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Equinox EQTools – Release Notes

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Author:

John Marriott

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Abstract:

This document contains the Release Notes for the specified version of the EQTools – Programmer Interface Software.

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## 1.0 Overview of this release

### 1.1 Introduction

The document describes the new functionality, features and device support in this version of the EQTools software.

The last release version of EQTools was 2.1.0 build 1002.

### 1.2 Software versions in this release

This release of EQTools contains the following software utility versions:

Programmer	Software version	Description
EQTools	Build 1030	Main EQTools application
Upload Wizard	Build 1030	Utility used to upload 'Standalone Programming Projects' to a programmer.
ConsoleEDS	Build 1031	Utility used to control the operation of a programmer using simple Command Line instructions.
AOExplorer	Build 722	Utility used to monitor / control the Interface Database.

### 1.3 Programmers supported

The EQTools application supports the following Equinox programmers:

Programmer	Description	Production status
EPSILON5	Single channel portable ISP programmer.	In production
FS2000A	Single channel portable ISP programmer with LCD and keypad.	Now discontinued. Replaced by FS2003 or FS2000B.
FS2000B	The FS2000B is an FS2003 programmer running special firmware which emulates the functionality of the FS2000A programmer.	In production
FS2003	Single channel portable ISP programmer with LCD and keypad.	In production
FS2009	Single channel portable ISP programmer with LCD and keypad. (updated version of FS2003 supporting more algorithms)	In production
PPM3 MK1	Discontinued	Discontinued. Replaced by PPM3-MK2.
PPM3 MK2	Production ISP Programming Module – expandable up to 16 programming channels.	In production – will be replaced by PPM4-MK1
PPM4 MK1	Production ISP Programming Module – expandable up to 16 programming channels.	In production

ISPnano	Production ISP Programming Module – expandable up to 32 programming channels.	Pre-production
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## 2.0 New functionality in this release

### 2.1 New features for all applications

#### 2.1.1 New PPM4-MK1 Programmer support

Support for a new programmer called the '**PPM4-MK1**' has been added to EQTools, Upload Wizard and ConsoleEDS. This new programmer is based on the existing PPM3-MK2 programmer but has double the on-board FLASH memory, larger display, more accurate Target Controlled Power Supply capable of generating down to 1.8V, faster JTAG algorithms, a dedicated I2C port, USB connectivity to the PC. It also supports up to 32 Programmer Nodes on an RS485 network.

#### 2.1.2 New FS2009 Programmer support

Support for a new programmer called the '**FS2009**' has been added to EQTools, Upload Wizard and ConsoleEDS. This new programmer is based on the existing FS2003 programmer but it is capable of supporting more algorithms in the future.

#### 2.1.3 New ISPnano Programmer support

Support for a new programmer called the '**ISPnano**' has been added to EQTools, Upload Wizard and ConsoleEDS. This new programmer is a miniature 'Production Programming Module' designed for integration into Test Fixtures. It is possible to pack many ISPnano programmers into a small space making them ideal for programming multiple Target Boards on a PCB panel..

#### 2.1.4 Atmel AT91SAM7 ARM7 FLASH Microcontroller support

The main reason for this release is to add support for the Atmel AT91SAM7 ARM7 FLASH Microcontroller families. Support for 'SAM7' devices is offered as a chargeable license upgrade on the Epsilon5, FS2003, FS2009, PPM3-MK2 and PPM4-MK1 programmers.

Please see Application Note – AN122 for further details about programming AT91SAM7 microcontrollers.

#### 2.1.5 Minimum programmer firmware version validation support

When a Programming Project is created, a '**Minimum programmer firmware version**' is now stored in the project file. This firmware version is checked when the project is uploaded to a programmer using the Upload Wizard utility to make sure that the programmer is running the correct firmware version which is compatible with the project.

This feature was first released in build 947.

## **2.1.6 Measuring Target System Current consumption**

It is now possible to measure the current drawn by an attached Target System from the 'Programmer Controller Power Supply' on the PPM3-MK2 and PPM4-MK1 programmers. In EDS, clicking the **[Measure VI]** button now displays a constantly updated **"Target Voltage"** and **"Target Current"** reading.

## **2.1.7 Supports up to 32 Programmer Nodes on RS485 network**

The latest versions of EQTools, Upload Wizard and ConsoleEDS now support detection of and uploading to up to 32 **'Programmer Nodes'** on an RS485 network. This support has been added to allow up to 32 x PPM4-MK1 or ISPnano programmers to be networked to a single PC COM port.

## **2.1.8 USB to Serial Converter now supported**

As many new PC's no longer have a serial (COM) port, many customers are using **'USB to Serial Convertor cables'** with Equinox programmers. Some of these converters are not directly compatible with Equinox ISP programmers as they don't reproduce the handshaking lines of the COM port correctly. Equinox have therefore sourced a brand of **'USB to Serial Convertor cables'** and fully tested it with all our programmers. This cable will now come as standard with any new Equinox ISP Programmer purchased from Equinox directly. It is also available to purchase as a separate item.

## **2.1.9 New PPM4-MK1 supports direct USB connectivity**

The new PPM4-MK1 programmer now supports direct USB connectivity. It features a USB port on the actual programmer itself. A USB Driver is now available on the EQTools Install Disk.

## **2.1.10 24xx Serial EEPROM Memory device support**

This release includes ISP programming support for most 24xx and 34xx I2C Serial EEPROM memory devices.

The following device families have been added:

- Catalyst 24C I2C Serial EEPROM
- Dallas 28C I2C Serial EEPROMs
- Exel 24xxx I2C Serial EEPROMs
- Holtek 24xx I2C Serial EEPROMs
- IC MIC 24xx I2C Serial EEPROMs
- ISSI 24xxx I2C Serial EEPROM
- Microchip 24xxx I2C Serial EEPROM
- NXP 24xxx I2C Serial EEPROMs
- Ramtron F-RAM Serial Nonvolatile F-RAM Memory
- Rohm 24xx I2C Serial EEPROM
- Seiko 24xxx I2C Serial EEPROMs
- STM 24xxx I2C Serial EEPROMs
- Xicor 24xxx I2C Serial EEPROMs

**Please note:**

The use of any of the above devices requires the purchase of *the “24Cxxx – Serial I2C EEPROM Memory Device Library” (UPG16)* for your programmer.

### **2.1.11 Ramtron - Serial Nonvolatile F-RAM Memory device support**

This release includes ISP programming support for Serial Nonvolatile F-RAM Memory devices from Ramtron. F-RAM products combine the nonvolatile data storage capability of ROM with the benefits of RAM, which include a high number of read and write cycles, high speed read and write cycles, and low power consumption. The Ramtron F-RAM product line features industry-standard I2C serial bus; industry standard package types; and 4-kilobit, 16-kilobit, 64-kilobit, 256-kilobit, 512-kilobit densities.

## **2.2 EDS – new features**

### **2.2.1 Enhanced Error Messages**

The latest version EDS now generates enhanced error messages. Each error message now displays the selected SPI / JTAG settings, Target Voltage / Current etc. This should help to debug problems as all the information is displayed on a single screen.

### **2.2.2 Enhanced ‘Project Type’ selection**

The latest version EDS now displays an updated version of the **‘Project Type’** with a full description of what this selection means. The **‘Project Type’** is also now displayed in the Project Manager view. This feature should help choosing of the correct **‘Project Type’** and also make sure that all the relevant projects in a Project Collection have the same **‘Project Type’**,

## **2.3 EQTools Project Manager – new features**

### **2.3.1 Display of tabulated Project Information**

The latest version of Project Manager now displays the main information for each project in a Project Collection in a tabulated format. This makes it very simple to compare and check the basic settings such as power supply settings, file names, fuses and Security Fuses of all projects at a glance without having to open up each one in turn.

**Please note:**

This feature is released as a beta version. We would welcome any comments for improving the functionality of this new feature.

### **2.3.2 Enhanced ‘Project Type’ selection**

The latest version of Project Builder now displays an updated version of the **‘Project Type’** with a full description of what this selection means. This feature should help choosing of the correct **‘Project Type’**.



## 2.4 ConsoleEDS – new features

### 2.4.1 Multi-node RS485 control capability

The latest version of ConsoleEDS now supports controlling of multiple PPM3-MK2 programmers from a single ConsoleEDS session. This allows a Remote Application to start up to 16 PPM3-MK2 or 32 PPM4-MK1 programmers at the same time using a single command.

The new commands are:

**/NODE** – specifies a particular programmer node address

**/NODES** – specifies which particular programmers are to be controlled from a ConsoleEDS session

For further details about this new multi-node functionality, please refer to the latest version of the ConsoleEDS application note – AN111.

### 2.4.2 ConsoleEDS – data logging to file on error

The latest version of ConsoleEDS now supports logging of all ConsoleEDS debug data to file in the event of an error. The 'Error Log File' can then be inspected after programming a batch of devices to see what problems have occurred.

The format of the new command is as follows:

**ConsoleEDS /OtherCommands /LOG=ErrorLog.txt, YES**

## 2.5 Upload Wizard – new features

### 2.5.1 Supports up to 32 Programmer Nodes on RS485 network

The latest version of Upload Wizard now supports detection of and uploading to up to 32 '**Programmer Nodes**' on an RS485 network. This support has been added to allow up to 32 x PPM4-MK1 programmers to be networked to a single PC COM port.

### 2.5.2 Supports uploading PPM3-MK2 projects to the PPM4-MK1 programmer

The latest version of Upload Wizard now supports uploading of existing PPM3-MK2 'Standalone Programming Projects' to the new PPM4-MK1 programmer. At the moment there is no difference between a PPM3-MK2 project and a PPM4-MK1 project and so PPM3-MK2 projects should operate OK on a PPM4-MK1.

### 2.5.3 Fast Project Upload Mode

The latest version of Upload Wizard is capable of uploading projects at a faster BAUD rate than normal to any attached programmers. This can significantly decrease the time to upload large project collections – at 115,200 baud a Project Collection will upload at least x2 times faster than at 38,400. The Upload Wizard automatically changes the BAUD rate to 115,200 before the upload and then changes it back to 38,400 after the upload process is complete.

Please note:

- This new feature requires that firmware 4.01G or above is installed in the programmer.
- Upload Wizard build 1001 or above is also required.
- The Epsilon5, FS2003, FS2009 and PPM3-MK2 programmers should support a maximum baud rate of 115,200 baud as long as the PC Serial Port can also support this baud rate.
- The PPM4-MK1 can support up to 115,200 baud using the COM port. If the USB port on the PPM4-MK1 is used, then a maximum baud rate of 230,400 can be achieved.

## 2.6 Script Builder – new features

### 2.6.1 Now supports AUTOPROGRAM projects which do not end in programming mode

The latest version of Script Builder now supports AUTOPROGRAM (Standalone Projects) which do not end in programming mode. This allows scripts to execute a Standalone Project which will then exit programming mode and power down the Target System. This is required for many JTAG applications where the programmer must exit JTAG mode at the end of the sequence to prevent the AVR device from getting stuck in JTAG mode.

Please note:

- This new feature requires that firmware 4.01G or above is installed in the programmer.

## ***2.6.2 New Run Target GUI to allow EEPROM parameter validation***

In earlier versions of EQTools, it was not possible to read back / validate EEPROM parameters if the 'Run Target' project failed for some reason.

The latest version of EQTools build 2022 now has the ability to read back selected parameters from the EEPROM area of the Target IC after a Target Run operation. This allows any results stored by the Target IC in its EEPROM to be read out after the firmware has executed. The parameters can also be validated one-by-one via the script to make sure they are within limits.

## 3.0 Device Support

### 3.1 New Device Support in this release

The main new device support in this release is as follows:

- Atmel AT91SAM7 ARM7 FLASH microcontroller family – see section 3.2.
- 24xx Serial EEPROM Memories from most manufacturers – see section 3.6
- Ramtron – Serial F-RAM non-volatile Memories – see section 3.7

### 3.2 How to find the latest Device Support Lists

The latest Device Support List detailing all devices supported can be found:

- As a Download available on the website
  - click on the 'Downloads' tab
  - under 'Download Type' choose 'Device Support Lists / Release notes'
  - click 'Search'
- By browsing on the 'Device Support' tab in each product.
- In the latest version of EQ-Tools:
  - Launch EQ-Tools
  - Go to Programmer
  - Create a Device Support.

All programmers and devices supported are listed in this document.

### 3.3 Atmel AT91SAM7 ARM7 FLASH Microcontrollers

The main new device support in this release is for the Atmel AT91SAM7 ARM7 FLASH microcontroller family. At present, the AT91SAM7 “S”, “SE” and “A” families have been added – see the following sections for detailed device list.

Please see Application Note – AN122 for further details about programming AT91SAM7 microcontrollers.

#### **Please note:**

- All SAM7 device support requires that the programmer firmware is updated to version 4.00 or above.
- Not all algorithms have been tested on actual devices.
- Programming of the SAM7 “Security Fuse” is not yet supported.

### 3.3.1 AT91SAM7 – “S” Family

The AT91SAM7 – “S” Family contains the following devices:

Device	On-chip FLASH Size (kb)	FLASH Page Size (bytes)	Minimum firmware version	Programming Support available	Tested on actual device
AT91SAM7S16	16	64	4.00	YES	-
AT91SAM7S161	161	64	4.00	YES	-
AT91SAM7S32	32	128	4.00	YES	-
AT91SAM7S321	321	128	4.00	YES	-
AT91SAM7S64	64	128	4.00	YES	YES
AT91SAM7S128	128	256	4.00	YES	-
AT91SAM7S256	256	256	4.00	YES	YES
AT91SAM7S512	512	256	4.00	YES	YES

### 3.3.2 AT91SAM7 – “SE” Family

The AT91SAM7 – “SE” Family contains the following devices:

Device	On-chip FLASH Size (kb)	FLASH Page Size (bytes)	Minimum firmware version	Programming Support available	Tested on actual device
AT91SAM7SE32	32	128	4.00	YES	-
AT91SAM7SE256	256	256	4.00	YES	-
AT91SAM7SE512	512	256	4.00	YES	YES

### 3.3.3 AT91SAM7 – “A” Family

The AT91SAM7 – “A” Family contains the following devices:

Device	On-chip FLASH Size (kb)	FLASH Page Size (bytes)	Minimum firmware version	Programming Support available	Tested on actual device
AT91SAM7A3	256	256	4.00	YES	YES

## 3.4 Atmel ATtiny261/461/861 AVR FLASH Microcontrollers

The following devices have been added in this release:

- ATtiny261, ATtiny261V (SPI)
- ATtiny461, ATtiny461V (SPI)
- ATtiny861, ATtiny861V (SPI)

## 3.5 Atmel ATA6612 / ATA6613 SiP Modules

The following devices have been added in this release:

- ATA6612 (features ATmega88 microcontroller)
- ATA6613 (features ATmega168 microcontroller)

These devices are a SiP (System-in-Package) design featuring an LIN IC plus an AVR microcontroller in the same package. ISP programming support is offered for the AVR microcontroller inside the SiP using the conventional AVR SPI programming algorithm. The programming functionality is identical to the ATmega88 / ATmega168.

## 3.6 Atmel AT89C51ED2 support

The following device has been added in this release:

- Atmel AT89C51ED2 microcontroller (via UART Boot Loader algorithm)

### **Please note:**

This release only supports programming of the FLASH area of the AT89C51ED2 device. Programming of the EEPROM area is not currently supported. Please contact Equinox for further information.

## 3.7 24xx Serial EEPROM Memory device support

Support has been added for most manufacturers of Serial I2C Interface Memory devices.

The following device families have been added:

- Catalyst 24C I2C Serial EEPROM
- Dallas 28C I2C Serial EEPROMs
- Exel 24xxx I2C Serial EEPROMs
- Holtek 24xx I2C Serial EEPROMs
- IC MIC 24xx I2C Serial EEPROMs
- ISSI 24xxx I2C Serial EEPROM
- Microchip 24xxx I2C Serial EEPROM
- NXP 24xxx I2C Serial EEPROMs
- Ramtron F-RAM Serial Nonvolatile F-RAM Memory
- Rohm 24xx I2C Serial EEPROM
- Seiko 24xxx I2C Serial EEPROMs
- STM 24xxx I2C Serial EEPROMs
- Xicor 24xxx I2C Serial EEPROMs

### **Please note:**

The use of any of the above devices requires the purchase of the **“24Cxxx – Serial I2C EEPROM Memory Device Library” (UPG16)** for your programmer.

## 3.8 Ramtron - Serial Nonvolatile F-RAM Memory device support

This release includes ISP programming support for Serial Nonvolatile F-RAM Memory devices from Ramtron. F-RAM products combine the nonvolatile data storage capability of ROM with the benefits of RAM, which include a high number of read and write cycles, high speed read and write cycles, and low power consumption. The Ramtron F-RAM product line features industry-standard I2C serial bus; industry standard package types; and 4-kilobit, 16-kilobit, 64-kilobit, 256-kilobit, 512-kilobit densities.

## 3.9 Atmel ATmega 164P / 324P / 644P device support

The following devices have been added in this release:

- ATmega164P-15A, ATmega164P-15M (SPI)
- ATmega324P-15A, ATmega324P-15M (SPI)
- ATmega644P-15A, ATmega644P-15M (SPI)
  
- ATmega164P-15A, ATmega164P-15M (JTAG)
- ATmega324P-15A, ATmega324P-15M (JTAG)
- ATmega644P-15A, ATmega644P-15M (JTAG)

## 3.10 Atmel ATmega 32M / 32C / 64M / 64C device support

The following devices have been added in this release:

- ATmega32M1-8 (SPI)
- ATmega32M1-16 (SPI)
- ATmega64M1-8 (SPI)
- ATmega64M1-16 (SPI)
  
- ATmega32C1-8 (SPI)
- ATmega32C1-16 (SPI)
- ATmega64C1-8 (SPI)
- ATmega64C1-16 (SPI)

## 4.0 Upgrading the Programmer Firmware

### 4.1 Programmer firmware versions

This version of EQTools requires that the programmer firmware is upgraded to the latest version. The programmer firmware can be updated using either the Configit or Upload Wizard utilities. If the programmer is already running firmware version 3.00 or above then the Upload Wizard utility should be used to upgrade the programmer firmware.

The latest versions of programmer firmware are listed in the table below.

Programmer	Configit upgrades to firmware version:	Upload Wizard upgrades to firmware version:
Activ8r AVR	2.50	Not supported
Activ8r 8051	2.00	Not supported
EPSILON5	3.07	5.00J
FS2000A	2.54	Not supported
FS2000B	Not supported	3.07 (need to upgrade the firmware of an FS2003 to make an FS2000B programmer)
FS2003	3.07	4.01F for existing devices or 4.00c for AT91SAM7 devices
FS2009	Not supported	5.00J version for existing devices 5.00J special AT91SAM7 version
Micro-ISP S3 (LV)	2.80	Not supported
Micro-ISP S4 (LV)	2.80	Not supported
PPM3 MK1	No longer supported	No longer supported
PPM3 MK2	3.07	4.00G version for existing devices Please request AT91SAM7 version from Equinox
PPM4 MK1	Not supported	5.00J
ISPnano	Not supported	5.00K

#### Please note:

- The Atmel AT91SAM7 device support has been added in firmware 4.00 and above. Please email Equinox at [support@equinox-tech.com](mailto:support@equinox-tech.com) to request the latest version of this firmware.
- The FS2003 and PPM3-MK2 programmers do not have firmware space to fit both the existing algorithms and the new AT91SAM7 algorithms at the same time. It is therefore necessary to upload firmware 4.xx for programming SAM7 devices and 3.xx for programming any existing device eg. Atmel AVR microcontrollers.



## 4.2 Firmware version 3.07

This version of EQTools requires that you install firmware version 3.07. You can find this firmware upgrade project in **the `program files\equinox\firmware`** directory once EQTools has been installed.

The new features implemented in this firmware are as follows:

- Faster programming of Atmel ATmega AVR microcontrollers using SPI – EEPROM Page Based EEPROM Programming Mode
- Faster Power Supply voltage Settling time (PPM3-MK2 only)
- Leave Power Supply on at end of Standalone Programming Project (PPM3-MK2 only)
- Faster JTAG programming of Atmel ATmega AVR microcontrollers
- JTAG-in-a-chain programming support for Atmel ATmega AVR microcontrollers
- JTAG ID can now be read and validated (works for both Atmel and non Atmel JTAG devices)
- JTAG chain validation now possible
- Skip 'Standalone Project Image Check' in manual Keypad mode
- Skip 'Standalone Project Image Check' in 'ASCII Text Communications' mode. (new command 'FPROGRAM')
- Locked Keypad Projects – new functionality
- RESET\_PPM command now does not wait after the command has been issued.
- Support for programming 24xxx Serial EEPROM Memory devices

## 4.4 Firmware version 4.00F

This version of firmware has been specially developed to add support for the Atmel AT91SAM7 microcontroller family.

The new features implemented in this firmware are as follows:

- Support for programming the Atmel AT91SAM7 ARM7 microcontroller families
- Support for new FS2009 programmer
- Support for 'FAST JTAG' mode on the FS2003 programmer
- Correct exiting of JTAG Mode in PC controlled mode

Please note:

- This firmware is compiled using a different compiler to version 3.xx and so should be treated as a beta version until it has been fully tested.
- The Epsilon5, FS2003 and PPM3-MK2 programmers do not have firmware space to fit both the existing algorithms and the new AT91SAM7 algorithms at the same time. It is therefore necessary to upload firmware 4.xx for programming SAM7 devices and 3.xx for programming any existing device eg. Atmel AVR microcontrollers.

## 4.5 Firmware upgrade instructions

If your programmer firmware version is 3.00 or above then you can upgrade your programmer firmware by uploading the relevant **'Firmware Upgrade Project Collection File'** (\*.ppc) using the EQTools / Upload Wizard applications.

For detailed firmware upgrade instructions, please see the following Application Note:  
**'AN112 - Firmware Update instructions for Equinox ISP Programmers'**

## 5.0 General problem and bug corrections

### 5.1 Overview

This section details any reported problems and their fixes / workarounds.

### 5.2 EDS – Save from FLASH Buffer with address offset

**Problem description:**

If an attempt was made to save the contents of the FLASH Buffer to a file with an 'offset address' other than 0x00000, then an exception error was produced.

**Fix / workaround:**

This problem has now been fixed.

### 5.3 EDS – Target firmware will not execute after JTAG programming

**Problem description:**

If an AVR device was programmed via the JTAG algorithm, the Target System would not execute the programmed firmware. It was necessary to perform a power-cycle of the Target System in order to reset the device so that it would then execute the programmed firmware.

**Fix / workaround:**

This problem has now been fixed with new programmer firmware.

The fix is currently undergoing beta testing with customers.

Please request the latest firmware 4.00F from Equinox.

### 5.4 Project Builder – EEPROM Page Size defaulting to 1 byte when opening old projects

**Problem description:**

If an old ATmega AVR JTAG project was opened with EQTools build 900 – 1000, Project Builder would automatically default the 'EEPROM Page Size' to 1 byte. This would cause the EEPROM programming to fail. The problem was easily resolved by simply reselecting the device and then recompiling the project.

**Fix / workaround:**

This problem has now been fixed with an update to EQTools.

When an old ATmega AVR JTAG project is opened, Project Builder now reads the 'EEPROM Page Size' from the device library instead of trying to read it from the project file.

## 5.5 AT89S Projects will not upload to an FS2009 programmer

### **Problem description:**

If an attempt was made to upload any Programming Project for an Atmel 'AT89S' device to an FS2009 programmer, Upload Wizard would display a message saying that the programmer was not licensed for this device.

### **Fix / workaround:**

This problem has been fixed in Upload Wizard version 1022.  
The problem was only with the FS2009 programmer.

## 5.6 EDS Wizard – displayed FLASH timings tab

### **Problem description:**

When creating a project using the EDS Wizard, the wizard would show the 'FLASH timings tab' instead of the 'FLASH file tab'.

### **Fix / workaround:**

This problem has been fixed in EQTools build 2022.

## 6.0 IC / algorithm Related Problem and bug corrections

### 6.1 Overview

This section details any reported problems with actual IC algorithms.

### 6.2 ATmega644P – Incorrect Device JTAG ID

**Problem:**

When trying to program an ATmega644P via the JTAG algorithm, the programmer would report an invalid JTAG ID.

**Devices affected:**

ATmega644P, ATmega644PV (JTAG)

**Problem fix:**

The JTAG ID has now been corrected.

- Device ID: 0x1E960A
- JTAG ID: 0x0960A03F

To install the correct JTAG ID in your existing projects, please install this new version of EQTools, re-open your project and then re-select the device in the project.

### 6.3 Atmel AVR JTAG microcontrollers – error if both Signature and JTAG ID are deselected

**Problem:**

When creating a project for any Atmel AVR device in JTAG mode, it should not be possible to deselect both the 'Device Signature' and 'JTAG ID' at the same time. This causes the programmer to skip the initial JTAG initialisation so the Programming Project fails to program the AVR device.

**Devices affected:**

All Atmel AVR microcontrollers in JTAG programming mode.

**Problem fix:**

Please do not deselect both the 'Device Signature' and 'JTAG ID' at the same time. EQTools will now display a warning if it detects this condition.

## 6.4 Atmel AT91SAM7S512 – FLASH Programming Error in EDS Mode

**Problem:**

Programming of the FLASH of the AT91SAM7S512 (512kb) device would fail in EDS (Development) mode after the first page.

**Devices affected:**

AT91SAM7S512

**Problem fix:**

This problem has been fixed in EQTools build 1030.

The 'FLASH Write Time' is now set to 20ms for all AT91SAM7 device to prevent EDS timing out before the FLASH page write operation has completed.