FS2009USB - Portable multi-project USB ISP Programmer for ATmega Microcontrollers

The FS2009USB is a portable programmer ideal for Development, Field-Service and Production. In Standalone Mode (without a PC) the operator can select from any 1 of 64 pre-loaded *'Programming Projects'* using the keypad and Display and then simply presses the key to program the Target Device. This makes the FS2009USB programmer ideal for use in Development, Field-Service or Production programming environments. The FS2009USB(AVR-JTAG) supports high-speed In System Programming (ISP) of Atmel AVR microcontrollers via the JTAG interface.

Key features:

- Portable In-System (ISP) Programmer
- Ideal for Development, Production or Field use
- Supports 'Standalone' operation i.e. no PC required after programmer has been configured
- Very fast programming speeds suitable for high-throughput production environments
- Up to 64 individual Programming Projects can be uploaded to the non-volatile On-board FLASH Store (4Mbytes).
- Robust I/O driver stage
- Individually configurable programmer I/O pins
- Programmer firmware is field upgradeable to cater for future algorithms
- CE / RoHS approved product

Features

Supported Programmer Control Methods

The programmer supports the following control methods:

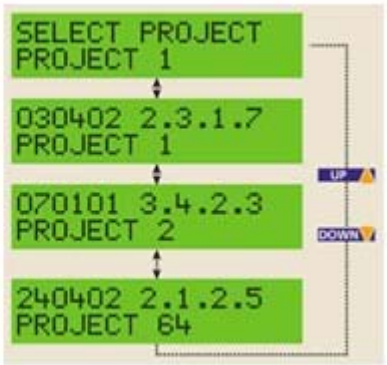
- **Standalone Mode** - Keypad and LCD controlled (no PC)
- **Development Mode** - Controlled via PC Software - Equinox Development Suite (EDS)
- **Project Upload Mode** - PC Controlled
- **ISP-PRO** - Production Software (chargeable upgrade)
- **ASCII Text Communications Protocol** (RS232 Serial control - chargeable upgrade)

Target Interface Capabilities

The FS2009(AVR-JTAG) supports the following Target Interfaces / Algorithms:

- **Atmel ATmega JTAG** In-System Programming (ISP)

Standalone Programming Mode



In ‘Standalone Mode’, the FS2009 is controlled via the push buttons on the front panel of the programmer - no PC connection is required. The programmer LCD and the LED Status Indicators are used to display the current status of the programmer. It is possible to select from 1 of 64 previously uploaded Programming Projects and then to repeatedly execute this project to program a batch of devices.

In Standalone Mode...

- Programmer is completely portable as no PC connection is required
- Programmer supports storage up to **64** independent Programming Projects in the non-volatile On-board **4Mbits** FLASH Memory Store .
- The operator simply selects the required project using LCD and keypad
- Each project name is version controlled showing the project name, date, firmware revision and build date. e.g. ***myproject-240402-2.3.4.12***
- Single key auto-program mode
- Simple PASS / FAIL response with diagnostics on program failure
- Operator can not inadvertently change the programming data or settings

To configure the programmer for Standalone Mode...

- A Project Collection containing 1 - 64 Programming Projects must be uploaded on a one-off basis to the programmer using the EQTools PC software
- This is a single file which can be easily distributed to remote sites. It contains all projects, Hex File data, Fuse information etc.

▸ Development Mode

- Programmer is controlled from the PC via EQTools - Equinox Development Suite (EDS) Software
- Ideal for use in a Development Environment
- Supports manual writing / reading of FLASH / EEPROM memory areas
- Supports manual writing / reading of Fuses and Security Fuses
- All projects can be developed and tested on a real device before uploading a Programming Project to the programmer
- Tested Programming Projects can then be uploaded to the Programmer for use in Standalone Mode

Project Upload Mode

This mode allows a pre-compile Project Collection to be uploaded to the on-board 'FLASH Memory Store'. The programmer can store up to 32 MBits of Project Information which is held indefinitely in non-volatile FLASH Memory. It is possible to upload up to 64 Programming Projects to the programmer, each of which can be for a different target device. A simple 'Upload Wizard' allows field personnel to upload single or multiple Programming Projects as part of Project Collections.

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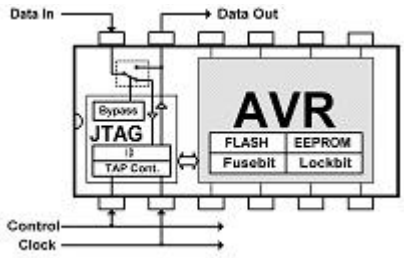
Programmer / Target System - Power Supply Options

The Programmer supports the following powering options:

- Target System can supply power to the programmer: 3.0 - 5.0V @ 50mA
- Programmer can supply power to the Target System: 5.0V @ 300mA
- Programmer and Target System can be Independently Powered

The Programmer comes with a 9V DC Power Supply which is regulated down to +5.0V inside the programmer.

JTAG ISP Support for Atmel ATmega AVR Microcontrollers



The FS2009(AVR-JTAG) supports programming of the Atmel ATmega AVR Microcontroller Family using the JTAG algorithm. This allows the FS2009 to program the ATmega devices at high speed via the JTAG port of the Target Device.

The advantages of JTAG In-System Programming are:

- Much faster programming times (up to x4 times faster than SPI)
- JTAG port can also be used as a 'Debug Port' during product development

▸ CE / FCC / RoHS Approved Product

The FS2009 is a CE / FCC and RoHS approved product.

▸ Spare Programmer I/O pins

- In SPI mode, there are 2 x Spare I/O pins for custom use
- In UART mode, there is 1 x Spare I/O pins for custom use
- The spare I/O pin(s) can be used for controlling circuitry on the user Target System including Chip Selects, additional RESET control lines, Watchdog Timers etc.

▸ Fast Programming Times

The FS2009 (AVR-JTAG) supports fast programming of Target Devices via the JTAG algorithm.

▸ Standalone Mode - Program -> Test -> Re-Program

The programmer is capable of performing a multi-project Programming Sequence in Standalone Mode as follows:

- Program Test Firmware
- Execute Target Firmware
- Wait for Target Firmware to finish
- Program Production Firmware

This powerful functionality allows the programmer to be used as part of an In-Circuit Test procedure where the Target Firmware must be allowed to execute in order to eg. calculate some calibration values. The programmer initially programs some 'Test Firmware' into the Target Device and then allows the Target to run this firmware and waits for this firmware to finish executing. The real 'Production Firmware' is then programmed into the Target Device.

Device Support (by family)

This product supports devices from the families listed below:

Atmel Corporation:

- AT90CAN - AVR with on-chip CAN : AVR microcontroller with on-chip CAN
- AT90USB - AVR FLASH Microcontroller Family
- ATmega AVR - FLASH Microcontroller Family
- ATmegaxxxP 'PICO Power' AVR Microcontroller Family

The following are available as chargeable upgrades: 24Cxxx - Serial I2C EEPROM Memory Device Library and Atmel AT91SAM7 Upgrade Pack. See [Upgrades] tab.

Please note:
Not all devices may be supported within a family.
Please see the Detailed Device Support List for a list of all devices which the product supports.

Ordering Information...

FS2009USB - Portable multi-project USB ISP Programmer for ATmega Microcontrollers
FS2009USB (AVR-JTAG) - Portable high-speed In-System (ISP) Programmer for JTAG programming of Atmel AVR microcontroller family. Standalone capability using LCD / keypad (64 projects) and USB / RS232 connectivity.
Manufacturer: Equinox Technologies

Order Code: **FS2009USB(AVR-JTAG)**

Quantity	Price (USD) [Excl. VAT]
1 - 4	$
5 - 9	$
10 - 24	$
25 and above	$

BUY

Availability:

For further information about related products, please see the Overview Product.