

Product Facts

We make sure



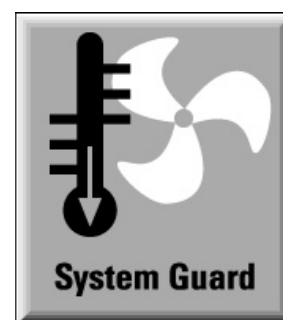
SystemGuard Version 3.x

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Product SystemGuard

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Positioning and target groups

SystemGuard is a freeware tool that is available on the Internet and can run on mainboards from Fujitsu Siemens Computers. Integrators as well as end customers are target groups for this software.

Important: SystemGuard is a pure freeware program for which no technical support is offered! Please note the legal information issued during installation.

Customer benefits

SystemGuard can help illustrate and explain the operation of the onboard Silent Fan Controller. The software also offers various setting options to reduce the noise level. Beginning with version 3, SystemGuard will also support Silent Fan LT Controller that are implemented on most value mainboards.

Product description

SystemGuard shows temperatures and fan speeds measured by the Silent Fan Controller and provides the possibility of changing fan dependencies.

Technical data

The main window of SystemGuard shows up to four temperatures, five fans and their influence on each other.

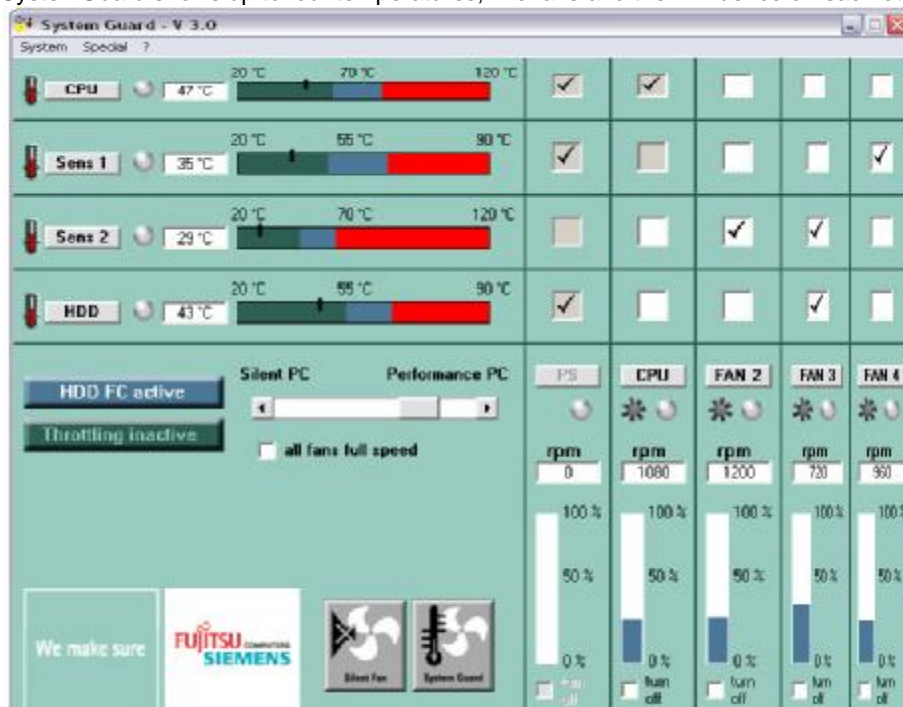


Illustration 1, SystemGuard main window

Temperatures

Depending on the mainboard used, the main window (left area) will show up to four temperature values numerically and graphically. The information displayed for each of these sensors indicates what temperature it is measuring and whether this temperature is below the critical threshold (Alert display). Usually the indicator is in the dark green range. In this case the connected fans rotate at their minimum speed or are switched off (depending on the basic setting). If the temperature moves into the blue range, the fans speed up. The fan speed increases continuously throughout the blue range, so that all the fans are operating at full speed before the red range is reached. Should the temperature nonetheless exceed the limit to the red range (critical temperature), the Silent Fan Controller reports a temperature alarm (premium mainboards only). If a sensor is not present or is defective, no sensor or temperature is displayed.

Please note: On some value mainboards (Silent Fan LT), the CPU temperature may not be correct due to possible offset.

Fans

The lower right area of the main window shows up to five fans. As with the temperatures, this also indicates first whether a fan is present and is operating properly. The fan speed (in revolutions per minute) can be read off underneath the heading "rpm". Additionally, the current fan speed is shown graphically (blue bar). If a fan fails, an alarm is triggered and the corresponding "warning LED" will blink in red color.

Below the blue bars, checkboxes specify, which fan are allowed to turn off at low temperature (turn off).

Notice: Some 4 PIN fans can not cut off. These are spinning with minimum rotation.

Temperature – Fan – Influence

The upper right area in the main window shows the Temperature – Fan – Influence matrix. The user can independently determine the dependencies for each sensor and each fan. Thus the user may configure his own cooling solution for a specific system. If more than one sensor is linked to a fan, the actual speed is determined by the most critical temperature value in each case. Nearly any combination is possible (premium mainboards only). Some system critical options may not be changed. These restrictions are shown via inactive checkboxes (premium mainboards) or system messages (value mainboards). Settings may be changed by clicking on one of the checkboxes. Every setting must be confirmed individually after each change and is then written directly into the Silent Fan controller. As a result, this data is overwritten by the BIOS as soon as the system is restarted. As soon as SystemGuard is started (e.g. by means of a Startup group), the settings made will be restored. It is not possible to write the settings into the BIOS with SystemGuard permanently.

By activating the checkbox “all fans full speed”, all fans will be run at maximum speed. This way, you can easily demonstrate, how loud a system could be without fan control. Alternatively, this option could be used for additional cooling in case of extremely hot environmental conditions.

Silent PC or performance PC? (throttling temperature)

As the Silent Fan controller is able to retard the CPU (throttling, premium mainboards only), it is possible to avoid overheating without activating the fans or causing them to speed up. The temperature at which the CPU clock speed is reduced (throttling temperature) can be specified by the user on an infinitely variable basis within certain limits. The more the slider is moved towards “Silent PC”, the earlier the CPU will be slowed down. This setting is useful when the CPU has a small workload (e.g. office applications) and the user would like to minimize the noise. If it is less important to have a quiet PC than a powerful PC, then the slider should be moved more towards the direction of “Performance PC”. In this case the clock speed is not reduced until later, when cooling by the fans is inadequate. This setting is useful, for example, when working with high end applications (e.g. 3D-rendering or games).

These settings can also be activated in the BIOS (see Product Facts Silent Fan). SystemGuard will overwrite the values set in the BIOS each time the interface is started. Naturally, SystemGuard remembers “its” settings and restores them after a system start, as soon as the tool has been activated. The throttling temperature will be shown as a light gray line in the bar of the CPU temperature. As soon as the CPU temperature exceeds this value, the CPU will throttle and the throttling display will show “active” (blue). After temperature drops below the throttling temperature again, the CPU will return to “full speed” and the display will be “Throttling inactive” (dark green) again.

This feature has nothing to do with Intel Enhanced Speedstep Technology or AMD Cool ‘n’ Quiet. Those functions will be controlled by the CPU itself and will additionally avoid any unnecessary heating-up of the system.

Additional Features

Fan AgeingProcess Check.

Since all moving parts are subject of mechanical wearout and the fans are among the most heavily loaded components in a PC, SystemGuard monitors the ageing of all fans on request. When the software is first started, all the fans present are brought to full speed in turn, and the speed is measured and noted. If the fan ageing process check is activated, SystemGuard then checks at regular intervals whether the fans still reach the maximum speed first noted. If the newly determined maximum speed is less than 80% of that initially measured, the user is prompted to replace the fan. The time interval between fan checks can be selected between one day and one year.

When a new fan is installed, it will be calibrated automatically. Otherwise, this can be done by simply clicking on one of the “FAN” buttons in the “Configure Ageing Process Check” window. This option can be found in the menu “Special”.

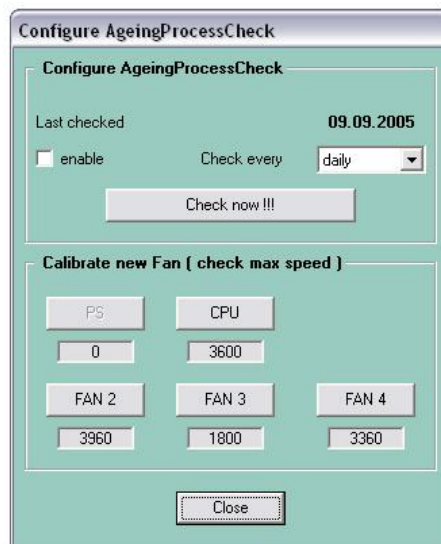


Illustration 2, SystemGuard Fan Ageing Process Check

WatchDog (premium mainboards only)

The WatchDog is a function borrowed from the server sector. Activating the WatchDog: When activated, the WatchDog has to be reset within a selectable time interval (1 – 8 min.). If this does not happen, the Silent Fan controller automatically initiates a system reboot. This is particularly relevant for print and file servers, as these should always be available but often are not accessible easily. SystemGuard can be used to activate and set the WatchDog. SystemGuard also handles the reset. This means that the WatchDog is also no longer reset if, for example, the system is overloaded. After the set time has elapsed, the Silent Fan controller restarts the system, and the server is available again. If the user terminates SystemGuard, the WatchDog is also deactivated, of course, as otherwise it would restart the system after the set time interval. After the system has been started up again, SystemGuard automatically detects that the WatchDog was responsible for the restart. It reports this to the user and makes a note in the event log. This option can be found in the menu “Special”.



Illustration 3, SystemGuard WatchDog initialization

Setting the language

Since Version 2.4, SystemGuard has been available in a choice of three languages: German, English and French. The language can be selected on installation or in the menu “Special” (see Illustration 4).



Illustration 4, Setting the language

SystemGuard messages (Alerts)

A basic distinction is made between two different types of alerts: hardware alert and software alert.

Hardware alert

Hardware alerts are alarms reported independently by the Silent Fan controller. This detects a fan failure, for example, and triggers an alarm after attempting to restart the fan. SystemGuard regularly polls the controller to determine whether a hardware alert is present or not. If so, the info window of the affected object is opened and the corresponding fault message displayed. The alert can then be reset here or ignored. In the latter case the fault message is retained; otherwise it is replaced by the OK message. Faults detected by the controller include: fan failure, overheating and failure of a sensor.

Software alert

As the Silent Fan controller does not detect or report all events, SystemGuard additionally monitors certain components. The present monitoring is one of these. As with the hardware alerts, the info window of the affected object is opened when an error is detected.

Present monitoring

In addition to alert monitoring, SystemGuard offers “Present monitoring”. This checks whether fans and sensors that were once present are still working or not. Suppose SystemGuard detects three fans and two sensors, then the program is terminated, the computer powered down and a fan (e.g. fan 2) removed. If SystemGuard is now restarted, the following message appears: “Fan 2 is not present – but it was when last running SystemGuard”. The software therefore stores which components are present and compares this data with the current values each time the program is started. If an object is then missing, a software alert is triggered.

Message LED and SysTray icon

The Message LED (connector on mainboard, see mainboard manual) flashes for each type of alert. This is intended to draw the user’s attention to a fault message even without a screen. In addition to the Message LED, an alert is indicated by means of a

red icon in the SysTray (on the far right in the Windows Start bar next to the clock). If the system is operating properly, a green icon (OK) is displayed in the SysTray.

Logging options

Event.log

To ensure that faults occurring during the user's absence can be classified correctly, SystemGuard logs all events that occur, including date, time and the most important measured values. If the system should exhibit major problems, with the temperature for example, this log file (event.log) can be very useful as an aid to remedying any fault present. If the log file gets too big or is no longer required, it can simply be deleted; SystemGuard recognizes this and automatically creates a new file. At the beginning of each file created, a note is first made of which components are present. It is not possible to limit the size of the event log file.

All.log

In addition to the logging of the events and alerts, SystemGuard can, on request, also write all the measured data at regular intervals into a file (all.log). The time period between the entries is freely selectable in the range from one to approx. 60,000 seconds. The values are stored together with the date and time (separated by semicolon) in table form, which enables trouble free and easy data import into Microsoft Excel, for example. These values can therefore be very easily transferred into a diagram.

Windows Eventlog

Under Windows NT-based operating systems, if no more event.log files are to be created and all the information is to be entered in the Windows Eventlog instead, this can be achieved by entering the following parameters when starting SystemGuard:

`SysGuard.exe /NoMsgBoxes /Write2EventLog`

A distinction is made between the following types of entries for the Eventlog: information and faults.

Information is understood to mean all messages that report a positive event (e.g. detection of a new fan). All negative messages (e.g. fan failure, overheating, etc.) are designated as faults. The messages are also displayed in the Windows Eventlog in accordance with this classification.

Additional information

Starting with the release of SystemGuard V2.3 it is possible to run SystemGuard in parallel with DeskView (premium mainboards).

Before a new version of SystemGuard is installed, the previous version should be removed completely from the system, as otherwise version conflicts can occur.

Starting with V3.0 also value mainboards are supported. The features of SystemGuard may differ, depending on the used mainboard and implemented Silent Fan LT controller. The following functions are not supported by value mainboards in general: Alerts, Throttling, Message LED, WatchDog.

Information and downloads

Information:

<http://www.fujitsu-siemens.com/mainboards>

Downloads (manuals, drivers, BIOS):

<http://www.fujitsu-siemens.com/support/> (free text search: "SystemGuard")