BIOS manual D331x

FUJITSU

Congratulations on your purchase of an innovative product from Fujitsu.

The latest information about our products, tips, updates etc. can be found on the Internet at: "http://www.fujitsu.com/fts/"

You can find driver updates at: "http://support.ts.fujitsu.com/download"

Should you have any technical questions, please contact:

- our Hotline/Service Desk (see the Service Desk list or visit: "http://support.ts.fujitsu.com/contact/servicedesk")
- Your sales partner
- Your sales office

We hope you enjoy working with your new Fujitsu system!

FUJITSU

BIOS manual D331x

Manual

Contents

Contents

Contents

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

<div style="border:1px solid">i</div>

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.
i	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://www.fujitsu.com/fts/" • 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 31.
↳ 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" CD/DVD. Alternatively you can also use it to download the corresponding BIOS update file from the Internet (see "BIOS Update", Page 52).

If you want to open the Boot Menu immediately

| **i** | 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 the drive from which you wish 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.

| **i** | 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.
► If you want perform basic tests of the CPU, working memory and hard disks, use the cursor keys ↑ or ↓ to select the *Diagnostic Program* entry and confirm your selection with the Enter key.

If you wish to boot immediately from LAN

► Press the function key ⌊F11⌋ if you wish to boot directly via LAN and not from the drive which is given as the first position under *Boot Option Priorities* in the *Boot* menu.

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

```
┌─────────────────────────────────────────────────────────────────────────────┐
│ Main   Advanced   Security   Power   Event Logs   Boot   Save & Exit         │
│                                                            ┌────────────────  │
│   BIOS Information                                         │ This submenu provides details │
│   BIOS Vendor                      American Megatrends     │ on the system configuration   │
│   Customized by                    Fujitsu                 │                               │
│   Core Version                     4.6.5.4                 │                               │
│ ▶ System Information                                       │                               │
│                                                            │                               │
│   System Language                  [English]               │                               │
│                                                            │                               │
│   System Date                      [Mon 01/20/2014]        │                               │
│   System Time                      [09:11:59]              │                               │
│                                                            │                               │
│   Access Level                     Administrator           │                               │
│                                                            │                               │
│                                                            ├───────────────  │
│                                                            │ →←: Select Screen │
│                                                            │ ↑↓: Select Item   │
│                                                            │ Enter: Select     │
│                                                            │ +/-: Change Opt.  │
│                                                            │ F1: General Help  │
│                                                            │ F2: Previous Values │
│                                                            │ F3: Optimized Defaults │
│                                                            │ F4: Save & Exit   │
│                                                            │ ESC: Exit         │
│                                                            │                   │
│                                                            │                   │
│                                                            │                   │
└─────────────────────────────────────────────────────────────────────────────┘
```

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 slot.

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 protected by a password, or an administrator password has been allocated, the access level is Administrator. If administrator and user passwords are allocated, 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.

```
  Main   Advanced   Security   Power   Event Logs   Boot   Save & Exit

   Erase Disk                          [Disabled]           Trusted Computing Settings

 ▶ Trusted Computing
 ▶ Graphics Configuration
 ▶ SATA Configuration
 ▶ USB Configuration
 ▶ System Monitoring
 ▶ Onboard Device Configuration
 ▶ SMART Settings
 ▶ Super I0 Configuration
 ▶ LVDS Configuration
 ▶ Network Stack
                                                            →←: Select Screen
 ▶ Realtek PCIe GBE Family Controller (MAC:90:1B:OE:10:F7:70)   ↑↓: Select Item
 ▶ Realtek PCIe GBE Family Controller (MAC:90:1B:OE:10:F7:71)   Enter: Select
                                                            +/-: Change Opt.
                                                            F1: General Help
                                                            F2: Previous Values
                                                            F3: Optimized Defaults
                                                            F4: Save & Exit
                                                            ESC: Exit
```

Example showing the *Advanced* menu

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.

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

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

> **i** 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.

TPM (Trusted Platform Module) 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.

SATA Configuration

Opens the SATA configuration submenu.

SATA Mode

Specifies in which mode the SATA ports will be operated.

IDE   The SATA port is operated in IDE Mode.

AHCI   The SATA port is operated in AHCI Mode.

RAID (if available)   The SATA port is operated in RAID Mode.

mSATA Support

Determines whether mSATA modules are detected automatically.

Auto   If the mSATA module has an mSATA Present Pin, the module is detected automatically.

Enabled   The mSATA interface is always active.

Graphics Configuration

Opens the submenu for configuring the graphics controller on the system board.

Primary Display

Specifies the image source during the Power On Self Test (POST).

Auto   If the display adapter is inserted, this is used as the image source during the POST. Otherwise, the graphics device (IGD) integrated in the system board is used.

IGD   The Integrated Graphics Device (IGD) on the system board serves as the only image source during the POST.

PEG   If the PCI Express display adapter is inserted, this is used as the image source during the POST. Otherwise the IGD is used.

Internal Graphics

Use this option if you wish to use a PCI or PEG card as the primary image source and the graphics controller on the system board (IGD - Integrated Graphics Device) as the secondary image source.

Disabled   If it is not used as the first image source, the IGD is disabled and is not available to the operating system.

Enabled   If the IGD is not used as the primary image source, it can be used for operation with several monitors after the POST.

IGD Memory

Configures the size of the main memory used for the graphics controller on the system board (Integrated Graphics Drive - IGD).

32M...1024M   The set value specifies the size of the shared memory available to the integrated graphics in megabytes.

LVDS Configuration

i   For version D3313-S only.

Opens the submenu to configure the LVDS interface for direct connection of an LCD panel.

LVDS Support

Determines whether the LVDS interface is available.

Disabled   The LVDS interface is not available.
Enabled   The LVDS interface is available.

LVDS Panel Config Select

Determines the resolution of the LVDS (Low Voltage Differential Signalling) interface. The selected resolution should be the same as that of the connected LCD panel.

i   By using the "LVDS" OEM tool, an additional *LVDS adjusted parameters* entry can be created, which enables the use of freely configurable LVDS parameters.

Non-EDID Support

For LCD panels that do not support a DDC (Display Data Channel), no EDID (Extended Display Identification Data) is available.

i   For LCD panels without EDID support, *Enabled* must be set. To install a Linux operating system, it may be necessary to initially select "Non-EDID Support = Disabled", despite having a connected LVDS panel without DDC support. After the Linux and driver installation is completed, "Non-EDID Support = Enabled" can be set again.

Disabled   The LCD provides EDID.
Enabled   The LCD does not provide EDID.

LVDS Mode

The selected mode of the LVDS interface must be supported by the LCD panel used.

<table>
<tr><td>

i

</td><td>Faulty colour display often indicates an incorrectly configured LVDS mode.</td></tr>
</table>

FPDI 8 bit	FPDI (Flat Panel Interface) 8 bit mode is being used.
FPDI 6 bit	FPDI (Flat Panel Interface) 6 bit mode is being used.
LDI 8 bit	LDI (LVDS Display Interface) 8 bit mode is being used.
LDI 6 bit	LDI (LVDS Display Interface) 6 bit mode is being used.

LVDS Channel Swap

Depending on the connected LCD panel, the channels of the LVDS interface can be swapped.

Disabled	The channels of the LVDS interface are not swapped.
Enabled	The channels of the LVDS interface are swapped.

LVDS Backlight-Enable Polarity

Depending on the connected LCD panel, the polarity for enabling backlighting can be set.

Active High	The polarity for enabling backlighting of the LCD panel is Active High.
Active Low	The polarity for enabling backlighting of the LCD panel is Active Low.

LVDS Brightness Control

Determines whether the brightness of the LCD panel connected at the LVDS interface
is controlled in the BIOS setup or under the operating system.

OS Controlled	The brightness of the LCD panel connected at the LVDS interface is controlled under the operating system.
BIOS Controlled	The brightness of the LCD panel connected at the LVDS interface is controlled in the BIOS setup.

LVDS Brightness

Determines the brightness of the LCD panel connected at the LVDS interface.

Permissible values: *0..255*

<table>
<tr><td>

i

</td><td>0 stands for the minimum (0 V) and 255 for the maximum (4V) brightness voltage level at the corresponding inverter connection.</td></tr>
</table>

POST Screen Mode

Determines whether the output during POST is in graphic mode or text mode.

> **i** To view outputs during POST, text mode must be selected for LCD panels with a resolution < 800x600.

Graphic Mode   The system is in graphic mode during POST and BIOS setup.

Text Mode   The system is in text mode during POST and BIOS setup.

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.

> **i** 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.

USB Transfer Time-Out

If USB devices are not detected during the POST, it is possible to increase the waiting time so that slower USB devices can also be detected.

1..5..20 sec   Waiting time setting for USB devices in seconds.

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.

USB Port Security

Opens the *USB Port Security* submenu in order to configure the USB interfaces present on the mainboard.

USB Port Control

Configures the use of the USB ports. Disabled USB ports are only available during the POST, but are no longer available under the operating system.

Enable all ports	All USB ports are enabled.
Enable front and internal ports	All USB ports on the rear of the device are disabled.
Enable rear and internal ports	All USB ports on the front of the device are disabled.
Enable internal ports only	All external USB ports are disabled.

USB Device Control

For the *Enable front and internal ports*, *Enable rear and internal ports* and *Enable used ports* settings, which were made under *USB Port Control*, there are additional options available here.

Enable all devices	Those settings made under *USB Port Control* will be used without any limitation.
Enable Keyboard and Mouse only	Only USB keyboards and USB mice can be operated at the USB ports enabled under *USB Port Control*. Any ports to which no USB keyboards or USB mice are connected are disabled. Keyboards with an integrated hub result in deactivation of the port.
Enable all devices except mass storage devices/Hubs	USB ports on which USB storage devices or USB hubs are connected will be disabled.

System Monitoring

i	For version D3313-S only.

Controller Revision

Shows the version of the system monitoring controller.

Firmware Version

Shows the firmware 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.

Fan2 Wiring

Determines whether a three-wire or four-wire fan is connected to fan connector Fan2.

3 wires   A three-wire fan is connected.

4 wires   A four-wire fan is connected.

Onboard Device Configuration

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

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.

Front Panel Audio

i	For version D3313-S only.

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.

LAN 1

Specifies whether the LAN 1 controller is available.

Disabled   The LAN 1 controller is not available.
Enabled   The LAN 1 controller is available.

LAN 2

Specifies whether the LAN 2 controller is available.

Disabled   The LAN 2 controller is not available.

Enabled   The LAN 2 controller is available.

Auto BIOS Update

With Auto BIOS Update it is possible to check a Fujitsu server automatically to see if there is a new BIOS version for the system. For the update, no operating system or external storage medium is required.

> **i** Please also note the terms of use, which are included as an Annex to the BIOS manual or can be found on the Internet at "http://support.ts.fujitsu.com/content/tou.asp".

Terms of Use

In order to be able to use the *Auto BIOS Update* function, you must accept the terms of use, which are included as an Annex to the BIOS manual or can be found on the Internet at "http://support.ts.fujitsu.com/content/tou.asp".

Decline   The Terms of Use were not accepted. The *Auto BIOS Update* function cannot be used.

Accept   The Terms of Use were accepted. The *Auto BIOS Update* function can be used.

Automatic BIOS update

Defines how frequently BIOS updates are searched for on the Fujitsu server. If the automatic BIOS update function is *disabled*, it is possible under *Manually check for update* to search for BIOS updates at the next system boot.

Disabled   BIOS updates are not automatically searched for.

Daily   BIOS updates are searched for daily.

Weekly   BIOS updates are searched for once per week.

Monthly   BIOS updates are searched for once per month.

Quarterly   BIOS updates are searched for once every three months.

Server IP address

Shows the IP address of the Fujitsu server on which BIOS updates are being searched for.

Silent update

Defines if the BIOS update, if a new BIOS version is available, is executed automatically without an input request and only a notification is displayed.

Disabled   It is possible to execute the BIOS update immediately, to skip it with this system boot or to ignore the new BIOS version.

Enabled   The BIOS update is executed automatically without an input request.

Manually check for update

Defines if a BIOS update is searched for during the next system reboot.

> **i**   This function is automatically reset to *disabled* after a search has been performed.

Disabled   No BIOS update is searched for at the next system reboot.

Enabled   A BIOS update is searched for at the next system reboot.

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 used for access to the parallel port.

Change Settings

Specifies which base I/O addresses and which interrupts can be used by the BIOS or operating system for the particular serial port.

Auto	The base I/O address and the interrupt are automatically assigned.
IO=3F8h; IRQ=4;	The base I/O address 3F8h and the interrupt 4 are permanently assigned.
IO=3F8h; IRQ=3,4,5,6,7,9,10,11,12;	The base I/O address is permanently assigned.
IO=2F8h; IRQ=3,4,5,6,7,9,10,11,12;	
IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12;	
IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12;	

The values given in the list are available for the interrupt for automatic selection by the BIOS or the operating system.

> **i** If conflicts with other devices occur, this option should be converted to *Auto*.

Serial Port 1 Configuration

Opens the submenu for configuration of the serial port 1 (COMB).

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 used for access to the parallel port.

Change Settings

Specifies which base I/O addresses and which interrupts can be used by the BIOS or operating system for the particular serial port.

Auto	The base I/O address and the interrupt are automatically assigned.
IO=2F8h; IRQ=3;	The basic I/O address 2F8h and the Interrupt 3 are firmly allocated.
IO=3F8h; IRQ=3,4,5,6,7,9,10,11,12;	The base I/O address is permanently assigned.
IO=2F8h; IRQ=3,4,5,6,7,9,10,11,12;	
IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12;	
IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12;	

The values given in the list are available for the interrupt for automatic selection by the BIOS or the operating system.

> **i** If conflicts with other devices occur, this option should be converted to *Auto*.

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 used for access to the parallel port.

Change Settings

Specifies which base I/O addresses and which interrupts can be used by the BIOS
or operating system for the particular serial port.

Auto	The base I/O address and the interrupt are automatically assigned.
IO=378h; IRQ=5;	The basic I/O address 2F8h and the Interrupt 3 are firmly allocated.
IO=378h; IRQ=5,6,7,9,10,11,12;	The base I/O address is permanently assigned.
IO=278h; IRQ=5,6,7,9,10,11,12;	
IO=3BCh; IRQ=5,6,7,9,10,11,12;	

The values given in the list are available for the interrupt for automatic selection
by the BIOS or the operating system.

> **i** If conflicts with other devices occur, this option should be converted to *Auto*.

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.

Network Stack

Specifies whether the UEFI Network Stack is available for network access under UEFI. If the UEFI Network Stack is disabled, UEFI installation via PXE is not possible, for example.

Disabled   The UEFI Network Stack is not available.

Enabled   The UEFI Network Stack is available.

Ipv4 PXE Support

Specifies whether PXE UEFI Boot via Ipv4 is available for installation of operating systems in UEFI mode.

Disabled   PXE UEFI Boot via Ipv4 is not available.

Enabled   PXE UEFI Boot via Ipv4 is available.

Ipv6 PXE Support

Specifies whether PXE UEFI Boot via Ipv6 is available for installation of operating systems in UEFI mode.

Disabled   PXE UEFI Boot via Ipv6 is not available.

Enabled   PXE UEFI Boot via Ipv6 is available.

Security Menu – Security Functions

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.

```
  Main   Advanced   Security   Power   Event Logs   Boot   Save & Exit

   Password Description                                     Set Administrator Password

   If ONLY the Administrator's password is set,
   then this only limits access to Setup and is
   only asked for when entering Setup.
   If the User's password is set, then this
   is a power on password and must be entered to
   boot or enter Setup. In Setup the User will
   have User rights.
   The password must be in the following range:
   Minimum length                      3
   Maximum length                      32


   Administrator Password
   User Password                                          →←: Select Screen
   User Password on Boot           [On Every Boot]        ↑↓: Select Item
   Cabinet Monitoring              [Disabled]             Enter: Select
   Skip Password on WOL            [Disabled]             +/-: Change Opt.
                                                          F1: General Help
 ▶ Secure Boot                                            F2: Previous Values
                                                          F3: Optimized Defaults
   HDD Security Configuration:                            F4: Save & Exit
   HDD Password on Boot            [Enabled]              ESC: Exit

   P0:FUJITSU MHY2    HDD-ID:0137862189
```

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.

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.

> **i** 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.

> **i** 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.

> **i** In order to be able to assign a user password, an administrator password must already have been assigned.

User Password on Boot

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

On 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.

i	If the administrator password and the user password have been assigned and the setting *Disabled* has been chosen for this item, simply press Enter to get USER access to the BIOS Setup. In this case the user password does not have to be entered.

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.

Secure Boot

Opens the submenu for configuring Secure Boot.

Platform Mode

Shows whether the system is in user mode or setup mode.

User   In user mode, the Platform Key (PK) is installed. Secure Boot can be enabled
                    or disabled via the *Secure Boot Control* menu option.

Setup   In setup mode, the Platform Key (PK) is not installed. Secure Boot is disabled
                    and cannot be enabled via the *Secure Boot Control* menu option.

Secure Boot

Indicates whether the Secure Boot function is active.

Disabled   Secure Boot is not active.

Enabled   Secure Boot is active.

Secure Boot Control

Specifies whether booting of unsigned boot loaders/UEFI OpROMs is permitted.

> **i** The associated signatures are saved in the BIOS or can be reloaded
> in the *Key Management* submenu.

Disabled   All boot loaders / OpROMs (Legacy / UEFI) can be executed.

Enabled   Only booting of signed boot loaders/UEFI OpROMs is permitted.

Secure Boot Mode

Specifies whether the Key Management submenu is available.

Default   The *Key Management* submenu is not available.

Custom   The *Key Management* submenu is available.

Key Management

Submenu for deleting, changing and adding the key and signature databases required for Secure Boot.

i	Without the installed Platform Key (PK), the system is in setup mode (Secure Boot is disabled). As soon as the PK is installed, the system switches to user mode (Secure Boot can be enabled).

Factory Default Key Provisioning

If the system is in setup mode (no Public Key is installed), it is possible to install the default Secure Boot key and signature databases.

Disabled   The available Secure Boot key and signature databases remain unchanged.

Enabled   If the PK, KEK, DB, DBX signature databases are not available, the default Secure Boot key and signature databases will be installed after rebooting the system.

Delete All Secure Boot Variables

Puts the system in setup mode (Secure Boot is disabled). All keys and signature databases (PK, KEK, DB, DBX) in the system are deleted.

Install All Factory Default Keys

All keys and signature databases (PK, KEK, DB, DBX) in the system are reset to the default values. This menu option is only available when the PK is deleted.

Save Secure Boot Keys

Saves the Secure Boot Key and Key Databases to the selected drive.

Platform Key (PK)

Shows the current status of the Platform Key (PK).

Installed   The PK is installed. System is in user mode.

Not Installed   The PK is not installed. The system is in setup mode.

Set new PK

Sets the Platform Key (PK). After selecting the drive, the corresponding file must be selected in the browser.

Delete PK

Deletes the Platform Key (PK), which puts the system in setup mode and disables Secure Boot.

Key Exchange Key Database (KEK)

Shows the current status of the Key Exchange Key Database (KEK).

Installed   The KEK Database is installed.
Not installed   The KEK Database is not installed.

Set new KEK

Sets the Key Exchange Key Database (KEK) After selecting the drive, the corresponding file must be selected in the browser.

Delete KEK

Deletes the Key Exchange Key Database (KEK)

Append Var to KEK

Adds an entry to the Key Exchange Key Database (KEK). After selecting the drive, the corresponding file must be selected in the browser.

Authorized Signature Database (DB)

Shows the current status of the Authorized Signature Database (DB).

Installed   The DB is installed.
Not installed   The DB is not installed.

Set new DB

Sets the Authorized Signature Database (DB). After selecting the drive, the corresponding file must be selected in the browser.

Delete DB

Deletes the Authorized Signature Database (DB).

Append Var to DB

Adds an entry to the Authorized Signature Database (DB). After selecting the drive, the corresponding file must be selected in the browser.

Forbidden Signature Database (DBX)

Shows the current status of the Forbidden Signature Database (DB).

Installed   The DBX is installed.
Not installed   The DBX is not installed.

Set new DBX

Sets the Forbidden Signature Database (DB). After selecting the drive, the corresponding file must be selected in the browser.

Delete DBX

Deletes the Forbidden Signature Database (DB).

Append Var to DBX

Adds an entry to the Forbidden Signature Database (DBX). After selecting the drive, the corresponding file must be selected in the browser.

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 / HDD-ID

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

HDD Password Description

Allows the hard disk user and master passwords to be set, changed and deleted. The hard disk user password must be set up before the Enabled Security setting can be carried out. The hard disk master password can only be changed if you have successfully unlocked it in POST with the hard disk master 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.

> **i** 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.

Set Master Password

If a hard disk user password has been forgotten, it can be deleted using the hard disk master password. This option is only available if an incorrect hard disk user password has been entered three times when the system is booting during POST. The hard disk master password for your hard disk can be obtained from the certificated technical support service, but only if the particular HDD-ID is provided together with a valid proof of purchase.

Power Menu – Energy saving functions

```
Main   Advanced   Security   Power   Event Logs   Boot   Save & Exit

  Power Settings                                              Powerled is blinking or off

  Power LED in S3                    [Enabled]
  Power-On-Source                    [BIOS Controlled]
  Low Power Soft Off                 [Disabled]

  Power Failure Recovery             [Always On]
  Hibernate like Soft Off            [Disabled]
  USB At Power-Off                   [Always Off]
▶ Wake-Up Resources

                                                            →←: Select Screen
                                                            ↑↓: Select Item
                                                            Enter: Select
                                                            +/-: Change Opt.
                                                            F1: General Help
                                                            F2: Previous Values
                                                            F3: Optimized Defaults
                                                            F4: Save & Exit
                                                            ESC: Exit
```

Example showing the *Power* menu.

Power Settings

Power LED in S3

Determines the behaviour of the Power LED in standby (S3).

Disabled	The Power LED is disabled in standby.
Enabled	The Power LED flashes in standby.

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.

i	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), the system will instead be brought into Low Power Soft Off or Zero Watt mode (S5) when it is switched off. However, 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

> **i** 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, on selected week days
or only once a month at the specified time.

Daily	The system will be switched on daily at the time specified.
Weekly	The system is switched on at the specified time on the selected week days.
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.

i	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

```
  Main   Advanced   Security   Power   Event Logs   Boot   Save & Exit

▶ Change Smbios Event Log Settings                          Press <Enter> to change the
▶ View Smbios Event Log                                     Smbios Event Log configuration.




                                                            →←: Select Screen
                                                            ↑↓: Select Item
                                                            Enter: Select
                                                            +/-: Change Opt.
                                                            F1: General Help
                                                            F2: Previous Values
                                                            F3: Optimized Defaults
                                                            F4: Save & Exit
                                                            ESC: Exit
```
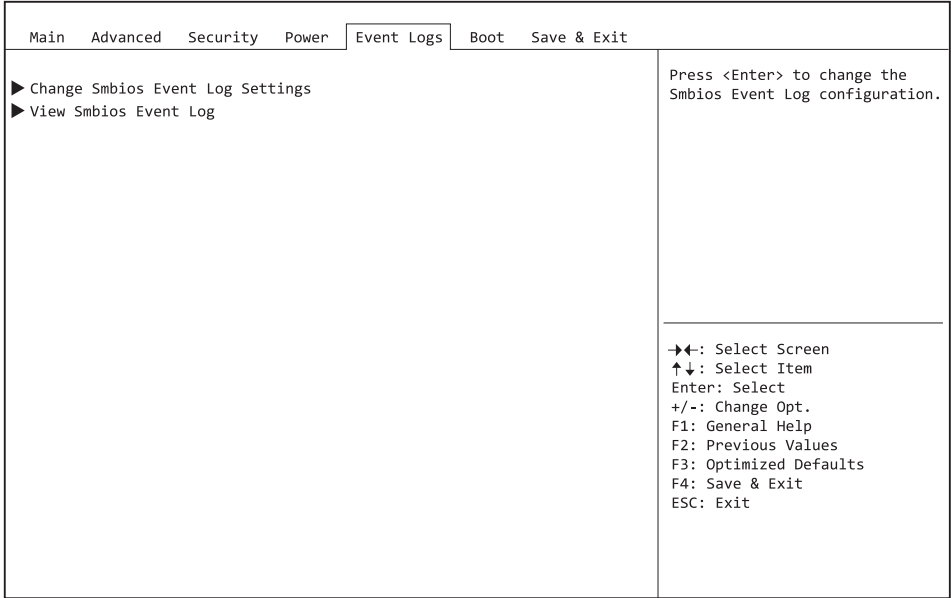
Example showing the *Event Logs*.

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 codes as OEM codes (if not already legacy converted).

Convert OEM codes

Enabling or disabling the conversion of EFI status codes to standard SMBIOS types (not all may be translated).

View SMBIOS Event Log

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

Boot Menu – System boot

```
┌─────────────────────────────────────────────────────────────────────────────────────┐
│  Main   Advanced   Security   Power   Event Logs │ Boot │ Save & Exit                 │
│                                                                                       │
│   Boot Configuration                                         Select the keyboard Numlock │
│                                                              state                     │
│   Bootup NumLock State                  [Off]                                         │
│   Quiet Boot                            [Enabled]                                     │
│   Fast On                               [Disabled]                                    │
│   POST Errors                           [Enabled]                                     │
│   Remove Invalid Boot Options           [Disabled]                                    │
│   Boot Removable Media                  [Enabled]                                     │
│   Virus Warning                         [Disabled]                                    │
│                                                                                       │
│                                                                                       │
│                                                                                       │
│   Boot Option Priorities                                                              │
│   Boot Option #1                        [Realtek PXE B01 D00]                         │
│   Boot Option #2                        [Realtek PXE B02 D00]    →←: Select Screen     │
│   Boot Option #3                        [P0: FUJITSU MHY2160BH]  ↑↓: Select Item       │
│   Boot Option #4                        [ USB FLASH DRIVE PMAP]  Enter: Select         │
│   Boot Option #5                        [UEFI: USB FLASH        +/-: Change Opt.       │
│                                         DRIVE PMAP]             F1: General Help       │
│                                                                 F2: Previous Values    │
│   Boot Option #6                        [Diagnostic Program]    F3: Optimized Defaults │
│                                                                 F4: Save & Exit        │
│ ▶ CSM Configuration                                            ESC: Exit              │
│                                                                                       │
│                                                                                       │
│                                                                                       │
└─────────────────────────────────────────────────────────────────────────────────────┘
```

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.

> **i**　　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.

Fast On

Fast On is intended to reduce the boot time for systems with a fixed configuration. Once a successful boot path has been established, enabling this function allows this boot path to be used for every subsequent boot process. This reduces the boot time, because only the components needed for booting are initialised. If the system configuration is changed, open the BIOS Setup once only to confirm the new configuration.

> **i** Due to the short boot time, it is not usually possible to enter the BIOS Setup by pressing key F2 . To enter the BIOS Setup, power up the system with the on/off switch and keep pressing the on/off switch until you hear a beep. The BIOS Setup then opens.

Note that connected devices (e.g. SSD/HDD type & firmware, etc.) can increase the boot time.

To optimise the Fast On function, if possible configure as follows:

• Under First Boot Device, enter the preferred boot medium.
• Disable TPM.
• Disable the SMBIOS Eventlog function.
• Disable parallel and serial ports.

Disabled   When the system is switched on, a complete initialisation is performed.

Enabled   When the system is switched on, initialisation is performed only for the components needed for booting.

USB Support

If this function is disabled, USB devices (including USB keyboard) are only available after booting the operating system.

> **i** It may not be possible to use setup and operating system boot menus if the function is activated. This function remains without impact if the function for entering a user password is enabled with every boot process.

Disabled   USB components are not available before booting the operating system.

Full Initial   USB components are available already before booting the operating system.

Partial Initial   USB components are not available before booting the operating system.

PS2 Devices Support

It may not be possible to use setup and operating system boot menus if the function is disabled. This function remains without impact if the function for entering a user password is enabled with every boot process.

Disabled   PS/2 devices are still not available even after booting the operating system.

Enabled   PS/2 devices are available.

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).

Prefer USB Boot

Determines whether USB devices should be preferred in the boot sequence.

Enabled	USB devices will be preferred to other devices in the boot sequence.
Disabled	USB devices will not be treated with preference in the boot sequence.

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*.

CSM Configuration

Opens the submenu for configuring the Compatibility Support Module (CSM).

> **i** This submenu is only available if *Secure Boot Control* is disabled under *Setup –> Secure Boot Configuration*.

Launch CSM

Specifies whether the Compatibility Support Module (CSM) is executed. A legacy operating system can only be booted if the CSM has been loaded.

Enabled	The CSM is executed so that a legacy or UEFI operating system can be booted.
Disabled	The CSM is not executed so that a only a UEFI operating system can be booted.

Boot Option Filter

Specifies the drives from which booting can be carried out.

UEFI and Legacy	Booting is possible both from drives with UEFI OS and from drives with Legacy OS.
Legacy only	Booting is only possible from drives with Legacy OS.
UEFI only	Booting is only possible from drives with UEFI OS.

Launch PXE OpROM Policy

Specifies which PXE option ROM is booted. For the PXE boot, both the normal (Legacy) PXE boot and a UEFI PXE boot are available.

Do not launch   No option ROMs are booted.
UEFI only   Only UEFI option ROMs are booted.
Legacy only   Only Legacy option ROMs are booted.

Launch Storage OpROM Policy

Specifies which Storage option ROM is booted.

Do not launch   No Storage option ROMs are booted.
UEFI only   Only UEFI Storage option ROMs are booted.
Legacy only   Only Legacy Storage option ROMs are booted.

Launch Video OpROM Policy

Specifies which Video option ROM is booted.

UEFI only   Only UEFI Video option ROMs are booted.
Legacy only   Only Legacy Video option ROMs are booted.

Other PCI Device ROM Priority

Specifies which option ROM is booted for devices other than the network, mass memory or video.

UEFI OpROM   Only UEFI option ROMs are booted.
Legacy OpROM   Only Legacy option ROMs are booted.

Save & Exit Menu – Finish BIOS Setup

```
  Main    Advanced   Security   Power   Event Logs  Boot   Save & Exit

   Save Changes and Exit                                      Exit system setup after saving
   Discard Changes and Exit                                   the changes.
   Save Changes and Reset
   Discard Changes and Reset

   Save Options
   Save Changes
   Discard Changes

   Restore Defaults
   Save as User Defaults
   Restore User Defaults

   Boot Override
   Realtek PXE B01 D00                                      →←: Select Screen
   Realtek PXE B02 D00                                      ↑↓: Select Item
   P0: FUJITSU MHY2160BH                                    Enter: Select
      USB FLASH DRIVE PMAP                                  +/-: Change Opt.
   UEFI: USB FLASH DRIVE PMAP                               F1: General Help
   Diagnostic Program                                       F2: Previous Values
                                                            F3: Optimized Defaults
                                                            F4: Save & Exit
                                                            ESC: Exit
```

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 – quit without saving

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.

Diagnostic Program

► To perform a basic test of the CPU, working memory and hard disks, select
Diagnostic Program and press the Enter key.

↳ If a problem occurs during the test, the relevant Error Code and a brief explanation (Diagnostic
Result) will be displayed. In addition, the Error Code is entered in the Smbios Event Log.

> **i** Diagnostic Program can also be called up directly in the Boot Menu
> by pressing the F12 key in the POST.

BIOS Update

To carry out a *Flash BIOS Update*, you can use the *Auto BIOS Update* function ("Auto BIOS Update", Page 24) or must first download the necessary files from the Internet.

> **i**
> The BIOS is installed on a flash memory module. If an error occurs during the flash BIOS update procedure, the BIOS image may be destroyed. You can then only recover the BIOS using *BIOS Recovery Update*, see "BIOS Recovery Update", Page 54. 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://www.fujitsu.com/de/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: For "Flash-BIOS Update under Windows", download the file *Flash-BIOS Update – Desk Flash Instant*.
► Admin package – Compressed Flash Files: If you cannot find the operating system which you are using in the selection, 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 BIOS Setup.

Auto BIOS Update

With *Auto BIOS Update* it is possible to check a Fujitsu server automatically to see if there is a new BIOS version for the system. For the update, no operating system or external storage medium is required. For details on the *Auto BIOS Update* function, see the manual, "Auto BIOS Update", Page 24.

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.

> **i**
> 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.

> **i** 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.

> **i** 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 the further instructions.

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

BIOS 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 prepared USB stick and remove all other bootable USB devices.

> If the Admin package on the prepared USB stick does not match the BIOS version of the system (e.g. Admin package for BIOS R1.2.0, but BIOS R1.3.0 is enabled on the system), no screen outputs will be possible in recovery mode. The Recovery Update will be carried out automatically in this case.
>
> During the Recovery Update, a recurring short signal tone will sound. Recovery of the system has succeeded if you hear the repeated signal sequence "short-short-long-long" after a long signal tone. The Recovery process can take a few minutes.

► 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 the 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 and close the casing.

► 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.

Index