## **Introducing AIDA64**



AIDA64 Engineer is a streamlined Windows diagnostic and benchmarking software for home users. AIDA64 Engineer provides a wide range of features to assist in overclocking, hardware error diagnosis, stress testing, and sensor monitoring. It has unique capabilities to assess the performance of the processor, system memory, and disk drives. AIDA64 is compatible with all current 32-bit and 64-bit Microsoft Windows operating systems, including Windows 10 and Windows Server 2016.

A more detailed manual and setup guide are available online at:

http://www.aida64.co.uk/download?cat=manuals http://www.aida64.co.uk/download?cat=guides

AIDA64 and this manual are Copyright (c) 1995-2017 FinalWire Ltd. All rights reserved.

## Features

AIDA64 is designed to run on 32-bit and 64-bit Microsoft Windows operating systems, and it fully supports Microsoft Windows 95, 98, Me, NT 4.0 SP6, 2000, XP, Windows Server 2003, Vista, Windows Server 2008, Windows 7, Windows Server 2008 R2, Windows 8, Windows Server 2012, Windows 8.1, Windows Server 2012 R2, Windows 10, and Windows Server 2016. AIDA64 has exceptionally low system resource requirements (minimum 486 processor with 32 MB RAM).

## **Generic features**

- · Low-level hardware information: 48 pages
- · Software and operating system information: 46 pages
- · Security related information: 6 pages
- DirectX information including Direct3D acceleration features
- · Diagnostics module that simplifies troubleshooting
- · Tweaking features
- · Automatic online update

## **Benchmarking features**

- AVX and FMA accelerated FP32 and FP64 ray tracing benchmarks [\*NEW\*]
- $\cdot$  15 benchmark modules to measure CPU, FPU and memory performance
- Multi-threaded cache and memory bandwidth benchmarks with AVX2, AVX, FMA and SSE optimizations
- · Block-random cache and memory latency benchmark
- Benchmark reference results to compare measured performance to other systems
- · Cache & Memory Benchmark Suite with L4 cache support
- · OpenCL GPGPU Benchmark Suite
- $\cdot$  Hard disk, optical drive and flash drive benchmarking with RAID array support

### **Unique features**

- RemoteSensor: wireless remote monitoring of PC status on any smartphone or tablet [\*NEW\*]
- $\cdot$  System certificates information
- · AMD Mantle graphics accelerator diagnostics
- · ACPI Browser
- · DRAM Timings Panel
- $\cdot$  UpTime and DownTime statistics with critical errors counter
- Monitor Diagnostics to check the capabilities of CRT and LCD displays
- System Stability Test with thermal monitoring to stress CPU, FPU, APU, memory, caches, disks and GPUs
- Hardware Monitor to measure and display system temperatures and voltages on the System Tray, OSD, Desktop Gadget, and over 50 external LCD and VFD displays
- $\cdot$  SensorPanel with 3D bars, graphs and gauges
- Temperature, voltage and fan RPM data logging to HTML and CSV log files
- $\cdot$  Overheating, voltage drop, overvoltage and cooling fan failure detection
- $\cdot$  High Definition Audio and OpenAL sound card details
- AMD Stream, Direct3D Compute Shader, nVIDIA CUDA, OpenCL GPGPU device information
- · Smart Battery information
- $\cdot$  Web links: IT portals, software and driver download
- Manufacturer links: product information, driver, firmware, and BIOS download
- $\cdot$  Hardware information database for over 204,000 devices
- · Overclock information
- · Fully localized user interface: 35+ languages
- · No installation or setup procedure required

## AIDA64 END-USER LICENSE AGREEMENT

The software and materials provided by FinalWire Ltd. are licensed, NOT SOLD; and are available for use only under the terms described hereafter. Please read this agreement carefully. By downloading, installing, copying or otherwise using the software and materials, you agree to be bound by the terms and conditions of this agreement. If you do not agree with all of the terms and conditions of this agreement, do not download, install, copy or otherwise use the software or materials provided by FinalWire Ltd.

The term "Software" used throughout the agreement includes any modified versions or updates of the Software licensed to you by FinalWire, but does not include source code for the FinalWire software product.

## **TERMS & CONDITIONS**

**GRANT OF LICENSE:** Subject to the terms and conditions of this Agreement, FinalWire grants you a non-exclusive and non-transferable license only to:

- a) Install and use for personal or internal business purposes one copy of the Software on a single computer;
- b) Make a single copy of the Software solely for archival purposes;
- c) Store or install a copy of the Software on a storage device such as a network server, used only to run the Software on your other computers over an internal network, provided that the number of computers on which you use the product does not exceed the license number. A single license for the Software does not allow you to share the Software or use it concurrently on different computers or for others (other than you) to access, install, download, copy or otherwise use the functionality of the Software.

**MULTIPLE LICENSE PACK:** If you have purchased a Multiple License Pack, you may make additional copies of the Software not exceeding the

number of licenses purchased. You may use each copy solely in the manner specified in this Agreement.

**REGISTRATION:** FinalWire has included features in the Software to prevent unlicensed use of the Software. You agree that FinalWire may do so. In particular, use of the full version of the Software requires that you register the Software through the Internet as described in the FinalWire Product Registration email sent to you following your purchase of the product.

**UPDATES / UPGRADES:** You may install and use a modified version, update, or upgrade of the Software only if you have a validly licensed full version of the Software being modified, updated, or upgraded. If you download, install, copy, or otherwise use a modified version, update, or upgrade of the Software, then this Agreement terminates as to the previous version of the Software, and you then have a license only to such modified version, update, or upgrade of the Software or upgrade of the Software or upgrade of the Software, and you then have a license only to such modified version, update, or upgrade of the Software under the terms and conditions of this Agreement.

**RESTRICTIONS:** Except as otherwise expressly permitted in this Agreement, you may not:

- a) Reproduce or copy any of the Software;
- b) Modify or create any derivative works of the Software, including translation or localization;
- c) Decompile, disassemble, reverse engineer, or otherwise attempt to derive the source code for the Software;
- d) Redistribute, encumber, sell, rent, lease, sublicense, or otherwise transfer rights to the Software;
- e) Remove or alter any trademark, logo, copyright or other proprietary notices, legends, symbols or labels in the Software;
- f) Provide service bureau services using the Software or otherwise use the Software to process data or information supplied by a third party for the benefit of such third party without FinalWire's prior express written consent, which may be given in FinalWire's sole discretion; or
- g) Copy the printed materials accompanying the Software. Any changes to, modifications to, or derivative works of the Software shall become the exclusive property of FinalWire.

**TERMINATION:** Without prejudice to any other rights, FinalWire may terminate this Agreement if you breach any of its terms and conditions. Upon termination, you shall destroy all your copies of the Software.

**PROPRIETARY RIGHTS:** Title, ownership rights, and intellectual property rights in the Software shall remain in FinalWire and/or its suppliers or licensors. You acknowledge such ownership and intellectual property rights and will not take any action to jeopardize, limit or interfere in any manner with FinalWire's or its suppliers' or licensors' ownership of or rights with respect to the Software. The Software is protected by copyright and other intellectual property laws and by international treaties.

## GENERAL:

- a) This Agreement may be amended only by a writing signed by both you and FinalWire Ltd.
- b) If any provision in this Agreement should be held illegal or unenforceable by a court having jurisdiction, such provision shall be modified to the extent necessary to render it enforceable without losing its intent, or severed from this Agreement if no such modification is possible, and other provisions of this Agreement shall remain in full force and effect.
- c) The controlling language of this Agreement is English.
- d) You agree to bear any and all costs of interpreters if necessary.
- e) If you have received a translation into another language, it has been provided for your convenience only.
- f) If you or FinalWire waives any term or condition of this Agreement or any breach thereof, in any one instance, this shall not waive such term or condition or any subsequent breach thereof.
- g) This Agreement shall be binding upon and shall be to the benefit of you, your successors and permitted assigns. The relationship between FinalWire and you is that of independent contractors, thus neither you nor your agents shall have any authority to bind FinalWire in any way.
- h) The provisions of this Agreement that require or contemplate performance after the expiration or termination of this Agreement shall be enforceable notwithstanding such expiration or termination.
- i) You may not assign, or otherwise transfer by operation of law or

otherwise, this Agreement or any rights or obligations herein except to the acquirer of your business in the case of a merger or the sale of all (or substantially all) of your assets.

- j) If any dispute arises under this Agreement, the prevailing party shall be reimbursed by the other party for any and all legal fees and costs associated with the dispute.
- k) The headings to the sections of this Agreement are used for convenience only and shall have no substantive meaning.
- FinalWire may use your name in any customer reference list or in any press release issued by FinalWire regarding the licensing of the Software.

**DISCLAIMER OF WARRANTY:** The software and documentation provided by FinalWire Ltd. is provided without warranty. FinalWire gives no guarantee that the Software is free from defects. The risk therefore lies on you to use the product with the knowledge that the performance and quality of the software may not be optimal. In the event that the Software is defective, you will be held responsible for the cost to service and repair the Software, and therefore cannot seek compensation from FinalWire Ltd. or any third party vendors. THIS DISCLAIMER OF WARRANTY CONSTITUTES AN ESSENTIAL PART OF THIS AGREEMENT. This software cannot be used in ways not specified by this disclaimer.

**LIMITATION OF LIABILITY:** To the maximum extent permitted by applicable law, in no event will FinalWire or its suppliers or licensors be liable for any indirect, special, incidental or consequential damages arising out of the use of (or inability to) use the software, including without limitation: damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses, even if advised of the possibility thereof, and regardless of the legal or equitable theory (contract, tort or otherwise) upon which the claim is based. In any case, FinalWire and its suppliers' and licensors' entire liability under any provision of this agreement shall not exceed in the total sum of the fees you have paid for this license (if any), with the exception of death or personal injury caused by the negligence of FinalWire to the extent to which applicable law prohibits the limitation of damages in such cases. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so this exclusion and limitation may not be applicable.

**APPLICABLE LAW:** If you acquired this Software in the United States, this EULA is governed by the laws of the State of Washington. If you acquired this Software in Canada, unless expressly prohibited by local law, this EULA is governed by the laws in force in the Province of Ontario, Canada; and, in respect of any dispute which may arise hereunder, you consent to the jurisdiction of the federal and provincial courts sitting in Toronto, Ontario. If you acquired this Software in the European Union, Iceland, Norway, or Switzerland, then local law applies. If you acquired this Software in any other country, then local law may apply.

Should you have any questions concerning this EULA, or if you desire to contact FinalWire for any reason, please contact FinalWire at <u>info@finalwire.com</u> or write to FinalWire Ltd., Hegedus Gyula u. 89/a. 7/6., Budapest, HUNGARY H-1133.

Copyright © 2010 FinalWire Ltd. All rights reserved.

## **Revised: October 2010**

-----

\_\_\_\_\_

### **OpenSSL License**

-----

/\*

\_\_\_\_\_

\* Copyright (c) 1998-2008 The OpenSSL Project. All rights reserved.

- \*
- \* Redistribution and use in source and binary forms, with or without
- \* modification, are permitted provided that the following conditions \* are met:

\* \*

\* 1. Redistributions of source code must retain the above copyright

\* notice, this list of conditions and the following disclaimer.

- \*
- \* 2. Redistributions in binary form must reproduce the above copyright
- notice, this list of conditions and the following disclaimer in
- the documentation and/or other materials provided with the \*
- \* distribution.
- \*
- \* 3. All advertising materials mentioning features or use of this
- software must display the following acknowledgment: \*
- "This product includes software developed by the OpenSSL Project \*
- for use in the OpenSSL Toolkit. (http://www.openssl.org/)" \*
- \*

\* 4. The names "OpenSSL Toolkit" and "OpenSSL Project" must not be used to

- endorse or promote products derived from this software without \*
- prior written permission. For written permission, please contact \*
- openssl-core@openssl.org. \*
- \*
- \* 5. Products derived from this software may not be called "OpenSSL"
- nor may "OpenSSL" appear in their names without prior written \*
- permission of the OpenSSL Project. \*
- \*
- \* 6. Redistributions of any form whatsoever must retain the following
- acknowledgment: \*
- "This product includes software developed by the OpenSSL Project \*
- for use in the OpenSSL Toolkit (http://www.openssl.org/)" \*
- \*

\* THIS SOFTWARE IS PROVIDED BY THE OpenSSL PROJECT ``AS **IS" AND ANY** 

\* EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE

\* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR

\* PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OpenSSL **PROJECT OR** 

\* ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,

\* SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT

\* NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR

SERVICES;

\* LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)

\* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,

\* STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)

\* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED

\* OF THE POSSIBILITY OF SUCH DAMAGE.

\*

\* This product includes cryptographic software written by Eric Young
\* (eay@cryptsoft.com). This product includes software written by Tim
\* Hudson (tjh@cryptsoft.com).

" \*/

**Original SSLeay License** 

-----

/\* Copyright (C) 1995-1998 Eric Young (eay@cryptsoft.com)

\* All rights reserved.

\*

\* This package is an SSL implementation written

\* by Eric Young (eay@cryptsoft.com).

\* The implementation was written so as to conform with Netscapes SSL.

\* This library is free for commercial and non-commercial use as long as
\* the following conditions are aheared to. The following conditions

\* apply to all code found in this distribution, be it the RC4, RSA,

\* Ihash, DES, etc., code; not just the SSL code. The SSL documentation

\* included with this distribution is covered by the same copyright terms

\* except that the holder is Tim Hudson (tjh@cryptsoft.com).

\*

\* Copyright remains Eric Young's, and as such any Copyright notices in \* the code are not to be removed.

\* If this package is used in a product, Eric Young should be given

attribution

\* as the author of the parts of the library used.

\* This can be in the form of a textual message at program startup or
\* in documentation (online or textual) provided with the package.
\*

\* Redistribution and use in source and binary forms, with or without

\* modification, are permitted provided that the following conditions
\* are met:

- \* 1. Redistributions of source code must retain the copyright
- \* notice, this list of conditions and the following disclaimer.
- \* 2. Redistributions in binary form must reproduce the above copyright
- \* notice, this list of conditions and the following disclaimer in the
- \* documentation and/or other materials provided with the distribution.
- \* 3. All advertising materials mentioning features or use of this software
  \* must display the following acknowledgement:
- Inust display the following acknowledgement.
   "This product includes environmental software written
- \* "This product includes cryptographic software written by
- \* Eric Young (eay@cryptsoft.com)"
- \* The word 'cryptographic' can be left out if the rouines from the library
- \* being used are not cryptographic related :-).

\* 4. If you include any Windows specific code (or a derivative thereof) from

\* the apps directory (application code) you must include an acknowledgement:

\* "This product includes software written by Tim Hudson (tjh@cryptsoft.com)"

\*

\* THIS SOFTWARE IS PROVIDED BY ERIC YOUNG ``AS IS" AND

\* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE

\* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE

\* ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE

\* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL

\* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS

\* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)

\* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT

\* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY

\* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF

\* SUCH DAMAGE.

\*

\* The licence and distribution terms for any publically available version or \* derivative of this code cannot be changed. i.e. this code cannot simply be

\* copied and put under another distribution licence

\* [including the GNU Public Licence.]

\*/

## Purchase

FinalWire sells its products through our valued worldwide channel of resellers. Please contact our <u>sales department</u> and one of our representatives will put you in contact with a FinalWire partner in your region who can meet your requirements.

AIDA64 Engineer is also available for <u>online purchase</u>.

## **Getting started with AIDA64**

AIDA64 can be downloaded in either a ZIP compressed package or in a self-installation EXE package. Both versions contain the same files, the only difference is the process of installation.

## Setting up a ZIP package

AIDA64 does not require a setup process, hence it can be installed by just copying AIDA64 files (AIDA64.EXE, AIDA64.DAT, etc) into an empty folder. From the ZIP compressed package AIDA64 files can be decompressed to a folder by using WinZIP, WinRAR or any other ZIP compatible application. After the decompression it is necessary to create a shortcut to launch AIDA64, it can be done by right-clicking on the decompressed AIDA64.EXE file, and selecting *Send To / Desktop (create shortcut)*.

## Setting up a self-installation EXE package

Although AIDA64 does not require a setup process, to ease the installation it can be downloaded in a self-installation EXE package too. That package does exactly the process explained in the previous paragraph: it decompresses the files to a new folder (default: *C:\Program Files\FinalWire\AIDA64 Engineer*) and creates a shortcut on the desktop to launch AIDA64. The self-installation package offers the advantage of enabling the uninstallation in *Control Panel / Add/Remove Programs*.

#### Uninstallation

Since AIDA64 does not require a setup process, it can be removed simply by deleting all files in AIDA64 folder, and when it's done the folder itself can be removed too.

To remove an AIDA64 installed using a self-installation EXE package it is preferred to use the standard *Control Panel / Add/Remove Programs* way, to ensure the entry for AIDA64 is to be removed from the Windows installed programs list.

#### **Upgrading AIDA64**

When a new version is available, AIDA64 can be upgraded by downloading the new ZIP package and extracting all files into the AIDA64 installation folder, by overwriting all existing files. Before the upgrade the uninstallation of the old version is not necessary.

#### Getting started to use AIDA64

The user interface and its elements

Configure and customize AIDA64 user interface and behavior

Create reports of system configuration

## The user interface

The AIDA64 user interface is shown on the following screen shot. Please scroll down for an explanation of each user interface elements.

64		AIDA64 Er	ngineer				- 🗆 🗙
File View Report Favorites Tools Help							
Content of the second s							
Menu Favorite	Device Description						
64 AIDA64	Cor ir Neutron SSD (1310790800009800004C)						
D- 🚛 Computer							
Motherboard		tion	Threshow	Value	Worst	Data	Status
Server		late	6	166	166	0	OK: Value is normal
		or Count	36	25	253	0	OK: Value is normal
Multimedia	9 Power-On Tir	me Count	0	100	100	25	OK: Always passes
🔺 🔄 Storage	OC Power Cycle	Count	20	100		15	OK. Value is normal
- 🕞 Windows Storage	AB <vendor-specific> AC <vendor-specific></vendor-specific></vendor-specific>		0	253			asses
			0	253	4. Into	ormation window asses	
Physical Drives	B5 <vendor-specific></vendor-specific>		0	253			asses
Optical Drives	☑ B6 <vendor-specific></vendor-specific>		0	253	7/5	0	OK: Always passes
ASPI	C2 Temperature		0	28	0	22, 34, 28	OK: Always passes
ATA	C9 Soft Read Erro	or Rate	0	100	100	0	OK: Always passes
	CC Soft ECC Corr	rection	0	10	100	0	OK: Always passes
	E7 Temperature		0	253	253	0	OK: Always passes
Deviced		cific>	0	100	100	69	OK: Always passes
Softwar o D		cific>	0	100	100	33	OK: Always passes
Security 3. Page menu		cific>	0	100	100	51	OK: Always passes
Retr		try Rate	0	100	100	86	OK: Always passes
Database							
Benchmark							
G SMART							

### 1. Main menu

The main features of AIDA64 (including Monitor Diagnostics, System Stability Test, Preferences and Report Wizard) are accessible from the main menu.

## 2. Toolbars

The left toolbar contains 6 buttons can be used to navigate through the pages of AIDA64:

- $\cdot$  "Left Arrow" button can be used to jump to the previous page
- · "Right Arrow" button can be used to jump to the next page
- "Up Arrow" button can be used to navigate one level up in the page menu
- $\cdot$  "Refresh Page" button can be used to refresh or update the actual page
- "Tech Support" button can be used to open the <u>AIDA64 Discussion</u> <u>Forum</u>
- $\cdot$  "System Stability Test" button can be used to launch the AIDA64 System Stability Test

The right toolbar contains a button to launch the Report Wizard. It may also display other buttons that access page specific features, depending on the actual page viewed. For example, a Remove button appears when navigating to the *Software / Auto Start* and *Software / Installed Programs* pages.

### 3. Page menu

The page menu provides a general listing of all pages, such as hardware, software and DirectX information. The pages are grouped in the following categories:

- · Computer
- · Motherboard
- · Operating System
- · Server
- Display
- · Multimedia
- · Storage
- · Network
- $\cdot$  DirectX
- · Devices
- · Software
- · Security
- · Config
- · Database

· Benchmark

### 4. Information window

The information window displays specific information pertaining to each category from the page menu. The information window layout changes depending on the particular item being viewed; it can be a single list box (example: *Computer / Summary* page) or it can be divided horizontally into two list boxes (example: *Storage / SMART* page). A right-click on any single item will provide a command to copy the related information to the clipboard. Clicking on the column captions will sort the displayed information by alphabetic order.

# Main menu

The AIDA64 main menu is explained in the pages below.

## File

This menu covers Preferences and closing AIDA64. Please scroll down to read explanation of each menu item.



#### Preferences

This menu item launches the Preferences module. <u>Preferences</u> can be used to customize features, behavior and layout of AIDA64.

#### Exit

This menu item can be used to close AIDA64 and return to Windows.

## View

This menu can be used to change the look of the page menu window. Please scroll down to read explanation of each menu item.



### Toolbars

This menu item displays or hides the toolbars.

#### **Status Bar**

This menu item displays or hides the status bar (on the bottom of the main window).

#### Large Icons

This menu item selects large icons view.

#### **Small Icons**

This menu item selects small icons view.

## List

This menu item selects list view.

### Details

This menu item selects details view.

## Expand

This menu item expands all submenus of the page menu.

## Collapse

This menu item collapses all submenus of the page menu.

## Refresh

This menu item refreshes the actual page.

## Report

This menu covers the report creation features of AIDA64. Please scroll down to read explanation of each menu item.



### **Report Wizard**

This menu item launches the Report Wizard. Report Wizard can be used to create a report of the local computer interactively.

## **Quick Report**

This menu item can be used to create an instant report of the local computer. The profile of the created quick report (ie. the pages to be included in the report) is decided based on the highlighted category or page in the page menu.

Examples:

- $\cdot$  When the root of the page menu is highlighted, the quick report will include all pages.
- When *Storage* category is highlighted, the quick report will include all pages under Storage category.
- When *Storage / ATA* page is highlighted, the quick report will include only the *Storage / ATA* page.

#### Submit Report To FinalWire

This menu item can be used to submit a HTML report to the authors of AIDA64. Submitted reports only contain information about the computer hardware, and they could help investigating a software bug.

## Favorites

This menu covers the favorites and web links feature of AIDA64. Please scroll down to read explanation of each menu item.



### Add to Favorites

This menu item can be used to add a page to the favorites collection. The page to be added should be highlighted on the "Menu" tab of the page menu.

#### **Remove from Favorites**

This menu item can be used to remove a page from the favorites collection. The page to be removed should be highlighted on the "Favorites" tab of the page menu.

Web

This menu lists web links collection of AIDA64. Web links are stored in the AIDA64.WEB file.

## Tools

This menu covers the most frequently used modules of AIDA64. Please scroll down to read explanation of each menu item.



### **Disk Benchmark**

This menu item launches the Disk Benchmark. Disk Benchmark can be used to measure the performance of hard disk drives, optical drives, flash memory drives, memory cards and SSD drives.

#### **Cache And Memory Benchmark**

This menu item launches the Cache And Memory Benchmark. Cache And Memory Benchmark can be used to measure the bandwidth and latency of CPU caches and system memory.

#### **Monitor Diagnostics**

This menu item launches the Monitor Diagnostics. Monitor Diagnostics can be used to check the capabilities and display performance of LCD and CRT displays.

#### **ACPI Browser**

This menu item launches the ACPI Browser. ACPI Browser can be used to walk the ACPI tree, perform ACPI queries, and to save ACPI tables.

#### **DRAM Timings**

This menu item launches the DRAM Timings. DRAM Timings can be used to compare the SPD and XMP programmed memory timing values against the actually used memory controller timings, separately for each memory channel.

#### **System Stability Test**

This menu item launches the System Stability Test. System Stability Test can be used to stress all major system components (CPU, caches, memory, hard disk drives) all at once, and find possible stability or cooling issues.

#### AIDA64 CPUID

This menu item launches the CPUID Panel. CPU Panel shows a onepage overview about the CPU.

## Help

This menu covers the local and online help options for AIDA64. Please scroll down to read explanation of each menu item.



### AIDA64 Help

This menu item can be used to display the AIDA64 User's Manual.

### **AIDA64** Online

This menu item can be used to browse to AIDA64 web page.

#### AIDA64 Forum

This menu item can be used to browse to the <u>AIDA64 Discussion Forum</u>, where technical support and knowledge base is available for AIDA64 products.

### Contact

This menu item can be used to post a feedback about AIDA64.

#### License

This menu item displays the AIDA64 End User License Agreement.

### **Command-line Options**

This menu item displays the list of AIDA64 <u>command-line options</u>, and a short explanation for each.

#### **Enter Product Key**

This menu item can be used to enter the product key received after acquiring an AIDA64 software license.

#### **Check for Updates**

This menu item can be used to find out if an updated version of AIDA64 is available. Automatic online update can be configured on the page <u>Preferences / General</u>.

#### About

This menu item displays the About box of AIDA64. Version number and release date for the actual AIDA64 copy can be checked on this page.

## Page menu

The page menu provides a general listing of all pages, such as hardware, software and DirectX information.



The screen shot above shows the right-click menu of the page menu.

### **Quick Report**

This menu item can be used to create an instant report of the local computer. The profile of the created quick report (ie. the pages to be

included in the report) is decided based on the highlighted category or page in the page menu.

Examples:

- When the root of the page menu is highlighted, the quick report will include all pages.
- When *Storage* category is highlighted, the quick report will include all pages under Storage category.
- When *Storage / ATA* page is highlighted, the quick report will include only the *Storage / ATA* page.

## Add to Favorites

This menu item can be used to add a page to the favorites collection. The page to be added should be highlighted on the "Menu" tab of the page menu.

## **Report Wizard**

All the system information provided by AIDA64 can be written to a report file or printed using the AIDA64 Report Wizard. HTML and MHTML report files can later be opened in a web browser.

The Report Wizard can be started by clicking on the Report button on the tool bar, or alternatively by navigating to main menu / Report / Report Wizard.



Report Wizard follows the standard Windows wizard layout. First page is a welcome page, Next button advances to the next page of the wizard, Back button jumps back to the previous page, Cancel button closes down the wizard. The actual report creation process starts only after the successful completion of the wizard.

## **Report profiles**

The second page of the Report Wizard selects the report profile to be used for the report creation process. A report profile is no more than a list of pages (of the page menu) to be included in the report. AIDA64 offers a couple of predefined report profiles to let users quickly create standard report files.

	Report Wizard - AIDA64
	Report profiles
	Please choose a desired report layout profile:
	System Summary only Hardware-related pages
23/18/153	Software-related pages     Benchmark pages
-	O Custom selection
	○ Load from file: \\server\aida64folder\our_profile.prf
AIDA64	
	< Back Next > Cancel

### All pages

This report profile includes all available pages of the page menu, from *Computer / Summary* to *Benchmark / Memory Latency*. Although this profile offers the most information, it should be used with precautions since it produces a very long report file, typically over 2 MB in size.

### System Summary only

This includes only the *Computer / Summary* page in the created report. This profile is useful to have a quick summary of the hardware and operating system, but the reports produced using this profile will not include any software information.

#### Hardware-related pages

This profile includes all pages containing hardware configuration information, for example every pages under *Motherboard*, *Storage* and *Devices* categories. Hardware reports typically do not include any private information except for motherboard and system serial number, IP and MAC addresses.

#### Software-related pages

This profile includes all pages containing software configuration information, for example every pages under *Operating System*, *Software*, *Config* and *Database* categories. Software reports typically include a lot of private information, hence they should be shared with other people only with strong precautions.

#### **Benchmark pages**

This profile includes all benchmark pages under *Benchmark* category.

#### **Custom selection**

This option offers a flexible way to compile a custom report profile ondemand, using the *Custom report profile* page of the Report Wizard.

#### Load from file

This option offers a quick way to load back a previously compiled custom report profile file (with .RPF file extension) that was saved on the *Custom report profile* page of the Report Wizard. The browse button can be used to select the file in Windows Explorer.

## **Custom report profile**

The third page of the Report Wizard offers a flexible way to compile a custom report profile on-demand. Custom report profiles can be saved to a report profile file (with .RPF file extension).



The pages to be included in the custom report profile can be selected or deselected by clicking on the checkbox next to the page name. By clicking on a checkbox next to a category (e.g. *Computer*) all pages under the category can be selected or deselected at once. To select or deselect all pages, the checkbox next to "*AIDA64 - Report*" should be clicked.

#### Loading a custom report profile

By clicking on the Load button, a previously compiled custom report profile can be loaded back from a .RPF report profile file.

#### Saving the compiled report profile
By clicking on the Save button, the current custom report profile can be saved to a .RPF report profile file.

# **Report format**

The last page of the Report Wizard selects the format of the created report. AIDA64 offers an exceptional selection of report formats with logical layout and structure.



# **Plain Text**

Using this option the report will be created in the plain text format. For network audit purposes plain text format is in most cases not useful.

#### HTML

Using this option the report will be created in HTML (HyperText Markup Language) format. Layout of HTML reports can be customized on the page <u>Preferences / Report / Report Look</u>.

# MHTML

Using this option the report will be created in MHTML (MIME HTML) format. MHTML reports are basically HTML reports with small icons included. MHTML reports can be opened with MS Internet Explorer 5 and later, and recent versions of other HTML browsers. Layout of MHTML reports can be customized on the page <u>Preferences / Report / Report Look</u>. MHTML reports are perfect to be printed or filed.

# **Report review window**

After completing the Report Wizard, the actual report creation process begins. When all information are gathered, the generated report is displayed in the Report review window.

64	Report - AIDA64 –	×
File 📑 Save To File 📑 Send In E-mail	🌒 Submit To FinalWire 📄 Print Preview 🖷 Print 🔞 Close	
AIDA64 Engi	neer	^
<ul> <li>Version</li> <li>Benchmark Module</li> <li>Homepage</li> <li>Report Type</li> <li>Computer</li> <li>Generator</li> <li>Generator</li> <li>Operating System</li> <li>Date</li> <li>Time</li> </ul>	AIDA64 4.1.581-x64 http://www.aida64.com/ Quick Report FINAL Wire Microsoft Windows 8.1 Professional 6.3.9600.16384 (Win8.1 RTM) 2013-09-23 09:03	
P Computer: Computer Type Coperating System	ACPI x64-based PC Microsoft Windows 8.1 Professional	~
Done	195 KB	

In this window the created report can be printed, saved to a report file or sent in e-mail using SMTP, MAPI or Outlook protocols. For printing purposes HTML and MHTML report formats are the best choice.

Automatic compression of the saved or e-mailed report can be enabled on the page <u>Preferences / Report</u>.

# Preferences

AIDA64 offers outstanding customization flexibility via its Preferences module. This module is accessed via main menu / File / Preferences.

64 Preferences - AIDA64						Х
Search	anguage					
😔 Language		Shaine	^			
🖉 General	O Arabic	Sudibe				
🛄 Layout	OBelanusian	Siertoper				
🔍 Stability		Bosanski				
📝 Report	OBulgarian	Áúčišť décě				
Report File	O Gatalan	Auearonec				
	O Catalan	Catair				
Remarks	O Croatian	Hrvatski				
E-mail	OCzech	Ceský				
SMTP	O Danish	Dansk				
💻 Summary	O Dutch	Nederlands				
🗟 Content Filtering	() Estonian	Eesti				
Custom Components	English	English				
Note: Hardware Monitoring	○ Finnish	Suomi				
Update Frequency	○ French	Français				
Sensor Icons	○ German	Deutsch				
V IO OSD	O Hungarian	Magyar				
OSD Items	O Indonesian	Bahasa Indonesia				
🗸 📑 Desktop Gadget	O Italian	Italiano				
Gadget Items	O Japanese	″ú–{Śe				
Y - ELCD	O Korean	Cѱalĩ				
ELCD Items	O Latvian	Latviešu				
LCD Options	O Lithuanian	Lietuviř				
SensorPanel	O Macedonian	Ěŕeĺäĩíceč				
A RGB LED	O Norwegian	Norsk				
Logging	O Polish	Polski				
External Applications		Portugues (Brasil)	~			
Alerting		Portuguęs (brasil)	•			
Correction			01/	C 1		
Hot Keys			UK	Cancel	App	biy

The first page of the Preferences module lists all possible user interface languages. The user interface language is changed by selecting the desired language from the list and pressing the "OK" button. Restarting AIDA64 is recommended after changing the user interface language, to assure that all user elements are updated and displayed correctly.

# General

The "General" category allows the user to define the primary role of the computer, as follow:



# **Display AIDA64 in the Control Panel**

This option enables displaying AIDA64 icon in Windows Control Panel, hence it enables launching AIDA64 from Control Panel.

#### Load AIDA64 at Windows startup

This option enables automatic loading of AIDA64 when Windows starts.

## Display AIDA64 splash screen at startup

This option enables displaying of AIDA64 splash screen at AIDA64 startup.

## "Minimize" button minimizes main window to System Tray

This option changes the default behavior of the Minimize button to close AIDA64 main window to the System Tray (instead of Taskbar).

#### "Close" button minimizes main window to System Tray

This option changes the default behavior of the Close button to close AIDA64 main window to the System Tray (instead of exiting the application).

#### When AIDA64 starts

This option controls the initial appearance of AIDA64 main window. Combined with the "Load AIDA64 at Windows startup" option, it is possible to load AIDA64 at Windows startup and hiding its main window in order to use it to monitor temperatures and voltages using its <u>Sensor</u> <u>Icons</u> or <u>OSD</u> features.

#### **Check for updates**

This option configures the automatic online update feature. A fully automated online update is only available when AIDA64 is activated with a valid product key. During the 30-day trial period -- or when AIDA64 is activated with a non-genuine product key -- only a notification is sent about new product updates, and a manual software update is required.

#### Update type

This option can be used to select which updates to use. AIDA64 beta updates are released once a week, while stable updates are released

cca. 5 to 8 times a year.

# Save update packages to local folder

This option can be used to backup AIDA64 update packages to a local folder. Besides the ZIP format update package, a text file holding changelog information is also saved to the specified folder after a successful software update.

# Layout

This page covers several options that control the AIDA64 user interface and appearance. Please scroll down to read explanation of each options.



#### Enable "ASPI" page

This option displays or hides the *Storage / ASPI* page. In some very rare cases on ASPI page AIDA64 may lock up or cause an application fault, in such cases disabling ASPI page can help to make AIDA64 stable.

## Enable "Audio Codecs" page

This option displays or hides the *Multimedia / Audio Codecs* page.

## Enable "DMI" page

This option displays or hides the *Computer / DMI* page. The reliability and accuracy of DMI information depends on the manufacturer of the motherboard or brand-name computer. The DMI page should be disabled when DMI information is suspect or inaccurate.

## Enable "OpenAL" page

This option displays or hides the *Multimedia / OpenAL* page. OpenAL API calls may cause application or operating system fault when the audio driver does not fully conform to industry-accepted standards.

## Enable "OpenGL" page

This option displays or hides the *Display / OpenGL* page. OpenGL API calls may cause application or operating system fault when the video driver does not fully conform to industry-accepted standards.

#### Enable "DirectX" menu

This option displays or hides all pages under the *DirectX* menu.

#### Enable "Config" menu

This option displays or hides all pages under *Config* menu. When those pages are not used or required, they can be disabled via this option.

#### Enable "Database" menu

This option displays or hides all pages under the *Database* menu. When those pages are not used or required, they can be disabled via this option.

#### Enable "Benchmark" menu

This option displays or hides all pages under the *Benchmark* menu. When those pages are not used or required, they can be disabled via this option.

#### Sort menu and submenu items alphabeticially

This option sorts the Page menu captions alphabetically. This option simplifies navigation in the Page menu to ease finding a specific one in the wide selection of pages.

#### Hide icon and bubble in Notification Area

This option displays or hides the AIDA64 icon on the System Tray (also known as the Notification Area). This includes the bubble shown for specific events under Windows 2000 and later operating systems.

#### Remember main window position

AIDA64 saves and restores the main window position when this option is enabled. The AIDA64 main window will always be displayed on the desktop centre when this setting is disabled.

#### Remember main window size

AIDA64 saves and restores the main window size (both width and height) when this option is enabled. The AIDA64 main window will be displayed using the default 800x600 window size when this setting is disabled.

#### Remember page menu state

AIDA64 saves and restores the page menu state when this option is enabled. Page menu state means the expanded or collapsed state of each menu item of the page menu.

#### Remember last selected page

AIDA64 displays the last selected page when this option is enabled.

# Hide the best benchmark reference results

This option can be used on old computers to hide the top half of the scores in the benchmark reference results list.

# Stability

This page lists several options to control the low-level hardware detection modules of AIDA64. When experiencing instability issues, these options can be used to make AIDA64 work properly. Please scroll down to read explanation of each options.



# Load kernel driver

This option controls the using of AIDA64 kernel driver. In most cases instability issues can be avoided by preventing the use of AIDA64 kernel

driver.

## Low-level MSR operations

This option controls the using of MSR instructions (RDMSR and WRMSR). When this option is disabled, the detection of CPU FSB and CPU multiplier cannot be used.

#### Low-level PCI bus operations

This option controls the using of low-level PCI bus scanning that may cause system lockup in old systems, typically equipped with S3 PCI or Trident PCI video cards. When this option is disabled, neither of motherboard chipset information, motherboard buses information, GPU information, SPD information and sensor information can be provided.

#### Low-level SMBus operations

This option controls the using of low-level SMBus scanning that may cause system lockup in rare cases. When this option is disabled, neither of SPD information and sensor information can be provided.

#### Low-level sensor operations

This option controls the using of low-level sensor scanning that may cause system lockup, CPU fan stop or system audible warnings in rare cases. When this option is disabled, no sensor information can be provided.

# Fan divisor reconfiguration

This option controls the using of the fan divisor reconfiguration feature of the hardware monitoring module of AIDA64. Fan divisor reconfiguration ensures that status of all fans -- including low-RPM fans -- can be detected properly. However, MSI Core Cell and PC Alert applications collide with applications that reconfigure fan divisors, so AIDA64 and those applications can be used simultaneously only by having this option disabled.

#### Low-level SMART operations

This option controls the using of low-level SMART disk calls that may cause system lockup in rare cases. When this option is disabled, no disk temperature or SMART disk health status information can be provided.

#### **RAID** member enumeration

This option controls the using of low-level RAID member enumeration calls for RAID arrays that may cause system lockup in rare cases. When this option is disabled, no ATA autodetect information or SMART disk health status information can be provided for RAID arrays.

#### **RAID SMART support**

This option controls the using of low-level SMART disk calls for RAID arrays that may cause system lockup in rare cases. When this option is disabled, no disk temperature or SMART disk health status information can be provided for RAID arrays.

#### Adaptec RAID support

This option controls the using of low-level Adaptec RAID calls that may cause slow startup in rare cases. When this option is disabled, no disk temperature or SMART disk health status information can be provided for Adaptec RAID arrays.

#### nVIDIA GPU SMBus access through nVIDIA ForceWare

This option can be used to improve the stability of GPU sensor readout on Asus cards with Asus SmartDoctor installed and running.

#### Change to 3D profile on nVIDIA video adapters

This option controls the switching to 3D profile in the nVIDIA GPU detection module of AIDA64. This option should be enabled to measure the maximum clock of the GPU. However, when the video adapter switches to 3D profile, the fan speed may also increase.

#### SMBus access through ACPI

This option can be used on Asus motherboards to avoid collisions between AIDA64 hardware monitoring module and Asus' own hardware monitoring and overclocking applications (e.g. Asus AI Booster, Asus AI Suite, Asus PC Probe II, Asus SixEngine, etc). This option should not be used on non-Asus motherboards.

#### Apple SMC sensor support

This option controls the using of low-level AIDA64 features to measure temperatures and cooling fan speeds via Apple SMC sensors. In rare cases polling the Apple SMC sensor device may cause system instability.

#### Asetek LC sensor support

This option controls the using of low-level AIDA64 features to measure temperatures, cooling fan speeds and pump speeds via Asetek LC based AIO water coolers. Such devices include Antec CC, Corsair H80iGT, Corsair H80i v2, Corsair H100iGTX, Corsair H100i v2, Corsair H110iGTX, Corsair H115i, NZXT Kraken X31, NZXT Kraken X41, NZXT Kraken X61, etc.

#### Asus ATKEX sensor support (Asus ROG)

This option controls the using of low-level AIDA64 features to measure temperatures and cooling fan speeds via Asus ATKEX driver calls on Asus ROG motherboards. This option can only be used when Asus AI Suite is installed.

#### **Corsair Link sensor support**

This option controls the using of low-level AIDA64 features to measure temperatures and cooling fan speeds via Corsair Link. In rare cases polling Corsair Link may cause system slowdown or lockup.

#### **Dell SMI sensor support**

This option controls the using of low-level AIDA64 features to measure

temperatures and cooling fan speeds via Dell SMI sensors. In rare cases polling the Dell SMI sensor device may cause system slowdown or lockup.

#### **GRID+ V2** sensor support

This option controls the using of low-level AIDA64 features to measure cooling fan speeds via the NZXT GRID+ V2 sensor device. AIDA64 may collide with NZXT CAM software when this option is enabled.

#### Heatmaster II sensor support

This option controls the using of low-level AIDA64 features to measure temperatures, cooling fan speeds and pump speeds via the AlphaCool Heatmaster II sensor device.

#### HID UPS sensor support

This option controls the using of low-level AIDA64 features to measure battery power and voltages via HID UPS sensors. In rare cases polling HID UPS sensors may cause system slowdown.

#### Koolance TMS-200 sensor support

This option controls the using of low-level AIDA64 features to measure temperatures and cooling fan speeds via Koolance TMS-200 family sensor devices. To avoid potential incompatibility issues this option is disabled by default, and shall only be enabled when a Koolance TMS-200 device is connected to the system.

#### **T-Balancer sensor support**

This option controls the using of low-level AIDA64 features to measure temperatures via T-Balancer sensor devices.

#### **DIMM thermal sensor support**

This option controls the using of low-level AIDA64 features to measure temperatures of DIMM memory modules using SMBus operations. To

avoid potential incompatibility issues this option is disabled by default, and shall only be enabled when a thermal sensor capable memory module is installed.

#### Toshiba TVALZ sensor support

This option controls the using of low-level AIDA64 features to measure cooling fan speeds via Toshiba TVALZ sensors. In rare cases polling the Toshiba TVALZ sensor device may cause system instability.

#### Volterra VT11xx sensor support

This option controls the using of low-level AIDA64 features to measure temperature, voltage and power draw via Volterra VT11xx GPU sensor chips. In rare cases polling a Volterra VT11xx sensor chip may cause system instability while running 3D games.

#### **GPU** sensor support

This option controls the using of low-level AIDA64 features to measure temperature, voltage and cooling fan speeds for AMD and nVIDIA video adapters. In rare cases polling GPU sensor chips may cause system slowdown or lockup.

#### **GPU** fan speed measurement

This option controls the using of low-level AIDA64 features to measure cooling fan speeds for AMD and nVIDIA video adapters. In rare cases polling GPU fans may cause system instability or automatic fan speed control issues.

#### **Multi-GPU support**

This option controls the using of the multi-GPU features of AIDA64. On AMD CrossFireX configurations (including multi-GPU AMD video cards, e.g. Radeon HD 5970) the ULPS power-saving feature of the AMD Catalyst video driver may cause various issues while running AIDA64. In such cases multi-GPU support has to be disabled to restore system stability.

# Report

This page lists several options to control report creation features of AIDA64. Please scroll down to read explanation of each options.

64 Preferences - AIDA64		-		×
Search	Report			
Canguage	Durant titles AIDA64 Engineer			
🚔 General				
Layout	🗹 📝 Enable report header			
🔍 Stability	🗹 🃝 Enable report footer			
📝 Report	Enable HTML report menu			
Report File	Include debug information in the report			
	Show computer name in caption of the first report page			
Remarks	Compress reports before saving to file			
📰 E-mail	Compress reports before sending in e-mail			
SMTP				
💻 Summary				
🗟 Content Filtering				
Custom Components				
🕤 Hardware Monitoring				
Update Frequency				
Sensor Icons				
V SO OSD	Personal			
OSD Items	Eull name     Iack Nicholson	1		
🗸 📑 Desktop Gadget		1		
Gadget Items	E-mail address: Jack@Stars.com			
V IN LCD		_		
LCD Items				
LCD Options				
SensorPanel				
A RGB LED				
Logging				
External Applications				
Alerting				
Correction		Canad		
Hot Keys	UK	Cancel	Ар	biy

# **Report title**

This option specifies the first line of the reports.

# **Enable report header**

When this option is enabled, several important information about the report creation (including AIDA64 version, report type, computer name, user name, operating system type & version, creation date & time) is displayed on the top of the reports. This option should always be enabled in network audit. When HTML and MHTML reports are created for printing purposes, in most cases it is preferred to disable both report header and report footer to save paper space.

## **Enable report footer**

When this option is enabled, a short disclaimer message appears below each HTML and MHTML report files.

## Include debug information in the report

When this option is enabled, a dump of PCI registers and video BIOS appears below each reports. Debug information is important when contacting AIDA64 Technical Support about hardware detection issues, so please make sure to enable this option before submitting any reports to AIDA64 Technical support.

#### Show computer name in caption of the first report page

When this option is enabled, the computer name is displayed in the caption of the *Computer / Summary* page in the reports. This option is useful when HTML or MHTML reports are printed or filed and the report header is disabled.

# Compress reports before saving to file

When this option is enabled, reports are compressed (using ZIP) in report file creation mode before they got saved to file.

# **Compress reports before sending in e-mail**

When this option is enabled, reports are compressed in e-mail sending mode before they got attached to the e-mail.

# Full name

This option specifies the name to appear in the "From" field of outgoing e-mail messages.

# E-mail address

This option specifies the e-mail address to appear in the "From" field of outgoing e-mail messages.

# **Report File**

This page lists several options to control report file creation features of AIDA64. Please scroll down to read explanation of each options.

64 Preferences - AIDA64					o x
Search	Report File				
🕘 Language	Output folder:	d:\reportfolder			
2 General					
Layout	File <u>n</u> ame:	reportfilename			Default
Stability	File extension:				
Report	C				
Report File	<ul> <li>Automatic</li> </ul>				
	Always:	txt			
Kemarks	00000.001.				
Summary					
Content Filtering					
Custom Components					
Hardware Monitoring					
Update Frequency					
Sensor Icons					
✓ . O OSD					
S OSD Items					
🗸 📑 Desktop Gadget					
Gadget Items					
Y-ELCD					
E LCD Items					
LCD Options					
SensorPanel					
Europying					
Correction					
Hot Keys			OK	Cancel	Apply

# **Output folder**

This option specifies the folder where AIDA64 report files should be saved. In network audit this folder should be a UNC path (for example: \\server\share\folder), and all users should have file create + write permission to this folder. In both output folder name and file name the

following special file control strings can be used:

- \$HOSTNAME -- Inserts host name
- · \$USERNAME -- Inserts current user name
- · \$DOMAIN -- Inserts current logon domain
- \$IPADDR -- Inserts primary network adapter IP address (aaa-bbb-cccddd)
- \$MACADDQ -- Inserts primary network adapter MAC address (AABBCCDDEEFF)
- SMACADDR -- Inserts primary network adapter MAC address (AA-BB-CC-DD-EE-FF)
- SUUIDMAC -- Inserts DMI System UUID. When not available, it inserts MAC address (0000000-0000000-0000AABB-CCDDEEFF)
- · \$MONTH -- Inserts current month (MM)
- \$DATE -- Inserts current date (YYYY-MM-DD)
- \$TIME -- Inserts current time (HH-MM-SS)

# File name

This option specifies the file name to be used when the reports are saved to file. In network audit either in output folder name or file name one of the special file control strings (listed above) should be used to prevent computers to overwrite each others report files.

# **File extension**

This option specifies the file name extension to be appended to the report files name. It is recommended to leave this option on the default state of automatic. This option does not control the report format, it specifies only the file name extension.

# **Report Look**

This page lists several options to control the look of HTML and MHTML reports of AIDA64. Please scroll down to read explanation of each options.



#### Name

This option specifies the font to be used for each 3 report elements (Normal Font, Page Caption Font, Device Caption Font). In default Verdana is used when it is available on the system.

#### Size

This option specifies the font size to be used for the report elements. For MHTML reports a custom font size should be tested carefully to check the visual impacts of the font size change.

#### Color

This option specifies the font color to be used for the report elements. Colors can be picked from the palette by pressing the Colors button.

#### Style

This option selects normal, bold, italic or bold italic font type.

#### **Background color**

This option selects the background color for the report. Color can be picked from the palette by pressing the Colors button. Recommended background color is the default white. Printing reports may become difficult when a non-light background color is used.

#### **Restore Default Values**

By pressing this button all options on this page could be restored to their default states.

# Remarks

This page can be used to build list of report remarks. Please scroll down to read explanation for this page.

64 Preferences - AIDA64				- 🗆 X
Search	Remark	s		
Search Language General Layout Stability Report Report File Report Look Remarks E-mail SMTP Summary Content Filtering Custom Components Hardware Monitoring Update Frequency Sensor Icons Sonsor Ic	Remark	S Computer Name ADMINPC CEOLAPTOP SALESPC	Remark Administrator's PC Our CEO's laptop Sales PC	
		New	Modify	Delete Cancel Apply

Remarks should be specified per computer, and the appear on the top of each report file.

# E-mail

This page lists several options to control automatic e-mail sending features of AIDA64. Please scroll down to read explanation of each options.

64 Preferences - AIDA64		_3		х
Preferences - AIDA64         Search         Image         General         Layout         Stability         Report         Report File         Report Look         Remarks         E-mail         Summary         Content Filtering         Custom Components         Hardware Monitoring         Update Frequency         Sensor Icons         OSD         OSD         Soldget Items         LCD Options         LCD Options         SensorPanel         RGB LED         Logging         External Applications	E-mail E-mail transfer protocol: SMTP  Test  "Io:" address: reportsubmit@company.com "Cc:" address: "Bcc:" address: Embed TXT reports to e-mail body			×
	OK Ca	ncel	Арр	ly

# E-mail transfer protocol

This option selects the protocol to be used for e-mail sending:

 $\cdot$  "Microsoft Outlook" -- This protocol can be used only in the case MS

Outlook is installed on the system. MS Outlook Express cannot be used with this protocol.

- "MAPI" -- This protocol can be used along with any installed MAPI clients. MAPI clients are typically mailing applications including MS Outlook, MS Outlook Express, Netscape Mail etc. This protocol may fail to work when no MAPI clients are selected on the system, or when MAPI client features are disabled/limited due to security concerns.
- "SMTP" -- This protocol is the recommended configuration in network audit. Note: SMTP parameters below should be specified correctly.

## "To:" address

This option specifies the target e-mail address where the reports will be submitted.

#### "Cc:" address

This option specifies the Cc (carbon-copy) e-mail address where the reports will be submitted.

#### "Bcc:" address

This option specifies the Bcc (blind carbon-copy) e-mail address where the reports will be submitted.

#### Embed TXT reports to e-mail body

This option can be used to embed (include) TXT reports directly to the email body instead of sending the TXT report as file attachment. This could be useful when the e-mail server cannot accept any file attachments.

# SMTP

This page lists several options to control automatic e-mail sending features of AIDA64, for the SMTP mail transfer protocol. Please scroll down to read explanation of each options.

64 Preferences - AIDA64			_3		×
Search  Clanguage  General  Layout  Stability  Report  Report File  Report Look  Remarks  SmTP  Summary  Content Filtering  Custom Components  Hardware Monitoring  Vpdate Frequency  Sensor Icons  Sensor Icons  OSD  SoD  SoD  SoD  SoD  Co  OSD  Co  Co  Co  Co  Co  Co  Co  Co  Co  C	SMTP Display name: E-mail address Seryer: SMTP port: Use SSL Use SMTP User: Password:	Admin admin@company.com 25 Default authentication: admin@company.com *****	ancel	Αρρ	
·					-

#### **Display name**

This option specifies the "From" name to be used in the outgoing e-mail messages.

#### E-mail address

This option specifies the "From" e-mail address to be used in the outgoing e-mail messages.

#### Server

This option specifies the SMTP server address (either IP address or host name) to be used for SMTP e-mail transfers. To use TLS for GMail, the server needs to be set to "smtp.gmail.com", with the SMTP port set to 25 or 587.

#### SMTP port

This option specifies the SMTP port to be used for SMTP e-mail transfers. Default SMTP port is 25.

#### Use SSL

This option can be used to enable SSL protocol when sending e-mails via SMTP.

#### **Use SMTP authentication**

This option can be used when the SMTP server requires authentication.

# Summary

This page lists several options to control the layout of the *Computer / Summary* page. Please scroll down to read explanation for this page.



#### Summary

Each line of the *Computer / Summary* page can be either shown or hidden by checking or clearing the check boxes in this list. Hiding specific lines of the *Summary* page is most useful when HTML and MHTML reports are created for printing and/or filing purposes, and some lines on this page (for example "3D Accelerator" or "SMTP E-mail Address") are not important in this process.

# **Content Filtering**

This page can be used to filter the content of the *Event Logs*, *IE Cookies* and *Browser History* pages by date and/or entry type. Please scroll down to read explanation for this page.

64 Preferences - AIDA64				Х
Search   Language  General  Layout  Stability  Report  Report File  Report Look  Remarks  E-mail  SMTP  Summary  Content Filtering  Custom Components  Hardware Monitoring  Dydate Frequency  Sensor Icons  OSD  SoSD  S	Event Logs Filtering <ul> <li>List all events</li> <li>List events occurred in the past days:</li> <li></li></ul>			
Hot Keys		OK Cancel	App	JIY

# List all events (Event Logs Filtering)

By selecting this option, *Event Logs* page will list all event logs entries, regardless of their date.

# List events occured in the past days (Event Logs Filtering)

By selecting this option, only the event logs entries occured in the past "n" days will be listed on the *Event Logs* page.

## List "Information" events

When this option is enabled, "Information" type of events will be included in the list on the *Event Logs* page. In most cases "Information" events are not necessary to be listed, hence the recommended setting for this option is disabled.

#### List "Warning" events

When this option is enabled, "Warning" type of events will be included in the list on the *Event Logs* page. In most cases "Warning" events are important, hence the recommended setting for this option is enabled.

#### List "Error" events

When this option is enabled, "Error" type of events will be included in the list on the *Event Logs* page. In most cases "Error" events are important, hence the recommended setting for this option is enabled.

#### List "Audit" events

When this option is enabled, "Audit" type of events will be included in the list on the *Event Logs* page. "Audit" events may be important, hence the recommended setting for this option is enabled.

#### List all events (IE Cookies and Browser History Filtering)

By selecting this option, *IE Cookies* and *Browser History* pages will list all entries, regardless of their date.

# List events occured in the past days (IE Cookies and Browser History Filtering)

By selecting this option, only the entries occured in the past "n" days will

be listed on the IE Cookies and Browser History pages.

#### List "file://" events

When this option is enabled, entries with "file://" type of URL (ie. local file names) will be included in the lists on the *IE Cookies* and *Browser History* pages. In most cases "file://" entries are not necessary to be listed, hence the recommended setting for this option is disabled.

#### List "http://" events

When this option is enabled, entries with "http://" type of URL (ie. web addresses) will be included in the lists on the *IE Cookies* and *Browser History* pages. In most cases "http://" entries are important, hence the recommended setting for this option is enabled.
# **Custom Components**

This page can be used to configure Custom Components. Please scroll down to read explanation for this page.

64 Preferences - AIDA64			- 🗆 X
Search	Custom Components		
<ul> <li>Language</li> <li>General</li> <li>Layout</li> <li>Stability</li> <li>Report</li> <li>Report File</li> <li>Remarks</li> <li>E-mail</li> <li>SMTP</li> <li>Summary</li> <li>Content Filtering</li> <li>Custom Components</li> <li>Hardware Monitoring</li> <li>Update Frequency</li> <li>Sensor Icons</li> <li>OSD</li> <li>SOSD</li> <li>SOSD Items</li> <li>Gadget Items</li> <li>LCD Items</li> <li>LCD Options</li> <li>SensorPanel</li> <li>Dech LCD</li> </ul>	ADMINPC CEOLAPTOP DBSERVER SALESPC USERWS1 USERWS2	Field Chassis Power Supply CPU Cooler System Cooler System Cooler System Cooler System Cooler System Cooler System Cooler Misc Device Misc Device Misc Device Misc Device Misc Device	Value CM Elite 370 (Midi Tower) Corsair 850HX (850W PFC) Thermaltake Frio (120mm)
Logging	New		
External Applications	Delete		
Alerting	Delete		
Hot Keys			OK Cancel Apply

Custom Components can be used to specify model name and type of such hardware components cannot be detected using conventional hardware auditing methods. The information about pre-configured Custom Components will appear on the *Computer / Summary* page. All fields of the Custom Components sheet are optional and so can be left blank when not required.

# **Hardware Monitoring**

This page can be used to configure the Hardware Monitoring feature. Please scroll down to read explanation for this page.

64 Preferences - AIDA64		_3		×
Search	Hardware Monitoring   ● Display temperatures in Fahrenheit   ● Enable CPU throttling measurement   ○ Enable disk temperature measurement   Disk temperature polling frequency:   ○ • • • • • • • • • • • • • • • • • • •			
Hot Keys	ОК	Cancel	Арр	ly

### **Display temperatures in Fahrenheit**

Temperatures on the sensor icons, OSD panel, Desktop Gadget, LCD and SensorPanel are displayed in Degrees Fahrenheit (instead of Degrees Celsius) when this option is enabled.

### Enable CPU throttling measurement

This option can be used to enable CPU throttling measurement on Intel processors. Measuring throttling may cause system instability. Throttling is a self-protection mechanism of Intel processors to prevent physical damages due to overheating.

### Enable disk temperature measurement

This option can be used to enable disk temperature measurement via SMART calls. Measuring disk temperature may prevent disk drives from sleeping.

### Disk temperature polling frequency

This option configures the interval between disk temperature measurements. Setting this option to a value below 20 seconds may result in data corruption on old hard disk drives. On modern hard disk drives and SSD devices it is safe to set this option to any value.

### Decimal digits for voltage values

This option configures the number of decimal digits to be displayed for voltage readings. For modern computers at least 3 digits is recommended.

### Decimal digits for clock speeds

This option configures the number of decimal digits to be displayed for clock speeds, e.g. CPU core clock, FSB clock and memory clock.

#### **Tjmax temperature**

This option configures the Tjmax temperature that is used to calculate core temperature readings on Intel processors. Setting this option to automatic means following Intel Digital Thermal Sensors (DTS) specifications.

### **Degree symbol**

This option configures the character to be used as a degree symbol for thermal readings.

# **Update Frequency**

This page can be used to configure the update frequency for various Hardware Monitoring features. Please scroll down to read explanation for this page.

64 Preferences - AIDA64				х
Search	Update Frequency			
● Language ﷺ General	"Se <u>n</u> sor" page: 1 000  mus ms			
Layout	" <u>G</u> PU" page: 3 000 🗭 ms			
Preport	Sensor icons:			
Report File	OSD panel: 1000  mtextbf ms			
Remarks	Desktop <u>G</u> adget: 4 000 💌 ms			
E-mail	LC <u>D</u> : 5 000 👘 ms			
Summary	Sensor <u>P</u> anel: 2 000 ms			
Content Filtering	<u>R</u> GB LED: 2 000 ms			
Hardware Monitoring	Log file: 1 000 ms			
Update Frequency	External applications: 3 000 ms			
<ul> <li>✓ So OSD</li> </ul>	Alerting: 4 000 ms			
S OSD Items				
Gadget Items				
V E LCD				
LCD Options				
SensorPanel				
Logging				
External Applications				
Alerting				
Hot Keys	ОК	Cancel	Арр	ly

## Update frequency

These options configure the update frequency for the *Computer / Sensor* page, the *Display / GPU* page, the <u>Sensor Icons</u> feature, the <u>OSD</u> feature, the <u>Desktop Gadget</u> feature, the <u>Hardware Monitor LCD</u> feature,

the <u>SensorPanel</u> feature, the <u>External Applications</u> feature, the logging interval for the <u>Hardware Monitor Logging</u> feature, and the polling interval for the <u>Hardware Monitor Alerting</u> feature.

### Important note

When any <u>T-Balancer</u> miniNG or bigNG devices are connected, it is strongly recommended to choose an update frequency of at least 2 seconds.

# **Sensor Icons**

This page can be used to configure the displayed sensor icons for the Hardware Monitoring feature. Please scroll down to read explanation for this page.

64 Preferences - AIDA64			_	o x
Search	Sensor Icons			
language	Show sensor icons			
🚔 General	** 0:00			
Layout	Value	Sensorlson		^
🔍 Stability		Sensor reon		
📝 Report	System			- 11
Report File	CPU Clock	Icon Text		_
📝 Report Look	CPU Core #1 Clock	Icon Text		
Remarks	CPU Core #2 Clock	Icon Text		
🖽 E-mail	CPU Core #3 Clock	Icon Text		
SMTP	CPU Core #4 Clock	Icon Text		
💻 Summary	🗹 🔲 CPU Multiplier	Icon Text		
🗟 Content Filtering	CPU FSB	Icon Text		
Custom Components	🗹 🎬 North Bridge Multiplier	Icon Text		
🕤 Hardware Monitoring	🗹 🎬 North Bridge Clock	Icon Text		
	🗹 🎬 System Agent Multiplier	Icon Text		
	System Agent Clock	Icon Text		
V . 🕤 OSD	Memory Clock	Icon Text		
S OSD Items	CPU Utilization	Icon Text		
🗸 📑 Desktop Gadget	CPU1 Utilization	Icon Text		
Gadget Items	CPU2 Utilization	Icon Text		
V ELCD	CPU3 Utilization	Icon Text		
LCD Items		Icon Text		
LCD Options		Icon Text		
		Icon Text		
A RGB LED		Icon Text		
Logging		icon text		×
External Applications	Select All	11170	Cle	ar All
Alerting	Select All	Juie	CIE	
Correction	1			
Int Keys		OK Car	ncel	Apply

### Show sensor icons

This option can be used to enable displaying the sensor icons on the System Tray.

## Configuration

When selecting one of the sensor icon items in the list and pressing the "Configure" button the following configuration window appears:

Sensor Icon	- AIDA64			×
. 0:00	lcon <u>b</u> ackground color:	Co	olors	
	lcon <u>t</u> ext color:	Co	olors	
			OK	Cancel

Background and text colors should be selected to ensure proper text readability.

# OSD

This page can be used to configure OSD panel options for the Hardware Monitoring feature. Please scroll down to read explanation for this page.



### Show OSD panel

This option can be used to enable displaying the OSD panel.

#### **Display icons on OSD panel**

Text and icons are both displayed on the OSD panel when this option is enabled. When this option is disabled, only text is displayed on the OSD.

### **Display labels on OSD panel**

Labels are displayed on the OSD panel when this option is enabled.

### Align items to the right

Items are aligned to the right on the OSD panel when this option is enabled. When this option is disabled, the items are aligned to the left.

### Keep OSD the topmost window

When this option is enabled, the window of the OSD panel is always visible, since it is displayed on top of all other windows. This feature is also called "always on top".

### OSD panel background color

This option configures the background color of the OSD panel. Background color should be selected to ensure proper text readability.

### **OSD** panel transparency

This option configures the transparency level of the OSD panel. Window transparency level adjustment is not supported under Windows 95, 98, Me and NT 4.0.

# **OSD** Items

This page can be used to configure the displayed OSD panel items for the Hardware Monitoring feature. Please scroll down to read explanation for this page.

64 Preferences - AIDA64			- 🗆 X
Search	OSD Items		
Sector Language	OSD Item	Type	^
2 General	Date Date	System	OSD Text
Challen Challen		System	OSD Text
Stability	Time (HH:MM)	System	OSD Text
Benort File		System	OSD Text
	UnTime (HH:MM)	System	OSD Text
Remarks		System	OSD Text
🖼 E-mail	CPU Core #1 Clock	System	OSD Text
SMTP	CPU Core #2 Clock	System	OSD Text
Summary	CPU Core #3 Clock	System	OSD Text
🐻 Content Filtering	CPU Core #4 Clock	System	OSD Text
Custom Components	CPU Multiplier	System	OSD Text
🕤 Hardware Monitoring		System	OSD Text
	North Bridge Multiplier	System	OSD Text
Sensor Icons	North Bridge Clock	System	OSD Text
V OSD	System Agent Multiplier	System	OSD Text
OSD Items	System Agent Clock	System	OSD Text
V III Desktop Gadget	Memory Clock	System	OSD Text
Gadget Items	Memory Speed	System	OSD Text
	DRAM:FSB Ratio	System	OSD Text
LCD Options	Memory Timings	System	OSD Text
SensorPanel	BIOS Version	System	OSD Text
RGB LED	CPU Utilization	System	OSD Text
	CPU1 Utilization	System	OSD Text 🗸
External Applications			
Alerting	Select All Clear All	Configure	Move Up Move Down
Hot Keys		ОК	Cancel Apply

## Configuration

When selecting one of the OSD items in the list and pressing the "Configure" button the following configuration window appears:

$\odot$	Label:	UpTime	Default
	<u>F</u> ont name:	Segoe UI 🛛 🗸	
	Text color:	Colors	
	Text size:	16	
		☑ Bold	
		□ Italic	

Background and text colors should be selected to ensure proper text readability.

# **Desktop Gadget**

This page can be used to configure Desktop Gadget options for the Hardware Monitoring feature. Please scroll down to read explanation for this page.



## Enable Desktop Gadget support

This option can be used to enable publishing sensor values to Desktop Gadget. The AIDA64 Desktop gadget is automatically copied to the Desktop gadgets folder, but the gadget itself needs to be activated

manually by adding the gadget to the Desktop by right-clicking on the Desktop / Gadgets. Supported operating systems include Windows Vista, Windows Server 2008, Windows 7, and Windows Server 2008 R2. Windows XP with <u>Vista 5744 Sidebar for XP</u> is also supported.

### **Use HKLM in Registry**

When this option is enabled, AIDA64 uses HKEY\_LOCAL\_MACHINE path in the Registry to store measured temperature, voltage and fan speed values. When this option is disabled, AIDA64 uses HKEY\_CURRENT\_USER path in the Registry.

# **Gadget Items**

This page can be used to configure the displayed Gadget items for the Hardware Monitoring feature. Please scroll down to read explanation for this page.

64 Preferences - AIDA64			– 🗆 X
Search	Gadget Items		
S Language	Gadget Item	Type	^
2 General	T P Date	System	Text
Carbillar		System	Text
Stability	Time (HH:MM)	System	Text
Benort File		System	Text
	VinTime (HH:MM)	System	Text
Remarks		System	Tevt
E-mail		System	Tevt
SMTP		System	Tevt
Summary		System	Text
🐻 Content Filtering		System	Text
Custom Components		System	Text
🕤 Hardware Monitoring		System	Text
	North Bridge Multiplier	System	Text
Sensor Icons	North Bridge Clock	System	Text
v ⊙ OSD	System Agent Multiplier	System	Text
OSD Items	System Agent Clock	System	Text
✓ ☐ Desktop Gadget	Memory Clock	System	Text
Gadget Items	Memory Speed	System	Text
	M I RAM: FSB Ratio	System	Text
LCD Items	Memory Timings	System	Text
	BIOS Version	System	Text
	V X CPU Utilization	System	Text
	CPU1 Utilization	System	Text 🗸
External Applications			
Alerting	Select All Clear All	Configure	Move Up Move Down
Hot Keys		ОК	Cancel Apply

## Configuration

When selecting one of the Gadget items in the list and pressing the "Configure" button the following configuration window appears:

	Label	CPU Core #1 Clock	Default
2	Label.	ero core a relock	Delault
	Font name:	Segoe UI 🛛 🗸 🗸	
	Text color:	Colors	
	Text size:	8 -	
		Bold	
		☐ Italic	

Background and text colors should be selected to ensure proper text readability.

# LCD

This page can be used to configure the Hardware Monitor LCD feature. Please scroll down to read explanation for this page.



### **Enable LCD support**

This option can be used to enable the Hardware Monitoring LCD feature for a particular LCD device.

### LCD background color

This option configures the background color of the LCD. Background color can only be configured for graphical displays (e.g. Logitech G19 Gaming Keyboard).

# **LCD** Items

This page can be used to configure the displayed LCD items for the Hardware Monitor LCD feature. Please scroll down to read explanation for this page.

64 Preferences - AIDA64				– 🗆 X
Search	LCD Items			
🕒 Language	Logitech 160 x 43 pixels Mor	ochrome		Export
🛱 General	2017 02 17 10:10:02			Export
📃 Layout	Clk: 900 MHz CpuF: 742 RPM			ітроп
🔍 Stability	Mobo 34°C Vcore: 0.732	V		
📝 Report				
Report File	Page 1 Page 2 Page 3	Page 4		
	I CD Item	Type	XY	
Remarks	Dete	Sustan	0.0	Ť
🚍 E-mail		System	0,0	E Inv A
SMTP	S lime	System	88, 0	e ipx e
Summary	Clk:	System	5, 13	4
R Content Filtering	CpuF:	Cooling Fan	78, 15	
Custom Components	Mobo	Temperature	2, 27	
🕤 Hardware Monitoring	Vcore:	Voltage	83, 26	
V OSD				
S OSD Items				
🗸 📑 Desktop Gadget				
Gadget Items				New
				Modify
LCD Items				Delete
SensorPanel				Hide
RGB LED				Duplicate
Logging				Marialla
External Applications				iviove up
Alerting				Move Down
Correction	I			
Hot Keys		C	OK Ca	ancel Apply

## Configuration

When adding a new item by pressing the "New Item" button, or when selecting one of the LCD items in the list and pressing the "Modify" button the following configuration window appears:

Item type:	Simple sensor item $$	X: 5	Y: 13	-
System				^
P Date				
S Time	2			
Time	e (HH:MM)			_
🕑 UpT	ime			
🕑 UpT	ime (HH:MM)			
CPU	Clock			
CPU	Core #1 Clock			_
CPU	Core #2 Clock			~
Text size:	8			
Font name:	Tahoma	~		
Style:	Bold Italic	Right-Align		
Show lab	el			
Label:	Clk:	Defa	ult	
Show un	it (e.g. Celsius, RPM, Volt)			
Unit	MHz Default			

### Text size

This option selects the font size to be used for the LCD item label and value text. Most fonts do not look properly with size 6 and size 7 setting, so a minimum of size 8 is recommended for proper LCD readibility.

### Font name

This option selects the font to be used for the LCD item label and value text.

### Style

By pressing the coloured box the font color to be used for the LCD item label and value text can be selected. Text color can only be configured for keyboards with a color LCD display (e.g. Logitech G19 Gaming Keyboard).

### **Bold, Italic**

These options configure font style.

### **Right-Align**

The actual LCD item is aligned to the right on the LCD when this option is enabled. When this option is disabled, the LCD item is aligned to the left.

### Show label

This option enables displaying the label next to the LCD item value.

### Label

This option configures the label to be displayed next to the actual LCD item value.

#### Show unit

This option enables displaying the measurement unit (e.g. Celsius, RPM, Volt) next to the LCD item value. In order to save LCD space, it is recommended to have this option disabled.

#### Unit

This option configures the measurement unit to be displayed next to the actual LCD item value.

# **LCD** Options

This page can be used to configure various options for the Hardware Monitor LCD feature. Please scroll down to read explanation for this page.



## Automatically cycle through LCD pages

This option enables automatic changing of LCD pages with the selected frequency.

# **Edit Defaults**

This button opens the LCD defaults configuration window.

# SensorPanel

This page can be used to configure SensorPanel options for the Hardware Monitoring feature. Please scroll down to read explanation for this page.



### Show SensorPanel

This option can be used to enable displaying the SensorPanel.

### Keep SensorPanel the topmost window

When this option is enabled, the SensorPanel is always visible, since it is displayed on top of all other windows. This feature is also called "always on top".

### Prevent SensorPanel from being minimized

When this option is enabled, the SensorPanel will not be minimized when Show desktop button is pressed.

### Lock panel position

This option can be used to lock the location of the SensorPanel on the Windows Desktop.

#### Lock panel size

This option can be used to lock the dimensions of the SensorPanel, and effectively disable resizing it by the computer user.

#### Enable context menu

This option can be used to enable the right-click context menu on the SensorPanel.

#### SensorPanel background color

This option configures the background color of the SensorPanel. Background color should be selected to ensure proper text readability.

#### SensorPanel transparency

This option configures the transparency level of the SensorPanel. Window transparency level adjustment is not supported under Windows 95, 98, Me and NT 4.0.

#### SensorPanel size

This option can be used to specify the dimensions of the SensorPanel in

pixels. The first value configures the width of the SensorPanel, while the second value sets its height.

# **RGB LED**

This page can be used to configure the Hardware Monitor RGB LED feature. Please scroll down to read explanation for this page.

64 Preferences - AIDA64			– 🗆 X
Search	RGB LED		
Sanguage	Enable RGB LED keyboard	support	
🚰 General			
Layout	RGB   FD  tem	Type	Kev(s)
🏩 Stability		Townshine	M
📝 Report		Temperature	M
Report File		System	Mouse
		System	Function Keys
Remarks	Chassis	Cooling Fan	Mousepad
E-mail	CPU Package	Power	2 Digits
SMTP			
💻 Summary			
🗟 Content Filtering			
Custom Components			
🕤 Hardware Monitoring			
Sensor Icons			
✓ (○) OSD			
S OSD Items			
🗸 📑 Desktop Gadget			
Gadget Items			
V ELCD			5 5 5
ECD Items			
LCD Options			
SensorPanel			
RGB LED			
Logging			
External Applications		14.00	2.1.1
	New	Modify	Delete
Correction			
Hot Keys			OK Cancel Apply

## Configuration

When adding a new item by pressing the "New" button, or when selecting one of the RGB LED items in the list and pressing the "Modify" button the following configuration window appears:

Modify Item	- AIDA64		×
A	ltem type: Single Key 🗸	·	
	Estimated Battery Time	2	^
	Battery Power Load		
	RTSS FPS		
	<b>J</b> <sup>≡</sup> Temperatures		
	🛄 Motherboard		
	CPU		
	CPU Package		_
	CPU IA Cores		
	CPU GT Cores		~
	Key: M V	Min: 20	
		Limit 1: 30	
		Limit 2: 40	
		Limit 3: 50	
		Max: 60	
		ОК	Cancel

### Key

This option configures the key where the RGB LED effect is to be displayed on. Only applicable when the Single Key item type is selected.

### Row

This option configures the row of keys where the RGB LED effect is to be displayed on. Only applicable when the Row of Keys item type is selected.

### Divisor

This option configures the divisor to be applied on the sensor reading, in order to make it fit into 2 or 3 digits. For example, cooling fan speeds are typically divided by 100 to make the fan speed RPM readings fit into 2 digits. Only applicable when the 2 Digits or 3 Digits item type is selected.

## Min, Limit 1, Limit 2, Limit 3, Max

This option configures the minimum, in-between and maximum limits for the RGB LED item. The coloured box next to the edit fields can be clicked to pick the colour for the limit.

# Logging

This page can be used to configure the Hardware Monitor Logging feature. Please scroll down to read explanation for this page.

64 Preferences - AIDA64	— <sup>—</sup> (C	X C
Search	Logging	
🕘 Language	Log sensor readings to HTML log file:	
🙀 General		
💻 Layout	c:\html_log	
🔍 Stability	☐ Log sensor readings to CSV log file:	
📝 Report		
Report File	c:\csv_log	
	✓ Log started and stopped processes	
Remarks		
🚍 E-mail	Persistent log files	
SMTP	Number of hours between opening new log files: 1	
Summary		
Content Filtering	🗹 💻 System	^
Custom Components	🗹 🔛 Date	
Hardware Monitoring	🗹 🕲 Time	
Update Frequency	🗹 🞯 Time (HH:MM)	
Sensor Icons	🗹 🕲 UpTime	
V IO OSD	UpTime (HH:MM)	
OSD Items		
V 📑 Desktop Gadget	CPU Core #1 Clock	
Gadget Items	CPU Core #2 Clock	
	CPU Core #3 Clock	
LCD Items	CPU Core #4 Clock	
	North Bridge Multiplier	
Evernal Applications	In North Bridge Material	~
	Select All Clear All	
Hot Keys	OK Cancel	Apply
- Houncys	UN Calice	, they

### Log sensor readings to HTML log file

This option can be used to enable hardware monitor logging to HTML log file. Logging interval can be configured on the <u>Preferences / Hardware</u> <u>Monitoring</u> page. The items to be logged can be selected using the checkboxes next to each item in the list.

### Log sensor readings to CSV log file

This option can be used to enable hardware monitor logging to CSV log file. Logging interval can be configured on the <u>Preferences / Hardware</u> <u>Monitoring</u> page. The items to be logged can be selected using the checkboxes next to each item in the list.

### Log started and stopped processes

This option can be used to enable logging of started and stopped processes during the hardware monitor logging process.

# **External Applications**

This page can be used to configure the External Applications feature. Please scroll down to read explanation for this page.

64 Preferences - AIDA64			_		Х
Search	External Applications				
🕒 Language	Enable shared memory				
🚔 General					
🛄 Layout	I Enable writing sensor val	ues to Registry			
🏩 Stability	Enable writing sensor val	Enable writing sensor values to WMI			
📝 Report	Enable writing sensor val	Enable writing sensor values to Rivatuner OSD Server			
Report File	Display Jahels				
Remarks	Sustem				
🖼 E-mail	Jystem				
IIII SMTP					
Summary					
B Content Filtering					
Custom Components					
N Hardware Monitoring		)			
Update Frequency					
Sensor Icons		:k			
	CPU Core #2 Cloc	:k			
Desiten Codest	CPU Core #3 Cloc	:k			
Cadact Itams	CPU Core #4 Cloc	:k			
	CPU Multiplier				
	CPU FSB				
	North Bridge Mul	tiplier			
SensorPanel	North Bridge Clo	:k			
A RGB LED	System Agent Mu	ltiplier			
	System Agent Clo	ock			
External Applications	Memory Clock				¥
	Select All		Clear All		
- Correction					
Hot Keys			OK Cancel	Ар	ply

### **Enable shared memory**

This option can be used to enable exposing hardware monitoring values (temperatures, voltage and fan readings) to external applications through shared memory. Technical information about this feature is available in the External Applications chapter of this manual.

### Enable writing sensor values to Registry

This option can be used to enable exposing hardware monitoring values (temperatures, voltage and fan readings) to external applications through Windows Registry. Technical information about this feature is available in the <u>External Applications chapter</u> of this manual.

#### Enable writing sensor values to WMI

This option can be used to enable exposing hardware monitoring values (temperatures, voltage and fan readings) to external applications through WMI (Windows Management Instrumentation). Technical information about this feature is available in the <u>External Applications chapter</u> of this manual.

### Enable writing sensor values to Rivatuner OSD Server

This option can be used to enable exposing hardware monitoring values (temperatures, voltage and fan readings) to Rivatuner's OSD Server feature via *RTSSSharedMemoryV2* shared memory. Rivatuner OSD Server is capable of displaying those values on an OSD in full-screen 3D games.

# Alerting

This page can be used to configure the Hardware Monitor Alerting feature. Please scroll down to read explanation for this page.

64 Preferences - AIDA64			_3	o x
Search	lerting			
Sanguage	A Fnable alerting			
🛱 General				
Layout	Number of hours between s	ending repetitive alerts:	2	
🔍 Stability				
📝 Report	Alert Item	Туре	Alert Trigger	
Report File	Hotherboard	Temperature	> 60	
	CPU	Cooling Fan	< 500	
Remarks	🏵 + 3.3 V	Voltage	<2.95, >3.65	
📰 E-mail				
SMTP				
Summary				
🗟 Content Filtering				
Custom Components				
🕤 Hardware Monitoring				
Update Frequency				
Sensor Icons				
✓ . S OSD				
S OSD Items				
🗸 📑 Desktop Gadget				
Gadget Items				
V ELCD				
LCD Items				
LCD Options				
SensorPanel				
RGB LED				
Logging				
External Applications				
Alerting	New	Modify	Dele	ete
Hot Keys			OK Cancel	Apply

### **Enable alerting**

This option can be used to enable the Hardware Monitor Alerting feature.

### Number of hours between sending repetitive alerts

This option selects the pause between AIDA64 sends out the same alert message. Repetitive alerts could happen when e.g. a cooling fan stops and never restarts again.

### Configuration

When adding a new item by pressing the "New" button, or when selecting one of the alerting items in the list and pressing the "Modify" button the following configuration window appears:

Modify Item ·	AIDA64			×
Alert Trigge	Actions			
Alert Trigg	ger			_
	🕳 Samsung SSD 850 EVO 1TB		^	
	SAMSUNG SSD 830 Series		_	
	Cooling Fans			
-	CPU			
	🕢 Voltage Values			
-	CPU Core			
-				
-	@ +3.3 V			
	(g) +5 V			
	€ +12 V		¥	
L	abel: +3.3 V	Defa	ault	
A	lert when:			
	✓ Value is below: 2.95	₽ V		
	✓ Value is above: 3.65	÷ v		
	Number of <u>o</u> ccurrences: 1			
			OK Cano	:el

### Label

This option configures the label to be displayed for the actual alerting item.

### Alert when

This option configures the alert trigger for the actual alerting item.

#### Value is below

This trigger option should be used for cooling fans to detect fan slowdown or fan stopping. It can also be used to detect voltage dropping.

#### Value is above

This trigger option should be used for temperatures to detect overheating. It can also be used to detect an overvoltage situation.

Modify Item - AIDA64	×
Alert Trigger Actions	
Actions	
Display an alert window	
Shut down the computer	
✓ Play sound:	
C:\Windows\Media\chimes.wav	
Run program:	
notepad.exe	
Send an e-mail to:	
myself@mymailserver.com Test	
E- <u>m</u> ail subject:	
○ Automatic	
Custom: AIDA64 Alert	
Note: Don't forget to configure e-mail sending options on the E-mail pa	ge!
OK	Cancel

### Display an alert window

This option enables displaying a warning window, when an alert is
triggered.

#### Shut down the computer

This option can be used to power off the computer, when an alert is triggered.

#### Play sound

This option can be used to play a sound (a WAV file), when an alert is triggered.

#### Run program

This option can be used to launch an application, when an alert is triggered.

#### Send an e-mail to

This option enables sending a warning e-mail to the specified address, when an alert is triggered. Test button to send a sample alert e-mail is available to test the e-mail settings. Global e-mail sending options should be configured on the page <u>Preferences / E-mail</u>.

#### E-mail subject

This option can be used to override the default e-mail subject that AIDA64 uses for alert e-mails.

# Correction

This page can be used to configure the Hardware Monitor Correction feature. Please scroll down to read explanation for this page.

64 Preferences - AIDA64			_2	D X
Search	Correction			
<ul> <li>Language</li> <li>General</li> <li>Layout</li> <li>Stability</li> <li>Report</li> <li>Report Look</li> <li>Remarks</li> <li>E-mail</li> <li>SMTP</li> <li>Summary</li> <li>Content Filtering</li> <li>Custom Components</li> <li>Hardware Monitoring</li> <li>Update Frequency</li> <li>Sensor Icons</li> <li>OSD</li> <li>OSD ltems</li> <li>OSD ltems</li> <li>ICD</li> <li>ECD</li> <li>LCD ltems</li> <li>CD Options</li> <li>SensorPanel</li> <li>RGB LED</li> </ul>	Correction Item  Motherboard  CPU CPU Core	Type Temperature Cooling Fan Voltage	Ratio / Offset 1 / -10 0.5 / 0 1 / +0.02	
	New	Modify	Delet	te
Hot Keys		(	OK Cancel	Apply

## Configuration

When adding a new item by pressing the "New" button, or when selecting one of the correction items in the list and pressing the "Modify" button the following configuration window appears:

lodify Iten	n - AIDA64	4				>
123						
3-	-	ST4000DM0	00-1F2168			^
	-	INTEL SSDP	EDMW400G4			
	-	Samsung SS	SD 850 EVO 1TB			
	-	SAMSUNG S	SSD 830 Series			
	Co	oling Fans				
		CPU				
	G Vol	tage Values				
		CPU Core				
		CPU VID				
	6	+3.3 V				
	6	+5 V				
	6	+12 V				
	i i i	VBAT Batter	v			
	6	+3.3 V Stand	dby			
		DIMM	,			~
		1	D ( 1)			
	Ratio:	1	Default			
	Offset:	+0.02	Default			
				-		
					OK	Cancel

#### Ratio

This option configures the ratio to be applied on the selected item. A ratio of 0.5 means effectively halving the input value. A ratio of 2.0 means effectively doubling the input value.

## Offset

This option configures the offset to be applied on the selected item. An offset of -10 means lowering the input value by 10. An offset of +20 means raising the input value by 20.

# **Hot Keys**

This page can be used to configure the Hardware Monitor Hot Keys feature. Please scroll down to read explanation for this page.

64 Preferences - AIDA64		- 🗆 X
Search	Hot Keys	
Search Language	Command	Hot Key
2 General	Show OSD Papel	Shift + Win + S
Layout	Hide OSD Panel	Shift + Win + H
Stability	Show SensorPanel	Ctrl + Shift + F1
Z Report	Hide SensorPanel	Ctrl + Shift + F2
Penert Look	Start Sensor Longing	Disabled
Bemarks	Stan Sensor Logging	Disabled
E-mail	Switch to previous LCD page	Disabled
SMTP	Switch to pert I CD page	Disabled
Summary	Switch to LCD page 1	$Ctrl + \Delta lt + 1$
R Content Filtering	Switch to LCD page 2	Ctrl + Alt + 2
Custom Components	Switch to LCD page 3	Ctrl + Alt + 3
🗑 Hardware Monitoring	Switch to LCD page 4	Ctrl + Alt + 4
	Switch to LCD page 5	Ctrl + Alt + 5
Sensor Icons	Switch to LCD page 6	Ctrl + Alt + 6
V 🔊 OSD	Since to cop page o	
OSD Items		
✓		
Gadget Items		
		Configure
LCD Items		
External Applications		
Alerting		
- Correction	1	
Hot Keys		OK Cancel Apply

## Configuration

When selecting one of the hot keys and pressing the "Configure" button the hot key configuration message window appears:

Hot Key - A	IDA64		×
	Switch to LCD page 6 ☑ Ctrl + ☑ Alt + □ Shift + □ Win +	6	~
		OK	Cancel

# Ctrl, Alt, Shift, Win, Key

These options can be used to select the hot key combination.

# **External Applications**

The <u>Hardware Monitoring</u> feature of AIDA64 Business provides the following 3 methods to expose measured sensor values and other system values to external applications:

#### **Shared Memory**

Registry

#### <u>WMI</u>

A complete list of sensor value IDs and their meaning is below.

#### System

SDATE	Date
STIME	Time
STIMENS	Time (HH:MM)
SUPTIME	UpTime
SUPTIMENS	UpTime (HH:MM)
SCPUCLK	CPU Clock
SCC-1-01	CC-1-1 (CPU #1 / Core #1 Clock)
SCC-1-02	CC-1-2 (CPU #1 / Core #2 Clock)
•••••	•••••
SCC-1-32	CC-1-32 (CPU #1 / Core #32
	Clock)
SCC-2-01	CC-2-1 (CPU #2 / Core #1 Clock)
SCC-2-02	CC-2-2 (CPU #2 / Core #2 Clock)
SCC-2-32	CC-2-32 (CPU #2 / Core #32
	Clock)
SCPUMUL	CPU Multiplier
SCPUFSB	CPU FSB
SHTMUL	HyperTransport Multiplier
SHTCLK	HyperTransport Clock
SNBMUL	North Bridge Multiplier
SNBCLK	North Bridge Clock

SSAMUL **SSACLK** SMEMCLK **SMEMSPEED SDRAMFSB SMEMTIM SBIOSVER SCPUUTI** SCPU1UTI SCPU2UTI ..... SCPU80UTI SCPUTHR **SMEMUTI SUSEDMEM** SFREEMEM SPROCESSES SUSERS **SDRVAUTI** SDRVAUSEDSPC **SDRVAFREESPC SDRVBUTI** SDRVBUSEDSPC **SDRVBFREESPC** ..... **SDRVZUTI SDRVZUSEDSPC SDRVZFREESPC SSMASTA** SDSK1ACT SDSK1READSPD SDSK1WRITESPD SDSK2ACT SDSK2READSPD SDSK2WRITESPD . . . . . . . . . . . . . SDSK25ACT

SDSK25READSPD SDSK25WRITESPD System Agent Multiplier System Agent Clock Memory Clock Memory Speed **DRAM:FSB** Ratio Memory Timings **BIOS** Version **CPU** Utilization **CPU1** Utilization **CPU2** Utilization . . . . . . . . . . . . . . . . . . **CPU80** Utilization **CPU** Throttling Memory Utilization Used Memory Free Memory Processes Users Drive A: Utilization Drive A: Used Space Drive A: Free Space Drive B: Utilization Drive B: Used Space Drive B: Free Space Drive Z: Utilization Drive Z: Used Space Drive Z: Free Space **SMART Status** Disk 1 Activity Disk 1 Read Speed Disk 1 Write Speed Disk 2 Activity Disk 2 Read Speed Disk 2 Write Speed Disk 25 Activity

Disk 25 Read Speed Disk 25 Write Speed SGPU1CLK SGPU1SHDCLK SGPU1MEMCLK SGPU1UTI SGPU1MCUTI SGPU1VEUTI SGPU1USEDDEMEM SGPU1USEDDYMEM SGPU1BUSTYP SGPU1PWRCTRL SGPU1PERFCAP SGPU2CLK SGPU2SHDCLK SGPU2MEMCLK SGPU2UTI SGPU2MCUTI SGPU2VEUTI SGPU2USEDDEMEM SGPU2USEDDYMEM SGPU2BUSTYP SGPU2PWRCTRL SGPU2PERFCAP SGPU3CLK **SGPU3SHDCLK SGPU3MEMCLK SGPU3UTI** SGPU3MCUTI **SGPU3VEUTI SGPU3USEDDEMEM** SGPU3USEDDYMEM SGPU3BUSTYP **SGPU3PWRCTRL SGPU3PERFCAP** SGPU4CLK SGPU4SHDCLK SGPU4MEMCLK SGPU4UTI SGPU4MCUTI SGPU4VEUTI

**GPU1** Clock **GPU1** Shader Clock GPU1 Memory Clock **GPU1** Utilization **GPU1 MC Utilization GPU1 VE Utilization GPU1 Used Dedicated Memory** GPU1 Used Dynamic Memory **GPU1** Bus Type **GPU1** PowerControl GPU1 PerfCap Reason GPU2 Clock **GPU2** Shader Clock **GPU2 Memory Clock GPU2** Utilization **GPU2 MC Utilization GPU2 VE Utilization** GPU2 Used Dedicated Memory GPU2 Used Dynamic Memory GPU2 Bus Type **GPU2** PowerControl GPU2 PerfCap Reason **GPU3** Clock **GPU3** Shader Clock GPU3 Memory Clock **GPU3** Utilization **GPU3 MC Utilization GPU3 VE Utilization GPU3 Used Dedicated Memory GPU3 Used Dynamic Memory GPU3** Bus Type **GPU3** PowerControl **GPU3** PerfCap Reason **GPU4** Clock **GPU4** Shader Clock **GPU4 Memory Clock GPU4** Utilization **GPU4 MC Utilization GPU4 VE Utilization** 

SGPU4USEDDEMEM GPU4 Used Dedicated Memory SGPU4USEDDYMEM GPU4 Used Dynamic Memory SGPU4BUSTYP **GPU4** Bus Type **GPU4** PowerControl SGPU4PWRCTRL GPU4 PerfCap Reason SGPU4PERFCAP SGPU5CLK **GPU5** Clock SGPU5SHDCLK **GPU5** Shader Clock SGPU5MEMCLK **GPU5 Memory Clock** SGPU5UTI **GPU5** Utilization SGPU5MCUTI **GPU5 MC Utilization** SGPU5VEUTI **GPU5 VE Utilization** SGPU5USEDDEMEM **GPU5 Used Dedicated Memory** SGPU5USEDDYMEM GPU5 Used Dynamic Memory **GPU5** Bus Type SGPU5BUSTYP **GPU5** PowerControl SGPU5PWRCTRL **GPU5** PerfCap Reason SGPU5PERFCAP SGPU6CLK **GPU6** Clock **GPU6** Shader Clock SGPU6SHDCLK SGPU6MEMCLK GPU6 Memory Clock SGPU6UTI **GPU6** Utilization **GPU6 MC Utilization** SGPU6MCUTI SGPU6VEUTI **GPU6 VE Utilization** SGPU6USEDDEMEM GPU6 Used Dedicated Memory **GPU6 Used Dynamic Memory** SGPU6USEDDYMEM SGPU6BUSTYP **GPU6** Bus Type SGPU6PWRCTRL **GPU6** PowerControl GPU6 PerfCap Reason SGPU6PERFCAP SGPU7CLK **GPU7** Clock SGPU7SHDCLK **GPU7** Shader Clock SGPU7MEMCLK **GPU7 Memory Clock** SGPU7UTI **GPU7** Utilization SGPU7MCUTI **GPU7 MC Utilization GPU7 VE Utilization** SGPU7VEUTI SGPU7USEDDEMEM **GPU7 Used Dedicated Memory** GPU7 Used Dynamic Memory SGPU7USEDDYMEM SGPU7BUSTYP **GPU7** Bus Type SGPU7PWRCTRL **GPU7** PowerControl SGPU7PERFCAP **GPU7** PerfCap Reason SGPU8CLK **GPU8** Clock

SGPU8SHDCLK SGPU8MEMCLK SGPU8UTI SGPU8MCUTI SGPU8VEUTI SGPU8USEDDEMEM SGPU8USEDDYMEM SGPU8BUSTYP SGPU8PWRCTRL SGPU8PERFCAP **SVMEMUSAGE SUSEDVMEM SUSEDLVMEM** SUSEDNLVMEM SFREEVMEM SFREELVMEM SFREENLVMEM SPRIIPADDR SEXTIPADDR SNIC1DLRATE SNIC1ULRATE SNIC1TOTDL SNIC1TOTUL SNIC1CONNSPD SNIC1WLANRSSI SNIC2DLRATE SNIC2ULRATE SNIC2TOTDL SNIC2TOTUL SNIC2CONNSPD SNIC2WLANRSSI SNIC3DLRATE SNIC3ULRATE SNIC3TOTDL SNIC3TOTUL SNIC3CONNSPD SNIC3WLANRSSI SNIC4DLRATE SNIC4ULRATE

**GPU8** Shader Clock GPU8 Memory Clock **GPU8** Utilization **GPU8 MC Utilization GPU8 VE Utilization** GPU8 Used Dedicated Memory **GPU8 Used Dynamic Memory GPU8** Bus Type **GPU8** PowerControl GPU8 PerfCap Reason Video Memory Utilization Used Video Memory Used Local Video Memory Used Non-Local Video Memory Free Video Memory Free Local Video Memory Free Non-Local Video Memory Primary IP Address **External IP Address** NIC1 Download Rate NIC1 Upload Rate NIC1 Total Download NIC1 Total Upload NIC1 Connection Speed NIC1 WLAN Signal Strength NIC2 Download Rate NIC2 Upload Rate NIC2 Total Download NIC2 Total Upload NIC2 Connection Speed NIC2 WLAN Signal Strength NIC3 Download Rate NIC3 Upload Rate NIC3 Total Download NIC3 Total Upload NIC3 Connection Speed NIC3 WLAN Signal Strength NIC4 Download Rate NIC4 Upload Rate

SNIC4TOTDL SNIC4TOTUL SNIC4CONNSPD SNIC4WLANRSSI SNIC5DLRATE SNIC5ULRATE SNIC5TOTDL SNIC5TOTUL SNIC5CONNSPD SNIC5WLANRSSI SNIC6DLRATE SNIC6ULRATE SNIC6TOTDL SNIC6TOTUL SNIC6CONNSPD SNIC6WLANRSSI SNIC7DLRATE SNIC7ULRATE SNIC7TOTDL SNIC7TOTUL SNIC7CONNSPD SNIC7WLANRSSI SNIC8DLRATE SNIC8ULRATE SNIC8TOTDL SNIC8TOTUL SNIC8CONNSPD SNIC8WLANRSSI **SDESKRES SVREFRATE SDISPBRILVL SMASTVOL SMEDTIT SMEDSTA SMEDPOS SBATTLVL SBATTWEARLVL** SBATT **SESTBATTTIME** 

NIC4 Total Download NIC4 Total Upload NIC4 Connection Speed NIC4 WLAN Signal Strength NIC5 Download Rate NIC5 Upload Rate NIC5 Total Download NIC5 Total Upload NIC5 Connection Speed NIC5 WLAN Signal Strength NIC6 Download Rate NIC6 Upload Rate NIC6 Total Download NIC6 Total Upload NIC6 Connection Speed NIC6 WLAN Signal Strength NIC7 Download Rate NIC7 Upload Rate NIC7 Total Download NIC7 Total Upload NIC7 Connection Speed NIC7 WLAN Signal Strength NIC8 Download Rate NIC8 Upload Rate NIC8 Total Download NIC8 Total Upload NIC8 Connection Speed NIC8 WLAN Signal Strength **Desktop Resolution** Vertical Refresh Rate **Display Brightness Level** Master Volume Media Title Media Status Media Position **Battery Level Battery Wear Level** Battery **Estimated Battery Time** 

SPWRSTATE	Power State
SBATTPWRLOADPERC	Battery Power Load
SFRAPS	Fraps
SRTSSFPS	RTSS FPS
SJDDLRATE	JD Download Rate
SJDTOTDL	JD Total Download
SJDREMDL	JD Remaining Download
SJDETA	JD ETA
SREGVALS1	Registry Value Str1
SREGVALS2	Registry Value Str2
SREGVALS3	Registry Value Str3
SREGVALS4	Registry Value Str4
SREGVALS5	Registry Value Str5
SREGVALS6	Registry Value Str6
SREGVALS7	Registry Value Str7
SREGVALS8	Registry Value Str8
SREGVALS9	Registry Value Str9
SREGVALS10	Registry Value Str10
SREGVALD1	Registry Value DW1
SREGVALD2	Registry Value DW2
SREGVALD3	Registry Value DW3
SREGVALD4	Registry Value DW4
SREGVALD5	Registry Value DW5
SREGVALD6	Registry Value DW6
SREGVALD7	Registry Value DW7
SREGVALD8	Registry Value DW8
SREGVALD9	Registry Value DW9
SREGVALD10	Registry Value DW10

# Temperatures

Motherboard
CPU
CPU1
CPU2
CPU3
CPU4
CPU Diode
CPU Package

CPU IA Cores CPU GT Cores CC-1-1 (CPU #1 / Core #1) CC-1-2 (CPU #1 / Core #2)
 CC-1-32 (CPU #1 / Core #32)
CC-2-1 (CPU #2 / Core #1) CC-2-2 (CPU #2 / Core #2)
 CC-2-32 (CPU #2 / Core #32)
PPGA CPU
Slot1 CPU
DIMM
DIMM1
DIMM2
AGP
MiniPCI
PCMCIA
PCI-E
PCI-E #1
PCI-E #2
РСІ-Е #3
PCI-E #4
USB 3.0
USB 3.0 #1
USB 3.0 #2
USB 3.1
SATA 6G
M.2
M.2 #1
M.2 #2
M.2 #3
MXM
SoC
VSoC
Chipset
North Bridge

TSB	South Bridge
ТРСН	РСН
TPCHCORE	PCH Core
TPCHDIO	PCH Diode
TIMC	IMC
ТМСР	MCP
TGMCH	GMCH
TGMCH1	GMCH1
TGMCH2	GMCH2
TPXH	РХН
TPLX	PLX
TPSU	Power Supply
TPSU1	Power Supply #1
TPSU2	Power Supply #2
TPSU3	Power Supply #3
TAPS	APS
TODD	Optical Drive
TWLAN	WLAN
TLCD	LCD
TIGPU	iGPU
TRAIDCTR	RAID Controller
TRAIDCTR1	RAID Controller #1
TRAIDCTR2	RAID Controller #2
TRAIDCTR3	RAID Controller #3
TRAIDCTR4	RAID Controller #4
TWATER	Water
TBATT	Battery
TBATT2	Battery #2
TPWM	PWM
TPWM1	PWM1
TPWM2	PWM2
TPWM3	PWM3
TPWM4	PWM4
TPWM5	PWM5
TVRM	VRM
TVRM1	VRM1
TVRM2	VRM2
TVRM3	VRM3
TAUX	Aux

TFRONT	Front
TREAR	Rear
TVCCIO	VCCIO
TVCCSA	VCCSA
TOPT1	OPT1
TOPT2	OPT2
TOPT3	OPT3
TSZS1	Subzero Sense #1
TSZS2	Subzero Sense #2
TFAN1VRM	Fan #1 VRM
TFAN2VRM	Fan #2 VRM
TFAN3VRM	Fan #3 VRM
TFAN4VRM	Fan #4 VRM
TTEMP1	Temperature #1
TTEMP2	Temperature #2
TTEMP99	Temperature #99
IGPUI	GPU1
IGPUIGPU2	GPU1#2
IGPUIDIO	GPUI Diode
	GPUI Diode (DispiO)
TGPUIDIOM	GPUI Diode (MemIU)
	GPUI Diode (Snader)
	GPUI Ambient
	GPU1 Hotspot
TGPUIMEM	GPU1 Memory
TGPUIMEM2	GPU1 Memory #2
	GPU1 Memory #3
	GPUL VRM
	GPUI VRMI
	GPUI VRIVIZ
	GPUI PWMI
TGPUIPWM2	GPUI PWM2
	GPUL PWM3
	GrUZ #2
I GPUZDIU	Gruz Diole

TGPU2DIOD GPU2 Diode (DispIO) TGPU2DIOM GPU2 Diode (MemIO) TGPU2DIOS GPU2 Diode (Shader) TGPU2AMB GPU2 Ambient TGPU2HOT GPU2 Hotspot **TGPU2MEM GPU2 Memory** TGPU2MEM2GPU2 Memory #2 TGPU2MEM3GPU2 Memory #3 TGPU2VRM GPU2 VRM TGPU2VRM1GPU2 VRM1 TGPU2VRM2GPU2 VRM2 TGPU2PWM1GPU2 PWM1 TGPU2PWM2GPU2 PWM2 TGPU2PWM3GPU2 PWM3 TGPU2PWM4GPU2 PWM4 TGPU2PWM5GPU2 PWM5 TGPU3 GPU3 TGPU3GPU2 GPU3 #2 TGPU3DIO GPU3 Diode TGPU3DIOD GPU3 Diode (DispIO) TGPU3DIOM GPU3 Diode (MemIO) TGPU3DIOS GPU3 Diode (Shader) TGPU3AMB GPU3 Ambient TGPU3HOT GPU3 Hotspot TGPU3MEM GPU3 Memory TGPU3MEM2GPU3 Memory #2 TGPU3MEM3GPU3 Memory #3 TGPU3VRM GPU3 VRM TGPU3VRM1GPU3 VRM1 TGPU3VRM2GPU3 VRM2 TGPU3PWM1GPU3 PWM1 TGPU3PWM2GPU3 PWM2 TGPU3PWM3GPU3 PWM3 TGPU3PWM4GPU3 PWM4 TGPU3PWM5GPU3 PWM5 TGPU4 GPU4 TGPU4GPU2 GPU4 #2 **GPU4** Diode TGPU4DIO TGPU4DIOD GPU4 Diode (DispIO)

TGPU4DIOM GPU4 Diode (MemIO) TGPU4DIOS GPU4 Diode (Shader) TGPU4AMB GPU4 Ambient TGPU4HOT GPU4 Hotspot **TGPU4MEM GPU4 Memory** TGPU4MEM2GPU4 Memory #2 TGPU4MEM3GPU4 Memory #3 TGPU4VRM GPU4 VRM TGPU4VRM1GPU4 VRM1 TGPU4VRM2GPU4 VRM2 TGPU4PWM1GPU4 PWM1 TGPU4PWM2GPU4 PWM2 TGPU4PWM3GPU4 PWM3 TGPU4PWM4GPU4 PWM4 TGPU4PWM5GPU4 PWM5 TGPU5 GPU5 TGPU5GPU2 GPU5 #2 **GPU5** Diode TGPU5DIO TGPU5DIOD GPU5 Diode (DispIO) TGPU5DIOM GPU5 Diode (MemIO) TGPU5DIOS GPU5 Diode (Shader) **TGPU5AMB** GPU5 Ambient TGPU5HOT GPU5 Hotspot TGPU5MEM GPU5 Memory TGPU5MEM2GPU5 Memory #2 TGPU5MEM3GPU5 Memory #3 TGPU5VRM GPU5 VRM TGPU5VRM1GPU5 VRM1 TGPU5VRM2GPU5 VRM2 TGPU5PWM1GPU5 PWM1 TGPU5PWM2GPU5 PWM2 TGPU5PWM3GPU5 PWM3 TGPU5PWM4GPU5 PWM4 TGPU5PWM5GPU5 PWM5 TGPU6 GPU6 TGPU6GPU2 GPU6 #2 **GPU6** Diode TGPU6DIO TGPU6DIOD GPU6 Diode (DispIO) TGPU6DIOM GPU6 Diode (MemIO)

TGPU6DIOS GPU6 Diode (Shader) TGPU6AMB GPU6 Ambient TGPU6HOT GPU6 Hotspot TGPU6MEM GPU6 Memory TGPU6MEM2GPU6 Memory #2 TGPU6MEM3GPU6 Memory #3 TGPU6VRM GPU6 VRM TGPU6VRM1GPU6 VRM1 TGPU6VRM2GPU6 VRM2 TGPU6PWM1GPU6 PWM1 TGPU6PWM2GPU6 PWM2 TGPU6PWM3GPU6 PWM3 TGPU6PWM4GPU6 PWM4 TGPU6PWM5GPU6 PWM5 TGPU7 GPU7 TGPU7GPU2 GPU7 #2 TGPU7DIO GPU7 Diode TGPU7DIOD GPU7 Diode (DispIO) TGPU7DIOM GPU7 Diode (MemIO) TGPU7DIOS GPU7 Diode (Shader) TGPU7AMB GPU7 Ambient TGPU7HOT GPU7 Hotspot TGPU7MEM GPU7 Memory TGPU7MEM2GPU7 Memory #2 TGPU7MEM3GPU7 Memory #3 TGPU7VRM GPU7 VRM TGPU7VRM1GPU7 VRM1 TGPU7VRM2GPU7 VRM2 TGPU7PWM1GPU7 PWM1 TGPU7PWM2GPU7 PWM2 TGPU7PWM3GPU7 PWM3 TGPU7PWM4GPU7 PWM4 TGPU7PWM5GPU7 PWM5 TGPU8 GPU8 TGPU8GPU2 GPU8 #2 TGPU8DIO GPU8 Diode TGPU8DIOD GPU8 Diode (DispIO) TGPU8DIOM GPU8 Diode (MemIO) TGPU8DIOS GPU8 Diode (Shader)

**TGPU8AMB** GPU8 Ambient TGPU8HOT GPU8 Hotspot **TGPU8MEM GPU8 Memory** TGPU8MEM2GPU8 Memory #2 TGPU8MEM3GPU8 Memory #3 TGPU8VRM GPU8 VRM TGPU8VRM1GPU8 VRM1 TGPU8VRM2GPU8VRM2 TGPU8PWM1GPU8 PWM1 TGPU8PWM2GPU8 PWM2 TGPU8PWM3GPU8 PWM3 TGPU8PWM4GPU8 PWM4 TGPU8PWM5GPU8 PWM5 TAMB1 **1st FB-DIMM** TAMB2 2nd FB-DIMM ..... ••••• 32nd FB-DIMM TAMB32 TDIMMTS1 1st DIMM TDIMMTS2 2nd DIMM ..... ..... TDIMMTS64 64th DIMM THDD1 1st HDD THDD2 2nd HDD ..... ..... THDD50 50th HDD

#### **Cooling Fans**

FCPU	CPU
FCPU1	CPU1
FCPU2	CPU2
FCPU3	CPU3
FCPU4	CPU4
FCPUOPT	CPU OPT
FSYS	System
FCHIP	Chipset
FNB	North Bridge
FSB	South Bridge
FPCH	РСН

FNFORCE	nForce
FCHA	Chassis
FCHA1	Chassis #1
FCHA2	Chassis #2
•••••	
FCHA9	Chassis #9
FPSU	Power Supply
FFRONT	Front
FFRONT1	Front #1
FFRONT2	Front #2
FFRONT3	Front #3
FFRONT4	Front #4
FREAR	Rear
FREAR1	Rear #1
FREAR2	Rear #2
FOTES	OTES
FOTES1	OTES1
FOTES2	OTES2
FDIMM	DIMM
FFBD	FBD
FFBD1	FBD1
FFBD2	FBD2
FM2	M.2
FHDD	HDD
FODD	ODD
FMXM	MXM
FPWM	PWM
FHAMP	HAMP
FWPUMP	Water Pump
FWPUMP1	Water Pump #1
FWPUMP2	Water Pump #2
FWFLOW	Water Flow
FWFLOW2	Water Flow #2
FAIOPUMP	AIO Pump
FPUMP1	Pump #1
FPUMP2	Pump #2
 FPUMP8	 Pump #8
FASSIST	Assistant

FASSIST1	Assistant #1
FASSIST2	Assistant #2
FASSIST3	Assistant #3
FAUX	Aux
FAUX1	Aux1
FAUX2	Aux2
FAUX3	Aux3
FAUX4	Aux4
FAUX5	Aux5
FOPT1	OPT1
FOPT2	OPT2
FOPT3	OPT3
FOPT4	OPT4
FOPT5	OPT5
FFAN1	Fan #1
FFAN2	Fan #2
•••••	
FFAN40	Fan #40
FGPU1	GPU1
FGPU1MEM	GPU1 Memory
FGPU1PWM	IGPU1 PWM
FGPU2	GPU2
FGPU2MEM	GPU2 Memory
FGPU2PWM	IGPU2 PWM
FGPU3	GPU3
FGPU3MEM	GPU3 Memory
FGPU3PWM	IGPU3 PWM
FGPU4	GPU4
FGPU4MEM	GPU4 Memory
FGPU4PWM	IGPU4 PWM
FGPU5	GPU5
FGPU5MEM	GPU5 Memory
FGPU5PWM	IGPU5 PWM
FGPU6	GPU6
FGPU6MEM	GPU6 Memory
FGPU6PWM	IGPU6 PWM
FGPU7	GPU7
FGPU7MEM	GPU7 Memory
FGPU7PWM	IGPU7 PWM

FGPU8 GPU8 FGPU8MEMGPU8 Memory FGPU8PWMGPU8 PWM

#### **Fan Duty Cycles**

DCPU CPU DSYS System DTBAL1T-Balancer #1 DTBAL2T-Balancer #2 DTBAL3T-Balancer #3 DTBAL4T-Balancer #4 DGPU1 GPU1 DGPU2 GPU2 DGPU3 GPU3 DGPU4 GPU4 DGPU5 GPU5 DGPU6 GPU6 DGPU7 GPU7 DGPU8 GPU8

#### **Voltage Values**

VCPU	CPU Core
VCPU1	CPU1 Core
VCPU2	CPU2 Core
VCPU3	CPU3 Core
VCPU4	CPU4 Core
VCPUVRM	CPU VRM
VCPU1VRM	CPU1 VRM
VCPU2VRM	CPU2 VRM
VCPU3VRM	CPU3 VRM
VCPU4VRM	CPU4 VRM
VCPUVID	CPU VID
V09V	+0.9 V
V105V	+1.05 V
V11V	+1.1 V
V12V	+1.2 V
V125V	+1.25 V

V13V	+1.3 V
V15V	+1.5 V
V18V	+1.8 V
V25V	+2.5 V
V26V	+2.6 V
V33V	+3.3 V
VP5V	+5 V
VM5V	-5 V
VP12V	+12 V
VP12V1	+12 V #1
VP12V2	+12 V #2
VP12V3	+12 V #3
VP12V4	+12 V #4
VP12VCPU1	+12 V CPU1
VP12VCPU2	+12 V CPU2
VP12V4P	+12 V 4-pin
VP12V8P	+12 V 8-pin
VP12VVRM	+12 V VRM
VP12VVRM1	+12 V VRM1
VP12VVRM2	+12 V VRM2
VM12V	-12 V
VBAT	VBAT Battery
V3VSB	+3.3 V Standby
V5VSB	+5 V Standby
VDIMM	DIMM
VDIMMAB	DIMM AB
VDIMMCD	DIMM CD
VDIMMEF	DIMM EF
VDIMMGH	DIMM GH
VCPU1DIMM	CPU1 DIMM
VCPU2DIMM	CPU2 DIMM
VRIMM	RIMM
VDIMMVTT	DIMM VTT
VCPU1DVTT	CPU1 DIMM VTT
VCPU2DVTT	CPU2 DIMM VTT
VAGP	AGP
VAGPVDDQ	AGP VDDQ
VCHIP	Chipset
VCPUNB	CPU/NB

VNBCORE	North Bridge Core
VNBVID	North Bridge VID
VNBPLL	North Bridge PLL
VNB11V	North Bridge +1.1 V
VNB12V	North Bridge +1.2 V
VNB15V	North Bridge +1.5 V
VNB18V	North Bridge +1.8 V
VNB20V	North Bridge +2.0 V
VNB25V	North Bridge +2.5 V
VSBCORE	South Bridge Core
VSBPLL	South Bridge PLL
VSB11V	South Bridge +1.1 V
VSB12V	South Bridge +1.2 V
VSB15V	South Bridge +1.5 V
VPCHCORE	PCH Core
VPCHIO	PCH I/O
VPCHPLL	PCH PLL
VPCH10V	PCH +1.0 V
VPCH11V	PCH +1.1 V
VPCH15V	PCH +1.5 V
VPCH18V	PCH +1.8 V
VPCIE	PCI Express
VHT	HyperTransport
VDMI	DMI
VQPI	QPI
VIMC	IMC
VSOC	SoC
VVDD	VDD
VVDDA	VDDA
VVDDP	VDDP
VVPPM	VPPM
VCPUVDD	CPU VDD
VCPUVDDNB	CPU VDDNB
VCPUCAC	CPU Cache
VCPUMESH	CPU Mesh
VVGTL	VGTL
VVBT	VBT
VVTT	VTT
VCPUVTT	CPU VTT

VCPUVTT2	CPU VTT #2
VCPU1VTT	CPU1 VTT
VCPU2VTT	CPU2 VTT
VCPUPLL	CPU PLL
VCPURING	CPU Ring
VFSBVTT	FSB VTT
VGMCHVTT	GMCH VTT
VVCCIN	VCCIN
VVCCIO	VCCIO
VVCCSA	VCCSA
VCPU1VCCSA	CPU1 VCCSA
VCPU2VCCSA	CPU2 VCCSA
VVCCST	VCC Sustain
VVTR	VTR
V5VTR	5VTR
VNIC	Network Adapter
VESATA	eSATA
VPSU	Power Supply
VIGPU	iGPU
VFAN21	Fan #21
VFAN22	Fan #22
•••••	
VFAN32	Fan #32
VPUMP1	Pump #1
VPUMP2	Pump #2
VBATT	Battery
VBATTINP	Battery Input
VBATTOUTP	Battery Output
VBATT2	Battery #2
VBATT2INP	Battery #2 Input
VBATT2OUTP	Battery #2 Output
VGPU1	GPU1 Core
VGPU1VCC	GPU1 Vcc
VGPU1MEM	GPU1 Memory
VGPU1VRM	GPU1 VRM
VGPU1P12V	GPU1 +12V
VGPU2	GPU2 Core
VGPU2VCC	GPU2 Vcc
VGPU2MEM	GPU2 Memory

VGPU2VRM	GPU2 VRM
VGPU2P12V	GPU2 +12V
VGPU3	GPU3 Core
VGPU3VCC	GPU3 Vcc
VGPU3MEM	GPU3 Memory
VGPU3VRM	GPU3 VRM
VGPU3P12V	GPU3 +12V
VGPU4	GPU4 Core
VGPU4VCC	GPU4 Vcc
VGPU4MEM	GPU4 Memory
VGPU4VRM	GPU4 VRM
VGPU4P12V	GPU4 +12V
VGPU5	GPU5 Core
VGPU5VCC	GPU5 Vcc
VGPU5MEM	GPU5 Memory
VGPU5VRM	GPU5 VRM
VGPU5P12V	GPU5 +12V
VGPU6	GPU6 Core
VGPU6VCC	GPU6 Vcc
VGPU6MEM	GPU6 Memory
VGPU6VRM	GPU6 VRM
VGPU6P12V	GPU6 +12V
VGPU7	GPU7 Core
VGPU7VCC	GPU7 Vcc
VGPU7MEM	GPU7 Memory
VGPU7VRM	GPU7 VRM
VGPU7P12V	GPU7 +12V
VGPU8	GPU8 Core
VGPU8VCC	GPU8 Vcc
VGPU8MEM	GPU8 Memory
VGPU8VRM	GPU8 VRM
VGPU8P12V	GPU8 +12V

## **Current Values**

CCPU	CPU
CCPU1	CPU1
CCPU2	CPU2
CCPU3	CPU3

CCPU4	CPU4
CCPUVDD	CPU VDD
CCPUVDDNB	CPU VDDNB
C15V	+1.5 V
C18V	+1.8 V
C25V	+2.5 V
C33V	+3.3 V
CP5V	+5 V
CM5V	-5 V
CP12V	+12 V
CP12V1	+12 V #1
CP12V2	+12 V #2
CP12V3	+12 V #3
CP12V4	+12 V #4
CM12V	-12 V
CNB	North Bridge
CPCH	PCH
CPWM	PWM
CVRM	VRM
CFAN21	Fan #21
CFAN22	Fan #22
•••••	•••••
CFAN32	Fan #32
CPUMP1	Pump #1
CPUMP2	Pump #2
CPSU	Power Supply
CBATTOUTP	Battery Output
CBATT2OUTF	Battery #2 Output
CGPU1MEM	GPU1 Memory
CGPU1VRM	GPU1 VRM
CGPU2MEM	GPU2 Memory
CGPU2VRM	GPU2 VRM
CGPU3MEM	GPU3 Memory
CGPU3VRM	GPU3 VRM
CGPU4MEM	GPU4 Memory
CGPU4VRM	GPU4 VRM
CGPU5MEM	GPU5 Memory
CGPU5VRM	GPU5 VRM
CGPU6MEM	GPU6 Memory

CGPU6VRM	GPU6 VRM
CGPU7MEM	GPU7 Memory
CGPU7VRM	GPU7 VRM
CGPU8MEM	GPU8 Memory
CGPU8VRM	GPU8 VRM

## **Power Values**

PCPU	CPU
PCPU1	CPU1
PCPU2	CPU2
PCPUPKG	CPU Package
PCPUIAC	CPU IA Cores
PCPUGTC	CPU GT Cores
PCPUCU0	CPU CU0
PCPUCU1	CPU CU1
PCPUUNC	CPU Uncore
PCPUVDD	CPU VDD
PCPUVDDNB	CPU VDDNB
P15V	+1.5 V
P33V	+3.3 V
PP5V	+5 V
PP12V	+12 V
PP12V1	+12 V #1
PP12V2	+12 V #2
PP12V3	+12 V #3
PP12V4	+12 V #4
PDIMM	DIMM
PNB	North Bridge
PVRM	VRM
PIGPU	iGPU
PFAN21	Fan #21
PFAN22	Fan #22
PFAN32	Fan #32
PPUMP1	Pump #1
PPUMP2	Pump #2
PPWR1	Power #1
PPWR2	Power #2

PPWR3 Power #3 PPWR4 Power #4 PPSU **Power Supply** PBATT Battery **PBATTOUTP** Battery Output **Battery Charge Rate** PBATTCHR PBATT2 Battery #2 PBATT2OUTPBattery #2 Output PBATT2CHR Battery #2 Charge Rate PGPU1 GPU1 PGPU1TDPP GPU1 TDP% PGPU1MEM GPU1 Memory PGPU1VRM GPU1 VRM PGPU2 GPU2 PGPU2TDPP GPU2 TDP% PGPU2MEM GPU2 Memory PGPU2VRM GPU2 VRM PGPU3 GPU3 PGPU3TDPP GPU3 TDP% PGPU3MEM GPU3 Memory PGPU3VRM GPU3 VRM PGPU4 GPU4 PGPU4TDPP GPU4 TDP% PGPU4MEM GPU4 Memory PGPU4VRM GPU4 VRM PGPU5 GPU5 PGPU5TDPP GPU5 TDP% PGPU5MEM GPU5 Memory PGPU5VRM **GPU5 VRM** PGPU6 GPU6 PGPU6TDPP GPU6 TDP% PGPU6MEM GPU6 Memory PGPU6VRM GPU6 VRM PGPU7 GPU7 PGPU7TDPP GPU7 TDP% PGPU7MEM GPU7 Memory PGPU7VRM GPU7 VRM PGPU8 GPU8 PGPU8TDPP GPU8 TDP%

PGPU8MEM GPU8 Memory PGPU8VRM GPU8 VRM

#### **Flow Sensors**

WFLOW1 Flow #1 WFLOW2 Flow #2 ...... WFLOW20Flow #20

## **Liquid Levels**

LLIQ1Liquid #1 LLIQ2Liquid #2 LLIQ3Liquid #3 LLIQ4Liquid #4

# **Shared Memory**

One of the most common ways to share information between Windows applications is shared memory. AIDA64 Engineer hardware monitoring module uses the shared memory named AIDA64\_SensorValues. The shared memory is available in both the local and global space.

The shared memory content is a long string value closed with a 0x00 char, making it a classic PChar or char\*

The string is made of XML tags, but it's not a complete XML document. It includes all temperature, cooling fan and voltage values AIDA64 measures. Temperatures are always in Celsius, regardless of the <u>Fahrenheit display setting</u> in AIDA64 Preferences. Sensor value labels are always in English, they're not localized.

The buffer size (ie. the size of the shared memory block) should be at least 10 KB. A typical buffer size is around 1 to 3 KB, but for e.g. Abit MicroGuru 2005 based boards it may be a lot more.

The shared memory content can be read by using a similar code like the following Delphi procedure:

Const

sharedmem\_name = 'AIDA64\_SensorValues';

Function

ExtApp\_SharedMem\_ReadBuffer(bu:PChar;bu\_size:DWord):Boolean;

Var

mappedData : PChar; th : THandle;

Begin

Result:=False;

th:=OpenFileMapping(FILE\_MAP\_READ,False,sharedmem\_name);

```
If th<>INVALID_HANDLE_VALUE Then
Begin
mappedData:=MapViewOfFile(th,FILE_MAP_READ,0,0,0);
If mappedData<>Nil Then
Begin
StrLCopy(bu,mappedData,bu_size);
If UnmapViewOfFile(mappedData) Then Result:=True;
End;
CloseHandle(th);
End;
```

An example output for the shared memory content:

<temp><id>TMOBO</id><label>Motherboard</label><value>45</value></temp>
<temp><id>TCPU</id><label>CPU</label><value>35</value></temp>
<temp><id>TCC-1-1</id><label>CPU #1 / Core #1</label><value>58</value></temp>
<temp><id>TCC-1-2</id><label>CPU #1 / Core #2</label><value>58</value></temp>
<temp><id>TNB</id><label>North Bridge</label><value>62</value></temp>
<temp><id>TGPU1</id><label>GPU</label><value>67</value></temp>
<temp><id>THDD1</id><label>ST3320620AS</label><value>34</value></temp>
<temp><id>THDD2</id><label>ST3320620AS</label><value>35</value></temp>
<fan><id>FCPU</id><label>CPU</label><value>1430</value></fan>
<fan><id>FSYS</id><label>System</label><value>1700</value></fan>
<volt><id>VCPU</id><label>CPU Core</label><value>1.22</value></volt>
<volt><id>VP5V</id><label>+5 V</label><value>5.00</value></volt>
<volt><id>VP12V</id><label>+12 V</label><value>12.16</value></volt>
<volt><id>VBAT</id><label>VBAT Battery</label><value>3.20</value></volt>
<pre></pre>

# Registry

When the Registry method of the External Applications feature of AIDA64 Engineer is enabled, sensor values are written to the following Windows Registry path:

HKEY\_CURRENT\_USER\Software\FinalWire\AIDA64\SensorValues

When AIDA64 exits, it removes that Registry path and all values under it. Temperatures are always in Celsius, regardless of the <u>Fahrenheit display</u> <u>setting</u> in AIDA64 Preferences. Sensor value labels are always in English, they're not localized.

An example Registry content for the measured values:

💣 Regis	stry Editor			×
File Edit View Favorites Help				
File       Edit       View       Favorites       Help         Image: Computer       Image: Computer       Image: Computer       Image: Computer         Image: HKEY_CLASSES_ROOT       Image: Computer       Image: Computer         Image: HKEY_CLASSES_ROOT       Image: Computer       Image: Computer         Image: HKEY_CLASSES_ROOT       Image: Computer       Image: Computer         Image: Computer       Image: Com	Name Description Name Description Name Description Name Description Name Description Name Nalue.VDIMMAB Description Description Nalue.PCPUIAC Description Nalue.PCPUIAC Description Nalue.SCPUCLK Nalue.SCPUFSB Description Nalue.SCPUFSB Description Nalue.SCPUMUL Description Nalue.SCPUTCLK Description Nalue.SCPUTCLK Description Nalue.STIME Description Nalue.TCPU Description Nalue.TCPU Nalue.TCPUFKG Description Nalu	Type REG_SZ REG_SZ REG_SZ REG_SZ REG_SZ REG_SZ REG_SZ REG_SZ REG_SZ REG_SZ REG_SZ REG_SZ REG_SZ REG_SZ REG_SZ REG_SZ REG_SZ REG_SZ	Data DIMM AB DIMM CD GPU Core +12 V +5 V 516 9.55 15.98 3700 100 37.0 9/23/2013 135 933 8:21:04 AM 26 40 38	×
<ul> <li>Microsoft</li> <li>Mine</li> <li>NVIDIA Corporation</li> <li>NVIDIA Corporation</li> <li>ORL</li> <li>Policies</li> <li>RegisteredApplications</li> <li>Wow6432Node</li> <li>System</li> <li>Volatile Environment</li> <li>HKEY_LOCAL_MACHINE</li> <li>HKEY_CURRENT_CONFIG</li> </ul>	Value.TGPU1DIO Value.THDD1 Value.THOBO Value.TPCH Value.VCPU Value.VCPUVID Value.VCPUVID Value.VCPUVTT Value.VDIMMAB Value.VDIMMCD Value.VDIMMCD Value.VGPU1 Value.VP12V Value.VP5V	REG_SZ REG_SZ REG_SZ REG_SZ REG_SZ REG_SZ REG_SZ REG_SZ REG_SZ REG_SZ	38 29 32 31 0.944 1.131 1.056 1.500 1.512 0.850 11.880 5.010	>
Computer\HKEY_CURRENT_USER\Software\FinalWire\AlDA64\SensorValues				

## WMI

When the WMI method of the External Applications feature of AIDA64 Engineer is enabled, sensor values are written to the following WMI path:

Root\WMI\AIDA64\_SensorValues

When AIDA64 exits, it removes that WMI path and all values under it. Temperatures are always in Celsius, regardless of the <u>Fahrenheit display</u> <u>setting</u> in AIDA64 Preferences. Sensor value labels are always in English, they're not localized.

# **Command-line options**

AIDA64 Engineer offers an unparalleled flexibility for automated report creation purposes via its command-line interface. Command-line options can be used to create reports automatically. All command-line options are listed in AIDA64 on the page main menu / Help / Command-line Options.

## Precautions

1. Only one of the following options can be used in a single commandline: /ALL, /SUM, /HW, /SW, /BENCH, /CUSTOM. Mixing of these options with each other could lead to unexpected issues.

2. Only one of the following options can be used in a single commandline: /TEXT, /HTML, /MHTML. Mixing of these options with each other could lead to unexpected issues.
#### Report

Each command-line to be used to create a report should include the following report creation option:

#### **/R** [reportfile]

This option can be used to create a report and save it to file. When no *reportfile* is specified, the report is written to the file configured on the page <u>Preferences / Report / Report File</u>. For configuration independency it is recommended to specify *reportfile* including full path name in the command-line. Reports are automatically compressed if it is enabled on the page <u>Preferences / Report</u>. In *reportfile* the following special file control strings can be used:

- · \$HOSTNAME -- Inserts host name
- · \$USERNAME -- Inserts current user name
- · \$DOMAIN -- Inserts current logon domain
- \$IPADDR -- Inserts primary network adapter IP address (aaa-bbb-cccddd)
- \$MACADDQ -- Inserts primary network adapter MAC address (AABBCCDDEEFF)
- \$MACADDR -- Inserts primary network adapter MAC address (AA-BB-CC-DD-EE-FF)
- \$UUIDMAC -- Inserts DMI System UUID. When not available, it inserts MAC address (0000000-0000000-0000AABB-CCDDEEFF)
- \$MONTH -- Inserts current month (MM)
- · \$DATE -- Inserts current date (YYYY-MM-DD)
- \$TIME -- Inserts current time (HH-MM-SS)
- · \$DMISYSPROD -- Inserts DMI system product
- SDMISYSSKU -- Inserts DMI system SKU number
- · \$DMISYSSN -- Inserts DMI system serial number
- · \$DMISYSVER -- Inserts DMI system version

Example: AIDA64 /R c:\folder\\$HOSTNAME /HTML /BENCH /SILENT

#### **Report Profile**

Each command-line to be used to create a report should include one of the following report profile options:

#### /ALL

Using this option the created reports will include all pages.

Example: AIDA64 /R c:\folder\\$HOSTNAME /TXT /ALL /SILENT

#### /SUM

Using this option the created reports will include only the *Computer / Summary* page.

Example: AIDA64 /R c:\folder\\$HOSTNAME /HTML /SUM /SILENT

#### /HW

Using this option the created reports will include only the pages listing hardware-related information.

Example: AIDA64 /R c:\folder\\$HOSTNAME /MHTML /HW /SILENT

#### /SW

Using this option the created reports will include only the pages listing software-related information.

Example: AIDA64 /R c:\folder\\$HOSTNAME /TXT /SW /SILENT

#### **/BENCH**

Using this option the created reports will include only the benchmark pages.

Example: AIDA64 /R c:\folder\\$HOSTNAME /HTML /BENCH /SILENT

#### /CUSTOM <profile>

Using this option the created reports will include only the pages listed in *profile*. Report profile files (.RPF) can be created on the page Report Wizard / Custom selection.

Example: AIDA64 /R c:\folder\\$HOSTNAME /MHTML /CUSTOM c:\folder\myreportprofile.rpf /SILENT

#### **Report Format**

Each command-line to be used to create a report should include one of the following report format options:

#### /TEXT

Using this option the reports will be created in the plain text format.

#### /HTML

Using this option the reports will be created in HTML (HyperText Markup Language) format. Layout of HTML reports can be customized on the page <u>Preferences / Report / Report Look</u>. HTML reports are perfect to be printed or filed.

#### /MHTML

Using this option the reports will be created in MHTML (MIME HTML) format. MHTML reports are basically HTML reports with small icons included. MHTML reports can be opened with MS Internet Explorer 5 and later, and with Opera 9 and later; but they cannot be opened by other HTML browsers. Layout of MHTML reports can be customized on the page <u>Preferences / Report / Report Look</u>. MHTML reports are perfect to be printed or filed.

#### **System Stability Test**

The following command-line options can be used to automatize stressing the system using the AIDA64 System Stability Test:

#### **/SST** [subtests]

This option can be used to automatically open the System Stability Test window when AIDA64 loads up, and start the system stress test right away. When no *subtests* is specified, all subtests are enabled. To specify which subtest to enable, the name of subtests should be listed, separated by comma. In *subtests* the following subtest names can be used:

- · CPU
- · FPU
- $\cdot$  Cache
- $\cdot$  RAM
- · Disk
- $\cdot$  GPU

Example: AIDA64 /SST CPU, FPU, RAM /SSTDUR 15

#### /SSTDUR <minutes>

This option can be used to set the duration of the stress test in minutes. When /SSTDUR is not specified, the stress test will run until it's manually stopped by the user.

#### **/SSTDISKWRITE**

This option can be used to switch disk stressing from the default random read method to linear file writing. For SSDs linear write usually makes the device consume more power and heat up more, but it also shortens the lifecycle of the SSD by wearing out flash memory cells. Make sure to use this option with extra caution!

#### Language

To specify the language of the AIDA64 interface, the following option can be used:

#### /LANGxx

"xx" should be replaced with a 2-letter language code. Currently the following languages are supported:

- $\cdot$  AA = Arabic
- $\cdot$  AL = Albanian
- $\cdot$  BG = Bulgarian
- $\cdot$  BR = Brazilian Portuguese
- $\cdot$  BS = Bosnian
- $\cdot$  BY = Belarusian
- $\cdot$  CA = Catalan
- $\cdot$  CN = Chinese (Simplified)
- $\cdot$  CZ = Czech
- $\cdot$  DE = German
- $\cdot$  DK = Danish
- $\cdot$  EN = English
- $\cdot$  ES = Spanish
- $\cdot$  FI = Finnish
- $\cdot$  FR = French
- $\cdot$  HR = Croatian
- $\cdot$  HU = Hungarian
- $\cdot$  ID = Indonesian
- $\cdot$  IT = Italian
- $\cdot$  JP = Japanese
- $\cdot$  KR = Korean
- $\cdot$  LT = Lithuanian
- $\cdot$  LV = Latvian
- $\cdot$  MK = Macedonian
- $\cdot$  NL = Dutch
- $\cdot$  NO = Norwegian
- $\cdot$  PL = Polish
- $\cdot$  PT = Portuguese (Portugal)

- $\cdot$  RO = Romanian
- $\cdot$  RU = Russian
- $\cdot$  SE = Swedish
- $\cdot$  SI = Slovenian
- $\cdot$  SK = Slovak
- $\cdot$  SR = Serbian
- $\cdot$  TR = Turkish
- $\cdot$  TW = Chinese (Traditional)
- $\cdot$  UA = Ukrainian

Except for English, the language module file (LANG\_xx.TXT) for the selected language should be present in AIDA64 folder.

Example: AIDA64 /R c:\folder\\$HOSTNAME /HTML /BENCH /SILENT /LANGNL

#### Troubleshooting

The following command-line options can be used to make AIDA64 more stable when a hardware incompatibility issue occurs:

#### **/SAFE**

Using this option the most common hardware incompatibility issues can be avoided by disabling low-level PCI, SMBus and sensor scanning.

#### **/SAFEST**

Using this option all common hardware incompatibility issues can be avoided. When this option is used, AIDA64 will not load its kernel drivers, and so all low-level hardware access features get disabled.

#### /NT4ZIPFIX

Using this option an Iomega Zip drive related issue ("Subject aida64.exe - Drive Not Ready / Body: The drive is not ready for use; it's door may be open") can be avoided. This problem may occur only on Windows NT 4.0 systems.

#### Miscellaneous

The following command-line options can be used to change the behavior of several AIDA64 properties and features:

#### **/SILENT**

This option can be used to hide AIDA64 icon on the System Tray (also known as Notification Area) including the bubble shown on specific events under Windows 2000 and later operating systems.

#### **/SHOWP**

Using this option together with <u>/R option</u> the report creation progress can be tracked on the screen, but no user intervention during the report creation progress is allowed (ie. the user cannot stop the report creation process). This option is useful to let users know that their computer slows down during the report creation because their computer is audited by AIDA64, and they can visually track the completion of the audit process. This options also useful for debugging purposes, for example when AIDA64 has a crash on one of the information pages, using /SHOWP the problemous page can be identified easier.

#### **/SHOWPCANCEL**

Using this option together with <u>/R option</u> the report creation progress can be tracked on the screen, and user intervention during the report creation progress is allowed (ie. the user can stop the report creation process).

#### **/SHOWS**

Using this option together with <u>/R option</u> the startup process of AIDA64 can be tracked on the screen. This option is useful to let users know that their computer slows down during the startup of AIDA64 because their computer is audited by AIDA64. This options also useful for debugging purposes, for example when AIDA64 has a crash right at its startup.

#### **/NOICONS**

This option can be used to skip the loading of icons. It is useful to save system resources, but should not be used when the reports are created in the MHTML format.

#### /INIFILE <inifile>

This option can be used to get AIDA64 to use a custom preferences file instead of its default AIDA64.INI. This option is useful when different configuration options should be used on different AIDA64 launch instances.

Example: AIDA64 /R c:\folder\\$HOSTNAME /HTML /BENCH /SILENT /INIFILE c:\inifolder\firstrun.ini

#### /DELAY <seconds>

This option can be used to get AIDA64 to wait for a number of seconds at startup, to delay the actual report creation process.

#### /IDLE

This option sets AIDA64 application process to idle (lowest) priority. It can be used to run the report creation process in the background and still let the actual logged on user seamlessly work on the computer in the same time.

#### **/NOLICENSE**

This option can be used to disable and hide all software license related information, including the *Software / Licenses* page and the "License Information" section on the *Operating System / Operating System* page.

#### **Benchmark guide**

Benchmark pages of AIDA64 Engineer provide several methods to measure system performance. These benchmarks are synthetic, ie. the results show only the theoretical (maximum) performance of the system. In contrast to application tests, synthetic benchmarks do not tend to reflect the "real world" performance of the computer. These benchmarks provide quick and easy comparison between computer states, e.g. when certain parameters (CPU clock speed, memory timings, etc) change in system configuration.



Memory bandwidth, CPU and FPU benchmarks of AIDA64 Engineer are built on the multi-threaded AIDA64 benchmark engine that supports up to 32 simultaneous processing threads.

**[\*NEW\*]** Since AIDA64 v3.20, the AIDA64 benchmark engine supports up to 640 simultaneous processing threads and 10 processor groups.

The attained results are scalable either in multi-processor (SMP), multicore (CMP) and HyperThreading enabled systems. In other words, AIDA64 can utilize the full potential of the current and also the next generation of CPU technologies, such as the AMD FX, AMD Opteron and Intel Core i7, Intel Xeon processors.

#### Intel HyperThreading support

Intel's HyperThreading feature shows moderated performance improvement in AIDA64 benchmarks, because in HyperThreading enabled processors most internal resources (buffers, registers, caches) are shared between the two logical processor units. More specifically the Nortwood, Gallatin and Prestonia core based Intel NetBurst architecture processors do not contain sufficient internal resources for the extremely optimized benchmark routines AIDA64 uses, so on these processors the default HyperThreading setting is disabled, in order to avoid "bottleneck" situations and attain better benchmark results. The Prescott, Nocona, Irwindale, and Potomac based Intel processors have way more internal resources than their predecessors, so on these cores HyperThreading is enabled by default.

#### Enhanced Halt State and Enhanced SpeedStep support

In order to provide appropriate benchmark results, AIDA64 disables the Enhanced Halt State (C1E), Enhanced SpeedStep (EIST), Cool'n'Quiet (CnQ) and PowerNow! feature of capable AMD and Intel desktop processors during all benchmark measurement processes. Such features are available in most modern Intel and AMD processors. They are implemented to lower power consumption and heat production by lowering CPU clock frequency and CPU core voltage when the CPU is idle.

#### System requirements

AIDA64 Engineer benchmarks have considerably higher system requirements than the main AIDA64 application does. To get meaningful and comparable benchmark scores, at least an Intel Pentium class processor (implementing the Time Stamp Counter feature) and 128 MB system memory is required.

64-bit Windows systems are fully supported by AIDA64. All AIDA64 benchmark tests implement both 32-bit and 64-bit variations, and so they are fully capable of utilizing the 64-bit processing capabilities of modern AMD, Intel and VIA processors.

#### Before starting the benchmarks

In order to attain the highest possible benchmark scores make sure to close all background applications, including ICQ, Windows Live Messenger, Skype, Winamp, web browsers, email clients, hardware monitoring tools, etc. The least number of applications running in the background, the higher benchmark scores can be reached. For comparative benchmarks (ie. when comparing systems based on benchmark scores), make sure to perform benchmarking in a clean Windows installation.

#### Starting the benchmarks

Benchmarks are not started automatically, because it's possible to configure them before starting the actual performance measurement process. On CPU and FPU benchmark pages a new button appears on the tool bar named **Parameters**.



By clicking on the **Parameters** button, a dropdown menu appears to configure the number of processors to be utilized by the benchmark method.



And it's also possible to configure whether the benchmark should use Intel HyperThreading technology. For more details please refer to the **Intel HyperThreading support** topic above on this page.

#### **Comparing results**

FinalWire constantly improve the benchmarks of AIDA64, hence comparing benchmark results of different AIDA64 versions is absolutely <u>not</u> recommended. For example, attaining a result of 200 scores in AIDA64 Version 2.50 cannot be directly compared to a result of 200 scores measured using AIDA64 Version 2.00.

#### Understanding the results

Except for the Memory Latency test, the higher score means the better performance.

Measurement unit of the results is MB (megabytes) per sec for Memory Read, Memory Write, Memory Copy, CPU ZLib, CPU AES, and CPU Hash tests; ns (nanosecond) for Memory Latency test; and MPixel (megapixelsa) per sec for CPU PhotoWorxx test.

#### **Memory Read**

This benchmark measures the maximum achiveable memory read bandwidth. The code behind this benchmark method is written in Assembly and it is extremely optimized for every popular AMD, Intel and VIA processor core variants by utilizing the appropriate x86/x64, x87, MMX, MMX+, 3DNow!, SSE, SSE2, SSE4.1, AVX, and AVX2 instruction set extension. For each processing thread the benchmark reads a 64 MB sized, 64 KB aligned data buffer from system memory into the CPU. Memory is read continuously without breaks, using 4 KB page size.

**[\*NEW\*]** Since AIDA64 v3.00, the test is HyperThreading, multiprocessor (SMP) and multi-core (CMP) aware.

#### **Memory Write**

This benchmark measures the maximum achiveable memory write bandwidth. The code behind this benchmark method is written in Assembly and it is extremely optimized for every popular AMD, Intel and VIA processor core variants by utilizing the appropriate x86/x64, x87, MMX, MMX+, 3DNow!, SSE, SSE2, SSE4.1, and AVX instruction set extension. For each processing thread the benchmark writes a 64 MB sized, 64 KB aligned data buffer from the CPU into the system memory. Memory is written continuously without breaks, using 4 KB page size.

**[\*NEW\*]** Since AIDA64 v3.00, the test is HyperThreading, multiprocessor (SMP) and multi-core (CMP) aware.

#### **Memory Copy**

This benchmark measures the maximum achiveable memory copy speed. The code behind this benchmark method is written in Assembly and it is extremely optimized for every popular AMD, Intel and VIA processor core variants by utilizing the appropriate x86/x64, x87, MMX, MMX+, 3DNow!, SSE, SSE2, SSE4.1, AVX, and AVX2 instruction set extension. For each processing thread the benchmark copies a 32 MB sized, 64 KB aligned data buffer into another 32 MB sized, 64 KB aligned data buffer through the CPU. Memory is copied continuously without breaks, using 4 KB page size.

**[\*NEW\*]** Since AIDA64 v3.00, the test is HyperThreading, multi-processor (SMP) and multi-core (CMP) aware.

#### **Memory Latency**

This benchmark measures the typical delay when the CPU reads data from system memory. Memory latency time means the penalty measured from the issuing of the read command until the data arrives to the integer registers of the CPU. The code behind this benchmark method is written in Assembly, and uses at least 16 MB memory size with 4 KB page size.

[\*NEW\*] Since AIDA64 v3.00, memory is accessed in a random pattern, with at least 128-byte stride to avoid the effect of the adjacent cacheline prefetcher; and smaller stride than the TLB-window to minimize the effect of TLB miss penalty.

Memory Latency benchmark test uses only the basic x86 instructions and utilizes only one processor core and one thread.

#### **CPU** Queen

This simple integer benchmark focuses on the branch prediction capabilities and the misprediction penalties of the CPU. It finds the solutions for the classic "Queens problem" on a 10 by 10 sized chessboard (http://mathworld.wolfram.com/QueensProblem.html).

At the same clock speed theoretically the processor with the shorter pipeline and smaller misprediction penalties will attain higher benchmark scores. For example -- with HyperThreading disabled -- the Intel Northwood core processors get higher scores than the Intel Prescott core based ones due to the 20-step vs 31-step long pipeline. However, with enabled HyperThreading the picture is controversial, because due to architectural bottlenecks the Northwood core runs out of internal resources and slows down. Similarly, at the same clock speed AMD K8 class processors will be faster than AMD K7 ones due to the improved branch prediction capabilities of the K8 architecture.

CPU Queen test uses integer MMX, SSE2 and SSSE3 optimizations. It consumes less than 1 MB system memory and it is HyperThreading, multi-processor (SMP) and multi-core (CMP) aware.

#### **CPU PhotoWorxx**

This integer benchmark performs different common tasks used during digital photo processing.

It performs the following tasks on a large RGB image:

- $\cdot$  Fill the image with random coloured pixels
- · Rotate 90 degrees CCW
- · Rotate 180 degrees (a.k.a. Flip)
- · Difference
- Color space conversion (a.k.a. RGB32 to YV12 conversion, used e.g. during JPEG conversion)

This benchmark stresses the SIMD integer arithmetic execution units of the CPU and also the memory subsystem. CPU PhotoWorxx test uses the appropriate x87, MMX, MMX+, 3DNow!, 3DNow!+, SSE, SSE2, SSSE3, SSE4.1, SSE4A, AVX, AVX2, and XOP instruction set extension, and it is HyperThreading, multi-processor (SMP) and multi-core (CMP) aware.

**[\*NEW\*]** Since AIDA64 v3.00, the PhotoWorxx benchmark implements AVX2 optimizations, and supports AMD Kabini and Intel Haswell processors.

#### **CPU ZLib**

This integer benchmark measures combined CPU and memory subsystem performance through the public ZLib compression library Version 1.2.5 (<u>http://www.zlib.net</u>).

CPU ZLib test uses only the basic x86 instructions, and it is HyperThreading, multi-processor (SMP) and multi-core (CMP) aware.

#### **CPU AES**

This integer benchmark measures CPU performance using AES (Advanced Encryption Standard) data encryption. In cryptography AES is a symmetric-key encryption standard. AES is used in several compression tools today, like 7z, RAR, WinZip, and also in disk encryption solutions like BitLocker, FileVault (Mac OS X), TrueCrypt.

CPU AES test uses the appropriate x86, MMX and SSE4.1 instructions, and it's hardware accelerated on VIA PadLock Security Engine capable VIA C3, VIA C7, VIA Nano, and VIA QuadCore processors; and on Intel AES-NI instruction set extension capable processors. The test is HyperThreading, multi-processor (SMP) and multi-core (CMP) aware.

[\*NEW\*] Since AIDA64 v3.00, the AES benchmark supports AMD Kabini and Intel Haswell processors.

#### **CPU Hash**

This integer benchmark measures CPU performance using the SHA1 hashing algorithm defined in the Federal Information Processing Standards Publication 180-4 (http://csrc.nist.gov/publications/fips/fips180-4/fips-180-4.pdf). The code behind this benchmark method is written in Assembly, and it is optimized for every popular AMD, Intel and VIA processor core variants by utilizing the appropriate MMX, MMX+/SSE, SSE2, SSSE3, AVX, AVX2, XOP, BMI, and BMI2 instruction set extension. This benchmark is hardware accelerated on VIA PadLock Security Engine capable VIA C7, VIA Nano and VIA QuadCore processors, as well as on Intel HW SHA capable CPUs, e.g. Intel Goldmont, AMD Ryzen, and expected on Intel Cannonlake and on their descedants too.

In this benchmark every thread is working on independent 8 KB data blocks, and the MMX, SSE2, SSSE3, AVX, and XOP optimized calculation routines implement the latest vectorization idea of Intel (http://software.intel.com/en-us/articles/improving-the-performance-of-the-secure-hash-algorithm-1/).

**[\*NEW\*]** Since AIDA64 v3.00, the Hash benchmark implements AVX2, BMI and BMI2 optimizations, and supports AMD Kabini and Intel Haswell processors.

#### **FPU VP8**

This benchmark measures video compression performance using the Google VP8 (WebM) video codec Version 1.1.0 (http://www.webmproject.org). FPU VP8 test encodes 1280x720 pixel ("HD ready") resolution video frames in 1-pass mode at 8192 kbps bitrate with best quality settings. The content of the frames are generated by the FPU Julia fractal module. The code behind this benchmark method utilizes the appropriate MMX, SSE2, SSSE3 or SSE4.1 instruction set extension, and it is HyperThreading, multi-processor (SMP) and multi-core (CMP) aware.

#### WebM Project - Software License

Copyright (c) 2010, Google Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- $\cdot$  Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- Neither the name of Google nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

#### **FPU Julia**

This benchmark measures the single precision (also known as 32-bit) floating-point performance through the computation of several frames of the popular "Julia" fractal. The code behind this benchmark method is written in Assembly, and it is extremely optimized for every popular AMD, Intel and VIA processor core variants by utilizing the appropriate x87, 3DNow!, 3DNow!+, SSE, AVX, AVX2, FMA, and FMA4 instruction set extension.

FPU Julia test consumes 4 MB system memory per calculation thread, and it is HyperThreading, multi-processor (SMP) and multi-core (CMP) aware.

**[\*NEW\*]** Since AIDA64 v3.00, the Julia benchmark implements AVX2 and FMA optimizations, and supports AMD Kabini and Intel Haswell processors.

#### **FPU Mandel**

This benchmark measures the double precision (also known as 64-bit) floating-point performance through the computation of several frames of the popular "Mandelbrot" fractal. The code behind this benchmark method is written in Assembly, and it is extremely optimized for every popular AMD, Intel and VIA processor core variants by utilizing the appropriate x87, SSE2, AVX, AVX2, FMA, and FMA4 instruction set extension.

FPU Mandel test consumes 4 MB system memory per calculation thread, and it is HyperThreading, multi-processor (SMP) and multi-core (CMP) aware.

**[\*NEW\*]** Since AIDA64 v3.00, the Mandel benchmark implements AVX2 and FMA optimizations, and supports AMD Kabini and Intel Haswell processors.

#### **FPU SinJulia**

This benchmark measures the extended precision (also known as 80-bit) floating-point performance through the computation of a single frame of a modified "Julia" fractal. The code behind this benchmark method is written in Assembly, and it is extremely optimized for every popular AMD, Intel and VIA processor core variants by utilizing trigonometric and exponential x87 instructions.

FPU SinJulia test consumes 256 KB system memory per calculation thread, and it is HyperThreading, multi-processor (SMP) and multi-core (CMP) aware.

#### **FP32 Ray-Trace**

This benchmark measures the single precision (also known as 32-bit) floating-point performance through the computation of a scene with a SIMD-enhanced ray tracing engine. The code behind this benchmark method is written in Assembly, and it is extremely optimized for every popular AMD, Intel and VIA processor core variants by utilizing the appropriate x87, SSE, SSE2, SSE3, SSSE3, SSE4.1, AVX, AVX2, FMA, and FMA4 instruction set extension.

FP32 Ray-Trace test is HyperThreading, multi-processor (SMP) and multi-core (CMP) aware.

#### **FP64 Ray-Trace**

This benchmark measures the double precision (also known as 64-bit) floating-point performance through the computation of a scene with a SIMD-enhanced ray tracing engine. The code behind this benchmark method is written in Assembly, and it is extremely optimized for every popular AMD, Intel and VIA processor core variants by utilizing the appropriate x87, SSE, SSE2, SSE3, SSSE3, SSE4.1, AVX, AVX2, FMA, and FMA4 instruction set extension.

FP64 Ray-Trace test is HyperThreading, multi-processor (SMP) and multi-core (CMP) aware.

#### **Troubleshooting (FAQ)**

On this page below you can find explanation and solution for the most frequent issues in using AIDA64.

### **1.** What is the difference between AIDA64 Business, AIDA64 Engineer, AIDA64 Extreme, and AIDA64 Network Audit?

AIDA64 Business, AIDA64 Engineer and AIDA64 Network Audit are business products targeting small and medium sized businesses, enterprises, government entities as well as educational and healthcare institutions. AIDA64 Business is the most comprehensive product in the portfolio with network audit, remote control, SQL database connection, benchmarking, and hardware monitoring functions.

AIDA64 Network Audit offers a basic set of features for automated network audit, while AIDA64 Engineer is for corporate IT technicians, and includes a complete toolset for troubleshooting and hardware diagnostics.

AIDA64 Extreme is for home users and enthusiasts, and includes an industry-leading hardware detection engine as well as diagnostic, benchmarking and overclocking features.

### 2. What report formats supported by AIDA64 Business, AIDA64 Engineer, AIDA64 Extreme, and AIDA64 Network Audit?

AIDA64 Business and AIDA64 Network Audit support standard text, HTML, MHTML (HTML with images), XML, CSV, MIF (for Microsoft SMS), INI reports and direct report insertion to SQL databases. AIDA64 Engineer and AIDA64 Extreme support only standard text, HTML and MHTML report formats.

### 3. Is it possible to create reports automatically using command-line options?

AIDA64 Business, AIDA64 Engineer and AIDA64 Network Audit support command-line options. List of them can be reviewed in *main menu / Help / Command-line Options*. Full list of command-line options with explanation is available in the AIDA64 Manual. Using command-line options it is possible to create reports with custom layout in any of the supported report formats. Created reports can be saved to file, inserted to SQL database, sent in e-mail or uploaded to a FTP server.

#### 4. Is it possible to use AIDA64 without an installation procedure?

AIDA64 is available in ZIP compressed package that can be simply extracted to an empty folder. No installation procedure required at all.

#### 5. Is it possible to remove debug information from reports?

The options to enable/disable debug information, report header, report footer are available in *main menu / File / Preferences / Report*.

### 6. Is it possible to launch AIDA64 from a CD-ROM disc, DVD-ROM disc, Blu-ray disc, or flash drive?

It is fully supported. AIDA64 files can be simply extracted from the ZIP package and burnt to a CD/DVD/BD disc, or copied to a DVD-RAM disc or flash drive.

### 7. Why is the information provided by the *Computer / DMI* page inaccurate?

The reliability and accuracy of DMI information depends on the manufacturer of the motherboard or the computer (when a brand computer). When vendors do not take the time to fill in the DMI tables properly, all applications reading DMI will indicate the same wrong information. This is not the fault of AIDA64.

# 8. Is it possible to use AIDA64 on 64-bit Windows systems based on 64-bit AMD Opteron, AMD Phenom, Intel Core 2, Intel Core i3/i5/i7, Intel Xeon processors?

AIDA64 implements full support for 64-bit systems, including 64-bit version of all its benchmark methods. Benchmarks are backwards compatible with legacy 32-bit processors.

### 9. Does AIDA64 support Windows Vista, Windows Server 2008, Windows 7 or Windows PE?

AIDA64 has full support for all current 32-bit and 64-bit PC Windows systems including Windows 95, Windows 98, Windows Me, Windows NT 4.0, Windows 2000, Windows XP, Windows Server 2003, Windows XP 64-Bit Edition, Windows XP x64 Edition, Windows Vista, Windows Server 2008, Windows 7 and Windows PE.

10. Is there an AIDA64 version running under DOS, Mac OS, Mac OS X, Linux or UNIX?

### **11.** Is it possible to find out the product key of Office 97 or Office 2000?

AIDA64 license module is capable of detecting product key of Office XP, Office 2003, Office 2007, Office 2010, and Office 2013 only.

### **12.** How to determine the firmware version of optical drives and hard disk drives?

Firmware version of optical drives and SCSI hard disk drives is displayed on the *Storage / ASPI* page. Firmware version of ATA and SATA hard disk drives is displayed on the *Storage / ATA* page.

### 13. What does the "Aux" temperature shown on the *Computer / Sensor* page mean?

There is no standard for sensor registers layout, so the "Aux" temperature could show the temperature of the CPU or the motherboard, or might be a non-connected wire of the sensor chip, and so it could show a bogus value.

### 14. What does the "CPU Diode" temperature shown on the *Computer / Sensor* page mean?

"CPU" temperature means the temperature measured around the CPU

socket, whereas "CPU Diode" temperature means the temperature of the CPU core.

## 15. The web links on the *Computer / Summary* and other pages do not work, clicking on them does not open my web browser. What's the problem here?

It means Windows default web browser is not selected.

16. The temperature, voltage or fan rotation values on the *Computer* / *Sensor* page are inaccurate. For example, a bogus "Aux" temperature is displayed with a nonsense value; or the CPU and motherboard temperatures are reversed; or the -5V or -12V lines display a completely off positive value. How to make the sensor values more accurate?

Unfortunately there is no standard for sensor chip registers layout, hence in several cases the registers layout that AIDA64 uses could fail to be accurate. In such cases please contact us through the <u>AIDA64</u> <u>Discussion Forum</u>, under the "Hardware Monitoring" forum. When you open the new topic, please make sure to indicate the version number of AIDA64 you're using, the model of your motherboard; and also copypaste the full content of the Computer / Sensor page into the new topic you open.

### 17. When starting AIDA64 it locks up the computer while it displays "Scanning PCI devices". How can this be avoided?

Create a new text file (e.g. using Notepad) in AIDA64 folder, name it: "AIDA64.INI". Write the following 2 lines into the new file:

[Generic]

LowLevelPCI=0

# 18. Other software (e.g. CoreTemp, HWMonitor) show different core temperatures than AIDA64. Is it possible to adjust the core temperatures on an Intel CPU to match what other software measure?

Modern Intel processors use DTS on-die temperature sensing diode to provide core temperature measurement. AIDA64 fully complies to the latest Intel DTS Specifications, and uses the TJMax values published by Intel. With DTS the measured core diode temperatures are relative to a TJMax temperature value, which is specific to a particular CPU model & stepping. By adjusting TJMax, it is possible to adjust the measured core temperatures in both directions. The TJMax value AIDA64 uses can be changed in *main menu / File / Preferences / Hardware Monitoring*.

### **19.** What is the maximum operational temperature for a CPU, motherboard, video adapter, or hard disk drive?

Most modern processors work best while running below 70 Celsius, but will not fail or break below 80-90 Celsius. Modern Intel processors use a special hardware logic to prevent overheating: they throttle themselves down to prevent physical damage, and they shut the computer down automatically when even via throttling the CPU keeps getting too hot. Most motherboards can work stable while running below 50 Celsius, and physical damage will usually not occur until 60 Celsius. Modern video card GPUs can work up to 100-110 Celsius, and supplied with a video driver that implements overheating protection. Most hard disk drives work best below 50 Celsius, and they are rated to work stable below 60 Celsius. With hard disks data integrity is not guaranteed anywhere
# 20. Is it possible to display SMART information for an external hard disk drive (e.g. WD MyBook), or for a hard disk drive placed in an external disk enclosure?

Not all USB, eSATA, or FireWire disk enclosures support SMART readout. But out of the ones that do implement that feature, AIDA64 supports most of them. In the case you can find one that is supported by other monitoring software (e.g. HD Sentinel), but unsupported by AIDA64, please contact us through the <u>AIDA64 Discussion Forum</u>, under the "Hardware Monitoring" forum.

### **21.** Is it possible to display SMART information for RAID arrays?

SMART information for RAID array member drives can be displayed for 3ware, Areca, HighPoint RocketRAID 26xx, and LSI MegaIDE RAID controllers. Other RAID controllers either do not have a driver that makes SMART readout possible, or they are not supported by AIDA64.

# 22. My virus scanner has found a malicious file that belongs to AIDA64. Is it possible the AIDA64 distribution package is infected by a virus, trojan, or adware?

We scan all AIDA64 files we upload to our web site for viruses and other malware. Our files are 100% free of any malware or adware. In the case a security solution fires an alarm about AIDA64, then it is advised to remove AIDA64 from the computer, and download the latest version from our web site (www.aida64.com). It is also important to update the security software to its latest version, since there have already been

numerous occasions when anti-virus products fired false alarms about AIDA64 files in the past.

## 23. What is MCP temperature? Is it normal that it is over 80 Celsius?

MCP is part of nVIDIA chipsets, and stands for Media and Communications Processor. It is a computer component that is designed to operate at very high temperatures. 80-90 Celsius is normal temperature for MCPs.

#### 24. When starting AIDA64 under Windows 8.1 or Windows Server 2012 R2, the Program Compatibility Assistant shows a warning message about compatibility issues regarding the AIDA64Driver.sys file. Is it possible to fix this issue?

AIDA64 releases up to v3.00 are incompatible with Windows 8.1 and Windows Server 2012 R2. Under these operating systems only AIDA64 v3.20 and later versions can be used.

### **Revision History**

On this page you can find the changes made to the AIDA64 Engineer Manual.

Revision	Description	Date
001	· Initial release	November 2013
002	<ul> <li>Generic adjustments for AIDA64 v4.20 release</li> <li>Changed: External Applications (a couple of new items)</li> </ul>	February 2014
003	$\cdot$ Generic adjustments for AIDA64 v4.30 release	March 2014
004	<ul> <li>Generic adjustments for AIDA64 v4.50 release</li> <li>Changed: External Applications (a couple of new items)</li> </ul>	May 2014
005	$\cdot$ Generic adjustments for AIDA64 v4.60 release	July 2014
006	<ul> <li>Generic adjustments for AIDA64 v4.70 release</li> <li>Changed: External Applications (a couple of new items)</li> </ul>	October 2014
007	<ul> <li>Generic adjustments for AIDA64 v5.00 release</li> <li>Changed: External Applications (a couple of new items)</li> <li>Changed: Shared Memory (global space)</li> </ul>	December 2014
008	<ul> <li>Generic adjustments for AIDA64 v5.20 release</li> <li>Changed: External Applications (a couple of new items)</li> </ul>	March 2015
009	<ul> <li>Generic adjustments for AIDA64 v5.30 release</li> <li>Changed: External Applications (a couple of new items)</li> </ul>	July 2015
010	<ul> <li>Generic adjustments for AIDA64 v5.50 release</li> <li>Changed: External Applications (a couple of new items, swap space items removed)</li> </ul>	September 2015
011	<ul> <li>Generic adjustments for AIDA64 v5.60 release</li> <li>Changed: External Applications (a couple of new items)</li> </ul>	December 2015
012	Generic adjustments for AIDA64 v5.70 release	March 2016

	<ul> <li>Added: Benchmark guide / FP32 Ray-Trace page</li> <li>Added: Benchmark guide / FP64 Ray-Trace page</li> <li>Changed: External Applications (a couple of new items)</li> </ul>	
013	<ul> <li>Generic adjustments for AIDA64 v5.75 release</li> <li>Changed: External Applications (a couple of new items)</li> </ul>	June 2016
014	<ul> <li>Generic adjustments for AIDA64 v5.80 release</li> <li>Changed: External Applications (a couple of new items)</li> <li>Added: Command-line options / System Stability Test</li> </ul>	October 2016
015	<ul> <li>Generic adjustments for AIDA64 v5.90 release</li> <li>Changed: External Applications (a couple of new items)</li> <li>Changed: Command-line options / Report / 4 new file control strings</li> </ul>	March 2017
016	<ul> <li>Generic adjustments for AIDA64 v5.92 release</li> <li>Changed: External Applications (a couple of new items)</li> </ul>	June 2017
017	<ul> <li>Generic adjustments for AIDA64 v5.95 release</li> <li>Changed: External Applications (a couple of new items)</li> <li>Changed: Benchmark guide / CPU Hash page (HW SHA)</li> </ul>	November 2017
018	$\cdot$ Generic adjustments for AIDA64 v5.96 release	December 2017