Consumer Accessories

English

Operating Manual

Mainboard IPX7A-FS

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Mainboard IPX7A-FS

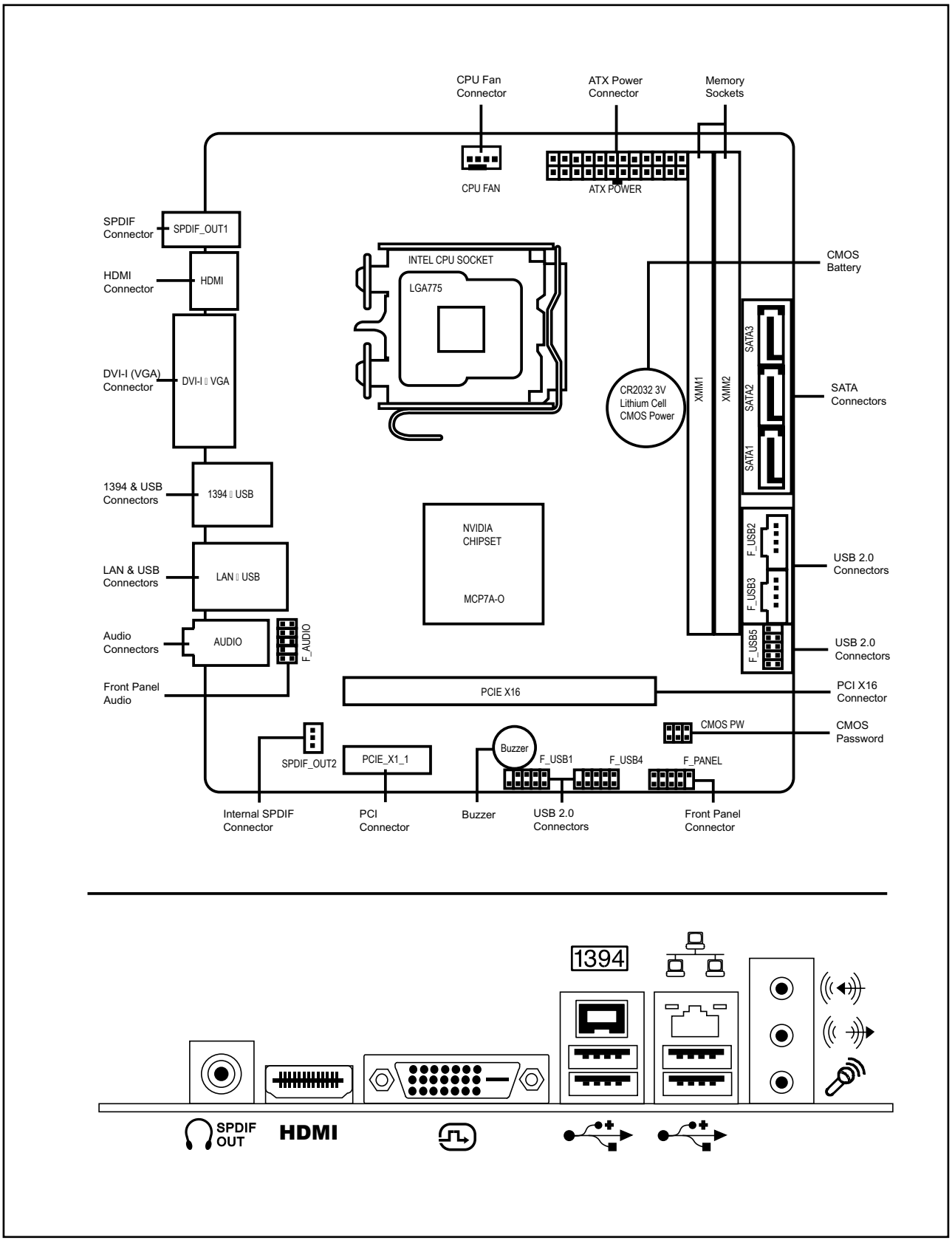
Operating manual

Edition August 2008

Content

Internal Connector and Slots

CPU	LGA775 socket for Intel® Core™ 2 Duo / Celeron® / compatible with Intel® (Conroe Wolfdale) TDP: 65W
CPU Features	Supports Intel® next generation 45nm CPU Supports Enhanced Intel SpeedStep® Technology (EIST) Supports Intel® Hyper-Threading Technology
Chipset	North Bridge: MCP7A-O
Front Side Bus	1333 / 1066 / 800 MHz
Memory	Dual-channel memory architecture 2 x 240-pin DIMM sockets support unbufferred non-ECC DDR2 800/667/ 533 memory modules, up to 4 GB total system memory
Expansion Slots	1 x PCI Express x16 slot 1 x PCI Express x1 slot
Audi	Azalia Realtek ALC888S 6-channel CODEC 1 x Coaxial S/PDIF out port Supports jack-dectect and Anti Pop Function Supports VISTA Premium OS
Storage	South Bridge:
LAN	Realtek 8111B Gigabit
USB	Supports up to 12 USB 2.0 ports (8 ports at mid-board, 4 ports at rear
Rear panel	1 x HDMI port 1 x LAN (RJ-45) port 4 x USB 2.0 ports 6-channel audio I/O ports 1 x DVI-I output 1 x S/PDIF out port 1 x 1394 port
Internal connectors	1 x 24-pin ATX power connector 5 x USB connectors for additional 8 USB 2.0 ports 1 x S/PDIF out connector 1 x Front panel audio connector 1 x CPU Fan connector 1 x Front panel connector
VGA	Integrated Graphic in Single chipset
BIOS feature	8 MB Flash ROM, AMI BIOS, PnP, DMI2.0, WfM2.0, ACPI v2.0a, SMBIOS
Power Requirement	ATX power supply (with 24-pin) ATX 12V 2.0 compliant
Form factor	Mini-ITX Form Factor: 7.48 in x 6.8 in


CPU Fan Connector
ATX Power Connector
Memory Sockets
CPU FAN
ATX POWER
SPDIF Connector
SPDIF_OUT1
HDMI Connector
HDMI
DVI-I (VGA) Connector
DVI-I VGA
1394 & USB Connectors
1394 USB
LAN & USB Connectors
LAN USB
Audio Connectors
AUDIO
F_AUDIO
Front Panel Audio
INTEL CPU SOCKET
LGA775
NVIDIA CHIPSET
MCP7A-O
CR2032 3V Lithium Cell CMOS Power
CMOS Battery
XMM1
XMM2
SATA3
SATA2
SATA1
SATA Connectors
F_USB2
F_USB3
USB 2.0 Connectors
F_USB5
USB 2.0 Connectors
PCIE X16
PCI X16 Connector
CMOS PW
CMOS Password
SPDIF_OUT2
PCIE_X1_1
Buzzer
F_USB1
F_USB4
F_PANEL
Internal SPDIF Connector
PCI Connector
Buzzer
USB 2.0 Connectors
Front Panel Connector
1394
SPDIF OUT
HDMI

Coaxial S/PDIF Out port.

This port connects an external audio output device via a coaxial S/PDIF cable.

HDMI port.

This port is for a High-Definition Multimedia Interface (HDMI) connector, and is HDCP compliant allowing playback of HD DVD, Blu-Ray and other protected content.

Digital Visual Interface Integrated (DVI-I).

A video interface standard designed to maximize the visual quality of digital display devices such as flat panel LCD computer displays and digital projectors.

IEEE 1394 port

This 6-pin IEEE 1394a port provides high-speed connectivity for audio/video devices, storage peripherals, PCs, or portable devices.

USB 2.0 ports 1 and 2

These two 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2.0 devices.

LAN (RJ-45) port

Supported by Marvell Gigabit LAN controller, this port allows Gigabit connection to a Local Area Network (LAN) through a network hub. Refer to the table below for the LAN port LED indications.

USB ports and 3 and 4

These two 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2.0 devices.

Line In port (light blue)

This port connects the tape, CD, DVD player, or other audio sources.

Line Out port (lime)

This port connects a headphone or a speaker. In 4-channel, 6-channel, and 8-channel configuration, the function of this port becomes Front Speaker Out.

Microphone port (pink)

This port connects a microphone.

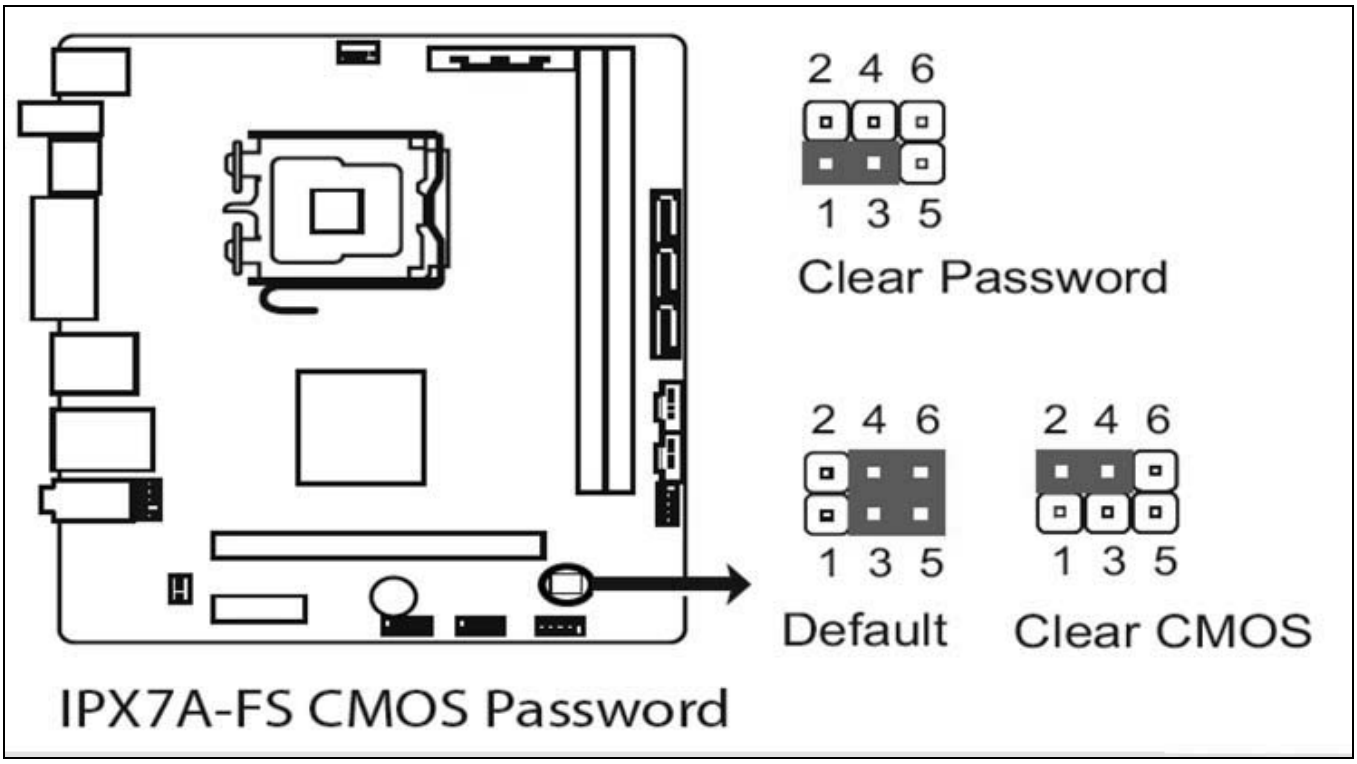
LAN port LED indications

Events generated	On (S0)	Standby (S1/S3)	Hibernate (S4)	Shut down (S5)	
LAN LED (power)	On	Off	Off	Off	ACT/LINK Indicator, Speed Indicator, LAN
LAN LED (activity)	Blinking - active Off - otherwise	Off	Off	Off	

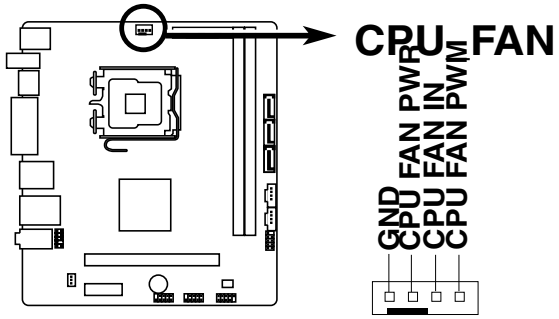
Audio 2, 4, 6, or 8-channel configuration

Port	Headset 2-channel	4-channel	6-channel	8-channel
Light Blue	Line In	Line In	Line In	Line In
Lime	Line Out	Front Speaker Out	Front Speaker Out	Front Speaker Out
Pink	Mic In	Mic In	Mic In	Mic In

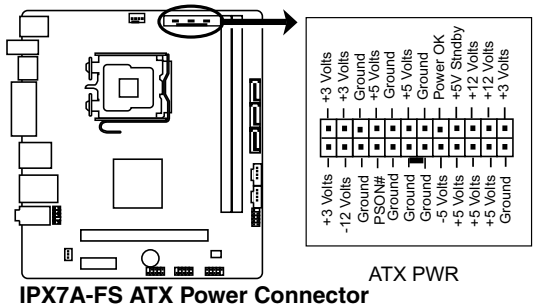
Function Selectors



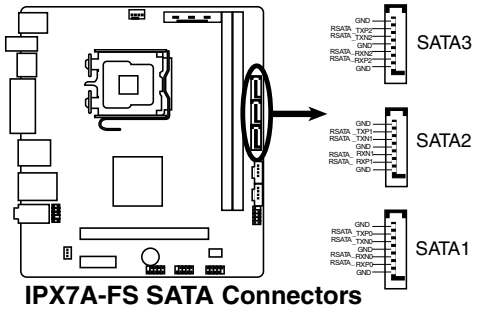
Internal Selectors



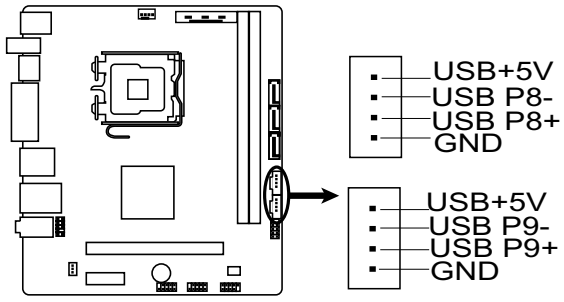
IPX7A-FS CPU Fan Connector



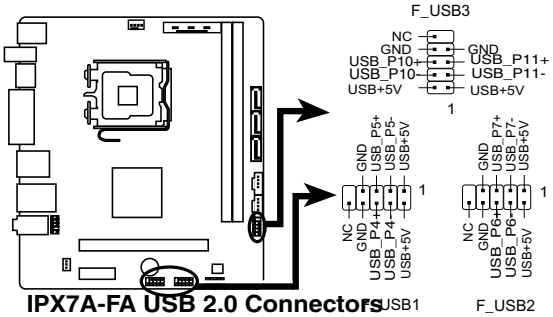
IPX7A-FS ATX Power Connector



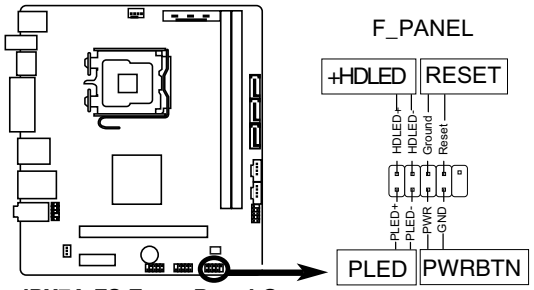
IPX7A-FS SATA Connectors



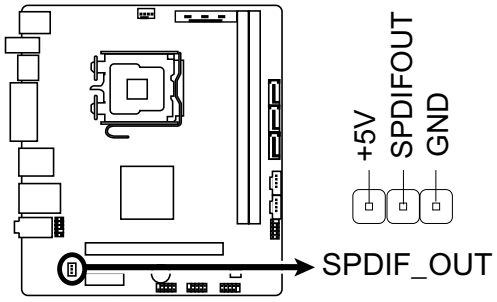
IPX7A-FA USB 2.0 Connectors



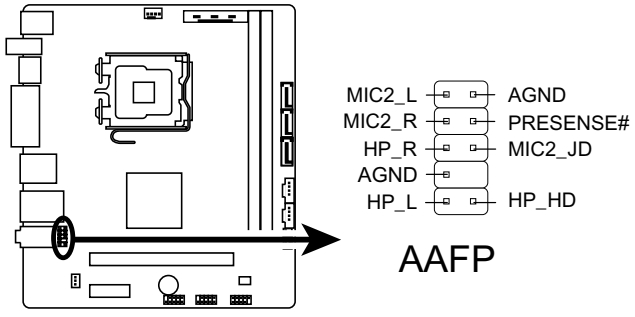
IPX7A-FA USB 2.0 Connectors



IPX7A-FS Front Panel Connector



IPX7A-FS Internal Audio Connector



IPX7A-FS Front Panel Audio Connector

Document Overview

The purpose of this document is to help customers to understand the changes of BIOS. The requirement of system BIOS was provided in this specification. All possible items and topics related to BIOS would be covered, but usually the BIOS of each system would be different in some degree. If some topics were not found or described in this document, please contact with your vendor.

BIOS POST Screen

How to show BIOS and system information during POST

The POST Screen without Logo

During POST, the BIOS would show some BIOS and system information. If user choose don't show M/B logo or silent boot enabled in setup menu, then BIOS should show necessary information to tell users the configuration of the motherboard.

The following are items necessary shown in the screen during POST.

- BIOS vendor, version, and built date,
- CPU model, operating frequency
- IDE devices detection, including Model of IDE devices
- Error messages, and BIOS should halt system and wait for users' responses
- BIOS messages for users to adopt some actions to do something, like, entering setup menu, neglect error halt, show Popup menu for booting devices, etc.
- Summary for system devices (this could be enabled or disabled through BIOS)
- NVRAM (ESCD or other Non-Volatile information) update information if supported
- USB storage devices founded if USB storage legacy boot was supported. (Max support 6 USB storage device)
- The above items were necessary except some item that was claimed as optional. And for different chipsets, there might be some different request for showing messages.

The POST Screen with Logo

For boards with 4Mb flash ROM, showing logo during POST should be a necessity. For boards with 2Mb flash ROM, showing logo would be an option. The smallest size of a logo should be 640x480x16 colors. BIOS would compress it and show them during POST. 256 colors logo support is a must-have. But while making BIOS, this could be added through some flags. Usually, 4Mb flash or above boards have to support 256-color logo. For 2Mb flash boards, 16 colors support is enough.

In BIOS setup menu, there must be an option for users to decide to show logo or not.

There should be some messages to remind users to press Enter_Setup_Key or some other important keys. For example, the message, "Press DEL to enter BIOS setup or press TAB to show POST information.", should be shown somewhere with the logo. For BIOS engineers, there should be some flags to set to decide if this message was shown or not. But for channel BIOS, this flag would be "Yes".

The BIOS provides different support on Screen Logo and default support is BMP format. The simplest support is a 16-color special format. The needed 16-color BMP files have to be transferred through a special utility provided by AMI called BMPLOGO.EXE (please check the AMITOOLS).

The BIOS also developed a logo module that supports original BMP files that need no transferred. Developer could use 16-color or 256-color BMPs. There are limitation and requirement on those

BMP files:

- the resolution has to be 640x480
- 256-color BMP's color palette could only use 240 if this board must support Intel On-Screen Branding (because this branding logo needs 16 colors)
- the standard size of 16-color is 150KB and 256-color is 300KB. Developers should consider the size of logos due to the size of Flash

Developers could find more details on BMPLOGO module documents.

POST Time Requirements

There are no special requirements for POST time with this channel BIOS. Because the BIOS has to support jumperless feature in ATX boards. But for MicroATX boards, booting into OS within 10 seconds would be necessary. Even with jumperless features, the boards should boot into OS within 15 seconds.

If there were onboard devices that have boot-ROM, then the POST time limitation is not necessary.

Miscellaneous Requirements with POST

- There should be a pop-up menu for users to choose favorable boot devices. This pop-up menu pops up at the last stage of POST. All bootable devices could be selected in this menu.
- Keyboard error, like no keyboard, or keyboard locked, should halt system until users fix the error.
- All errors, except keyboard error, should not halt system boot if users decide to neglect it.
- There should be options for user or BIOS engineers to decide which error could be neglected.
- All special keys, including Enter_Setup_Key, Resume_Key, Pop-up_Menu_Key, etc, could be revised through BIOS engineers.

Chassis intrude

If the chassis is opened. The POST will pause and prompt a message. The possible action is entering the setup menu.

Devices Support and Compatibility

The devices needed special supports in BIOS

Backward and Forward Compatibility

Whenever possible, newer BIOS should maintain backwards compatibility with previous revisions of a motherboard by providing appropriate support for updated components and hiding feature support for non-existing components. For example, if the south bridge of a motherboard has changed to a new revision with added feature set, the BIOS should identify and support two revisions accordingly. Also, if the S3 Standby feature was added to a motherboard, the BIOS should hide the S3 support including S3 enable/disable option in Setup for old motherboards that don't have the capability.

If possible, any new devices which need BIOS to revise to support, then BIOS should support it through BIOS update except the limitations of hardware. For example, a new CPU was delivered, then BIOS need add its ID codes as soon as possible.

CPU

AMD and Intel's newest CPUs support are necessary. If some customer has request to support VIA's CPU, then the code should be ready in short time.

BIOS should support micro-codes update, including Intel and AMD's.

BIOS should have capability to show real speed during POST by calculation. And CPU information in DMI data should match the CPUs used by customers.

BIOS should follow all CPUs' specification to take necessary actions.

Microcode update is very important while BIOS developed. Anytime, a new CPU microcode was released, then BIOS engineers has the responsibility to release a beta BIOS which contains the newest microcode. If a new CPU without matching microcode was found during POST. BIOS should show CPU microcode update error message should be shown on the POST screen.

Memory

The support of DDR-SDRAM, SDR-SDRAM, RDRAM or other kinds of RAM depends on platforms. All memory timing parameters must be attained from SPD and comply with related specification. It is possible for users to change timing by themselves. That means except "BY SPD" option is available in BIOS setup menu, all possible timing settings should be available to users, too. Right now, at least CAS Latency, RAS to CAS Delay, RAS Pre-charge timing settings are available through all platforms.

Depends on customers' requirement, DDR speed and type message like PC2100, PC133, etc., could be optional.

If system failed to boot with wrong memory timing settings, then BIOS should be capable reboot with fail-safe settings for user to recover. The details would be discussed in following chapters.

BIOS Flash ROM

BIOS has to provide the codes to support all possible flashes which could be used on the platform. If hardware provide some mechanism to protect flash, BIOS should provide related call function to turn off and on flashes “Write Protect” function for AP.

Option ROM

Some onboard devices might needs extension ROM to boot. BIOS combines these ROMs and invoke them while it is necessary.

The extension ROMs for BIOS to support includes LAN’s PXE, SCSI, VGA.

Mass Storage

The following features are required when supported by the platform hardware:

- Block transfers.
- LBA (Logical Block Addressing, 28-bit) support.
- 48-bit LBA support for drivers > 137 GB.
- 4-drive IDE HDD support. With new chipsets, 8-drive IDE HDD support is necessary.
- PIO & DMA modes support. Users could choose PIO and DMA through BIOS setup menu.
- UDMA (Ultra DMA) mode support including the maximum transfer rate of 33 MB/s (= mode 2), 66 MB/s (= mode 4), 100 MB/s (= mode 5). If ATA133 is not supported in chipsets, the BIOS must configure it as ATA100 instead if the system (= both IDE controller and hard drive) is detected as ATA133 capable. Also, the BIOS must not display an option to select ATA133, or UDMA 6 in Setup.
- 32-bit I/O support.
- 80-conductor IDE cable detection should be supported. If 40-conductor IDE cable was detected, BIOS should set IDE’s UDMA mode no higher than UDMA mode 2. The IDE device-timing mode such as PIO transfer and DMA must be programmed to achieve the best data transfer rate by considering the capability of the controller, drive and cable.
- Support autotype devices (Reads drive ID data; sets drive geometry, transfer mode, block size/LBA) detection.
- Display the manufacturer and model number of hard drives and optical drives detected during POST. Also, this message should automatically be displayed on the first screen (= Main Menu) when Setup is entered without having to press any further key.
- SMART (Self-Monitoring Analysis and Reporting Technology) should be supported during POST. The SMART feature support must always be enabled (no Setup option to enable/disable the feature is required). If a SMART error has been detected during POST, the BIOS must display a corresponding warning message, stop with "Press <F1> Setup, <F2> to Continue" and then proceed as selected by the user.
- The BIOS must implement Disk I/O (INT 13h) by utilizing the Bus Master IDE operation to improve the S4 resume.

USB

All systems require the support for USB 2.0 starting from January 2003.

The BIOS must support booting from USB floppy drive starting from January 2003.

The BIOS must provide boot support for USB keyboards and hubs. This BIOS support referred to as USB legacy mode support in this specification must provide the ability for the user to enter Setup and enough functionality to install and boot an operating system that recognizes USB peripherals.

USB keyboards built as stand-alone devices, part of a composite device, or part of a compound device must all be recognized and usable. The BIOS is required to support keyboards behind at least two levels of external hubs.

The BIOS must support USB keyboards and hubs for all host controllers that are integrated on the system board.

The BIOS must be capable of handling any size of data returned for a configuration request it makes to enumerate the USB and configure boot devices. However, the BIOS is required to configure only boot devices.

USB legacy support is necessary, and BIOS should provide options for users to change. Auto, Enable, and Disable are necessary.

Keyboard and Mouse

Power on state for NUM-LOCK is enabled; CAPS-LOCK and SCROLL-LOCK is disabled.

Support for PS/2 compatible keyboard and mouse required. Default PS/2 mouse to auto detect mode.

If a PS/2 keyboard and mouse are installed and a USB keyboard and mouse are not installed then the USB legacy mode support is disabled.

If a PS/2 keyboard and mouse are not installed and a USB keyboard and mouse are present then the initialization/configuration of the PS/2 keyboard and mouse should be skipped so that it wouldn’t increase the normal POST time.

Front Panel

SMI button is not supported anymore.

Onboard Devices

For different platforms, there might be some different onboard devices, like onboard VGA, AC97, etc. If hardware supports disabled features or chipsets support hide function, then BIOS should provide options in setup menu for users to decide if the devices were enabled or not. For some platforms, there might be some variants for the same model, for example, P4B533-V with LAN, and without LAN. BIOS should detect the devices automatically, then hide or show related items in BIOS setup menu.

Followings are some devices that might be used by the motherboard.

Onboard VGA

The BIOS must provide a Setup option to select the primary video adapter from PCI, AGP (if AGP slot is supported), or onboard video (if integrated video is supported).

For onboard which uses memory sharing scheme, the BIOS must also provide a Setup option to select the size of system memory dedicated to video memory if the onboard video is detected and enabled. However, if an AGP card is installed and the onboard video is disabled, the BIOS must hide this option from Setup or use [AUTO] as default. But user has the option to decide onboard VGA could be the primary boot devices. If onboard VGA has some related functions, then while onboard VGA was disabled, all related options should be hidden.

The onboard video BIOS will be integrated into the system BIOS ROM.

Onboard Audio (AC97 or PCI audio chips)

For PCI audio chips, BIOS should provide an option to disable it. And each PCI audio chip has its proprietary assigned SSID (Subsystem ID, for BIOS is always 1043h) and SVID (Subvendor ID). BIOS should be responsible for filling ID for individual chip.

For AC97 codecs, due to some boards might not use AC97, so BIOS should have the capability to detect codec existence automatically. If codec did not exist, then related items should be hidden. Otherwise, AC97 option should be shown in BIOS setup menu, and users have right to disable or enable it.

Because one board could have more than one codec loaded, BIOS need to support automatic detection, and fill SSID and SVID accordingly.

As the MIDI and game port support, it depends on hardware design. If MIDI and game port support were provided through super I/O, then BIOS should have related items to disable or enable it, and provide options to set up resource. Some chipsets may support these two features through AC97. On such an occasion, BIOS needs to provide items to setup necessary parameters.

Onboard LAN

When the LAN chip is loaded, the BIOS must enable the feature and provide a Setup option to enable/disable the feature. The PXE boot ROM must be disabled in Setup by default.

When the LAN chip is not loaded, the BIOS must disable any LAN features and no LAN options should be displayed in Setup.

Onboard IEEE 1394 Controller

Some controllers need special register settings, BIOS should check the controllers to do what need to be done. As the same behavior, there is an item in BIOS setup menu to enable or disable it.

Onboard SATA/PATA Controller, and SCSI Controller

These three different controller must have embed boot ROMs. BIOS is responsible for initialize the ROM and under BBS menu, to set related boot option for users to choose. BIOS provides enable/disable item for each controller, too. In addition to previous item, BIOS also provides items to let user decide to load ROMs or not. If Disabled was be selected, then the boot ROM loading item should be hidden.

Other Onboard Controllers with Super I/O

For different platforms, different Super I/O could provide different function combinations. For example, memory stick controller was available in Winbond 83637 chips, then BIOS should provide items to set its resource and enable it.

Specification Support

Introduction

The following specifications and design guides provide additional information on required BIOS features and supports.

To maintain the backward compatibility, some out-of-date specifications are still necessary for the BIOS. Under such a circumstances, it is allowable to be partially compliant.

Microsoft Windows Logo Programs and Devices

It is always required to refer to the latest document.

Requirements for fast system startup and fast resume:

- Boot to a usable state in less than 35 seconds.
- Resume from Hibernate (S4) in less than 25 seconds.
- Resume from Standby (S1, or S3) in less than 5 seconds.
- The BIOS POST time should not exceed 10 seconds.

The above requirement has to be satisfied with WHQL (Windows Hardware Quality Labs) certified drivers.

ACPI (Advanced Configuration Power and Interface)

All system power management and Plug-and-Plug features should be full complaint to ACPI Specification 1.0b.

Power state S0, S1, S3, S4, S5 have to be supported. And the following table is the summary of wake-up events and power LED status in each power state.

	APCI (Windows 98SE/ME/2000/XP)			
Events/Power State	S1	S2	S4	S5
Power Button	Yes	Yes	Yes	Yes
RTC	Yes	Yes	Yes	Yes*
PME(WoL)	Yes	Yes	Yes	Yes*
RI (Com Port)	Yes	Yes	Yes	Yes*
USB Devices	Yes	Yes**	Yes**	No
PS2 Keyboard	Yes	Yes***	Yes***	Yes***
PS2 Mouse	Yes	Yes***	Yes***	Yes***
Power LED	Flash	Flash	Off	Off

* In ACPI OS, only Power Button could wake up system from S5. So BIOS should implement some patches to make RTC, PME and RI wake-up events. In BIOS setup menu, there should be related items for users to decide if they need to wakeup system from S5 through RTC, PME, and RI.

** This feature depends on the design of USB power supply. If the board did use 5V standby power to supply USB power, then this BIOS only report supported sleep state. User could choose wakeup capable tab in OS.

*** The hardware provides PS2 devices standby power, then PS2 devices should wake up system according to the table. BIOS should have items to let users disable or enable S5 wakeup capability.

PCI V2.2

To comply with PCI 2.2 specification and avoid many HCT-related failures the BIOS must program the Subsystem Vendor ID and Subsystem ID registers of all onboard devices with values pre-assigned for the platform. The exception for this requirement is for the following device types:

- Bridge devices with a base class of 06h and a sub class of 00h-04h: Host-to-PCI, PCI-to-ISA and PCI-to-PCI bridges belong to this category.
- Base system peripherals with a base class of 08h and a sub class of 00h-03h. Interrupt controllers, DMA controllers, programmable timers and RTC controllers belong to this category.

SMBIOS V2.3.1 & DMI

The System Management BIOS Reference Specification provides an interface and data structures through which system information, known by the system BIOS, can be accessed by applications during run-time. The following data structures are required. Additional structures may be included.

- BIOS Information (Type 0)
- System Information (Type 1)(“To be filled by O.E.M.” not used)
- Base Board Information (Type 2)
- System Enclosure (Type 3)
- Processor Information (Type 4)
- Cache Information (Type 7)
- System Slots Information (Type 9)
- Onboard Devices Information (Type 10)
- Physical Memory Array (Type 16)
- Memory Device (Type 17)
- Memory Array Mapped Address (Type 19)
- Memory Device Mapped Address (Type 20)
- System Boot Information (Type 32)
- End-of-Table (Type 127)

Miscellaneous Specifications

- APM (Advanced Power Management) Specification 2.0
- Plug and Play BIOS V 1.0a
- USB V 1.1/V 2.0
- BBS (BIOS Boot Specification) V1.01
- “El Torito" Bootable CD-ROM Format v1.0
- PXE (Preboot Execution Environment) Support

If onboard LAN supports PXE with Bootrom, then BIOS should provide option to enable it or not.

BIOS Setup

Introduction

In this chapter, the main purpose is to help BIOS engineers to build a favored setup menu. All common items' position and showing policy would be described in details.

During POST, BIOS shows the message to remind user pressing keys to enter setup menu. The entering setup menu key should be DEL. After keyboard is ready, then anytime users press DEL, BIOS should get into setup menu. If the system POST with logo, there should be messages to remind users to disable Logo and enter setup menu. Press TAB to show POST.

After entering setup menu, there are some common keys for users to use.

[ESC]	Cancel the selection
[ENTER]	Confirm selection and show all options in one item
[↑ ↓ ← →]	Move cursor between items
[F1]	Help messages
[F9]	Load setup default
[F10]	Save changes and exit
[+ -]	Change options sequentially

These special keys could be changed as needed.

Setup Menu Screen Allocation

All items except some features, should have default value. With default value, system should be able to boot into setup menu and could not prevent from booting into OS.

Main Menu

Whenever users decide to enter setup menu, the first screen shown on the monitor would be Main Menu.

System Information

This menu is optional, depends on hardware and product requirement, BIOS could do different showing with such an information.

AMI BIOS

Displays the auto-detected BIOS information

Processor

Displays the auto-detected CPU specification.

System Memory

Displays the auto-detected system memory.

System Time

Display system time and provide ability to set the time.

System Time [xx:xx:xxxx]

System Date

Display system date and provide ability to set the date. BIOS and CMOS firmware must support calendar dates from January 1, 1999 through December 31, 2099

System Date [Day xx/xx/xxxx]

5.4 Advanced Menu

In Advanced Menu, users have chances to set some chipsets and special features by them.

CPU Configuration

Microcode Updation

Options: [Enabled] [Disabled]

Default: [Enabled]

Enhanced C1 Control

Options: [Auto] [Disabled]

Default: [Auto]

Primary Master IDE

Display the ID string from the detected device; show ‘None’ when nothing is detected.

Selecting ‘Primary Master’ leads to another Setup screen where the method of obtaining data about this device is selected. The configuration item is named ’Type’ and the options are: Auto, None, CD-ROM, IDE Removable, ATAPI Removable, User. The default value is Auto.

Each of these options has additional screen for displaying the information about the device or configuration. The minimum information that must be displayed includes the maximum capacity of the drive (if applicable) and transfer mode (e.g. PIO 4, or UDMA 5). It is desired that the transfer mode be programmable. SMART monitoring must always be enabled.

Type

Options: [Not Installed] [Auto] [CDROM] [ARMD]

Default: [Auto]

PIO Mode

Options: [Auto] [0] [1] [2] [3] [4]

Default: [Auto]

DMA Mode

Options: [Auto] [SWDMAn] [MWDMAn] [UDMAn]

Default: [Auto]

Other IDE Related Functions

Some other IDE related items like 80-pin-cable detection, legacy or native mode support, SATA or PATA options were available in this sub-menu.

Floppy

Display the current diskette type.

Options: [Disabled] [360K, 5.25 in.] [1.2M , 5.25 in.] [720K , 3.5 in.] [1.44M, 3.5 in.]

[2.88M, 3.5 in.].

Default: [1.44M, 3.5 in.].

USB Configuration

USB Function

Options: [Disabled] [Enabled]

Default: [Enabled]

Legacy USB Support

Options: [Disabled] [Enabled] [Auto]

Default: [Auto]

USB 2.0 Controller

Options: [Enabled] [Disabled]

Default: [Enabled]

USB 2.0 Controller Mode

Options: [FullSpeed] [HiSpeed]

Default: [HiSpeed]

BIOS EHCI Hand-off

Options: [Enabled] [Disabled]

Default: [Enabled]

Onboard Devices Configuration

Serial Port1 Address

Options: [Disabled] [3F8/IRQ4] [3E8/IRQ4] [2E8/IRQ3]

Default: [3F8/IRQ4]

Parallel Port Address

Options: [Disabled] [378] [278] [3BC]

Default: [378]

Parallel Port Mode

Options: [Normal] [Bi-directional] [EPP] [ECP]

Default: [ECP]

ECP Mode DMA Channel

Options: [DMA0] [DMA1] [DMA3]

Default: [DMA3]

Parallel Port IRQ

Options: [IRQ5] [IRQ7]

Default: [IRQ7]

PCIPnP

Plug And Play O/S

Options: [No] [Yes]

Default: [No]

PCI Latency Timer

Options: [32] [64] [96] [128] [160] [192] [224] [248]

Default: [64]

Allocate IRQ to PCI VGA

Options: [No] [Yes]

Default: [YES]

Palette Snooping

Options: [Disabled] [Enabled]

Default: [Disabled]

PCI IDE BusMaster

Options: [Disabled] [Enabled]

Default: [Enabled]

IRQ-xx assigned to

Options: [PCI Device] [Reserved]

Default: [PCI Device]

Default: [Disabled]

Power Menu

In Power Menu, all power management features could be set through items.

Suspend Mode

Options: [S1 (POS) Only] [S3 Only] [Auto]

Default: [Auto]

ACPI 2.0 Support

Options: [No] [Yes]

Default: [No]

ACPI APIC Support

Options: [Disabled] [Enabled]

Default: [Enabled]

ACPI and APM Features

In the BIOS, APM features is still an important support issue. So we could not neglect the options to set APM function parameters. But we could use a sub-menu to collect all APM functions. And ACPI features should be the first tier in power menu.

APM Configuration

Power Button Mode

Options: [On/Off] [Suspend]

Default: [On/Off]

Restore on AC Power Loss

Options: [Power Off] [Power On] [Last State]

Default: [Power Off]

Power On By RTC Alarm

Options: [Disabled] [Enabled]

Default: [Disabled]

Boot Menu

In Boot Menu, users have right to choose their favorite boot sequence.

Boot Device Priority

1st ~ xxth Boot Device

Options: [xxxxx Drive] [Disabled]

Default: [1st Floppy Device]

Boot Settings Configuration

Quick Boot

Options: [Disabled] [Enabled]

Default: [Enabled]

Add On ROM Display Mode

Options: [Force BIOS] [Keep Current]

Default: [Force BIOS]

Bootup Num-Lock

Options: [Off] [On]

Default: [On]

PS/2 Mouse Support

Options: [Disabled] [Enabled] [Auto]

Default :[Auto]

Wait for ‘F1’ If Error

Options: [Disabled] [Enabled]

Default: [Enabled]

Hit ‘DEL’ Message Display

Options: [Disabled] [Enabled]

Default: [Enabled]

Interrupt 19 Capture

Options: [Disabled] [Enabled]

Default: [Disabled]

Security Menu

Security menu keeps the item related to super-user password and user password settings. These two different passwords would allow users have different accessing level. While super-user password was set, then only super-user password could access all items in BIOS setup menu. And user-password could access BIOS setup menu but only few items could be accessed through user-password. Individual items should have its accessing level setting.

Change Supervisor Password

Boot Sector Virus Protection

Options: [Disabled] [Enabled]

Default: [Disabled]

Exit Menu

In Exit Menu, users could decide all changes they have made should be saved or discarded.

Exit & Save Changes

Options: [OK] [Cancel]

Exit & Discard Changes

Options: [OK] [Cancel]

Discard Changes

Options: [OK] [Cancel]

Load Setup Defaults

Options: [OK] [Cancel]

Other Support Features

BIOS's Normal and Special Features

Common Features

The following lists are common features:

- OS fully support : Windows 98 SE, Windows Millennium, Windows 2000, Windows XP
- System recovery from failure caused by wrong setup parameters.
- System Error Message and Beeping

System resume from S4 behaviour about setup menu

We allow user enter setup menu from S4. But we recommend
user not to do this because system resume from S4 is still controlled by OS. If some
critical items be changed, system may resume fail.