# Chipsmall

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

## Contact us

**EPSILON5 MKIV - Portable ISP Programmer - for Atmel ARM Microcontrollers**

The Epsilon5 MKIV ARM Portable USB ISP Programmer is a high-speed development / field / production programmer supporting in-system programming of Atmel ARM microcontrollers. The programmer can be operated under PC control during development and for project configuration / uploading using the EQTools Toolsuite. For field / production applications the unit is designed to operate in *'Standalone Mode'*. A 'Programming Project' can be recalled from the *on-board non-volatile FLASH memory* and programmed into a Target System by pressing a single key. All the popular ISP headers are catered for including the new JTAG ISP Port required for fast programming of the Atmel ARM family.

*Ideal programmer for development, field service and production applications*

**Features**

▶ Supports PC Controlled and Standalone Programming
▶ Main features
▶ Controlled / configured by Equinox EQTools Software
▶ Standalone Programming Mode
▶ Target Interface Capabilities
▶ ISP Header Support
▶ Typical applications
▶ Device Support for each Epsilon5 version
▶ Comparison of new EPSILON5-MKIV and the MKII / MKIII versions
▶ Device Support

▶ Supports PC Controlled and Standalone Programming

  ● Development Mode - using Equinox Development Suite (EDS) under PC control
  ● Standalone Mode - ideal for field or small-scale production use (no PC required)

▶ Main features

  ● Fastest programming times possible due to on-board data, high-speed SPI and JTAG port
  ● Supports programming of FLASH, EEPROM, FUSE bits, Security bits and RC Oscillator Calibration bytes
  ● 2Mbits of on-board non-volatile FLASH memory for user project storage (Standalone Mode)
  ● SCK2 Oscillator signal for externally clocking ATmega & ATtiny microcontrollers during programming
  ● On-board +12V Vpp generator for programming Atmel ATtiny11/12/15 microcontrollers in 'High voltage Serial Mode'
  ● JTAG Port - FAST ISP using JTAG algorithm (license upgrade)

▶ Controlled / configured by Equinox EQTools Software

  ● Equinox Development Suite (EDS)
  ● Project Builder - to create/edit Programming Projects
  ● Project Manager - to create and maintain Project Collections
  ● Project Upload / Download Utility - to upload projects to the programmer for use in Standalone Mode

▶ Standalone Programming Mode



In **'Standalone Mode'**, the EPSILON5 is controlled via the push buttons on the front panel of the programmer - no PC connection is required.The programmer can store one **'Standalone Programming Project'** which can then be executed multiple times by simply pressing the **'Autoprogram'** button.

**In Standalone Mode...**

- Programmer is completely portable as no PC connection is required
- Programmer supports storage of 1 x **'Standalone Programming Project'** in the non-volatile On-board **512kbyte** FLASH Memory Store .
- Single key auto-program mode - supports repetitive programming of the same project
- Simple BUSY / PASS / FAIL indication via **'Programmer Status LEDs'**
- Operator can not inadvertently change the programming data or settings

**To configure the programmer for 'Standalone Mode'...**

- A Project Collection containing a single **'Standalone Programming Project'** 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.

▶ Target Interface Capabilities

The **EPSILON5** programmer supports the following Target Programming Interfaces / Algorithms:

- **Atmel AVR - SPI -** Serial Programming Mode
- **Atmel AT89S - SPI -** Serial Programming Mode
- **Atmel ATtiny11/12/15 High-Voltage** Serial Programming Mode
- **UART Boot Loader** - for Atmel T89C51Rx2 8051 microcontrollers
- **UART Boot Loader** - for Philips P89C51Rx2 and P89C66x 8051 microcontrollers
- **Atmel ATmega JTAG** In-System Programming (ISP) - chargeable upgrade
- **24Cxxx Serial EEPROMs** I2C (Two-Wire Interface) - chargeable upgrade
- **AT91SAM7 JTAG** In-System Programming (ISP) - chargeable upgrade
- **NXP LPC21xx JTAG** In-System Programming (ISP)

▶ ISP Header Support
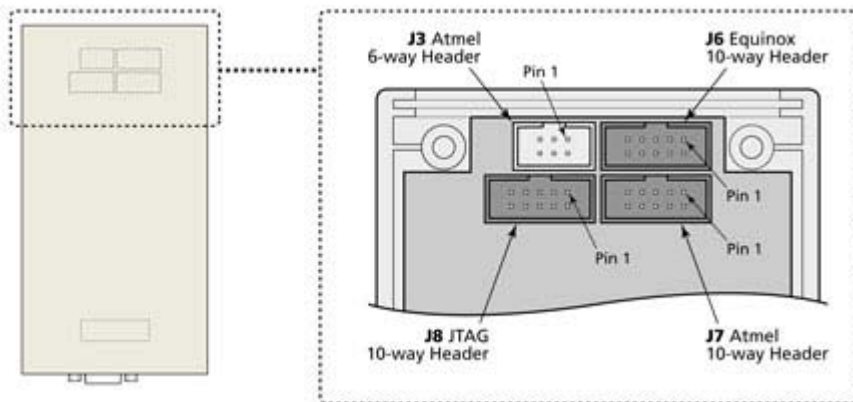


The **EPSILON5** programmer features all the popular In System Programming (ISP) Headers including:

- Atmel 10-way SPI Header (for Atmel AVR and AT89S microcontrollers)
- Equinox 10-way Header (for Atmel AVR and AT89S microcontrollers) and I2C Serial EEPROMs
- Atmel 6-way SPI Header (for Atmel AVR and AT89S microcontrollers)
- Atmel 10-way JTAG ISP Header (for JTAG ISP of Atmel ATmega AVR microcontrollers)
- Equinox 10-way UART Header (for Atmel AT89C51Rx2 and Philips P89C51RX2 and P89C66x microcontrollers)
- A special **'ARM JTAG ISP Cable'** is available to support programming of all ARM microcontrollers via the JTAG interface.

This allows the programmer to interface directly to most target systems without requiring an external cable convertor.

Please refer to the **ISP Header Overview** page for full details of all available ISP Headers and ISP Cables.

▶ Typical applications

- Field programming - supports programming of a single customer firmware / product version
- Distributor / Sales agent field programming applications
- Low to medium volume production programming
- Re-programming of product batches in production

▸ Device Support for each Epsilon5 version

The table below details which device families are supported by each version of the programmer.

| Device Family | Programming Interface | EPSILON5 (STD) | EPSILON5 (AVR-JTAG) | EPSILON5 (ARM) |
|---|---|---|---|---|
| **Atmel AVR (SPI):** | | | | |
| - AT90S<br>- AT90USB<br>- AT90CAN<br>- ATmega<br>- ATmegaRF<br>- ATtiny LV | LV SPI | YES<br>YES<br>YES<br>YES<br>YES<br>YES | -<br>-<br>-<br>-<br>-<br>- | -<br>-<br>-<br>-<br>-<br>- |
| **Atmel AVR (HV):** | | | | |
| - ATtiny HV | HV Serial (+12V) | YES | - | - |
| **Atmel AVR (JTAG):** | | | | |
| - AT90USB<br>- AT90CAN<br>- ATmega<br>- ATmegaRF | AVR JTAG | -<br>-<br>-<br>- | YES<br>YES<br>YES<br>YES | -<br>-<br>-<br>- |
| **Atmel AT91SAM7** | | | | |
| - AT91SAM7A<br>- AT91SAM7L<br>- AT91SAM7S<br>- AT91SAM7SE<br>- AT91SAM7X<br>- AT91SAM7XC | ARM JTAG | -<br>-<br>-<br>-<br>-<br>- | -<br>-<br>-<br>-<br>-<br>- | YES<br>YES<br>YES<br>YES<br>YES<br>YES |
| **Atmel 8051** | | | | |
| - T89C51Rx2<br>- AT89C51xxx | UART Boot Loader | YES<br>YES | -<br>- | -<br>- |
| **Atmel 89S 8051** | | | | |
| - AT89S82xx<br>- AT89Sx051 | LV SPI | YES<br>YES | -<br>- | -<br>- |
| **NXP 8051** | | | | |
| - P89X51Rx2 | UART Boot Loader | YES | - | - |
| **NXP LPC ARM7** | | | | |
| - LPC210x<br>- LPC213x<br>- LPC214x | ARM JTAG | UPGRADE | UPGRADE | YES<br>YES<br>YES |
| **ST** | | | | |
| - STM32F100Rx | ARM JTAG | UPGRADE | UPGRADE | YES |
| **Zensys** | | | | |
| - ZW100 / 200 / 300 series | LV SPI | YES | - | - |
| **All manufacturers** | | | | |

| 24xxx Serial EEPROM Memories | I2C | UPGRADE | UPGRADE | UPGRADE |
|---|---|---|---|---|

▶ Comparison of new EPSILON5-MKIV and the MKII / MKIII versions

The new EPSILON5 MKIV programmer has the following improvements compared to the earlier MKII and MKIII versions:

- Features an on-board high-speed USB port instead of an RS232 port.
- Uploading of large project collections and PC controlled programming is now significantly faster
- The MKIV Programmer now runs at x2 the speed of the older programmer versions
- Most algorithms will now run faster due to faster processor and more on-board RAM
- The internal electronics now runs at +5V instead of +3.0V giving a better signal drive
- The external DC Jack power input will now accept any voltage between +6.2V and 12.0V.
- The programmer can be powered from the PC USB port during configuration / project uploading

### Device Support (by family)

This product supports devices from the families listed below:

**Atmel Corporation:**
- AT91SAM7A - ARM7 FLASH Microcontroller
- AT91SAM7L (Low Power) Series - ARM7 FLASH Microcontroller
- AT91SAM7S - ARM7 FLASH Microcontroller
- AT91SAM7SE - ARM7 FLASH Microcontroller
- AT91SAM7X - ARM7 FLASH Microcontroller
- AT91SAM7XC - ARM7 FLASH Microcontroller

*The following are available as chargeable upgrades: AVR via JTAG interface, ARM microcontrollers, 24Cxxx - Serial I2C EEPROM Memory Device Library. 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...

**EPSILON5 MKIV - Portable ISP Programmer - for Atmel ARM Microcontrollers**
Epsilon5 MKIV (ARM) - Portable high-speed In-System (ISP) Programmer - for programming of Atmel ARM microcontroller family with Standalone capability (1 project). USB connectivity.
**Manufacturer: Equinox Technologies**
 **Order Code: EPSILON5MK4(ARM)**

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

BUY

**Availability:**

For further information about related products, please see the <u>Overview Product</u>.