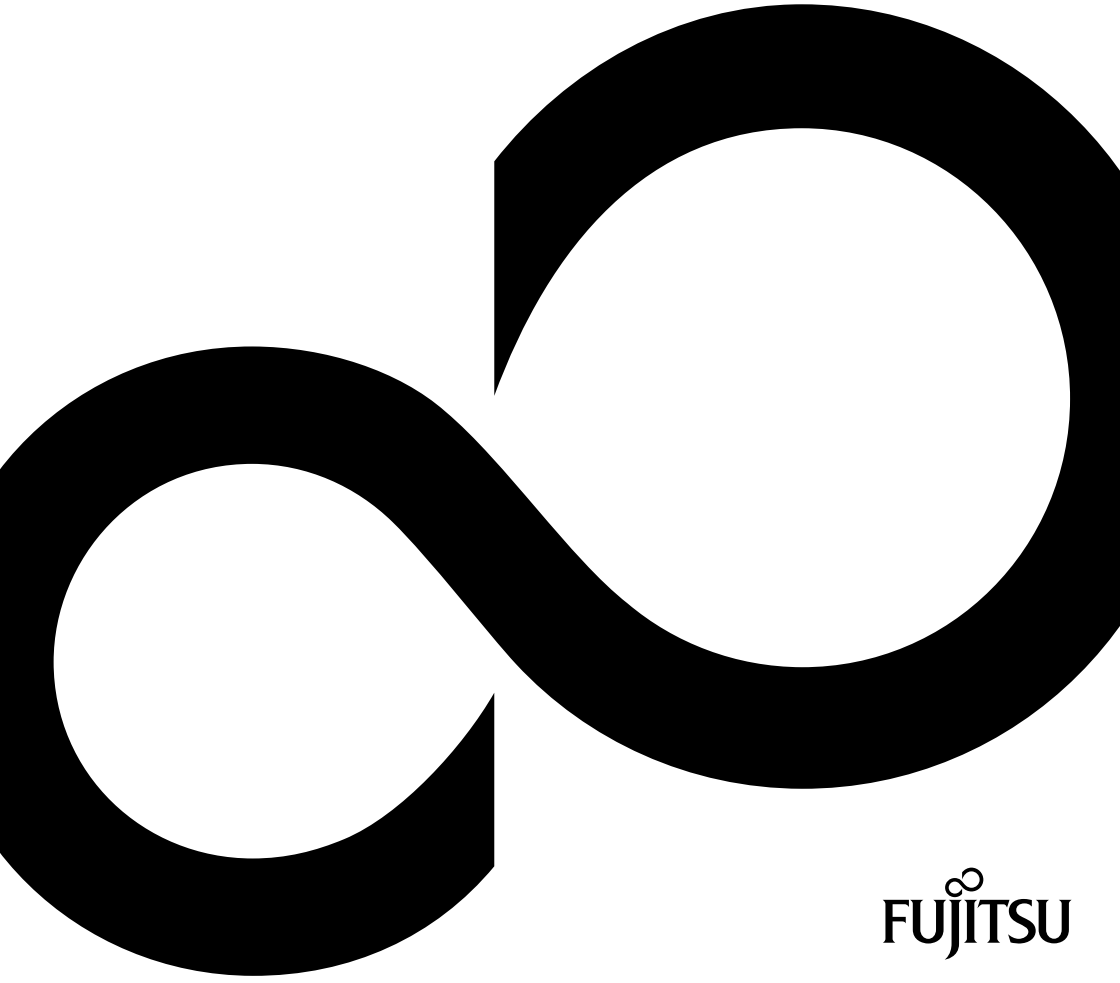
BIOS manual D3090/D3091



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Order No. Fujitsu Technology Solutions GmbH: A26361-D3090-Z320-1-7619, edition 1

BIOS manual D3090/D3091

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Introduction

BIOS Setup provides settings for system functions and the hardware configuration for the system.

Any changes you make to the settings take effect as soon as you save the settings and quit *BIOS Setup*.

The individual menus in *BIOS Setup* provide settings for the following areas:

Main:	System functions
Advanced:	Advanced system configuration
Security:	Security functions
Power:	Energy saving functions
Event Logs:	Configuration and display of the event log
Boot:	Configuration of the start-up sequence
Save & Exit:	Save and quit

The setting options depend on the hardware configuration of your system.

Some menus and certain settings may therefore not be available in *BIOS Setup* on your system, or the menus may be in a different place, depending on the *BIOS revision*.

Notational conventions

	Pay particular attention to texts marked with this symbol. Failure to observe this warning endangers your health, destroys the system, or may lead to loss of data. The warranty will be invalidated if the system becomes defective through failure to take notice of this warning.
	Indicates important information which is required to use the system properly.
►	Indicates an activity that must be performed.
↳	Indicates a result.
`This font`	Indicates data entered using the keyboard in a program dialogue or command line, e.g. your password ((**`Name123`**) or a command used to start a program (**`start.exe`**).
`This font`	Indicates information that is displayed on the screen by a program, e.g.: `Installation is complete!`.
This font	Indicates • terms and texts used in a software interface, e.g.: Click on *Save*. • names of programs or files, e.g. *Windows* or *setup.exe*.
"This font"	Indicates • cross-references to another section, e.g. "Safety information" • cross-references to an external source, e.g. a web address: For more information, go to"http://ts.fujitsu.com". • names of CDs, DVDs and titles or designations for other materials, e.g.: "CD/DVD Drivers & Utilities" or "Safety" manual.
Abc	Indicates a key on the keyboard, e.g: F10.

Navigating BIOS Setup

Open BIOS Setup

► Switch on the system.
↳ Wait until the screen output appears.
► Press function key F2.
► If the system is password protected, you must now enter the password and confirm with the Enter key. You will find details on password assignment under "Password Description", Page 30.
↳ The BIOS Setup Main menu will be displayed on the screen.
► To display system-specific information, select *System Information* and press the Enter key.
↳ The BIOS release information will be displayed:

- The revision of the BIOS (e.g. R1.3.0)

  Under "Board" you will find the system board number (e.g. D3062-A11)

  With the aid of the system board number you can locate the correct technical manual for the system board on the "Drivers & Utilities" or "ServerStart" CD/DVD. Alternatively you can also use it to download the corresponding BIOS update file from the Internet (see "BIOS Update", Page 45).

If you want to open the Boot Menu immediately

You can use this function if you do not wish to boot your system from the drive which is given as the first setting under *Boot Option Priorities* in the *Boot* menu.

► Start the system and wait until screen output appears.
► Press the function key F12.
↳ On the screen, the boot options are shown as a popup window. You can now select which drive you want to use to boot the operating system. The selection options are the same as the possible settings given under *Boot Option Priorities* in the *Boot* submenu.
► Use the ↑ and ↓ cursor keys to select which drive you want to boot the operating system from now and confirm your choice with the Enter key.

Your selection is only valid for the current system boot. At the next system boot, the settings in the *Boot* menu are valid again.

► If you want to start the BIOS Setup, use the cursor keys ↑ or ↓ to select the *Enter Setup* entry and confirm your selection with the Enter key.

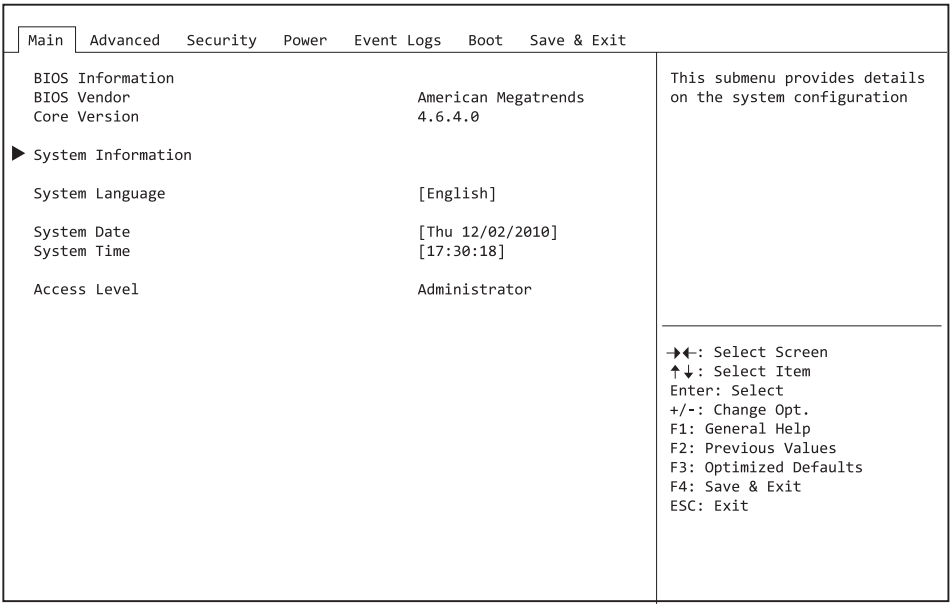
Navigating BIOS Setup

← or → cursor keys	Select menu from menu bar
↑ or ↓ cursor keys	Select field - selected field is highlighted
Enter or ESC	Open submenu (marked by ►) Enter and leave ESC
+ or - keys (numeric keypad)	Change entry for field
F3 function key	Set default entries for all menus
F2 function key	Reset entries that were in use when *BIOS Setup* was opened.

Exiting BIOS Setup

► Select the *Save & Exit* menu from the menu bar to end *BIOS Setup*.
↳ You can then decide whether you want to save the changed settings.
► Select the required option.
► Press the Enter key.

Main Menu – System functions



Example showing the *Main* menu

The *Main Menu* is entered, to determine the basic system configuration and to provide an overview. Some of the parameters are only available under certain conditions.

System Information

This submenu contains descriptions of the system configuration. Some parameters are only available optionally.

Board and Firmware Details

Shows the current information on the installed system board and firmware.

BIOS Revision	Shows the current BIOS version.
Build Date and Time	Shows the date and time of the formation of the current BIOS.
Board	Shows information about the current system board.
Ident Number	Shows the identification number of the system.
UUID	Shows the 16-byte long Universal Unique ID, also known as the Globally Unique Identifier (GUID).

Network Controller Details

Shows the 6-byte long MAC address (Media Access Control) of the LAN controller.

Processor Details

Processor Type	Shows the CPU designation.
CPU / Patch ID	Shows the CPU ID and the current Patch ID.
Processor Speed	Shows the speed of the processor core.
Cache Counts & Sizes	Shows detailed information about the cache.
Active Package, Core & Thread Count (maximum)	Shows the number of active and maximum available CPU packages, cores and threads.

Memory Details

Shows details of the memory quantities.

Memory Size / Frequency	Shows the total memory in Megabytes and the memory frequency in MHz.
DIMM n	Shows the memory size in Megabytes for the corresponding memory socket.

System Language

Specifies the language used in the *BIOS Setup*.

System Date / System Time

Shows the currently set date / the currently set time of the system. The date has the format "Day of the week, month/day/year". The time has the format "hours/minutes/seconds".
If you wish to change the currently set date / the currently set time, enter the new date in the field *System Date* and the new time in the field *System Time*. Use the tab key to switch the cursor between the *System Time* and *System Date* fields.

If the system date & time fields are often set incorrectly when starting the computer, the lithium battery is possibly discharged and must be changed. The procedure for changing the lithium battery is described in the system board manual.

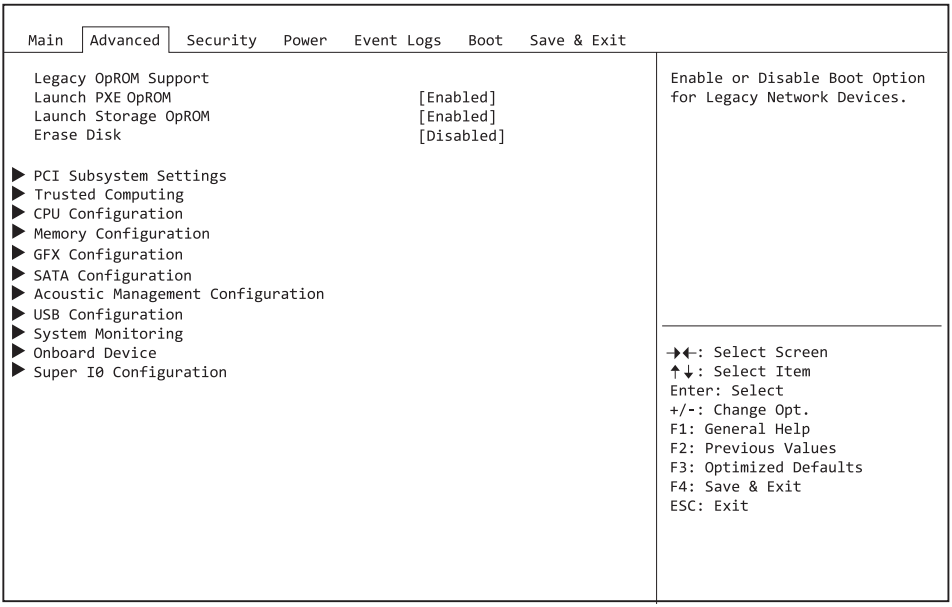
Access Level

Shows the current access level in *BIOS Setup*. If the system is not password protected, the access level is Administrator. If only the user password was set, the user has administrator rights. If administrator and user passwords are set, the access level depends on the password entered.

Advanced Menu – Advanced system configuration

The advanced functions which are available to the system are configured in this menu for the advanced system configuration.

Only change the default settings if required for a special purpose. Incorrect settings can cause malfunctions.



Example showing the *Advanced* menu

Legacy OpROM Support

Launch PXE OpROM

With the Preboot eXecution Environment (PXE) the system can be booted via a network interface by option ROM, independently of the connected devices.

Disabled	No *PXE Option ROM* is started.
Enabled	The *PXE Option ROM* starts, to be able to boot via PXE.

To boot via PXE, press the F12 key to start the boot menu, or change the settings of the *Boot Option Priorities* in the *Boot Menu*.

Launch Storage OpROM

Specifies whether *Option ROMs* for legacy mass storage are loaded and executed.

Disabled	*Option ROMs* for legacy mass storage will not be started.
Enabled	*Option ROMs* for legacy mass storage will be started.

Erase Disk

Erase Disk is a firmware incorporated in Fujitsu Technology Solutions (*UEFI: Unified Extensible Firmware Interface*), to delete all the data from SATA hard disk(s).

This function allows all the data on internal or external SATA hard disks connected via the eSATA connection to be irretrievably deleted, before disposal of the hard disks or the complete computer system. The function can also be used if hard disks need to be completely deleted, for example before installing a new operating system.

The application can only be selected and run if an administrator/supervisor password has been assigned (*BIOS Setup -> Security Menu*).

Please note that data on solid state drives (SSD) cannot be deleted with total certainty.

To delete hard disks in a RAID system, the mode of the RAID controller must be changed, e.g. to *IDE Mode* or *AHCI Mode* in the *SATA Configuration* submenu of the *Advanced* menu.

Proceed as follows to delete data from SATA hard disks:

- ► Call up the *BIOS Setup* with the administrator/supervisor password.
- ► To start the application, select *Erase Disk* (*BIOS Setup -> Advanced* or *BIOS Setup -> Security*) and set *Start after Reboot*.

► Then select *Save Changes and Exit* in the menu *Save & Exit* / *Exit* to initiate a reboot and Erase Disk.

i As a result of the reboot, the *Erase Disk* menu is started. You have the option of interrupting the process during the user selection.

► After the application starts, the administrator/supervisor password must be entered for security reasons.

↳ A dialogue field appears in which a particular, several or all the hard disks can be selected for deletion - this depends on the number of hard disks in your system.

► Select the hard disk(s) to be deleted.

↳ The selected hard disk(s) will be deleted individually.

i Erase Disk offers four deletion options, from "fast" (with one deletion pass) to "very secure" (with 35 deletion passes). Depending on the algorithm chosen, the process can take between ~10 seconds and ~10 minutes per GB:

- *Zero Pattern* (1 pass)
- *German BSI/VSITR* (7 passes)
- *DoD 5220.22-M ECE* (7 passes)
- *Guttmann* (35 passes)

i You can find further information on the deletion algorithms here:

- "https://www.bsi.bund.de/cln_174/DE/Publikationen/publikationen_node.html"
- "http://www.usaid.gov/policy/ads/500/d522022m.pdf"
- "http://www.cs.auckland.ac.nz/~pgut001/pubs/secure_del.html"

► Select the hard disk deletion algorithm which you wish to use.

i The complete deletion process can be copied as an audit-compliant log onto an external USB drive, which must be formatted as FAT32. Just connect an external USB drive.

► Select whether a status report should be written to the USB stick.

i The user can select the following tasks which are run by the system after the deletion process:

- *Reset administrator and user password*
- *Load BIOS setup defaults*
- *Shutdown the computer*
- *Exit Erase Disk with no additional options upon completion*

► Select the function which you require.

↳ The deletion process starts.

Disabled	Erase Disk will NOT be started after the next reboot.
Start after Reboot	Erase Disk will be started after the next reboot.

PCI Subsystem Settings

PCI ROM Priority

Specifies which PCI Option ROMs are started if multiple Option ROMs are available.

Legacy ROM	Legacy Option ROMs are started.
EFI Compatible ROM	EFI Compatible Option ROMs are started.

PCI Common Settings

PERR# Generation

Specifies whether PERR# (PCI parity errors) are created.

Disabled	PCI parity errors will not be created.
Enabled	PCI parity errors will be created.

SERR# Generation

Specifies whether SERR# (PCI system errors) will be created.

Disabled	PCI system errors will not be created.
Enabled	PCI system errors will be created.

PCI Express Link Register Settings

ASPM Support

Configure Active State Power Management (ASPM), to gradually reduce the power consumption of the PCI Express Link and so save energy.

Disabled	ASPM is disabled. The power consumption for PCI Express connections is not reduced. Best compatibility.
Auto	Configure maximum energy saving. Set the Low Power Mode of the PCI Express connections to L0s (uni-directional) or L1 (bi-directional).
Limit to L0s	Limit the Low Power Mode of the PCI Express connections to L0s (uni-directional). Compromise between compatibility and energy saving.

The latency (delay) for PCI Express devices can increase if ASPM is not disabled. Even if ASPM is generally enabled by this selection, it is only then enabled for a particular connection if the corresponding PCI Express adapter card or the corresponding Onboard Controller also supports this. Various adapter cards do not support this function correctly, which can lead to an unpredictable system behaviour.

Trusted Computing

Opens the submenu for enabling TPM and changing the TPM settings. If this setup menu is available, the system board contains a security and encryption chip (TPM - Trusted Platform Module) which complies with TCG specification 1.2. This chip allows security-related data (passwords etc) to be stored securely. The use of TPM is standardised and is specified by the Trusted Computing Group (TCG).

TPM Support

Specifies whether the TPM (Trusted Platform Module) hardware is available. If the TPM is disabled, the system behaves like any other system without TPM hardware.

Disabled	Trusted Platform Module is not available.
Enabled	Trusted Platform Module is available.

TPM State

Specifies whether TPM (Trusted Platform Module) can be used by the operating system.

Disabled	Trusted Platform Module cannot be used.
Enabled	Trusted Platform Module can be used.

Pending TPM operation

Specifies a TPM operation which will be performed during the next boot process.

None	No TPM operation will be performed.
Enable Take Ownership	The operating system can assume ownership of the TPM.
Disable Take Ownership	The operating system cannot assume ownership of the TPM.
TPM Clear	TPM is reset to the factory setting. All keys in the TPM will be deleted.

Current TPM Status Information

Shows the current TPM (Trusted Platform Module) status.

TPM SUPPORT OFF	Is displayed if the *TPM Support* is disabled.
TPM Enabled Status	Indicates whether TPM can be used.
TPM Active Status	Indicates whether TPM is enabled.
TPM Owner Status	Indicates the TPM owner status.

WHEA Configuration

Opens the submenu for enabling the WHEA support.

WHEA Support (only D3090)

Specifies whether the Windows Hardware Error Architecture (WHEA) is enabled.

Disabled	The Windows Hardware Error Architecture is disabled.
Enabled	The Windows Hardware Error Architecture is enabled.

CPU Configuration

Opens the *CPU Configuration* submenu.

The following parameters can be set in this menu. Some of them are only available under special preconditions.

Limit CPUID Maximum

Specifies the number of CPUID functions which can be called from the processor. Some operating systems cannot process new CPUID commands which support more than three functions. This parameter should be enabled for these operating systems.

Disabled	All CPUID functions are supported.
Enabled	For reasons of compatibility with the operating system, only a reduced number of CPUID functions is supported by the processor.

PSS Support

The ACPI Processor Power Management tables are used to notify the possible power and speed modes of the CPU to an ACPI OS.

Disabled	No ACPI Processor Power Management tables are generated. The power and speed modes of the CPU cannot be changed by the ACPI OS.
Enabled	An ACPI OS can change the power and speed modes of the CPU as they are described in the ACPI Processor Power Management tables.

C1E - Enhanced Halt State

If supported by the operating system, the processor will be stopped when possible, to save power.

Disabled	C1E Power State functionality is not available.
Enabled	C1E Power State functionality is available.

SVM Mode

Secure Virtual Machine (SVM) is used to support the visualisation of platform hardware and multiple software environments. Based on Virtual Machine Extensions (VMX), to support the application of multiple software environments under the use of virtual computers.

In active mode, a Virtual Machine Monitor (VMM) can use the additional performance features of the Secure Virtual Machine (SVM).

Disabled	A Virtual Machine Monitor (VMM) cannot use the additional performance features of the hardware.
Enabled	A VMM can use the additional performance features of the hardware.

Core Levelling Mode

On processors which contain multiple processor cores, the number of active processor cores can be limited. Inactive processor cores will not be used and are hidden from the operating system.

Automatic Mode	All available processor cores are active and can be used.
n core(s) per processor	Only the selected number of processor cores is active. The other processor cores are disabled.

The choice made here allows possible problems with certain software packages or system licences to be solved.

Hardware Prefetcher

If this function is enabled, an automatic prefetch of the memory content anticipated to be needed occurs when the memory bus is inactive. If the content is loaded from cache and not from memory, the latency is reduced. This particularly applies to applications with linear data access.

With this parameter you can make performance settings for non-standard applications. For standard applications, we recommend that the default settings are maintained.

Auto	Activates the hardware prefetcher of the CPU.
Disabled	Deactivates the hardware prefetcher of the CPU.

SW Prefetcher

When the SW (software) prefetcher is enabled, a set of special CPU prefetch instructions is available.

Auto	Enables the special software prefetch CPU instructions.
Disabled	Disables the special software prefetch CPU instructions.

DRAM Prefetcher

When this function is enabled, data will be read in advance into a special buffer, whereby otherwise unused DRAM cycles will also be used. This reduces the latency during access to the memory. This particularly applies to applications with linear data access.

Auto	Activates the DRAM prefetcher of the CPU.
Disabled	Deactivates the DRAM prefetcher of the CPU.

Runtime Error Logging

ECC Memory Error Logging (only D3090)

Specifies whether ECC memory errors will be recognised and entered in the SMBIOS event log.

Enabled	Both single-bit memory errors and multi-bit memory errors will be entered in the SMBIOS event log.
Multi-bit Errors Only	Only multi-bit memory errors will be entered in the SMBIOS event log.
Disabled	No memory errors will be entered in the SMBIOS event log.

Memory Configuration

Opens the *Memory Configuration* submenu.

Bank Interleaving

Specifies whether bank interleaving is enabled, to improve the memory bandwidth by alternating allocation of the data on the memory banks.

Auto	Bank interleaving is enabled if possible.
Disabled	Bank interleaving is not enabled.

Channel Interleaving

Specifies whether channel interleaving is enabled, to improve access to contiguous memory areas by alternate use of the memory channels.

Auto	Channel interleaving is enabled if possible.
Disabled	Channel interleaving is not enabled.

GFX Configuration

Opens the submenu to configure the graphics controller on the system board.

Integrated Graphics

Specifies whether the graphics controller integrated on the system board is available.

AUTO	The integrated graphics controller is not available if a x16 PEG card is connected.
Enabled	The integrated graphics controller is always available.

Display Port

Specifies whether 8 or 16 lanes are available for the PCIe x16 slot.

Disabled	All 16 lanes are available for the PCIe x16 slot.
Enabled	Only 8 lanes are available for the PCIe x16 slot.

UMA Frame Buffer Size

Specifies the dedicated size of the graphics frame buffer. The main memory available for the operating system reduces by the value set.

Auto	The frame buffer size will be configured to the size recommended for the graphics controller.
32MB..1024MB	The value set will be used as the dedicated frame buffer size.

FB Location

Specifies whether the frame buffer of the integrated graphics lies above or below 4G.

Below 4G	The frame buffer lies below 4G.
Above 4G	The frame buffer lies above 4G.

SATA Configuration

Opens the SATA configuration submenu.

OnChip SATA Channel

Specifies whether the SATA ports are available.

Disabled	The SATA ports are not available.
Enabled	The SATA ports are available.

OnChip SATA Type

Specifies in which mode the SATA ports should be operated.

Native IDE	The SATA port is operated in native IDE Mode.
RAID (if available)	The SATA port is operated in RAID Mode.
AHCI	The SATA port is operated in AHCI Mode.

SATA PORT n

Specifies whether the SATA PORT n is available.

Enabled	The SATA PORT n is available.
Disabled	The SATA PORT n is not available.

External SATA Port

Specifies whether the port will be operated internally as SATA or externally as eSATA.

Disabled	The port will be used internally as SATA.
Enabled	The port will be used as external SATA (eSATA).

SATA PORT Status

Provides information about the device connected to the associated SATA PORT.

Acoustic Management Configuration

Open the submenu to set the noise level of hard disks or optical drives.

Acoustic Management

Specifies whether the functionality for setting the noise level of hard disks or optical drives (Automatic Acoustic Management) is available.

Disabled	Automatic Acoustic Management is not available.
Enabled	Automatic Acoustic Management is available.

Acoustic Mode

Specifies the noise level of the hard disk or the optical drive. The noise level of the drive is reduced by decreasing its rotational speed. This function must be supported by the drive.

If the functionality for setting the noise level ("Automatic Acoustic Management") is disabled, the "Acoustic Mode" is "Not Available". If the functionality for setting the noise level ("Automatic Acoustic Management") is enabled, but is not supported by the connected SATA device, then "Acoustic Mode" is automatically set to "Not supported".

Bypass	The drive is operated with its preset speed of rotation.
Quiet	The drive is operated with the slowest possible speed of rotation. The drive is operated with lower noise and limited performance.
Medium Performance	The drive is operated with a medium speed of rotation. The drive is operated with reduced noise and slightly reduced performance.
High Performance	The drive is operated at slightly less than the highest possible speed of rotation.
Max Performance	The drive is operated at the highest possible speed of rotation.

USB Configuration

USB Devices

Shows the number of available USB devices, USB keyboards, USB mice and USB hubs.

Legacy USB Support

Specifies whether legacy USB support is available. This function should always be enabled or set to Auto so that the operating system can be booted from a USB device if required.

Disabled	Legacy USB support is not available. A USB keyboard or USB mouse can only be used if this is supported by the operating system. Booting the operating system from a USB device is not possible.
Enabled	Legacy USB support is available. A USB keyboard or USB mouse can also be used if the operating system does not support USB. Booting the operating system from a USB device is possible.
Auto	Legacy USB support will be disabled if no USB devices are connected.

Legacy USB support should be disabled if the operating system supports USB and you do not want to boot the operating system from USB devices.

Mass Storage Devices

List of USB Mass Storage Device(s)

Allows the user to force a particular device emulation. When set to *Auto*, the devices are emulated according to their media format. Optical drives are emulated as "CD ROM" and drives without data media according to the drive type.

Auto	Emulation is chosen depending on the USB device.
Floppy	Force USB floppy emulation.
Hard Disk	Force USB hard disk emulation.
CD-ROM	Force USB CD ROM emulation.

System Monitoring

Controller Revision

Shows the version of the system monitoring controller.

Chassis Type

Displays the current chassis type.

TCV Version

Shows the TCV version (Temperature Characteristics Values).

Fan Control

Specifies whether the fan speed will be adjusted automatically.

Enabled	The fan speed is adjusted automatically.
Disabled	The fan speed is not adjusted automatically. All fans are operated at maximum speed.

Onboard Device Configuration

Opens the submenu to configure devices on the system board. Some of them are only available under certain conditions.

LAN controller

Specifies whether the LAN controller on the system board is available.

Enabled	The LAN controller on the system board is available.
Disabled	The onboard LAN controller on the system board is not available.

Audio Configuration

Azalia HD Audio

Allows the onboard Azalia HD (High Definition) audio controller to be enabled.

Disabled	The onboard audio controller is disabled.
Enabled	The onboard audio controller is enabled.

AMD HD (HDMI) Audio

Specifies whether audio output via HDMI (High Definition Multimedia Interface) or Display Port Monitor is available.

Disabled	Audio output via HDMI or Display Port Monitor is not available.
Enabled	Audio output via HDMI or Display Port Monitor is available.

Front Panel Audio

Makes it possible to use a legacy front audio connector (AC97). The automatic check of whether an audio connection is occupied is not supported with this setting.

High definition	For the use of a high definition audio cable with automatic occupancy recognition.
Legacy	For the use of a legacy audio cable without automatic occupancy recognition.

High Precision Event Timer Configuration

High Precision Timer

Provided that it is enabled, the operating system is able to make use of the High Precision Event Timer, which allows it to meet the requirements of time-critical applications. The advanced timer is also known as the Multimedia Timer.

Disabled	The High Precision Event Timer is disabled.
Enabled	The High Precision Event Timer is enabled.

Super IO Configuration

Super IO Chip

Shows information about the Super IO Chip.

Serial Port 0 Configuration

Opens the submenu to configure the serial port 0 (COMA).

Serial Port

Specifies whether the serial port is available.

Disabled	The serial port is not available.
Enabled	The serial port is available.

Device Settings

Shows the base I/O address and the interrupt which is used to access the particular serial port.

Parallel Port Configuration

Opens the submenu to configure the parallel port (LPT).

Parallel Port

Specifies whether the parallel port is available.

Disabled	The parallel port is not available.
Enabled	The parallel port is available.

Device Settings

Shows the base I/O address and the interrupt which is used to access the parallel port.

Device Mode

Specifies whether the parallel port should be used as an input/output port or just as an output port. The ECP and EPP transfer modes permit higher transfer speeds of 2 or 2.4 Mbyte/sec. These modes can however only be used on devices which also support these modes. In addition, for EPP the I/O address of the parallel port must be set to 378 h or 278 h.

Standard Parallel Port Mode	The standard mode will be used for the parallel port.
EPP Mode	Fast transfer mode (up to 2 MByte/sec), data output and data reception are possible. The mode requires a peripheral device which supports the EPP (Enhanced Parallel Port) mode.
ECP Mode	Fast transfer mode (up to 2.4 MByte/sec), data output and data reception are possible. The mode requires a peripheral device which supports the ECP (Extended Capability Port) mode. The necessary DMA channel is determined by the system.
EPP Mode & ECP Mode	Both transfer modes are available.

PCI Status (only 3090)

This submenu shows the current status of the expansion cards in the slots.

PCI Slot n

Shows the current status of the expansion cards in this slot.

Failed	An error was detected for this slot. The expansion card in this slot possibly has a problem.
Enabled	No error was notified for this slot. The expansion card in this slot can be used without limitation.
Empty	There is no expansion card in this slot.

Option ROM Configuration (only 3090)

Calls the *Option ROM configuration* submenu.

Launch Slot n OpROM

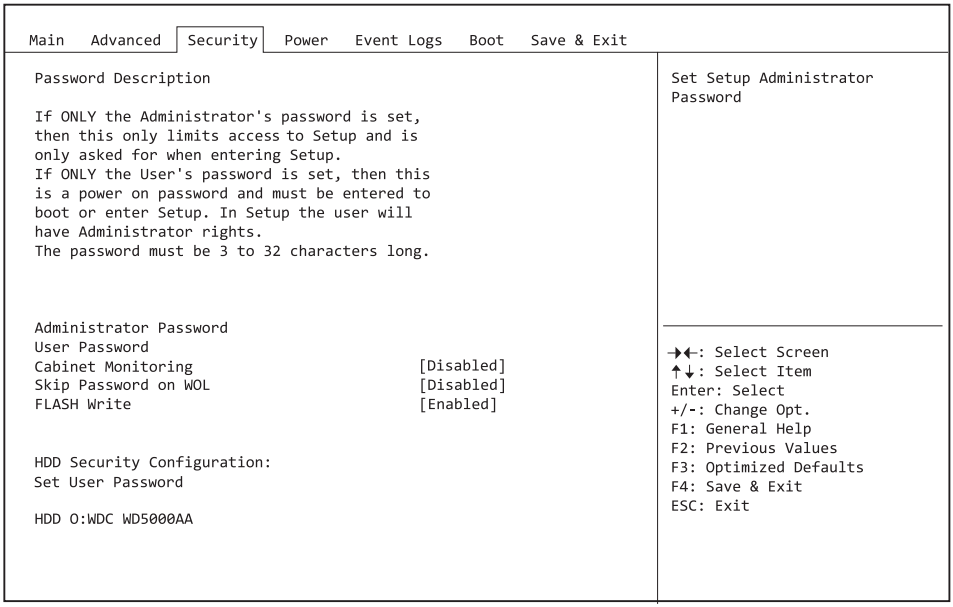
Specifies whether Option ROMs for expansion cards which are in this slot should be started.

Disabled	No Option ROMs are started for expansion cards in this slot.
Enabled	Option ROMs are started for expansion cards in this slot.

Security Menu - Security features

The *Security* menu offers various options for protecting your system and personal data from unauthorised access. Using a sensible combination of these options will help you achieve maximum protection for your system.

The following security settings can be made in this menu. Some of them are only available under certain conditions.



Password Description

Neither an administrator password nor a user password has been allocated

Opening the BIOS Setup and booting the system are possible without restriction.

Only the administrator password was allocated

If ONLY an administrator password was allocated, only the BIOS Setup is protected. Booting the system can be performed without restriction. When you access the BIOS Setup with an administrator password, the Administrator access level is assigned to you and you have unrestricted access to the BIOS Setup. If you access the BIOS Setup without a password, access to the BIOS Setup is limited because you are only assigned the User access level.

Only the user password was allocated

If ONLY a user password was allocated, activation of the BIOS Setup and booting the system is only possible after the user password has been entered. When you access the BIOS Setup with the user password, the Administrator access level is assigned to you and you have unrestricted access to the BIOS Setup. Access to the BIOS Setup without a password is not permitted.

Administrator AND user passwords were allocated

If administrator and user passwords were allocated, the authorisation level in the BIOS Setup depends on the password entered. If you access the BIOS Setup with the administrator password, unlimited access to the BIOS Setup is possible, entry of the user password results in limited access. Booting the system is possible both with the administrator and also with the user password.

If the administrator password is deleted, the user password will also be deleted.

The system will stop after an incorrect password has been entered three times. If this happens, switch off the system and then back on again, and enter the correct password.

Administrator Password

If you press the enter key, a window will open in which you can assign the administrator password. Enter a character string to define the password. If you confirm an empty password field, the password will be deleted.

To call up the complete BIOS Setup, you need the administrator level of access. If an administrator password is allocated, the user password only allows very limited access to the BIOS Setup.

User Password

If you press the enter key, a window will open in which you can assign the user password. Enter a character string to define the password. With the user password, you can prevent unauthorised access to your system.

User Password on Boot

Specifies whether a user password must be entered before the boot process.

Every Boot	Entry of a user password is required before every boot process.
Disabled	The system starts without requiring the entry of a user password.

If the administrator and user password were assigned and the setting *Disabled* was selected for this item, then it is sufficient to press the Enter key to access the BIOS setup with the USER access level. There is no need to enter the user password in this case.

Cabinet Monitoring

Specifies whether opening of the casing should be monitored.

Disabled	The system continues to operate normally even if the casing has been opened.
Enabled	If the casing has been opened, then the boot process is suspended until the BIOS Setup is called. If the BIOS Setup is protected with a password, then this must be entered. An SMBIOS event log entry will be generated.

Skip Password on WOL

Specifies whether a user password will be skipped or must be entered during a system boot via Wake on LAN.

Disabled	The user password must be entered via using the keyboard during the system boot.
Enabled	The user password is deactivated during the system boot with Wake On LAN.

Flash Write

Supplies the system BIOS with write protection.

Disabled	The system BIOS cannot be written. A flash BIOS update is not possible
Enabled	The system BIOS can be written. A flash BIOS update is possible.

HDD Security Configuration

HDD Password on Boot

Specifies whether a hard disk user password must be entered during every boot process.

Disabled	It is not necessary to enter a hard disk user password during the boot process.
Enabled	Entry of a hard disk user password is required during every boot process.

HDD n

Opens a submenu with information on the hard disk user password.

HDD Password Configuration

Shows the current security status of the hard disk.

Security Supported

Yes is shown here if the device supports use of a hard disk user password. In this case it is possible to assign a password to the hard drive.

Security Enabled

Yes is shown here if either a hard disk user password or a hard disk master password has been assigned to the hard disk.

Security Locked

The hard disk is locked if it was not unlocked with the valid password.

Security Frozen

If *Yes* is displayed, then a hard disk user password cannot be set up, changed or deleted. To change the security frozen status to *No*, the system must have been shut down before the BIOS Setup is called. Only then can a hard disk user password be set up, changed or deleted.

HDD User Password Status

Shows whether a hard disk user password was allocated or not.

HDD Master Password Status

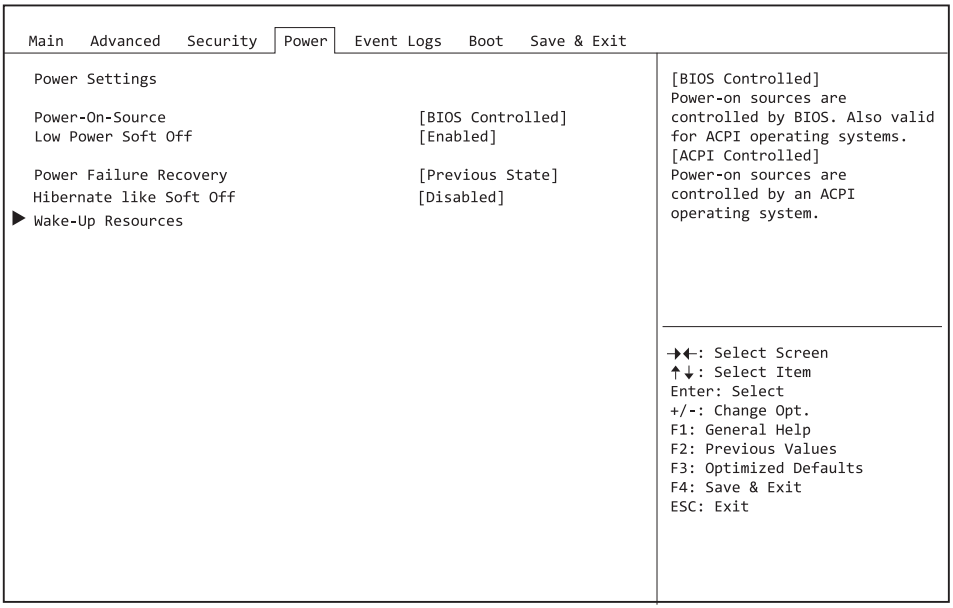
Shows whether a hard disk master password was allocated or not.

Set User Password

The hard disk user password protects the hard disk(s) from unauthorised access. Booting the operating system from the hard disk or accessing the data on the hard disk can only be carried out by those people who know the hard disk user password. The hard disk user password can be up to 32 characters long. The settings become effective immediately and also remain so, regardless of how you later end the BIOS Setup. The hard disk user password is requested during the POST.

If you press the Enter key, a window will open in which you can assign the hard disk user password. Enter a character string to define the password. If you confirm an empty password field, the password will be deleted.

Power Menu – Energy saving functions



Example showing the *Power* menu

Power Settings

Power On Source

Specifies whether the switch-on sources for the system are managed via BIOS or via an ACPI operating system.

BIOS Controlled The switch-on sources are managed via BIOS.

ACPI Controlled The switch-on sources are managed via the ACPI operating system.

Low Power Soft Off

Reduces the energy consumption of a system which is switched off.

When Low Power Soft Off is enabled, the system can only be switched on with the power button on the casing. The device cannot be switched on using the power button of a USB keyboard or a Wake-on-LAN signal.

Disabled Low Power Soft Off is disabled.

Enabled Low Power Soft Off is enabled.

Power Failure Recovery – System status after a power failure

Specifies how the system behaves during a reboot following a power failure.

Always Off The system switches on briefly, performs a status check (initialisation), and then switches off.

Always On The system switches on.

Previous State The system switches on briefly, performs a status check, and then returns the mode it was in before the power failure occurred (ON or OFF).

Disabled The system does not switch on.

Hibernate like Soft Off

In order to also reduce the energy consumption in hibernate mode (S4), when the system is switched off it will be brought into Low Power Soft Off or Zero Watt mode (S5). The energy consumption will only reduce if Low Power Soft Off or Zero Watt mode is enabled.

Disabled The system will be brought into hibernate mode (S4).

Enabled Instead of going into hibernate mode (S4), the system will be brought into Low Power Soft Off or Zero Watt mode (S5).

USB At Power Off

Enables/disables the power supply for the USB ports. This option is only available if Low Power Soft Off and Zero Watt mode are disabled.

Always off The USB ports are no longer supplied with power after the system is shut down.

Always on The USB ports continue to be supplied with power after the system is shut down.

Wake-Up Resources

This submenu is only available if neither *Zero-Watt mode* nor *Low Power Soft Off* is enabled.

LAN

Determines whether the system can be switched on via a LAN controller (on the system board or expansion card).

Enabled	The system can be switched on via a LAN controller.
Disabled	The system cannot be switched on via a LAN controller.

Wake On LAN Boot

Specifies the system behaviour when switched on by means of network signals.

Boot Sequence	After being switched on via the LAN, the system boots up according to the device sequence specified in the boot menu.
Force LAN Boot	After being switched on via the LAN, the system is booted remotely via the LAN.

Wake Up Timer

The time at which the system should be switched on can be specified here.

Disabled	Wake Up Timer is not enabled.
Enabled	Wake Up Timer is enabled. The system is switched on at the time specified.

Hour

Specifies the hour of the switch-on time.

Minute

Specifies the minute of the switch-on time.

Second

Specifies the second of the switch-on time.

Wake Up Mode

Specifies whether the system should be switched on daily or only once a month at the specified time.

Daily	The system will be switched on daily at the time specified.
Monthly	The system will be switched on once a month at the time specified.

Wake Up Day

Specifies the day of the month on which the system is to be switched on. Permitted values are 1..31.

USB Keyboard

Specifies whether the system can be switched on via the network key of a USB keyboard, if the keyboard supports this function.

Switching on the system via a USB keyboard is only available if *USB At Power-Off* is set to*Always On*.

Disabled	The network key of the USB keyboard is disabled.
Enabled	The network key of the USB keyboard is enabled.

Event Logs - Configuration and Display of the Event Log

Change SMBIOS event log settings

SMBIOS Event Log

Specifies whether the SMBIOS event log is enabled.

Disabled	The SMBIOS event log is disabled.
Enabled	The SMBIOS event log is enabled.

Erase Event Log

Specifies whether the SMBIOS event log should be deleted.

No	The SMBIOS event log will not be deleted.
Yes, next reset	The SMBIOS event Log is deleted once during the next system boot up. Afterwards, this option is automatically reset to *No*.
Yes, every reset	The SMBIOS event log is deleted every time the system is booted.

When Log is full

Specifies the course of action to be taken when the SMBIOS event log is full.

Do Nothing	When the SMBIOS event log is full, no further entries are added. The SMBIOS event log must first be deleted before new entries can be added.
Erase Immediately	When the SMBIOS event log is full, it will be erased immediately. All existing entries will be deleted!

Log System Boot Event

Specifies whether every boot of the system is logged in the SMBIOS event log.

Disabled	System boots are not recorded in the SMBIOS event log.
Enabled	All system boots are recorded in the SMBIOS event log.

MECI

Multiple Event Count Increment: the number of double events which must occur before the multiple event counter is updated, including the associated log entry. The value is in the range between 1 and 255.

METW

Multiple Event Time Window: the number of minutes which must elapse between double event logs which use a multiple event counter. The value is in the range between 0 to 99 minutes.

Log OEM Codes

Enables or disables the log function of EFI status codes as OEM codes (if not already legacy-converted).

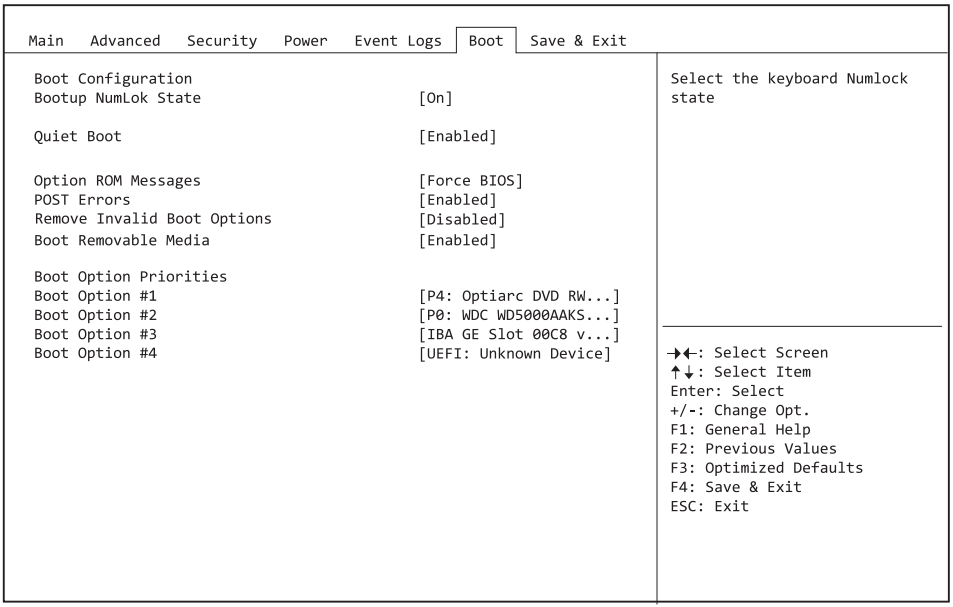
Convert OEM codes

Activates or deactivates the conversion of EFI status codes to standard SMBIOS types (it may be that not all are translated).

View SMBIOS Event Log

Opens the submenu to show all SMBIOS event log entries present.

Boot Menu – System boot



The sequence of the drives from which booting is to occur can be specified here.

Up to eight drives (can include USB ports, for example) can be listed here.

Boot Configuration

Bootup NumLock State

The setting of the NumLock function after a system boot is provided here. NumLock controls the functionality of the numeric keypad.

On	NumLock is enabled, the numeric keypad can be used.
Off	NumLock is disabled, the numeric keypad keys can be used to control the cursor.

The Num indicator light on your keyboard shows the current boot up NumLock state. The Num key on the keyboard can be used to toggle between ON and OFF.

Quiet Boot

The boot logo is shown on the screen instead of the POST boot up information.

Enabled	The boot logo is displayed.
Disabled	The POST boot up information is shown on the screen.

Option ROM Messages

Specifies whether Option ROM messages will be displayed during POST.

Force BIOS	Option ROM messages will be displayed during POST.
Keep Current	Option ROM messages will NOT be displayed during POST.

POST Errors

Specifies whether the system boot process aborts and the system is stopped when an error is detected.

Disabled	The system boot is not aborted. The error will be ignored, as far as this is possible.
Enabled	If an error is detected during POST, the boot process is aborted and the system stopped.

Remove Invalid Boot Options

Specifies whether UEFI boot settings for devices which are no longer connected to the system should be removed from the boot options priorities list.

Disabled	UEFI boot settings are not removed from the boot options priorities list.
Enabled	UEFI boot settings are removed from the boot options priorities list.

Boot Removable Media

Specifies whether booting via a removable data storage device such as a USB stick is supported.

Disabled	Booting via a removable data storage device is disabled.
Enabled	Booting via a removable data storage device is enabled.

Virus Warning

Checks the boot sectors of the hard disks for changes since the last system boot. If the boot sectors have been changed without any apparent reason, a suitable virus detection program should be run.

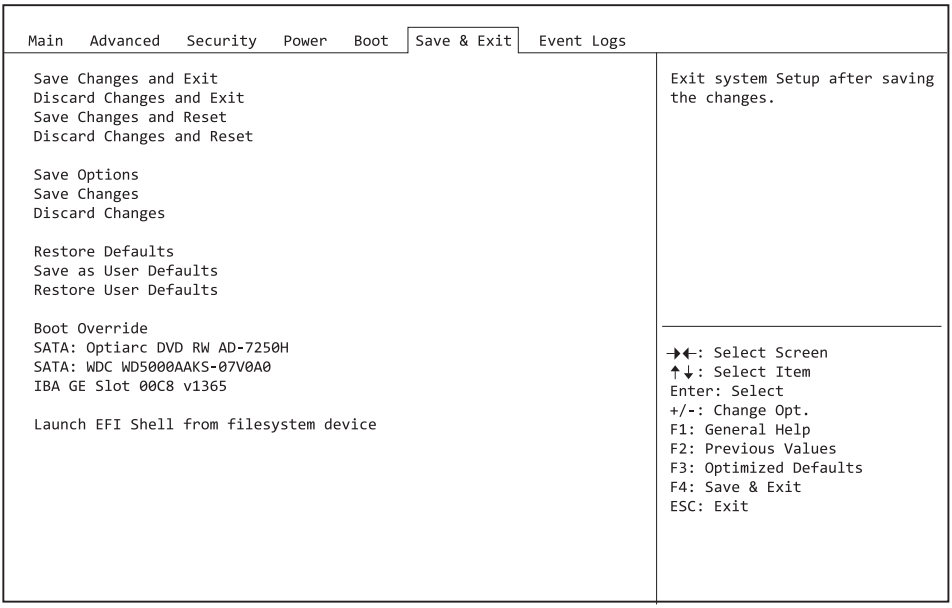
Disabled	The boot sectors will not be checked.
Enabled	If the boot sector has been changed since the last system boot (e.g. new operating system or a virus attack), a warning notice is displayed. The warning notice remains on the screen until you confirm the changes by going into BIOS Setup and setting this item to *Confirm* or disable the function.
Confirm	Confirm a required change to a boot sector (e.g. new operating system).

Boot option priorities

Displays the current boot sequence.

- ► Use the cursor keys  or  to select the device whose boot sequence you would like to change.
- ► To increase the priority for the selected device, press the + key. To decrease the priority, press the - key.
- ► To remove the selected device from the boot sequence, press the Enter key and select *Disabled*. If one or more devices have been disabled, the last entry in the boot sequence is set to *Disabled*.

Save & Exit Menu – Finish BIOS Setup



The *Exit* menu provides options for saving settings and exiting *BIOS Setup*.

Save Changes and Exit

To save the current entries in the menus and exit the BIOS Setup, select *Save Changes and Exit* and then *Yes*. The new settings become effective and POST continues, provided a reboot is not necessary due to a changed option.

Discard Changes and Exit

To discard the changes made since calling up the BIOS Setup or since the last time the function "Save Changes" was called, select *Discard Changes & Exit* and *Yes*. BIOS Setup is terminated and POST continues.

Save Changes and Reset

To save the current entries in the menus and exit BIOS Setup, select *Save Changes and Reset* and *Yes*. The system reboots and the new settings take effect.

Discard Changes and Reset

To discard the changes made since calling up the BIOS Setup or since the last time the function "Save Changes" was called, select *Discard Changes and Reset* and *Yes*. BIOS Setup is closed and the system reboots.

Save Options

Save Changes

To save the changes made so far without leaving BIOS Setup, select *Save Changes* and *Yes*.

Discard Changes

To discard the changes made since calling the BIOS Setup or since the last time the function "Save Changes" was called, but without leaving the BIOS Setup, select *Save Changes* and *Yes*.

Restore Defaults

To reset all the menus of the BIOS setup to the default values, select *Restore Defaults* and *Yes*. If you wish to leave the BIOS Setup with these settings, select *Save Changes and Exit* and *Yes*.

Save as User Defaults

To save the changes made so far as user default settings, select *Save as User Defaults* and *Yes*.

Restore User Defaults

To reset all the menus of the BIOS Setup to the user default settings, select *Restore User Defaults* and *Yes*. If you wish to leave the BIOS Setup with these settings, select *Save Changes and Exit* and *Yes*.

Boot Override

Use the cursor keys  and  to select the drive from which the operating system should be booted. Press the Enter key to start the boot process from the selected drive.

BIOS Update

Before you can perform a *flash BIOS update*, you must first download the required files from the Internet.

The BIOS is stored on a flash memory module. If an error occurs during the flash BIOS update procedure, the BIOS image may be destroyed. You can only then recreate the BIOS using *Flash Memory Recovery Update*, see "Flash Memory Recovery Update", Page 46. If this is not possible, the flash memory module must be replaced. If this is the case, please contact the Service Desk of Customer Services.

- On the Internet, go to "http://de.fujitsu.com/support/index.html".
- Use *MANUAL PRODUCT SELECTION* to select your device or look for your device under *SELECT PRODUCT USING SERIAL/IDENT NO.* using the serial/ident. no. or the product name.
- Click on *Drivers & Downloads* and select your operating system.
- Select *Flash BIOS*.
- Flash BIOS Update – Desk Flash Instant
  To "Flash BIOS Update under Windows", download the file *Flash BIOS Update – Desk Flash Instant*.
- Admin package – Compressed Flash Files
  If you don't find in the selection the operating system which you are using, select an operating system of your choice and download the file *Admin package – Compressed Flash Files* to "Flash BIOS update using a USB stick".
- For safety reasons, make a note of the settings in the BIOS Setup before you perform the Flash BIOS update.
  Normally, a Flash BIOS update does not damage the settings in BIOS Setup.

Flash BIOS update under Windows

- Start your system and boot Windows.
- Open Windows Explorer, then under *Flash BIOS Update – Desk Flash Instant* select the file which was downloaded and start the flash BIOS update with a double-click. Follow the instructions on the screen.

Administrator rights are necessary to run "Desk Flash Instant".

↳ After the Flash BIOS Update has terminated successfully, the system will restart automatically and boot up with the new version of BIOS.

Flash BIOS update with a USB stick

► Have a boot-capable USB stick ready.

If your USB stick is not boot-capable, you will find the necessary files for it under "*Admin package – Compressed Flash Files* under the item *Installation description* then selecting the item *Further information*. Follow the instructions.

When a boot-capable USB stick is created, all the files on the stick are irretrievably deleted. Please therefore make certain that all files from the USB stick are backed up elsewhere beforehand.

► Unzip the ZIP files which were downloaded under *Admin package – Compressed Flash Files* and copy the files and directories into the root directory of your boot-capable USB stick.

► Restart your system and wait until screen output appears. Press the function key F12 and use the cursor keys ↑ or ↓ to select the boot-capable USB stick.

► Use *cd DOS* to change directory, launch Flash BIOS Update with the command *DosFlash* and follow any further instructions.

↳ After the Flash BIOS Update has terminated successfully, the system will restart automatically and boot up with the new version of BIOS.

Flash Memory Recovery Update

► Prepare a boot-capable USB stick as described under "Flash BIOS update with a USB stick".

► Switch off the system and unplug it from the mains supply.

► Open the casing and enable *Recovery* using the jumper / DIP switch on the system board. You will find details on this in the technical manual for the system board.

► Connect the system to the mains supply again and switch it on.

► Use *cd DOS* to change directory, launch BIOS Recovery Update with the command *DosFlash* and follow any further instructions.

► After the Recovery process has finished, switch off the system and disconnect it from the mains supply.

► Remove the USB stick.

► For all jumpers / DIP switches which were changed, return them to their original positions.

► Connect the system to the mains supply again and switch it on.

↳ The system will now boot up with the new version of BIOS.

► Check the settings in the BIOS Setup. If necessary, configure the settings once again.

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