

## PRODUCT FACTS

### Multiboot

Issue May 2009  
Product Multiboot

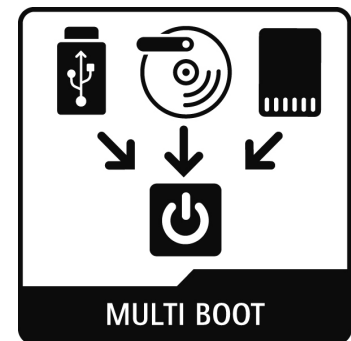
Pages 3

### Brief Description

Depending on the system configuration and application scenarios, PC systems require highly flexible boot options. The Multiboot function in the BIOS of Fujitsu Technology Solutions mainboards was designed to meet these requirements.

Multiboot is capable of booting from a variety of devices. This covers SATA/IDE hard disks and optical drives as well as mass storage devices attached to USB and FireWire™ interfaces.

Additionally, the mainboards provide a remote boot function over the network connection (PXE).



### Benefits

- Flexible selection of boot devices in the BIOS
- Support for a wide variety of devices attached to USB and Firewire™
- Support for remote boot (PXE)
- Pre-Boot Menu (F12 key) allows easy one-time selection of a different boot source

### Multiboot Options

BIOS Picture, TBD

## Functional Description

The Multiboot function in the BIOS of Fujitsu Technology Solutions mainboards permits booting from all kinds of mass storage devices:

- ATA(IDE)/SATA Hard Disk Drives
- eSATA Hard Disk Drives
- ATAPI(IDE)/SATA Optical Disk Drives (CD/DVD/Blu-ray)
- USB Devices such as Memory Sticks and USB Hard Disks (for details see section below)
- Firewire™ Devices (for details see section below)
- SCSI drives using a host adapter with a PCI BIOS Extension (add in card)

Additionally, Multiboot also offers boot support over the local network connection (Ethernet LAN) using the PXE protocol (PXE = Preboot eXecution Environment).

## Booting from USB/FireWire™ devices

In the age of mobility and flexibility, drives, too, are becoming more and more mobile and flexible. Many drives feature a USB or Firewire™ interface. In order to use this flexibility, Multiboot on Fujitsu Technology Solutions mainboards supports a variety of boot options from USB and Firewire™ drives (USB Legacy Support must be enabled).

The following drives are supported:

- USB Floppy, USB LS-120, USB ZIP
- USB Memory Sticks (e.g. Fujitsu Technology Solutions Memorybird)
- USB CD-ROM/CD-RW/DVD-ROM/DVD-RW Drives
- USB Hard Disk Drives, USB MO Drives
- FireWire™ Hard Disk Drives
- FireWire CD-ROM/CD-RW/DVD-ROM/DVD-RW (optional)

Some new BIOS offer the option that booting from a USB device (USB Memory Stick or USB hard disk) has the highest boot priority. The user does not need to enter the BIOS Setup to configure the BIOS. Whenever a USB device is plugged into the mainboard, booting is performed from that device. Select "Force USB Stick Boot" in the BIOS Setup "Boot" Menu to activate this option.

## Pre-Boot Menu

The Pre-Boot Menu allows the one-time selection of a boot device. Press the <F12> key during BIOS POST to open the Pre-Boot-Menu.

Only devices that are not excluded from the boot order can be selected.

Devices can be excluded in the BIOS Setup "Boot".

## Application Example

An innovative application would be feasible e.g. using the USB Memory Stick: Supported by diagnostic software on a bootable Memory Stick, a service engineer can examine a faulty PC on the customer's premises without great effort, and without having to open the PC or use a floppy disk/CD. The Pre-Boot Menu (accessible through the F12 key) allows a one-time boot from the Memory Stick without the need to change the boot order in the BIOS.

## Notes

- USB Memory Sticks can be identified as a hard disk or a floppy disk drive (fixed and removable). Should problems be experienced when booting from such a device, it is possible to toggle back and forth between floppy and HDD in the boot sequence.  
Select in the BIOS Boot Setup F (= fixed) or R (= removable).
- The BIOS offers the option to select 4 predefined boot sequences. No 1 corresponds to the user boot sequence. No 4 is the manufacturer default.
- Some mainboards offer the support for more than 4 hard disks (e.g. 6 SATA-hard disk drives). All drives are only available as boot devices when selecting the AHCI-mode in the BIOS Setup (AHCI = Advanced Host Controller Interface).
- The BIOS Setup allows to set up the boot order of up to 8 devices.
- When a selected device is not prepared as a boot device, then the BIOS selects the next device in the boot order. If no bootable device is available, the BIOS displays a warning message.

## Multiboot Support for Fujitsu Technology Solutions Computers Mainboards

Multiboot is available for all Fujitsu Technology Solutions BIOS based on Phoenix FirstBIOS, Phoenix TrustedCore and Phoenix SecureCore.

## Additional information and downloads

- General Information:  
[www.ts.fujitsu.com/mainboards](http://www.ts.fujitsu.com/mainboards)
- Documentation and downloads:  
<ftp://ts.fujitsu.com/pub/Mainboard-OEM-Sales/>

### Contact: Fujitsu Technolgy Solutions GmbH:

Peter Hoser / Director OEM Sales, Clients Group, Systemboard OEM

Phone: +49 (0) 821 - 804 3177

Fax: +49 (0) 821 – 804 3329

Email: [Peter.Hoser@ts.fujitsu.com](mailto:Peter.Hoser@ts.fujitsu.com)