

Production programming solutions for...

**AVR**<sup>®</sup> FLASH microcontrollers  
from **Atmel**<sup>®</sup>

**ISP** nano

High-Speed Production In-System Programming (ISP) Modules



The Equinox **ISPnano** range of programmers offers a scalable production **In-System Programming (ISP)** solution for **Atmel AVR<sup>®</sup> FLASH microcontroller** devices.

The programmers are designed for high-throughput production use with features including high-slew rate driver circuitry, fully **ESD** and **over-voltage** protected target programming I/O pins and local on-board storage of the target 'Flash / EEPROM images' to be programmed.

The **ISPnano** programmer range includes single channel, multiplexed and gang (concurrent) programming systems catering for single device / multi-device (microcontroller + Serial FLASH) Target Boards and also multi-PCB panel programming.

- Production-grade programming equipment
- Designed for high-throughput **In-System Programming (ISP)** of **Atmel AVR<sup>®</sup> FLASH microcontroller** devices
- **Scalable** programming solution - supports up to 32 concurrent programming channels (ideal for multi-PCB panels)
- High-speed production-orientated programming algorithms
- Supports programming of a microcontroller and serial memory device on the same Target Board
- Comprehensive **ESD** and **over-voltage** protection on all programmer I/O pins and communication ports






The Embedded Solutions Company

# ISP nano

## High-Speed Production In-System Programming (ISP) Modules

### AVR<sup>®</sup> - device support:

	<b>AVR<sup>®</sup> Classic</b> microcontrollers	AT90S, ATmega, AT90USB, AT90CAN, AT90PWM, ATmegaxxxxRFR2, ATA66xx RF modules
	<b>tinyAVR<sup>®</sup></b> microcontrollers	ATtinyxx (SPI) ATtinyxx (TPI)
	<b>AVR<sup>®</sup> XMEGA</b> microcontrollers	ATxmega (PDI interface only)

### AVR<sup>®</sup> - programming features:

- **Standalone Mode** - supports high-speed programming of the **AVR<sup>®</sup>** on-chip **FLASH / EEPROM** areas, **'Configuration Fuses'** and **'Security Lock bits'** from a single **'standalone programming project'** (no PC required)
- **AVR<sup>®</sup>** - Hardware programming interfaces supported: **SPI LV (ISP), JTAG, JTAG chain, XMEGA PDI, ATtiny TPI, ATtiny HV**
- Supports high-speed **'SPI (ISP) mode'** programming using automatic reconfiguration of the internal RC oscillator.
- Supports **'Internal RC oscillator calibration'** with +/-1% accuracy (optional)
- Supports import of **'Atmel ELF files'** making initial project setup straightforward

### Programmer Control Methods:

The **ISP nano** programmer can be controlled via many different methods including...



#### 'Standalone - Operator Start mode'

An operator can manually commence a programming operation via either the **START** push-button or a Remote Keypad.



#### 'Standalone - Fixture Jig / Lid Switch mode'

Closing of the programming fixture lid triggers the execution of a programming project. (can be standalone or PC controlled)



#### 'ASCII Text Communications (Serial Protocol)'

This simple ASCII protocol can be used to control the programmer from a PC or any other control system eg. PLC.



#### 'EDS - Development Mode'

This is a simple yet powerful **'development interface'** supporting generation of 'programming projects' and interactive testing of the target device programming under PC control.



#### 'Production ISP Monitoring Application'

Controls up to 32 programmers from a single PC. Comprehensive data-logging of all programming operations.



#### 'ActiveX control'

Supports direct control of the programmer from any customer Windows application via an 'Equinox Library' of functions.



#### 'Console Application'

Supports both low-level and high-level control from any customer Windows application by shelling to a console application.



ISP nano Series III



ISP nano Series III - ATE



ISP nano Series IV - ATE



ISP nano MUX - Multiplexed Programming System  
Available as 2, 4 & 8 channels

### Ordering information:

Please select the require **'ISP nano programmer'** via our website. Product brochures are available for download.

<b>ISP nano-UPG7</b>	- Atmel <b>AVR - JTAG</b> interface - Device Library
<b>ISP nano-UPG17</b>	- Atmel <b>AVR - SPI (ISP)</b> interface - Device Library
<b>ISP nano-UPG18</b>	- Atmel <b>XMEGA AVR - PDI</b> interface - Device Library
<b>ISP nano-UPG23</b>	- Atmel <b>ATtiny AVR - TPI</b> interface - Device Library

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