
Release Notes

S32 Design Studio for ARM v1.3

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1 Release description

Freescale, a subsidiary of NXP Semiconductors, is pleased to announce the release of the S32 Design Studio for ARM v1.3 for Automotive and Ultra-Reliable MCUs. The S32 Design Studio is based on the Eclipse open development platform and integrates the Eclipse IDE, GNU Compiler Collection (GCC), GNU Debugger (GDB), and other open-source software to offer designers a straightforward development tool with no code-size limitations.

1.1 Release content

- Eclipse Luna 4.4 Framework
- GNU Tools for ARM® Embedded Processors (launchpad) build (4.9.3 20150529)
- ARM64: Linaro GCC 4.9-2015.05
- Libraries included: newlib, newlib-nano and ewl2 (ewl and ewl-nano)
- SEGGER J-Link (with SEGGER GDB Server)
- P&E Multilink/Cyclone (with P&E GDB Server)
- New Project wizard to create application and library projects for supported devices
- Peripherals Register View
- Fully integrated S32 SDK for S32K144 EAR release v.0.8.2. For the details on the feature set of SDK please refer to Reference Manuals
- SDK management included:
 - Drivers for KEA family
 - FreeMaster Serial Communication driver for KEA family
 - Automotive Math and Motor Control Libraries for KEA and S32K devices
- Import projects from CodeWarrior for MCU v.10.6 and Kinetis Design Studio for respective supported processors
- GreenHills and IAR compilers support by new project wizard¹
- iSystem, Lauterbach and IAR debuggers support by new project wizard
- Kernel Aware debugging for FreeRTOS, OSEK.
- Devices supported:
 - SKEAZN8, SKEAZN16, SKEAZN32, SKEAZN64, SKEAZ128, SKEAZ64
 - S32K144 v2.0

¹ The plugins to support GreenHills, IAR, iSystem, Lauterbach are not included and have to be installed from corresponding update site or installation.

- S32V234
- MAC57D54H

2 What's New

S32 Design Studio for ARM v1.3 addresses a number of defects and new features:

2.1 New/Updated device support

- S32K144 v2.0

2.2 New features

- Fully integrated S32 SDK for S32K144 EAR release v.0.8.2 including PinMuxing and Processor Expert configuration.
- IAR debugger is supported by new project wizard
- Updated SEGGER and P&E debug plugins to the latest and greatest versions
- Reset functionality added with P&E debugger for single core projects (KEA, S32K devices) and A5 core for MAC57D54H
- Flash configuration supported for S32V234
- Header files for KEA and MAC57D54H updated
- Advanced FreeRTOS kernel aware debug support

2.3 Bug fixes

- Project Explorer updated to correctly show active build configuration resources

3 System Requirements

3.1 Recommended Configuration

- 2.6GHz Pentium® compatible processor or better
- 4GB RAM
- 2GB disk space
- 400MB on Windows system disk
- USB port for communications with target hardware
- Ethernet port for communications with target hardware (optional)

3.2 Operational Minimum Configuration

- 1.8GHz Pentium® compatible processor or better
- 2GB RAM
- 2GB disk space
- 400MB on Windows system disk
- USB port for communications with target hardware

3.3 Host Operating System Support

- Microsoft Windows 7 32-bit and 64-bit (Home Premium Edition and Professional Edition)
- Microsoft Windows 8 32-bit and 64-bit (Home Premium Edition and Professional Edition)
- Microsoft Windows 8.1 32-bit and 64-bit (Home Premium Edition and Professional Edition)
- Microsoft Windows 10 32-bit and 64-bit (Home and Pro Editions)

4 Product WEB page

S32 Design Studio for ARM v1.3 product page is <http://www.nxp.com/S32DS>. It contains general information about this product, updates, and download links.

5 Installation and Licensing

To install S32 Design Studio for ARM v1.3, choose the download option that meets your needs.

The installer package contains the complete S32 Design Studio for ARM v1.3 suite and an installer. All data needed by the installer will be downloaded and no other download will be performed². Double-click the installation package and a wizard will guide you through the installation process. During installation the license activation will be requested. The following types of activation supported:

- Online activation, requires the internet access and request for license will be sent automatically
- Offline activation, no internet access required, the offline activation request is generated and should be passed to licensing site to get the activation response, which should be loaded back to installer.

New functionality including support for new devices can be added to S32 Design Studio for ARM v1.3 with service packs, updates and patches. Service packs add specific support for new devices. Updates and patches correct software defects and add general functionality affecting more than one device family.

New support can be added directly from the Internet or from a downloaded archive. If your computer is connected to the Internet, select Install New Software in the Help Menu and all available updates will be displayed. If your computer does not have Internet access, you can download the archive that contains the service pack, update or patch you need from product page and follow the Service Pack Updater procedure posted on the site.

6 Technical Support

S32 Design Studio issues are tracked through the S32DS Public NXP Community space. <https://community.freescale.com/community/s32/s32ds>

For confidential cases and cases which cannot be publicly shared on NXP Community please follow the steps described here:

<https://community.freescale.com/docs/DOC-329745>

² The 3-rd party plugins such as IAR, Lauterbach, etc would need to be downloaded and installed later

Appendix A: Known issues and Workarounds

There are some issues which are introduced by CDT therefore reproduced in S32 Design Studio, they might be fixed when the fix is available with newer CDT version and when S32 Design Studio migrates to it.

- **Conditional watchpoints and breakpoints:** Conditional breakpoints and watchpoints, including those using ignore counts, do not work always.
Workaround: do not use conditions for breakpoints and watchpoints, instead check for condition in the code and set a normal breakpoint.
- **Renamed/copied project** launch configuration is not updated automatically
Workaround: Project and C/C++ Application parameters should be updated in the Debug Configurations dialog. Please note that if project renamed or original project removed – then the launch configuration could be filtered – you might need to temporary uncheck Filter Deleted/Unavailable Projects.
- **Default path to GDB client** in newly created launch configuration is empty.
Workaround: The GDB Client Setting Executable field on the Debug Configurations/Debugger tab depends on the current core and should be set to either “`{cross_prefix}gdb{cross_suffix}`” or “`{cortexa_cross_prefix}gdb{cross_suffix}`” for Cortex-A53 core.
- **Uninstallation of P&E drivers** the P&E Device Drivers item will remain in the Control Panel/ Programs and Features after uninstallation of S32 Design Studio, if user will try to use this item to uninstall – error message appeared, the user should ignore it. But the drivers will remain in the system.
Workaround: P&E drivers should be uninstalled before the product uninstallation. But one should be careful if several products are using P&E drivers.
- **USB driver conflict between P&E and Xilinx software.** P&E Drivers for Windows utilize the 3rd party service Jungo Windriver to enable USB support under windows XP/7/8.x/10. Xilinx also uses Windriver for their driver packages, but older versions. Starting with the P&E Driver package 11.7, a conflict between P&E Drivers and software IDEs that rely on older Jungo driver packages might occur. This is because both the old and new driver packages utilize the same .sys file (windrvr6.sys). When the new P&E Drivers are installed, Xilinx tools stop working after 30 days because the new sys file requires a new license that the older Xilinx software does not have.
Workaround: Please follow the steps in P&E's FAQ 255 for installing an older version of P&E Drivers (11.1) to resolve Xilinx conflict under Windows XP/7/8.x.
http://www.pemicro.com/website_management/faq_view.cfm?id=225
 If drivers issue persists, please submit a support request to P&E Microcomputer Systems:
<http://www.pemicro.com/support/index.cfm>
- **Driver installation** Windows 10 Anniversary Addition might be prevented by system
Workaround: To install the drivers the secure bootloader and signature verification on Windows 10 Anniversary Addition should be disabled
- **Path to Trace 32** in cmm scripts set to default installation path.
Workaround: cmm script should be updated to actual path.
- **Problems could be experiences while debugging** of elf file generated by GHS compiler like missing call stack information, incorrect info on step into function, etc.
Workaround: On occasion GHS generates GDB incompatible debug information preventing the debugger from displaying the call stack. In some cases, without such information gdb can still debug your program. The program build needs to be augmented with a post-build

step, select the project in the project explorer view and File->Properties to display the project properties, under C/C++ Build -> Settings select the build steps tab and enter the command `gstrip -r=.debug_frame` executable. Switch to Instruction Stepping Mode to be able to step through function. If this workaround does not help – please report issue to GreenHills support.

- **Missing license** could be reported on IDE start.
Workaround: same activation ID should be entered.
- **Hyperlinks** might not work correctly under Windows 10 when Microsoft Edge is default browser
Workaround: Set another browser as default.

Appendix B: Performance Considerations

The following suggestions will help keep the S32 Design Studio tools running at a respectable performance level.

- 1 To maximize performance, the S32 Design Studio tools should be installed on a computer with the recommended system configuration. While the tools will operate on a computer with the minimum configuration, the limited hardware will restrict its ability to function at desired performance levels.
- 2 Close unused projects. Eclipse caches files for all open projects in the workspace. If you need multiple projects open, try to limit the number of projects to no more than 10.
- 3 The Eclipse IDE provides several options that provide user assistance tools. These options, however, use memory and cpu bandwidth. If performance is slow and you do not need these options, turn them off.
 - Scalability options configure how eclipse deals with large source files.
 - Scalability options:
 - Editor live parsing: impacts parsing while typing, Outline View, semantic highlighting, folding, etc.
 - Semantic highlighting: C/C++ identifiers are colored
 - Syntax coloring: coloring of keywords, comments and literals
 - Parsing-based content assist proposals: content assist proposals which require parsing the file
 - Content assist auto activation: content assist activated automatically on trigger sequences, like '.', '::' or '→'.
 - To disable:
 - Click menu 'Window' -> 'Preference'
 - Expand 'C/C++' -> 'Editor' -> 'Scalability'
 - Uncheck 'Enable all scalability mode options'
 - Content Assist Auto Activation can reduce the number of keystrokes a developer must type to create code. The Content Assist plug-in consists of components that predict what a developer will type, based on the current context, scope and prefix.
 - To disable:
 - Click menu 'Window' -> 'Preference'
 - Expand 'C/C++' -> 'Editor' -> 'Content Assist'
 - Uncheck all the options for 'Auto-Activation'

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