S32 DESIGN STUDIO IDE (S32DS)

The complimentary S32 Design Studio IDE (S32DS) is a comprehensive enablement environment for automotive and industrial applications with no code-size limitations.

OVERVIEW
The S32DS enables editing, compiling, debugging and tracing of user’s applications. Based on open-source software, including Eclipse IDE, GNU Compiler Collection (GCC) and GNU Debugger (GDB), the S32 Design Studio IDE offers software developers a straightforward development tool.

NXP software included along with the S32 Design Studio IDE completes the comprehensive enablement environment and reduces development time.

S32DS FEATURES
• S32 Configuration Tools for pin functions, clocks, peripheral drivers and FreeRTOS
• Boot Tools : DCD Tool, IVT Tool, QuadSPI Tool
• DDR tools
• S32 Debugger for S32 Platform and S32 Debug Probe support
• New project wizard to create bare metal or software development kit (SDK) projects
• Integrated runtime software: Real-Time Drivers, S32 SDK, Vision SDK, and Radar SDK
• Advanced FreeRTOS kernel-aware debug support
• Peripherals register view
• Assembly language supported, together with C and C++
• Supports Eclipse plug-ins from the Eclipse ecosystem or from partners
• Supported host operating systems*:
  – Microsoft® Windows® 10 with 32&64-bit binaries running on 64-bit OS
  – Ubuntu 20.04 (64 bit)

*Versions prior to S32DS 3.5 supports OS (Windows 7/8, Ubuntu 16.04 (64-bit), 18.04 (64-bit), Debian 8 (64-bit), CentOS 7 (64-bit))
## S32DS SUPPORTED DEVICES

<table>
<thead>
<tr>
<th>S32DS for S32 Platform</th>
<th>S32DS for Arm*</th>
<th>S32DS for Power Architecture†</th>
</tr>
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<tbody>
<tr>
<td>S32G</td>
<td>S32K1</td>
<td>S32R294, S32R274, S32R264</td>
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<tr>
<td>S32K3</td>
<td>KEA</td>
<td>MPC57xx</td>
</tr>
<tr>
<td>S32K1</td>
<td>MAC57D54H</td>
<td>MPC56xx</td>
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<td>S32S24</td>
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<td>S32Z2/E2</td>
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<td>S32V</td>
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<td>S32R41</td>
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<td>S32R45</td>
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### INTEGRATED NXP TOOLS

- S32 Configuration Tool
  - Pins Wizard
  - Clocks configuration
  - Peripheral/Drivers configuration
  - DCD configuration
  - IVT configuration
  - QuadSPI configuration
  - DDR configuration
- S32 Flash Tool
- FreeMASTER

- Processor Expert
  - Pins Wizard
  - Peripheral/Driver configuration
- FreeMASTER

### INTEGRATED NXP SOFTWARE

- S32 RTD
- S32 SDK
- FreeRTOS
- AMMCLib
- Vision SDK
- Linux® BSP
- S32K1 SDK
- FreeRTOS
- AMMCLib for KEA and S32K
- KEA SDK
- MQX OS/MQX drivers for MAC57D54H
- S32 SDK for MPC57xx and S32R
- FreeRTOS
- AMMCLib for MPC5xxx
- Radar SDK

### COMPILERS

- NXP GCC 10.2*
- NXP GCC 9.2*
- NXP GCC 6.3.1*
- Green Hills IAR
- NXP GCC 6.3.1*
- Green Hills IAR
- Green Hills Diab

### DEBUGGERS

- Built-in GDB interface:
  - S32 Debugger/S32 Debug Probe
  - P&E Multilink/Cyclone/Open SDA
  - Segger J-Link
  - Lauterbach
  - iSystem
  - IAR
- Built-in GDB interface:
  - P&E Multilink/Cyclone/Open SDA
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- Built-in GDB interface:
  - P&E Multilink/Cyclone/Open SDA
  - Lauterbach
  - iSystem
  - PLS

### DEDICATED TOOLS

- Vision:
  - NXP APU Compiler
  - ISP Assembler
  - ISP and APEX graph tools
  - SPT Visualization Tools (Timeline, Memory)
  - SPT assembler, explorer, graph tool
- Radar:
  - SPT assembler
  - SPT explorer
  - SPT graph tool

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*Integrated

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**GET STARTED WITH S32 DESIGN STUDIO IDE:**
Download it now: [www.nxp.com/S32DS](http://www.nxp.com/S32DS)


www.nxp.com
S32 DEBUGGER
The S32 Debugger provides all the standard debugging features critical for testing and locating bugs in your application. It is dedicated to NXP microprocessors and accelerators and is available at the first customer silicon samples.

The S32 Debugger, as an essential part of the S32 Design Studio, is designed to work in conjunction with the S32 Debug Probe and NXP Automotive processors to accelerate all phases of project development.

S32 DEBUGGER FEATURES
• Full integration within S32 Design Studio IDE using GDB interface in Eclipse supporting all standard debug features
• Support for all Arm cores and accelerator cores
• Support for concurrent multicore debugging
• Integrated Flash programmer for Flash over JTAG
• Access to core and peripheral registers through IDE views
• Low level command line interface, GDB python scripting
• Secured device debugging
• Trace Support on Arm Cores with Trace/Profiling Views
• OS aware debugging for FreeRTOS and AUTOSAR/OSEK OS
• Supported host operating systems*:
  – Microsoft® Windows® 10 with 32&64-bit binaries running on 64-bit OS
  – Ubuntu 20.04 (64-bit)
*Versions prior to S32DS 3.5 supports OS (Windows 7/8, Ubuntu 16.04 (64-bit), 18.04 (64-bit), Debian 8 (64-bit), CentOS 7 (64-bit))

S32 DEBUGGER SUPPORTED DEVICES

<table>
<thead>
<tr>
<th>SUPPORTED DEVICES</th>
<th>CORES</th>
<th>FLASH Type/ Part No.</th>
<th>DEBUG HW</th>
</tr>
</thead>
<tbody>
<tr>
<td>S32S247</td>
<td>Arm Cortex-R52</td>
<td>Embedded Flash: C55_AE QSPI Flash: MX25UW12A45G</td>
<td>S32 Debug Probe</td>
</tr>
<tr>
<td>S3222/E2</td>
<td>Arm Cortex-R52, Cortex M33, Accelerator: CEVA, SPF2 Trace: Cortex-R52 Cortex-M33</td>
<td>QSPI Flash: S26HS512 MT25QL256</td>
<td>S32 Debug Probe</td>
</tr>
</tbody>
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S32 DEBUG PROBE
S32 Debug Probe (S32DBGPROBE) enables NXP target system debugging via a standard debug port while connected to a developer’s workstation via Ethernet or USB. S32DBGPROBE may also be referred to by industry- standard terms such as a probe, JTAG probe, JTAG emulator or target probe.
S32 Debug Probe can be ordered at nxp.com or from an authorized NXP distributor.
Visit www.nxp.com/S32DebugProbe for more information.