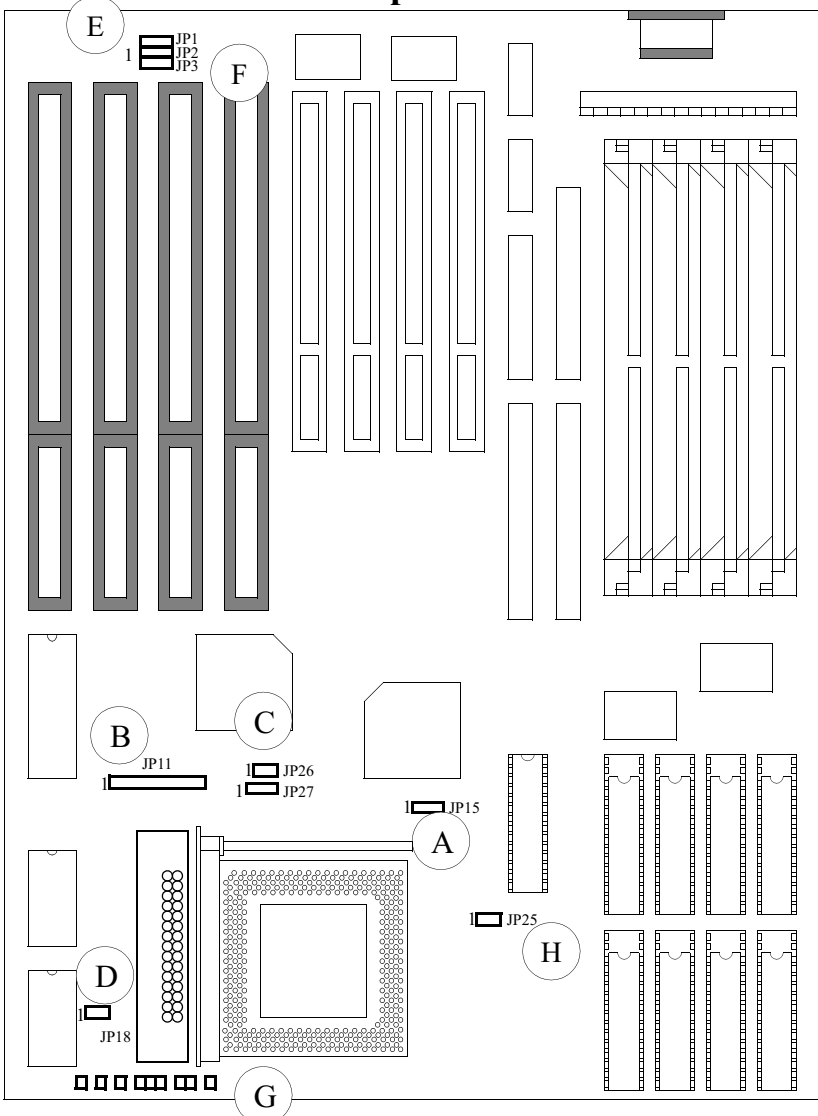
A:Cache Size Selection (JP15)
B:CPU Bus Clock Selection (JP11)
C:CPU Core to Bus Clock Ratio
  Selection(JP26, JP27)
D:CMOS RAM Clear (JP18)

E:ECP DMA Channel Selection (JP1, JP2)
F:Parallel Port Interrupt Selection (JP3)
G:Front Panel Connector
H:CPU Voltage Selection (JP25)

Connectors

Hard Drive LED

On: Hard Drive Active

Turbo LED

Light On: Turbo Speed

Reset

Press To Reset the System

GND

KeyLock
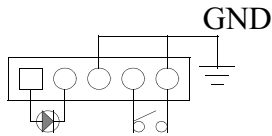
On: Disable Keyboard
Light On:+5V Exists

GND

Speaker
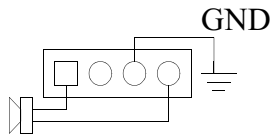
Break
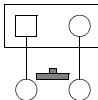
Press to enter the power
saving suspend mode

Cache Memory

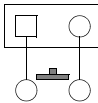The 586F52 mainboard has two external cache options installed; 256KB, 512KB. The Tag RAM uses 5V SRAM chip and the data RAM use 3.3V/5V mix-mode SRAM chips. All SRAMs must have a speed of 15ns or faster. The chart below shows the SRAM chips required for each configuration.

Cache Size	Tag RAM	Data RAM
256KB	one 5V 8Kx8 or 16Kx8 or 32Kx8 SRAM	8 mix-mode 32Kx8 SRAMs
512KB	one 5V 16Kx8 or 32Kx8 SRAM	8 mix-mode 64Kx8 SRAMs

The figures below show where to install the SRAM chips and jumper setting for each configuration.

Note:
Top 4 socket pins must be open when install a 28-pin SRAM chip in a 32-pin socket.

256KB Cache

JP15

1

5V 8K/16K/32K x8

Mix-mode32Kx8 Mix-mode32Kx8 Mix-mode32Kx8 Mix-mode32Kx8

Mix-mode32Kx8 Mix-mode32Kx8 Mix-mode32Kx8 Mix-mode32Kx8

512KB Cache

JP15

1

5V 16K/32K x8

Mix-mode64Kx8 Mix-mode64Kx8 Mix-mode64Kx8 Mix-mode64Kx8
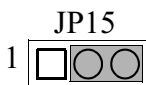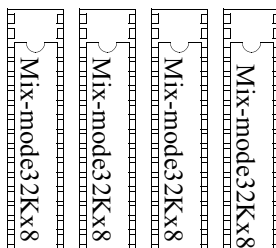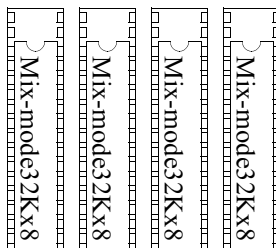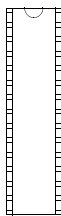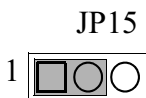
Mix-mode64Kx8 Mix-mode64Kx8 Mix-mode64Kx8 Mix-mode64Kx8
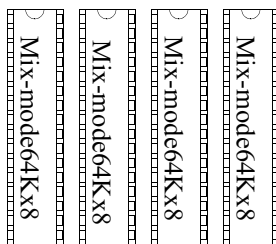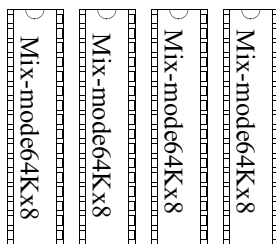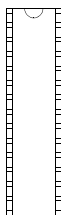
System Memory

Memory can be installed by using 4MB(S), 8MB(D), 16MB(S), or 32MB(D) 72-pin SIMM modules. S means single side and D means double side. Due to the 586F52 mainboard high speed design, the memory modules for the 586F52 must meet all of following requirements:

Socket 1&2

Modules Size: Single side 4MB, 16MB
            Double side 8MB, 32MB
DRAM Mode: Fast page mode or EDO
            (Extended Data Output
            Mode)
DRAM Speed: 70ns or faster
RAS Access Time: 60ns ~ 70ns
CAS Access Time: 10ns ~ 25ns

SIMMs have cut-out at one end that matches an extension on one of the vertical posts of each socket.
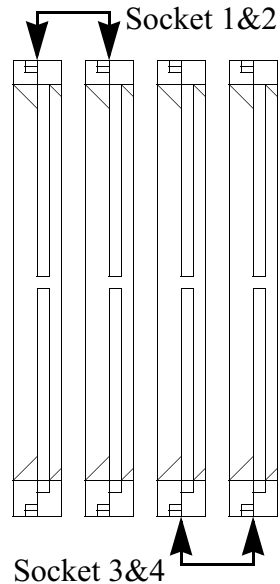
Socket 3&4

. You must use two SIMM modules at a time, and each pair of modules must be the same size, mode, and speed.

The following are all available memory configurations:

SIMM Socket 1&2	SIMM Socket 3&4	Total Memory
4MBx2	NONE	8MB
4MBx2	4MBx2	16MB
4MBx2	8MBx2	24MB
4MBx2	16MBx2	4oMB
4MBx2	32MB x 2	72MB
8MBx2	NONE	16MB
8MBx2	4MBx2	24MB
8MBx2	8MBx2	32MB
8MBx2	16MBx2	48MB
8MBx2	32MBx2	80MB
16MB x 2	NONE	32MB
16MB x 2	4MBx2	40MB
16MB x 2	8MBx2	48MB
16MB x 2	16MB x 2	64MB
16MB x 2	32MB x 2	96MB
32MB x 2	NONE	64MB
32MB x 2	4MBx2	72MB
32MB x 2	8MBx2	80MB
32MB x 2	16MB x 2	96MB
32MB x 2	32MBx2	128MB
NONE	4MBx2	8MB
NONE	8MBx2	16MB
NONE	16MBx2	32MB
NONE	32MB x 2	64MB

CPU Bus Clock Selection

. The jumper selects different CPU Bus Clock.

JP 11

50 MHz   (1-2,7-8)

JP 11

60 MHz   (3-4,8-9)

JP 11

66 MHz   (1-2,5-6,8-9)
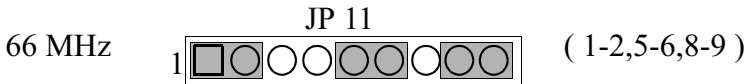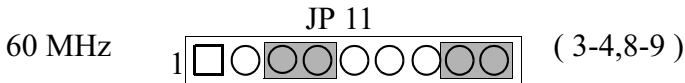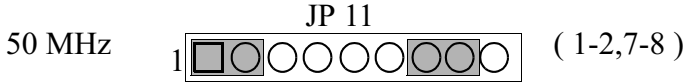
CPU Core to Bus Clock Ratio Selection
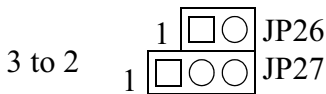
3 to 2   JP26 JP27   e.g.: 75MHz = 50MHz X 1.5
90MHz = 60MHz X 1.5
100MHz = 66MHz X 1.5
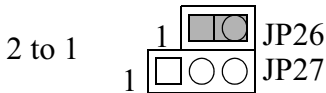
2 to 1   JP26 JP27   e.g.: 100MHz = 50MHz X 2
120MHz = 60MHz X 2
133MHz = 66MHz X 2
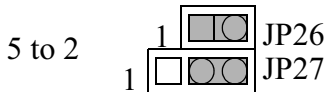
5 to 2   JP26 JP27   e.g.: 150MHz = 60MHz X 2.5
167MHz = 66MHz X 2.5
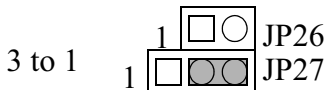
3 to 1   JP26 JP27   e.g.: 150MHz = 50MHz X 3
180MHz = 60MHz X 3
200MHz = 66MHz X 3

CPU Speed Selection

. Selecting the CPU Speed.
  If you install a CPU with a different operating speed, you must
  change the CPU speed jumper setting.
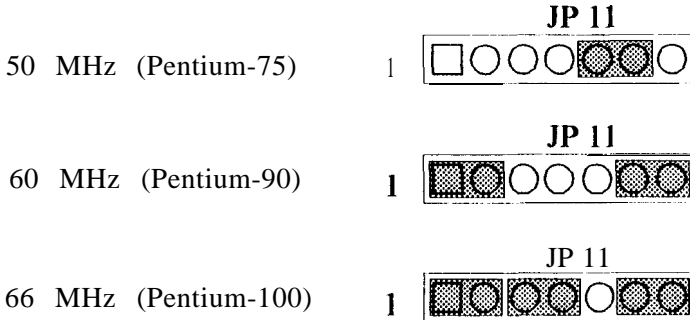
JP 11

50 MHz (Pentium-75)

JP 11

60 MHz (Pentium-90)

JP 11

66 MHz (Pentium-100)

CMOS RAM Clearance

. Clearing CMOS RAM Data
  If you need to clear the CMOS RAM data, put a shunt on JP I8
  for 5 seconds and the data stored in the CMOS RAM will be
  wiped out.

BIOS Type Selection

. These jumpers select different types of BIOS.

JP6 JP7   JP6JP7   JP6 JP7

EPROM   5V FLASH   12V FLASH
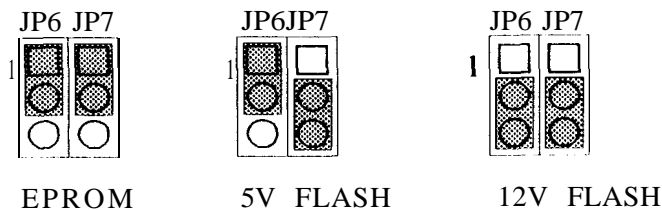
IDE Interrupt Selection

. These jumpers select the interrupts used by IDE drives.

ISA Interrupts (Default)   1   JP4
                            1   JP5

Cliipset Interrupts   1   **JP4**
                            1   **JP5**

ECP DMA Channel Selection

. These jumpers select the DMA channel used by ECP

DMA Channel 1 (Default)   1   JP1
                            1   JP2

DMA Channel 3   1   JP1
                            1   JP2

VRM Header

. This is an option for future CPU. If there is no VRM header installed, this board can work with 3V CPU only. If VRM header is installed, you may use VRM for CPU's power or install 2 shunts for 3V CPU see figure below.

VRM Header   CPU
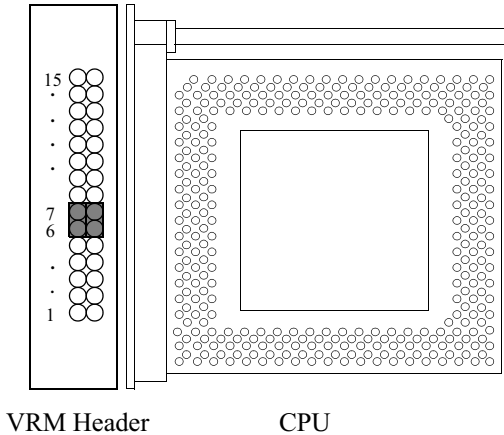
CPU Voltage Selection

. This jumper selects different voltage for the CPU.

JP25

3.45V

JP25

3.6 V

CMOS RAM Clearance

. Clearing CMOS RAM Data
If you need to clear the CMOS RAM data, put a shunt on JP18
for 5 seconds and the data stored in the CMOS RAM will be
wiped out.

ECP DMA Channel Selection

. These jumpers select the DMA channel used by ECP.

DMA Channel 1 (Default)   1 [▪ ◯ ◯] JP1
                             1 [▪ ◯ ◯] JP2

DMA Channel 3   1 [▫ ◯ ◯] JP1
                             1 [▫ ◯ ◯] JP2

Parallel Port Interrupt Selection

. This jumper select the interrupt used by the parallel port.

Interrupt 7 (Default)   1 [▪ ◯ ◯] JP3

Interrupt 5   1 [▫ ◯ ◯] JP3

Cable Set

. Included with 586F52 mainboard is a cable set which contains:
- one IDE Cable.
- one floppy disk drive cable.
- one serial port and parallel port cable with mounting bracket.
- one serial port cable with mounting bracket.

3 Software Guide

Software Setup

After hardware configuration of 586F52 mainboard is completed, and system hardware has been assembled, the completed system may be powered up. At this point, software setup should be run to ensure that system information is correct.

Normally, system setup is needed when the system hardware is not identical with the information contained in the CMOS RAM, whenever the CMOS RAM has lost power, or the system features need to be changed.

Running AWARD BIOS

When the system is powered on, the BIOS will enter the Power-On Self Test (POST) routines. These routines perform various diagnostic checks at the time the system is powered up; if an error is encountered, the error will be reported in one of two different ways. If the error occurs before the display device is initialized, a series of beeps will be transmitted. If the error occurs after the display device is initialized, the screen will display the error message.

After the POST routines are completed, the following message appears:

" Press DEL to enter SETUP"

To access the AWARD BIOS SETUP program, press the <DEL> key. The main program screen will be displayed at this time.

The Main Program Screen

```
                    ROM  PCI/ISA  BIOS (2A59CF2H)
                         CMOS SETUP UTILITY
                       AWARD  SOFTWARE,  INC.

   STANDARD CMOS SETUP              PASSWORD SETTING

   BIOS FEATURES SETUP              IDE HDD AUTO DETECTION

   CHIPSET FEATURES SETUP           SAVE & EXIT SETUP

   POWER MANAGEMENT SETUP           EXIT WITHOUT SAVING

   PCI CONFIGURATION SETUP

   LOAD BIOS DEFAULTS

   LOAD SETUP DEFAULTS

   ESC: Quit                       ↑ ↓  →   ←    :Select Item
   F10:Save & Exit Setup             (SHIFT) F2: Change Color

                 Time, Date, Hard Disk Type....
```

Listed below are explanations of the keys displayed at the bottom of the screen:

<ESC>: Exit the utility.

ARROW KEYS: Use arrow keys to move cursor to desired selection.

<F10>: Saves all changes made to Setup and exits program.

<Shift><F2>: Changes background and foreground colors.

Standard CMOS Setup

Selecting "STANDARD CMOS SETUP "on the main program screen displays this menu:

Standard CMOS Setup Screen

```
                    ROM PCI/ISA  BIOS (2A59CF2H)
                        STANDARD CMOS SETUP
                        AWARD  SOFTWARE,  INC

  Date (mm:dd:yy): Wed, Jun 28 1995
  Time (hh:mm:ss): 10:00:00


  HARD  DISKS      TYPE  SIZE   CYLS  HEAD  PRECOMP  LANDZ  SECTOR  MODE
  Primary Master   : User  213   685   16     65535    684      38   NORMAL
  Primary Slave    : None    0     0    0         0      0       0   -----------
  Secondary Master : None    0     0    0         0      0       0   -----------
  Secondary Slave  : None    0     0    0         0      0       0   -----------

     Drive A : None                         Base Memory :     640K
     Drive B : None                     Extended Memory : 15360K
                                           Other Memory :     384K
     Video  :  EGA/VGA                 ------------------------------------
     Halt On :  All Errors                  Total Memory :  16384K

     ESC: Quit          ↑ ↓  →   ←   :Select Item        PU/PD/+/-:Modify
     F1 : Help        (SHIFT) F2     :Change Color
```

The Standard CMOS Setup utility is used to configure the following features:

Set Date: Month, Date, Year.

Set Time: Hour, Minute, and Second. Use 24 Hour clock format (for PM numbers, add 12 to the hour, you would enter 4:30 p.m. as 16:30).

Hard Disks: Hard disk type from 1 to 45 are standard ones; type "Auto" is IDE HDD auto detection; type "User" is user definable, and Type "None" is not installed (e.g. SCSI). You must enter hard disk parameters for each drive.

There are six categories of information you must enter for a normal mode IDE HDD: "CYLS" (number of cylinders), "HEAD" (number of heads), "PRECOMP" (write precompensation), "LANDZ" (landing zone), "SECTOR" (number of sectors) and "MODE" (Normal, LBA, Large). The hard disk vendor's or system manufacturer's documentation should provide you the information needed. For an IDE hard drive, you can use the "IDE HDD AUTO DETECTION" utility in the main program screen to get this information.

The Award BIOS supports three HDD modes: NORMAL, LBA, and LARGE.

NORMAL mode: Generic access mode in which neither the BIOS nor the IDE controller will make any transformation during accessing. The maximum HDD size supported by the NORMAL mode is 528 Megabytes.

LBA mode: Logical Block Addressing mode is an HDD accessing method to overcome the 528Megabytes bottleneck.
The number of cylinders, heads, and 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 the cylinder, head and sector numbers into its own physical address inside the HDD. The maximum HDD size supported by the LBA mode is 8.4 Gigabytes.

LARGE mode: Some IDE HDD contain more than 1024 cylinders without LBA support. This access mode tricks DOS (or other OS) that the number of cylinders is less than 1024 by dividing it by 2. At the same time, number of heads is multiplied by 2.

A reverse transformation process will be made inside INT13h in order to accessing the right HDD address. The maximum HDD size supported by the LARGE mode is 1 Gigabytes.

Note: To support LBA or LARGE mode, there must be some softwares involved. All these softwares are located in the Award HDD Service Routine "INT13h". It may fail to access a HDD with LBA or LARGE modes selected if you are running under an Operating System which replaces the whole INT13h.

Floppy Drive A and Floppy Drive B: The options are: "360K, 5.25 in.", "1.2M, 5.25in.", "720K, 3.5in.", "1.44M, 3.5in.", "2.88M, 3.5in." and "None (Not Installed)". Not Installed could be used as an option for diskless workstations.

Video: Options are "Mono Monochrome", "CGA40", "CGA80" and "EGA/VGA".

Halt on: Controls whether the system stops in the case of an error. The options are "All Errors", "No Errors", "All, But Keyboard", "All, But Diskette" and "All, But Disk/Key".

After you have made your selections, exit to the main program screen by pressing the <ESC> key.

BIOS Features Setup

Selecting "BIOS FEATURES SETUP" on the main program screen displays this menu:

BIOS Features Setup Screen

```
                ROM  PCI/ISA  BIOS (2A59CF2H)
                     BIOS FEATURES SETUP
                   AWARD  SOFTWARE,  INC.

 Virus Warning            : Disabled    Video BIOS Shadow      : Enabled
                                        C8000-CBFFF  Shadow     : Disabled
 CPU Internal Cache       : Enabled     CC000-CFFFF  Shadow     : Disabled
 External Cache           : Enabled     D0000-D3FFF  Shadow     : Disabled
                                        D4000-D7FFF  Shadow     : Disabled
 Quick Power On Self Test : Enabled     D8000-DBFFF Shadow      : Disabled
 Boot Sequence            : C, A        DC000-DFFFF Shadow      : Disabled
 Swap Floppy Drive        : Disabled    E0000-E3FFF   Shadow    : Disabled
 Boot Up Floppy Seek      : Enabled     E4000-E7FFF   Shadow    : Disabled
 Boot Up NumLock Status   : On          E8000-EBFFF  Shadow     : Disabled
 Gate A20 Option          : Fast        EC000-EFFFF  Shadow     : Disabled


 Typematic Rate Setting   : Disabled    ESC : Quit       ↑↓ → ←  :Select Item
 Typematic Rate (Chars/Sec)  : 6        F1   : Help          PU/PD/+/- :Modify
 Typematic Delay (Msec)      : 250      F5   : Old Values      ( Shift ) F2: Color
                                        F6   : Load BIOS Defaults
 Security Option          : Setup       F7   : Load Setup Defaults
```

The following explains the options for each features:

Virus Warning: The Virus Warning's default setting is "Disabled". When enabled, any attempt to write the boot sector and partition table will halt the system and cause a warning message to appear. If this happens, you can use an anti-virus utility on a virus free, bootable floppy diskette to reboot and clean your system.

CPU Internal Cache: the default setting is "Enabled". This Setting enables the CPU internal cache.

External Cache: The default setting is "Enabled". This setting enables the external cache.

Quick Power On Self Test: The default setting is "Enabled". If enabled, this will skip some diagnostic checks during the Power On Self Test (POST) to speed up booting process.

Boot Sequence: The default setting is "C,A"; the other option is "A,C". The BIOS will load the operating system from the disk drives in the sequence selected here.

Swap Floppy Drive: The default setting is "Disabled". This setting gives you an option to swap A and B floppy disks. Normally the floppy drive A is the one at the end of the cable, if you set this option to "Enabled", the drive at the end of the cable will be swapped to B.

Boot Up Floppy Seek: The defaults setting is "Enabled". When enabled, the BIOS will check whether there is a floppy disk drive installed.

Boot Up Numlock Status: The default setting is "On". If set "Off ", the cursor controls will function on the numeric keypad.

Gate A20 Option: the defaults setting is "Fast". This is the optimal setting for the mainboard. The other option is "Normal".

Typematic Rate Setting: The default setting is "Disabled". If enabled, you can set the typematic Rate and typematic Delay.

Typematic Rate (Chars/Sec): This setting controls the speed at which the system registers repeated keystrokes. The choices range from 6 to 30 Chars/Sec. The default setting is "6 Chars/Sec".

Typematic Delay (Msec): This setting controls the time between the display of the first and second characters. There are four delay choices: 250ms, 500ms, 750ms and 1000ms. The default setting is 250ms.

Security Option: This setting controls the password feature. The options are "Setup" and "System". Select "Setup" will protect the

configuration settings from being tampered with. Select "System" if you want to use password feature every time the system boots up. The default setting is "Setup". You can create your password by using the "PASSWORD SETTING" utility on the main program screen.

Video BIOS Shadow: The default setting is 'Enabled". When enabled, the ROM BIOS on the video display card is copied into system DRAM to enhance performance.

C8000-CBFFF Shadow to EC000-EFFFF Shadow: The default setting for the shadow feature is "Disabled". When enabled, the ROM with the specific address is copied into system DRAM. It will also reduce the size of memory available to the system.

After you have made your selection in the BIOS FEATURES SETUP, press the <ESC> key to go back to the main program screen.

Chipset Features Setup

Selecting "CHIPSET FEATURES SETUP" on the main program screen displays this menu:

Chipset Features Screen

```
                    ROM  PCI/ISA  BIOS (2A59CF2H)
                        CHIPSET  FEATURES SETUP
                        AWARD  SOFTWARE,  INC.

DRAM RAS#  Precharge Time    :  4          PCI Concurrency             :  Disabled
DRAM R/W Leadoff Timing      :  8/6        PCI Streaming               :  Disabled
DRAM RAS To Cas Delay        :  3          PCI Bursting                :  Enabled
DRAM Read Burst Timing       :  x2222
DRAM Write Burst Timing      :  x3333      Onboard FDD Controller      :  Enabled
System BIOS Cacheable        :  Enabled    Onboard Serial Port  1      :  COM1
Video BIOS Cacheable         :  Enabled    Onboard Serial Port  2      :  COM2
 8 Bit I/O Recovering Time   :  3          Onboard Parallel Port       :  378H
16Bit I/O Recovering Time    :  3          Onboard Parallel Mode       :  Normal
Memory Hole At 15M-16M       :  Disable    Serial Port  1  MIDI        :  Disabled
                                           Serial Port  2  MIDI        :  Disabled
IDE HDD Block Mode           :  Enabled
IDE 32-bit Transfer Mode     :  Enabled
IDE Primary Master  PIO      :  Auto
IDE Primary Slave   PIO      :  Auto       ESC : Quit             ↑↓ → ←    :Select Item
IDE Secondary Master  PIO    :  Auto       F1   : Help              PU/PD/+/- :Modify
IDE Secondary Slave   PIO    :  Auto       F5   : Old Values        ( Shift ) F2: Color
On-Chip Primary    PCI  IDE  :  Enabled    F6   : Load BIOS Defaults
On-Chip Secondary  PCI  IDE  :  Enabled    F7   : Load Setup Defaults
PCI  Slot  IDE 2nd Channel   :  Disabled
```

This screen controls the settings for the board's chipset. All the entries on the screen are automatically configured. However, you can change it according to your operating environment.

The default settings of IDE PIO modes are "AUTO". Should you have problems running IDE drives with PIO mode set to "AUTO", you may try using a slower PIO mode. All IDE drives should work with PIO mode 0.

If you make any change for onboard FDD controller, serial ports and parallel port in this setup, save the change and turn off the system. After turning system on again the change will be effective.

After you have made your selections in the CHIPSET FEATURES SETUP, press the <ESC> key to go back to the main program screen.

Power Management Setup

The power Management Setup controls the mainboard's "green" features.

Selecting "POWER MANAGEMENT SETUP" on the main program screen displays this menu:

```
                    ROM  PCI/ISA  BIOS (2A59CF2H)
                    POWER MANAGEMENT  SETUP
                      AWARD  SOFTWARE,  INC.

  Power Management     :  Disable    IRQ3  ( COM 2 )          :  OFF
  PM Control by APM    :  No         IRQ4  ( COM 1 )          :  OFF
  Video Off Method     :  V/H SYNC+Blank IRQ5 ( LPT  2 )      :  OFF
                                     IRQ6  ( Floppy Disk )    :  OFF
  Doze Mode            :  Disable    IRQ7  ( LPT  1 )         :  OFF
  Standby Mode         :  Disable    IRQ8  ( RTC Alarm )      :  OFF
  Suspend Mode         :  Disable    IRQ9  ( IRQ2 Redir )     :  OFF
  HDD Power Down       :  Disable    IRQ10 ( Reserved )       :  OFF
                                     IRQ11 ( Reserved )       :  OFF
                                     IRQ12 ( PS/2 Mouse )     :  OFF
  IRQ3 (Wake-Up Event) :  OFF        IRQ13 ( Coprocessor )    :  OFF
  IRQ4 ( Wake-Up Event):  OFF        IRQ14 ( Hard Disk )      :  OFF
  IRQ8 (Wake-Up Event) :  OFF        IRQ15 ( Reserved )       :  OFF
  IRQ12(Wake-Up Event) :  OFF
                                    ESC : Quit      ↑↓→←   :Select Item
                                    F1   : Help      PU/PD/+/- :Modify
       **   PM  Events  **          F5   : Old Values   ( Shift ) F2: Color
  COM Ports Accessed   :  OFF        F6   : Load BIOS Defaults
  LPT Ports Accessed   :  OFF        F7   : Load Setup Defaults
  Drive Ports Accessed :  OFF
```

Power Management: This setting controls the system Doze, System Standby and System Suspend Timer features. There are four options.

User Define: Allow you to customize all power saving timer features.

Optimize: This is recommended setting for general use.

Test/Demo: This is for test/demonstration purpose.

Disable: Disable the power management features.

PM Control by APM: The default setting is "No". If set to "Yes", system BIOS will wait for APM's prompt before it enters any PM mode.

Note: If your system power management is controlled by APM and there is a task running, the APM will not prompt the BIOS to enter any power saving mode after time out.

Video Off Method: This setting controls the Video off method in power saving mode. The default setting is "V/HSYNC+Blank" This setting disables V/H SYNC signals and blanks the screen in power saving mode. Other options are "Blank Screen" and "DPMS".

System Doze: Options are from "1 Min" to "1 Hour" and "Disable". The system speed will change from turbo to slow if no Power Management events occur for a specified length of time. The system will return to full power when a Wake-Up event is detected.

System Standby: Options are from "1 Min" to "1 Hour" and "Disable". The system speed will change from turbo to slow and the video signal will be suspended if no Power Management events occur for a specified length of time. Full power function will return when a Wake-Up event is detected.

System Suspend: Options are from "1 Min" to "1 Hour" and "Disable". The CPU clock will be stopped and the video signal will be suspended if no Power Management events occur for a

specified length of time. Full power function will return when a Wake-Up event is detected.

HDD Power Down: Options are from "1 Min" to "15 Min" and "Disable". The IDE hard drive will spin down if it is not accessed within a specified length of time.

Wake-Up Events: When a hardware event is enabled, the occurrence of a corresponding event will return the system to full speed.

PM Events: when a hardware event is enabled, the occurrence of a corresponding event will prevent the system from entering any PM mode.

After you have made your selection in the POWER MANAGE-MENT SETUP, press the <ESC> key to go back to the main program screen.

PCI Configuration Setup

Both the ISA and PCI buses on the mainboard use system IRQ's. You must set up the IRQ assignments correctly thru the PCI Configuration Setup utility, otherwise the mainboard will not work properly.

Selecting "PCI CONFIGURATION SETUP" on the main program screen displays this menu:

PCI Configuration Screen

```
                    ROM  PCI/ISA  BIOS (2A59CF2H)
                    PCI   CONFIGURATION  SETUP
                      AWARD  SOFTWARE,  INC.

  PnP BIOS Auto Config          :  Disabled

  Slot  1  Using INT#           :  AUTO
  Slot  2  Using INT#           :  AUTO
  Slot  3  Using INT#           :  AUTO
  Slot  4  Using INT#           :  AUTO

  1st Available  IRQ            :  9
  2nd Available IRQ             :  10
  3rd Available IRQ             :  11
  4th Available IRQ             :  12
  PCI  IRQ Actived By           :  Level

  PCI  IDE  IRQ  Map To         :  PCI-AUTO
    Primary IDE INT#            :  A          ESC : Quit        ↑↓ → ←     :Select Item
    Secondary IDE  INT#         :  B          F1   : Help          PU/PD/+/- :Modify
                                              F5   : Old Values     ( Shift ) F2: Color
                                              F6   : Load BIOS Defaults
                                              F7   : Load Setup Defaults
```

Each PCI slot has four interrupts, "INT A", "INT B", "INT C" and "INT D" which could be connected to IRQ thru a hardware router in the Chipset. When you install a PCI expansion card which requires an "IRQ" (ISA interrupts IRQ 3, 4, 5, 7, 9, 10, 11, 12, 14 and 15) to operate, you must route the "INT" which is used by PCI expansion card to the proper IRQ.

PCI Expansion Card (Except PCI IDE) Installation

1. Set "INT" to each PCI slot.

   a. If the PCI expansion card is compliant to PCI plug and play specification, select "AUTO".

   b. If the PCI expansion card is not compliant to PCI plug and play specification, select "INT n" which is used by the expansion card.

2. Set the priority of available "IRQ's" (NA, IRQ 3, 4, 5, 7, 9, 10, 11, 12, 14 and 15), do not select IRQ14 and/or IRQ15 when an ISA or PCI IDE card is installed on the mainboard. When system boots up, the BIOS will scan the PCI expansion cards starting from slot1 then slot 2, 3, 4. If a PCI expansion card exists and requires an IRQ to operate, the BIOS will assign an available IRQ to it in the sequence of all available IRQ's.

3. Select INT Level or Edge trigger.

Example:

- Install a PCI expansion card which is compliant to PCI plug and play specification on slot 3. The PCI expansion card requires IRQ 11 to operate.

- Install a PCI expansion card which is not compliant to PCI plug and play specification on the slot2. The PCI expansion card uses INT A and requires IRQ 9 to operate.

- Install a PCI expansion card which does not require IRQ to operate on slot 4.

- The setting is as follows:

```
                    ROM  PCI/ISA  BIOS (2A59CF2H)
                    PCI   CONFIGURATION  SETUP
                      AWARD  SOFTWARE,  INC.

  PnP BIOS Auto Config      :  Disabled

  Slot  1  Using INT#       :  AUTO
  Slot  2  Using INT#       :  INTA
  Slot  3  Using INT#       :  AUTO
  Slot  4  Using INT#       :  AUTO

  1st Available  IRQ        :  9
  2nd Available IRQ         :  11
  3rd Available IRQ         :  NA
  4th Available IRQ         :  NA
  PCI  IRQ Actived By       :  Level

  PCI  IDE  IRQ  Map To     :  PCI-AUTO
    Primary IDE INT#        :  A          ESC : Quit        ↑ ↓  →  ←    :Select Item
    Secondary IDE  INT#     :  B          F1   : Help             PU/PD/+/- :Modify
                                          F5   : Old Values       ( Shift ) F2: Color
                                          F6   : Load BIOS Defaults
                                          F7   : Load Setup Defaults
```

PCI IDE Installation

If a PCI IDE Card which uses ISA IRQ directly thru a paddle card
is installed on ISA slot, set "ISA" for the option "PCI IDE IRQ
Map To". If a PCI IDE Card uses PCI "INT", and it is compliant
to PCI plug and play specification, set "PCI-AUTO" for the
option "PCI IDE IRQ Map To", otherwise set "PCI-SLOT n"
(PCI-SLOT 1, PCI-SLOT 2, PCI-SLOT 3 or PCI-SLOT 4)
depends on which slot the PCI IDE Card is installed.

Only INT A and INT B are available for a PCI IDE Card, there-
fore you must set the PCI IDE Card's primary interrupt to INT A
and secondary interrupt to INT B. The INT A is routed to IRQ

14 and the INT B is routed to IRQ 15 thru a hardware router in the chipset.

Load BIOS Defaults

This is useful if you are having problems with your mainboard and need to debug or troubleshoot the system.

The defaults loaded only affect the BIOS Features Setup, Chipset Features Setup, Power Management Setup and PCI Configuration Setup. There is no effect on the Standard CMOS Setup. To use this feature, highlight on the main screen and press <Enter>. A line will appear on the screen asking if you want to load the BIOS default values. Press the <Y> key and then press <Enter> key if you want to load the BIOS defaults. Press <N> if you don't want to proceed.

Load Setup Defaults

"LOAD SETUP DEFAULTS" loads optimal settings which are stored in the BIOS ROM.

The defaults loaded only affect the BIOS Features Setup and Chipset Features Setup, Power Management Setup and PCI configuration setup.There is no effect on the Standard CMOS Setup. To use this feature, highlight on the main screen and press <Enter>. 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 if you want to load the Setup defaults. Press <N> if you don't want to proceed.

Password Setting

The "PASSWORD SETTING" utility sets the password. The mainboard is shipped with the password disabled. If you want to change the password, you must first enter current password. Then at the prompt enter your new password. The password is case sensitive and you can use up to 8 alphanumeric characters, press <Enter> after entering the password. At the next prompt, confirm the new password by typing it and pressing <Enter> again.

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.

Note:
If you forget your password, the only way to solve this problem is to discharge the CMOS memory by turning power off and placing a shunt on the JP18 to short pin 1 and pin 2 for 5 seconds, then removing the shunt.

IDE HDD Auto Detection

If your system has an IDE hard drive, you can use this utility to detect its parameters and enter them into the Standard CMOS Setup automatically.

If the auto-detected parameters displayed do not match the ones that should be used for your hard drive, do not accept them. Press the <N> key to reject the values and enter the correct ones manually on the Standard CMOS Setup screen.

Note:
If you are setting up a new hard disk drive (nothing on it) that supports LBA mode, more than one line will appear in the parameter box, choose the line that lists LBA for an LBA drive. Do not choose Large or Normal. If the hard disk drive is already fully formatted when you install it, choose the mode which is used to format it.

Save & Exit Setup

Selecting this option and pressing the <Enter> key to save the new setting information in the CMOS memory and continue with the booting process.

Exit Without Saving

Selecting this option and pressing the <Enter> key lets you exit the Setup Utility without recording any new values or changing old ones.