

# EPSILON5N

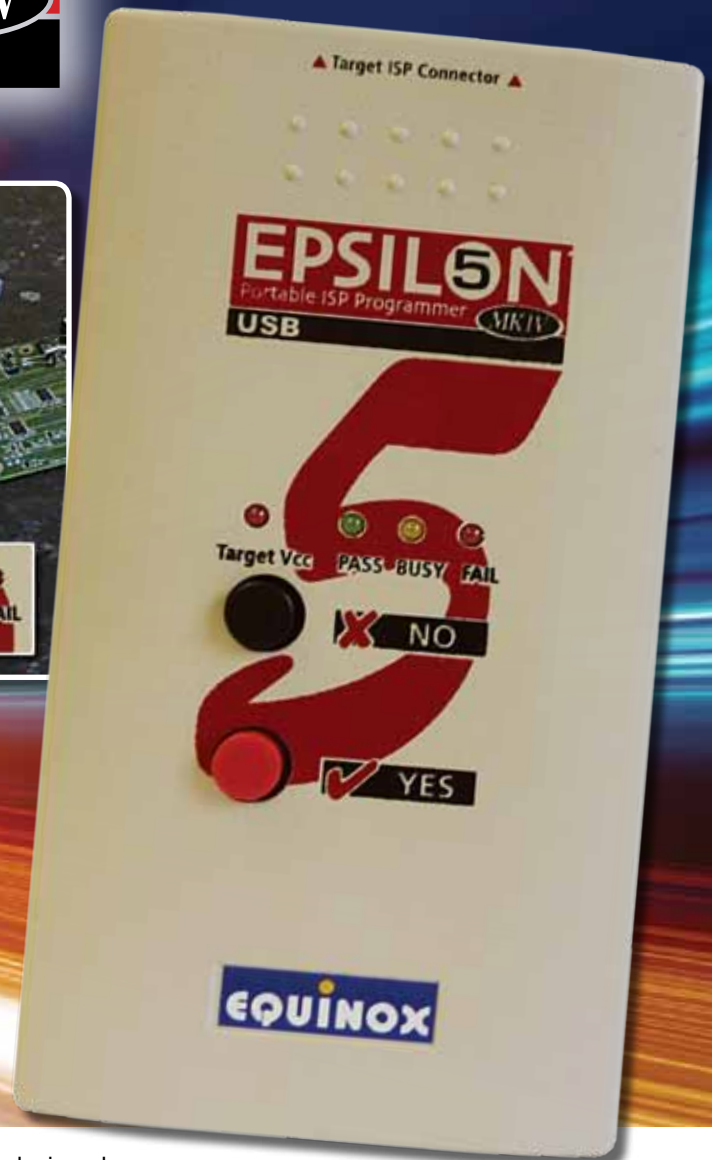
Portable ISP Programmer **MK IV**

**USB**

Portable high-speed  
USB In-System (ISP)  
Programmer



The EPSILON5 MK IV programmer being used in standalone mode



The **EPSILON5 MK IV** is a high-speed portable ISP programmer designed for field and low-volume production programming applications. The programmer supports programming of many **in-system programmable (ISP)** microcontrollers including AVR, 8051, ARM and Zensys Z-wave devices. It 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 **'Standalone 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 connection headers are catered for.

- Portable In-System (ISP) Programmer
- Ideal for Field-service or low-volume Production programming
- Supports In-system Programming (ISP) of many different programmable microcontrollers and serial memory devices
- Supports programming via SPI, JTAG, I2C and UART interfaces
- Supports **'Standalone'** operation - no PC required after programmer has been configured
- Low power consumption allows the programmer to be powered from most Target Systems (no external supply required)
- High-speed USB connection to PC
- Backwards compatible with Epsilon5 MKII / MKIII programmers

**FIELD-SERVICE**

**PRODUCTION PROGRAMMING**

**TARGET / USB POWERED**

**FIRMWARE UPGRADEABLE**



**The Embedded Solutions Company**

# EPSILON

Portable ISP Programmer

## USB

MK IV

### Programming Interfaces:

- Supports most ISP hardware interfaces / protocols including JTAG, SPI, I2C, ATtiny AVR HV mode, 8051 UART Bootloader
- Very fast programming speeds suitable for high-throughput production environments
- Robust I/O driver stage with ESD protection
- Individually configurable programmer I/O pins
- User-configurable RESET pin state and timing to cater for complicated RESET circuits / RESET monitoring ICs
- Supports programming of target ICs between 3.1 and 5.0V.
- Programmable frequency generator output on SCK2 pin - supports external clocking of AVR microcontrollers to speed up programming

### Control methods:

- PC control in **Development Mode** (EDS) via high-speed USB port
- Standalone keypad / display operation

### Standalone Mode:

- Supports loading of 1 x '**Standalone Programming Projects**' into the programmer memory (512 kbytes capacity)
- Single-button **auto-program** operation allows repetitive execution of the selected project (permanently stored in programmer)
- **PASS / BUSY / FAIL** LED's indicate programmer status



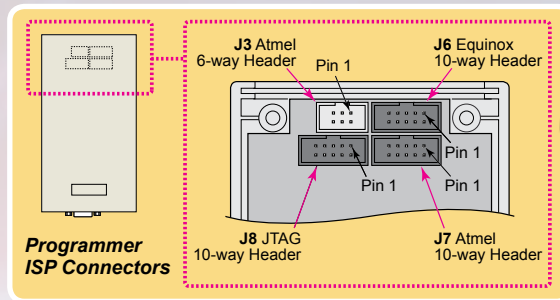
### Device support:

- Atmel AVR (not XMEGA or ATtiny TPI)
- ARM FLASH microcontrollers - ARM7TDMI®, Cortex M3, Cortex M4
- Selected 8051 FLASH microcontrollers
- Serial EEPROMs (I2C)
- Zensys Z-wave devices

### Power supply:

- The programmer can be powered from:
  - User Target System (3.1 - 5.0V @ 60mA)
  - External power supply via jack socket (6.0 - 12.0V @ 60mA)
  - PC USB Port (PC dependent)
  - External USB Power Pack (+5V only)

- Programmer can supply +5V regulated power to the Target system when it is powered from an external supply
- Power supply is reverse-polarity protected
- Fixed +12V **Target VPP** voltage generator for ATtiny HV devices



### ISP connectors / headers:

- Most popular ISP connectors are catered for
- ARM standard 20-pin and 10-pin JTAG connectors requires a special '**ARM JTAG cable**' (available separately)

### Software (as standard):

- **EQTools** - creates '**Standalone Programming Projects**'
- **EDS** - Development Mode for testing under PC control
- **Upload Wizard** - uploads projects to the programmer

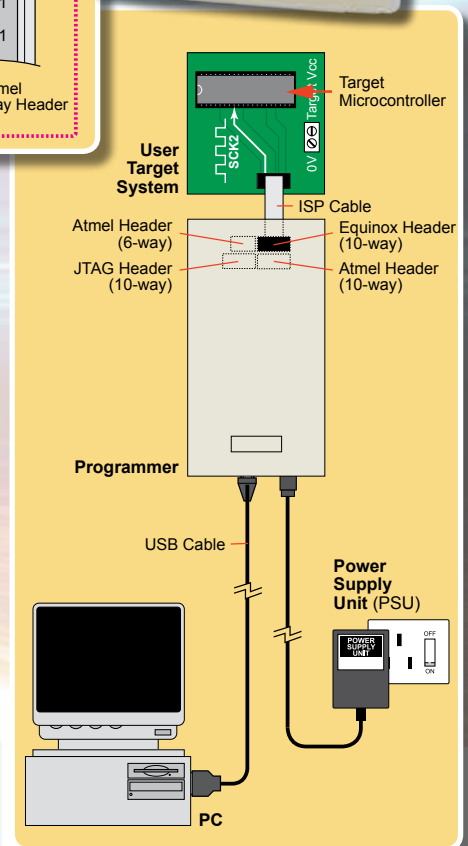
### Typical applications:

- **Field-service** programming
- Low to medium volume standalone **production programming**

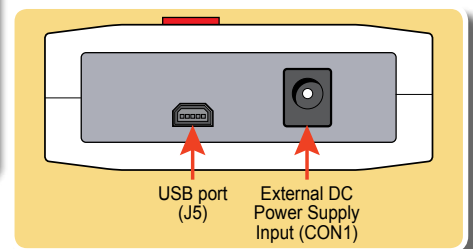


### System Contents:

The picture shows the typical contents of the Epsilon5 MK IV programming kit. An external power supply is **NOT** included with the kit.



Typical programmer connection to PC and Target System (DUT)



Bottom panel connections

### Ordering information:

- |                              |  |
|------------------------------|--|
| <b>EPSILON5MK4(STD)</b>      | - Portable high-speed USB In-System (ISP) Programmer (standard device support version) |
| <b>EPSILON5MK4(AVR-JTAG)</b> | - Portable ISP Programmer - Atmel AVR - JTAG algorithms only                           |
| <b>EPSILON5MK4(ARM)</b>      | - Portable ISP Programmer - for Atmel ARM Microcontrollers                             |
| <b>EPSILON5MK4(E2)</b>       | - Portable ISP Programmer for Serial (I2C) EEPROM memory devices                       |
| <b>PSU-9V1700mA(UN)</b>      | - External 9V DC 1.7A power supply for use with programmer                             |

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