PRODUCT FACTS

Silent Drives

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Brief Description

Building on its experience from thermal management and system monitoring, Fujitsu Technology Solutions is going one step further toward reducing noise at the workplace with the "Silent Drives" feature that is designed to achieve noise reduction of both hard disk drives as well as CD/DVD drives.

The Silent Drives technology is BIOS-based and leverages the built-in noise reduction modes of most hard disk drives and CD/DVD drives. Thus, there is no need for using a software driver or application software to use this feature.

SILENT DRIVES

Benefits

- Programming of Low Noise/Silent modes of SATA and ATA/IDE hard disk drives; works with HDDs conforming to the AT Attachment with Packet Interface – 6 or higher (ATA/ATAPI-6)
- Programming of lower rpm modes of CD and DVD drives (drives conforming to ATA/ATAPI 6)
- Operating system and software independent function; fully BIOS-based

HDD Read/Write Heads Positioner

Functional Description

The "Silent Drives" technology of Fujitsu Technology Solutions mainboards was developed to further reduce noise levels of PC systems. This technology leverages the noise reduction modes built into most hard disk drives (HDD) and optical drives (CD/DVD); the Silent Drives technology makes these modes easily accessible through specific BIOS setup options. This method results in an operating system and software independent function; no drivers or applications that are run under the operating system are required.

The drives must support the Automatic Acoustic Management. The implementation from different vendors and the amount of noise reduction might be different.

Please note that this function is an optional function/command.

Hard disk drive Silent Mode

The most hard disk drive manufacturers implement noise reduction modes to their drives. By changing the motion characteristics of the positioner of the read/write heads it is possible to reduce the noise arising during hard disk access to a barely perceptible level. The rotation speed of a hard disk is not reduced. In most cases, the resulting drop in performance is minimal. The Silent Drives technology makes this option accessible through the BIOS setup and avoids the need for manufacturer-specific configuration software.

Hard disk drive Silent Mode is supported only in conjunction with hard disks conforming to the ATA/ATAPI standards. Enabling the function sets a change in the operating mode of the servo controller for the positioner. This causes the read/write heads to be accelerated and decelerated "softer" than previously. Thus, the noise typical for the positioner movements of HDDs is reduced to a minimum.

Activating Hard disk drive "Silent Mode"

"Silent Mode" is activated in the BIOS setup menu for each individual hard disk. In the "Silent Mode" field, there is a choice between three options:

- *Disabled:* Full hard disk performance with standard noise generation
- *Medium:* Intermediate level of acoustic management
- *Silent:* Maximum level of acoustic management

CD/DVD Silent Mode – Automatic Acoustic Management

As well as hard disks, optical drives such as CD-ROM, CD-RW, DVD, DVD+/-RW etc. are also a significant source of noise in a PC system. Since these drives often spin even faster than hard disks and also rotate at different speeds depending on application, they cause higher levels of noise at certain times. In addition to the increased noise level, strong mechanical vibrations can lead to problems like read/burn errors. Most of the problems occur when using CD-ROMs or DVDs that are not manufactured precisely enough. Depending on how the drive is mounted and the design of the PC housing, these vibrations can also generate additional resonances.

There are already software tools available for reducing the rotation speed of optical drives, although this requires the tool to be launched each time the system is started up. An alternative option provided in the BIOS setup of Fujitsu Technology Solutions mainboards is to access the "Automatic Acoustic Management" feature provided by optical drives conforming to the extended ATA/ATAPI 6 standard.

Activating "Automatic Acoustic Management"

The Automatic Acoustic Management feature is activated and configured in the BIOS setup menu of the individual drive. The following options are available for selection in the "Silent Mode" field:

- *Disabled:*   The BIOS leaves the settings to the drive itself or to a software tool
- *Medium:*   Intermediate level of acoustic management
- *Silent:*   Maximum level of acoustic management

Note: The slower the drive rotates, the lower is its performance. Due to the high read error rate at high read speeds, the relationship cannot be expected to be linear; in other words, slower speeds often don't worsen the read performance as bad as expected.

Additional information and downloads

- General Information:
  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

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Fujitsu Technology Solutions GmbH
Clients Group, Systemboard OEM
Buergermeister-Ulrich-Str. 100
86199 Augsburg, Germany