AVR Studio 5: Release 5.0.1038

Welcome to the first release of AVR Studio 5.0, beta version

AVR Studio 5 is the new integrated development environment from Atmel. It provides you a modern and powerful environment for doing AVR development. All 8-bit and 32-bit microcontrollers are supported.

Get started by exploring the included example projects. Run your solution on a starter or evaluation kit. Program and debug your project with the included simulator, or use one of the powerful on-chip debugging and programming tools from Atmel. Get productive with the various navigate, refactor and intellisense features in the included editor. Experience seamless integration with various Atmel WEB services like AVR TV, Atmel Store and datasheets to keep you updated and help you to design your solutions.

With strong extension possibillities and online gallery, it is possible for both designers and 3rd party to provide plug-ins and customize the environment for best use and productivity.

AVR Studio 5 carries and integrates the AVR GCC toolchain, AVR Software framework, assembler and simulator. All newest Atmel tools are supported including AVR ONE!,JTAGICE MKII, JTAGICE3, STK600, QT600, AVRISP MKII and AVR Dragon.

For a detailed list of supported devices and tools please see the *Supported Devices* chapter.

8/32-bit AVR Microcontrollers

Release 5.0.1038

Installation Instructions

System Requirements

Supported Operating Systems

- Windows XP (x86) with Service Pack 3 - all editions except Starter Edition
- Windows Vista (x86) with Service Pack 1 - all editions except Starter Edition
- Windows XP (x64) with Service Pack 2
- Windows Vista (x64) with Service Pack 1,
- Windows 7 (x86 and x64)
- Windows Server 2003 R2 (x86 and x64)

Hardware Requirements:

- Computer that has a 1.6GHz or faster processor
- 1 GB RAM for x86
- 2 GB RAM for x64
- An additional 512 MB RAM if running in a Virtual Machine
- 3GB of available hard disk space
- 5400 RPM hard disk drive
- DirectX 9-capable video card that runs at 1024 x 768 or higher display resolution

Downloading and installing

- Download the latest AVR Studio 5.0 installer.
- Verify the hardware and software requirements from "System Requirements" section.
- Make sure you are logged on with Administrative privileges.
- Please save all your work before starting, because the installation might prompt you for a restart if required.
- Please disconnect all Atmel USB hardware devices.
- Double click the installer executable file. Please note that this might take some time to extract depending on H/W configuration.
- AVR Studio Prerequisites installation will start. NOTE : If you have all the prerequisites already installed then this dialog will not be shown.
  - If .NET Framework 4.0 is not already installed, the installer will start the .NET Framework setup.
  - Accept the licence agreement and proceed through the installation. If the installer prompts for restart please do so. After restart the installation will start automatically.
- If Visual Studio Isolated shell 2010 is not installed, the installer will start the Shell Setup.
  - Accept the licence agreement and proceed through the installation.
- If Jungo USB Driver v10.2 is not already installed the installer will start the Jungo installation.
  - Accept the licence agreement and proceed through the installation.
  - NOTE : If Jungo driver is already present and its version is anything less than v10.2, then the installer will update the Jungo driver you already have. The Jungo v10.2 is fully compatible with its previous versions. So AVR Studio 4 and Studio 32 should continue to work with the updated driver without any issues.
- After this , AVR Studio 5.0 installation should start
- Click “Next” to continue.
- Accept the licence agreement and continue.
- Choose the “Destination Directory to Install” and click “Next”.
- Choose the list of optional components to install and click “Next”.
- Review the summary and click “Install”.

- The installation will copy all files and prompt to click “Finish”.

Known issues

Report #12875: Some standalone ASF applications in Application Builder do not work.

The following ASF modules are not available as standalone in the "Select Drivers from the ASF" menu, but only as examples: XMEGA Sleep Manager and ADC driver, AVR UC3 USB Stack from ASF v1, ECC Hamming, TLV320AIC23B codec,FAT file system with play list support, Joystick interface (5-way), MEMORY - EBI SDRAM Controller, MEMORY - MCI - MultiMedia Card Interface, MEMORY - SD/MMC card access using MCI, MEMORY - SD/MMC card access using SPI, MEMORY - NAND Flash on EBI, MEMORY - AT45DBX DataFlash, TOUCH - AT42QT1060 QTouch 6-channel sensor, MEMS Sensors - Accelerometer LIS3L06AL, TIMING - CS2200 Clock Synthesizer, LodePNG, FreeRTOS minimal, lwIP, Micrium uC/OSII, H&D Wi-Fi SPB Firmware Download.

Report #13646: UC3A-ES and UC3B-ES parts are not supported AND not detected.

UC3A-ES and UC3B-ES devices are code incompatible with later revisions (non ES) of the same device. AVR Studio 5 is NOT able to detect that such a device is attached, and thus not able to provide a warning to the user.

Report #9879: Canceling the installation - failed.

The installer does not respond to canceling

Report #12382: Conditional Breakpoint is not supported on tools other than simulator.

Conditional and Hit count breakpoints works only for simulator

Report #12611: .NET Framework install might not work if there is limited network connectivity.

If you have network connectivity that is limited (no internet connectivity), please disconnect the network or disable all the active network adapters and start installation of AVR Studio 5.0.

Report #12765: Breakpoint is not updating in the Disassembly and Code view.

Breakpoint is not updating in the Disassembly and Code view. Set breakpoint in disassembly view and verify from code view, this is working. But random switching between the windows some time and erasing the breakpoint from the disassembly view is not working correctly.

Report #12803: Can't delete files from the project using "Delete Key" in the keyboard.

Hitting delete key will not work with Files and Folders listed in Solution Explorer. Instead right-click on the file or folder and select either of "Delete" or "Remove from project" to remove any project item.

Report #12852: Step out is slow.

Step out of a large function or a function with loops takes time. A workaround until fixed is to use breakpoints.

Report #13162: Installer crashes when trying to install from "runas" option.

on windows XP, right clicking to choose "run as". may crash the installer

Report #13226: I/O view not able to show correct number of GPIO ports.

Incorrect number of GPIO ports may be displayed for UC3 devices in I/O view.

Report #13335: STK600 does not limit target voltage range for selected device.

STK600 voltage settings is not limited to part used.

Report #13517: The asf.h header file is not included in all examples.

The asf.h header file is not included in all examples.

Report #13524: ISPmkII: Wrong error message when read device ID fails in ISP mode.

ISPmkII: Wrong error message when read device ID fails in ISP mode.

Report #13603: AS5 - 1008 - wdapi1011.dll.

Unintalling AVR Studio 4 removes USB driver files from existing AVR Studio 5 installations. Uninstall AVR Jungo USB, and run the AVR Studio 5 installer again to fix this.

Report #13667: Debug->Start New Instance causes Studio crash while debugging.

Start new instance when debugging is not working

Report #13714: AVRISPmkII: ATtiny20 selected. Target voltage seems to be stuck at 5.5V.

AVRISPmkII: ATtiny20/TPI selected. Target voltage seems to be stuck at 5.5V

Report #13725: UC3C does not work on AVR ONE! over aWire.

UC3C devices (AT32UC3C0512c, AT32UC3C1512c and AT32UC3C2512) does not work on AVR ONE! over aWire. JTAG works fine.

Report #12155: webproperties.tlb file missing.

"webproperties.tlb could not be located" message is displayed on some systems. workaround: copy a webproperties???.tlb file from "C:\Program Files (x86)\Common Files\microsoft shared\MSEnv" to the same folder and rename it to webproperties.tlb

Report #13429: Internet Explorer 6 does not show user documentation correctly.

Internet Explorer 6 does not show user documentation correctly

Report #13207: Some example projects are difficult to debug.

Some example projects may not debug properly. Please check what optimization level is set and adjust to -O0 to have full debug support.

Report #13275: AVR Assembler Help only lists AVR instructions, not 32-bit AVR.

The assembler project types and editor only applies to the 8-bit devices.

Report #13703: XMEGA user signature row and production signature row not supported.

User signature row support and production signature row support did not make it into the public beta. This will be supported in an upcoming version.

Report #13722: STK500 is not supported in beta release.

STK500 support is scheduled for final release of AVR Studio 5.0

Supported Devices

The following tables lists all supported tools and devices and shows which tools support debugging and programming of the various devices.

We have three kinds of support. "Control" support means that the device can only be programmed and controlled through the target context menu. By "debug" we mean a starting a debugging session through the launch mechanism and that the target context menu can be used. Similarily "run" means programming and starting the application through the launch mechanism (but no debugging). "Full" means that all these kinds are supported.

Required firmware versions

Debugger/programmer	Firmware version
AVR Dragon	7.2
AVRISP mkII	1.e
AVR ONE!	5.6
JTAGICE mkII	7.6
QT600	1.8
STK600	2.12

AVR Mega Series

	AVR Dragon	AVRISP mkII	AVR ONE!	JTAGICE mkII	QT600	Simulator	STK600
AT90CAN128		Control					Control
AT90CAN32		Control					Control
AT90CAN64		Control					Control
AT90PWM1	Full	Control	Full	Full			Control
AT90PWM216	Full	Control	Full	Full			Control
AT90PWM2B	Full	Control	Full	Full			Control
AT90PWM316	Full	Control	Full	Full			Control
AT90PWM3B	Full	Control	Full	Full			Control
AT90PWM81	Full	Control	Full	Full			Control
AT90USB1286	Full	Control	Full	Full			Control
AT90USB1287	Full	Control	Full	Full			Control
AT90USB162	Full	Control	Full	Full			Control
AT90USB646	Full	Control	Full	Full			Control
AT90USB647	Full	Control	Full	Full			Control
AT90USB82	Full	Control	Full	Full			Control
ATmega128	Full	Control	Full	Full		Full	Control
ATmega1280	Full	Control	Full	Full			Control
ATmega1281	Full	Control	Full	Full			Control
ATmega1284	Full	Control	Full	Full		Full	Control
ATmega1284P	Full	Control	Full	Full		Full	Control
ATmega128A	Full	Control	Full	Full		Full	Control
ATmega128RFA1	Full	Control	Full	Full			Control
ATmega16	Full	Control	Full	Full			Control
ATmega162	Full	Control	Full	Full			Control

	AVR Dragon	AVRISP mkII	AVR ONE!	JTAGICE mkII	QT600	Simulator	STK600
ATmega164A	Full	Control	Full	Full		Full	Control
ATmega164P	Full	Control	Full	Full		Full	Control
ATmega164PA	Full	Control	Full	Full		Full	Control
ATmega165A						Full	
ATmega165P	Full	Control	Full	Full		Full	Control
ATmega165PA						Full	Control
ATmega168	Full	Control	Full	Full		Full	Control
ATmega168A		Control	Full	Full		Full	Control
ATmega168P	Full	Control	Full	Full		Full	Control
ATmega168PA						Full	
ATmega169A	Full	Control	Full	Full		Full	Control
ATmega169P	Full	Control	Full	Full		Full	Control
ATmega169PA	Full	Control	Full	Full		Full	Control
ATmega16A	Full	Control	Full	Full			Control
ATmega16HVB	Full	Control	Full	Full		Full	Control
ATmega16M1	Full	Control	Full	Full			Control
ATmega16U2	Full	Control	Full	Full			Control
ATmega16U4	Full	Control	Full	Full			Control
ATmega2560	Full	Control	Full	Full			Control
ATmega2561	Full	Control	Full	Full			Control
ATmega32	Full	Control	Full	Full			Control
ATmega324A	Full	Control	Full	Full		Full	Control
ATmega324P	Full	Control	Full	Full		Full	Control
ATmega324PA	Full	Control	Full	Full	Full	Full	Control
ATmega325	Full	Control	Full	Full		Full	Control
ATmega3250	Full	Control	Full	Full		Full	Control
ATmega3250A		Control					Control
ATmega3250P	Full	Control	Full	Full		Full	Control
ATmega3250PA							
ATmega325A				Full		Full	
ATmega325P	Full	Control	Full	Full		Full	Control
ATmega325PA							Control
ATmega328	Full	Control	Full	Full		Full	Control
ATmega328P	Full	Control	Full	Full		Full	Control
ATmega329	Full	Control	Full	Full		Full	Control
ATmega3290	Full	Control	Full	Full		Full	Control
ATmega3290A		Control					Control
ATmega3290P	Full	Control	Full	Full		Full	Control
ATmega3290PA							
ATmega329A	Full	Control	Full	Full		Full	Control
ATmega329P	Full	Control	Full	Full		Full	Control

	AVR Dragon	AVRISP mkII	AVR ONE!	JTAGICE mkII	QT600	Simulator	STK600
ATmega329PA	Full	Control	Full	Full		Full	Control
ATmega32A	Full	Control	Full	Full			Control
ATmega32HVB	Full	Control	Full	Full		Full	Control
ATmega32M1	Full	Control	Full	Full			Control
ATmega32U2	Full	Control	Full	Full			Control
ATmega32U4	Full	Control	Full	Full			Control
ATmega48	Full	Control	Full	Full		Full	Control
ATmega48A	Full	Control	Full	Full		Full	Control
ATmega48P	Full	Control	Full	Full		Full	Control
ATmega48PA	Full	Control	Full	Full		Full	Control
ATmega64	Full	Control	Full	Full			Control
ATmega640	Full	Control	Full	Full			Control
ATmega644	Full	Control	Full	Full		Full	Control
ATmega644A	Full	Control	Full	Full		Full	Control
ATmega644P	Full	Control	Full	Full		Full	Control
ATmega644PA	Full	Control	Full	Full		Full	Control
ATmega645	Full	Control	Full	Full		Full	Control
ATmega6450	Full	Control	Full	Full		Full	Control
ATmega6450A	Full	Control	Full	Full		Full	Control
ATmega6450P		Control				Full	Control
ATmega645A						Full	
ATmega645P		Control				Full	Control
ATmega649	Full	Control	Full	Full		Full	Control
ATmega6490	Full	Control	Full	Full		Full	Control
ATmega6490A	Full	Control	Full	Full		Full	Control
ATmega6490P		Control				Full	Control
ATmega649A	Full	Control	Full	Full		Full	Control
ATmega649P	Full	Control	Full	Full		Full	
ATmega64A	Full	Control	Full	Full			Control
ATmega64M1	Full	Control	Full	Full			Control
ATmega8		Control					Control
ATmega8515		Control					Control
ATmega8535		Control					Control
ATmega88	Full	Control	Full	Full		Full	Control
ATmega88A	Full	Control	Full	Full		Full	Control
ATmega88P	Full	Control	Full	Full		Full	Control
ATmega88PA	Full	Control	Full	Full		Full	Control
ATmega8A		Control					Control
ATmega8U2	Full	Control	Full	Full			Control

AVR Tiny Series

	AVR Dragon	AVRISP mkII	AVR ONE!	JTAGICE mkII	QT600	Simulator	STK600
ATtiny10		Control				Full	Control
ATtiny13	Full	Control	Full	Full		Full	Control
ATtiny13A	Full	Control	Full	Full		Full	Control
ATtiny167	Full	Control	Full	Full			Control
ATtiny20		Control				Full	Control
ATtiny2313	Full	Control	Full	Full		Full	Control
ATtiny2313A	Full	Control	Full	Full		Full	Control
ATtiny24	Full	Control	Full	Full			Control
ATtiny24A	Full	Control	Full	Full			Control
ATtiny25	Full	Control	Full	Full		Full	Control
ATtiny26	Full	Control					Control
ATtiny261	Full	Control	Full	Full		Full	Control
ATtiny261A	Full	Control	Full	Full		Full	Control
ATtiny28	Full						
ATtiny4		Control				Full	Control
ATtiny40		Control				Full	Control
ATtiny4313	Full	Control	Full	Full		Full	Control
ATtiny43U	Full	Control	Full	Full		Full	Control
ATtiny44	Full	Control	Full	Full			Control
ATtiny44A	Full	Control	Full	Full			Control
ATtiny45	Full	Control	Full	Full		Full	Control
ATtiny461	Full	Control	Full	Full		Full	Control
ATtiny461A	Full	Control	Full	Full		Full	Control
ATtiny48	Full	Control	Full	Full		Full	Control
ATtiny5		Control				Full	Control
ATtiny84	Full	Control	Full	Full			Control
ATtiny84A	Full	Control	Full	Full			Control
ATtiny85	Full	Control	Full	Full		Full	Control
ATtiny861	Full	Control	Full	Full		Full	Control
ATtiny861A	Full	Control	Full	Full		Full	Control
ATtiny87	Full	Control	Full	Full			Control
ATtiny88	Full	Control	Full	Full	Full	Full	Control
ATtiny9		Control				Full	Control

AVR UC3A Series

	AVR Dragon	AVRISP mkII	AVR ONE!	JTAGICE mkII	QT600	Simulator	STK600
AT32UC3A0128	Full		Full	Full		Full	Control
AT32UC3A0256	Full		Full	Full		Full	Control
AT32UC3A0512	Full		Full	Full		Full	Control
AT32UC3A1128	Full		Full	Full		Full	Control

	AVR Dragon	AVRISP mkII	AVR ONE!	JTAGICE mkII	QT600	Simulator	STK600
AT32UC3A1256	Full		Full	Full		Full	Control
AT32UC3A1512	Full		Full	Full		Full	Control
AT32UC3A3128	Full		Full	Full			Control
AT32UC3A3128S	Full		Full	Full			Control
AT32UC3A3256	Full		Full	Full			Control
AT32UC3A3256S	Full		Full	Full			Control
AT32UC3A364	Full		Full	Full			Control
AT32UC3A364S	Full		Full	Full			Control

AVR UC3B Series

	AVR Dragon	AVRISP mkII	AVR ONE!	JTAGICE mkII	QT600	Simulator	STK600
AT32UC3B0128	Full		Full	Full			Control
AT32UC3B0256	Full		Full	Full			Control
AT32UC3B0512	Full		Full	Full			Control
AT32UC3B064	Full		Full	Full			Control
AT32UC3B1128	Full		Full	Full			Control
AT32UC3B1256	Full		Full	Full			Control
AT32UC3B1512	Full		Full	Full			Control
AT32UC3B164	Full		Full	Full			Control

AVR UC3C Series

	AVR Dragon	AVRISP mkII	AVR ONE!	JTAGICE mkII	QT600	Simulator	STK600
AT32UC3C0512C	Full		Full	Full			Control
AT32UC3C1512C	Full		Full	Full			Control
AT32UC3C2512C	Full		Full	Full			Control

AVR UC3L Series

	AVR Dragon	AVRISP mkII	AVR ONE!	JTAGICE mkII	QT600	Simulator	STK600
AT32UC3L016	Full		Full	Full		Full	Control
AT32UC3L032	Full		Full	Full		Full	Control
AT32UC3L064	Full		Full	Full	Full	Full	Control

AVR Xmega Series

	AVR Dragon	AVRISP mkII	AVR ONE!	JTAGICE mkII	QT600	Simulator	STK600
ATxmega128A1	Full	Control	Full	Full	Full	Full	Control
ATxmega128A3	Full	Control	Full	Full		Full	Control
ATxmega128D3	Full	Control	Full	Full		Full	Control
ATxmega16A4	Full	Control	Full	Full		Full	Control
ATxmega16D4	Full	Control	Full	Full		Full	Control
ATxmega192A3	Full	Control	Full	Full		Full	Control
ATxmega192D3	Full	Control	Full	Full		Full	Control
ATxmega256A3	Full	Control	Full	Full		Full	Control
ATxmega256D3	Full	Control	Full	Full		Full	Control

	AVR Dragon	AVRISP mkII	AVR ONE!	JTAGICE mkII	QT600	Simulator	STK600
ATxmega32A4	Full	Control	Full	Full		Full	Control
ATxmega32D4	Full	Control	Full	Full		Full	Control
ATxmega64A1	Full	Control	Full	Full		Full	Control
ATxmega64A3	Full	Control	Full	Full		Full	Control
ATxmega64D3	Full	Control	Full	Full		Full	Control

Device Notes

Obsolete Devices

The following devices are supported by AVR Studio 4: ATtiny11, ATtiny12, ATtiny15, ATtiny22, AT90S1200, AT90S2313, AT90S2323, AT90S2343, AT90S4433, AT90S8515, AT90S8535, ATmega323, ATmega161 ATmega163, ATmega103, ATmega165, ATmega169, ATmega406, ATmega16HVA, ATmega16HVA2, ATmega64HVE, ATmega32U6, AT90PWM2, AT90PWM3, AT90SCR100, AT86RF401

Contact Information

For support on AVR Studio 5 please contact avrbeta@atmel.com.

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