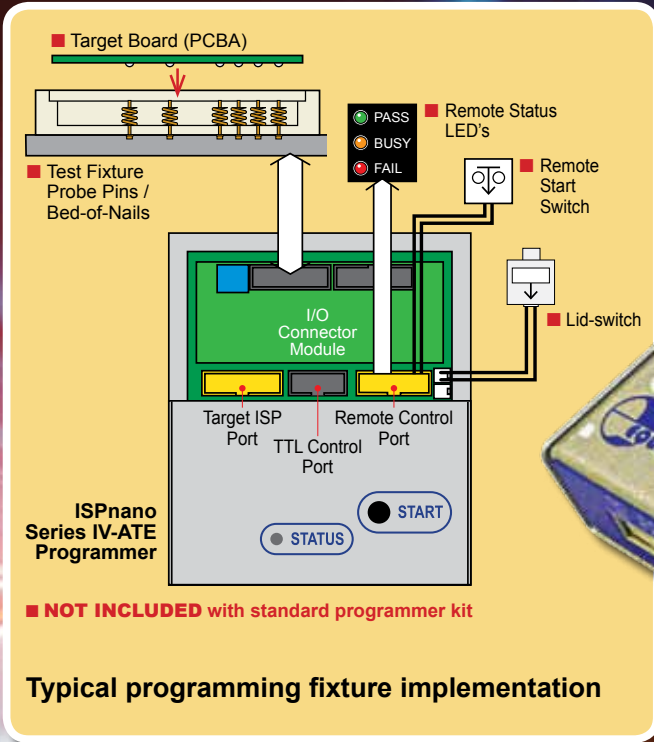


ISP nano

Series IV - ATE

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



The '**ISP nano Series IV-ATE**' is a state-of-the-art Production ISP Programmer designed for high-speed In-System Programming (ISP) of FLASH Microcontrollers and Serial Memory devices. It has been specially developed to allow simple integration with **Automatic Test Equipment (ATE)**.

- High-speed In-System Programming Module - designed for production
- Compact physical size ideal for integration into ATE / Test Fixtures
- Wide ranging Device Support capability
- Interchangeable I/O Connector Modules (IOMODx) to suit any connection system
- Scalable solution - up to 32 programmers can be networked to a single controlling PC (ideal for multi-PCB panel programming)
- Supports automated relay switching of all Target System I/O and power signal lines between an external ATE / ICT system and the programmer (requires IOMOD2 module)
- Supports both programming and In-circuit Testing (ICT) on the same fixture
- Dedicated opto-isolated 'ATE Interface' allows the ATE / ICT to control the operation of programmer.

PRODUCTION PROGRAMMING

STANDALONE PROGRAMMING

IN-CIRCUIT TESTING (ICT)

RELAY SIGNAL ISOLATION

FIRMWARE UPGRADEABLE

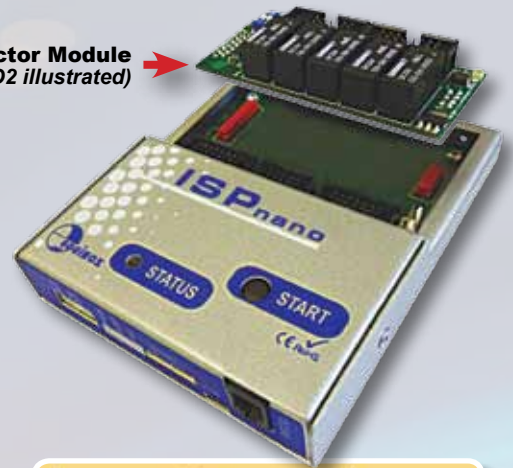


The Embedded Solutions Company

ISP nano

Series IV - ATE

I/O Connector Module
(IOMOD2 illustrated)



Programming Interfaces:

- Supports most ISP hardware interfaces / protocols including JTAG, ARM SWD (Serial Wire Debug), SPI, I2C, XMEGA AVR PDI, ATtiny AVR TPI, ATtiny AVR HV mode, 8051 UART Bootloader, ams1-wire, ams UART
- Dedicated 2-wire I2C serial port
- Dedicated 2-wire XMEGA PDI / ATtiny TPI serial interface port
- Supports high-speed ARM microcontroller programming via both JTAG and SWD (Serial Wire Debug) interfaces
- Very fast programming speeds suitable for high-throughput production environments
- Individually configurable programmer I/O pins
- All programmer I/O lines are fully **ESD** and **over-voltage** protected
- Supports programming of target ICs between 1.8 and 5.0V

Target Signal Routing:

- Interchangeable **'I/O connector Modules'** (IOMODx) to connect to Target System (DUT).
- Relay isolation of all programming and power signals from the Target System (DUT) when not in programming mode
- External **ICT / ATE** is routed to the Target System by default

Control methods:

- PC control via RS232, RS485 or USB port
- Network up to 32 x ISPnano programmers to a PC via RS485 bus
- Standalone operation (no PC required)
- **Remote System Control** e.g. PLC, ICT, ATE - using **ASCII (ATC)** protocol
- Opto-isolated **TTL Control Port** for remote PLC control

Standalone Mode:

- Supports loading of up to 64 x **'Standalone Programming Projects'** into the programmer memory (16 Mbytes capacity)
- Single-button **auto-program** operation allows repetitive execution of the selected project
- Standalone project execution can be triggered by Start button, Fixture Lid Switch, Target Sensing Circuit, Remote Keypad or **ASCII Text**

Communications protocol (for remote control)

Power control:

- Programmable **Target VCC** Supply: 1.8V - 5.0V @ 480 mA
- Programmable **Target VPP** Supply: 6.5V - 13.5V @ 100mA
- Programmer controlled **'Target Discharge Circuit'**
- Target voltage and current monitored by programmer
- Target Board short-circuit monitoring
- Power supply input: 9 to 24V

Device Support Libraries:

A separate **'Device library'** must be purchased per programmer for each required **'device family'**.

- Atmel AVR SPI, AVR JTAG, XMEGA PDI, ATtiny TPI, ATtiny HV microcontrollers
- ams - Magnetic Rotary Position Sensors
- ARM microcontrollers (via JTAG or SWD interface) - ARM7TDMI®, Cortex M0, Cortex M3, Cortex M4
- Selected 8051 FLASH microcontrollers
- Serial EEPROM memories (SPI and I2C)
- Serial FLASH memories (SPI)
- Atmel / Adesto Serial DataFLASH™
- Z-Wave SOC's and modules

Software (as standard):

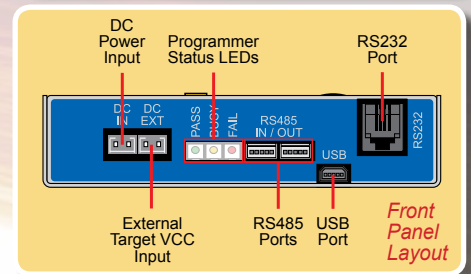
- **EQTools** - creates **'Standalone Programming Projects'**
- **EDS** - Development Mode for testing under PC control
- **Upload Wizard** - uploads projects to the programmer
- **ASCII Text Communications** protocol (for remote control)

Other Features:

- Backwards compatible with the **'ISPnano Series III'** programmer

Typical applications:

- Medium to high-volume **production programming**
- Integrated **In-Circuit Testing (ICT)** programming fixtures with testing and programming on the same fixture
- **PLC** controlled programming fixtures
- **Multi-PCB panel programming** (requires multiple programmers)



System Contents:

The picture shows the typical contents of the **ISP nano Series IV-ATE** programming kit. The programmer is also available separately without any power supply or cables.

Ordering information:

- ISP nano-S4ATEKIT** - Full programming system including ISP nano Series 4 programmer, selected IOMODx connector module(s), power supply, cables and EQTools configuration software.
- This kit does NOT include any **'Device libraries'**. One or more **'Device libraries'** must be purchased separately.
- ISP nano-S4ATE** - This is just the programmer module itself without any other items.

Device Support Libraries:

This programmer is capable of supporting programming of many different **'Device families'**. A separate **'Device library'** must be purchased per programmer for each required device family.

IO Connector Modules:

The programmer can be used with various **IO Connector Modules (IOMODx)** to enable connection to the target system via any connection system. A range of **IOMODx** connector modules is available. The programmer is shipped with an **IOMOD4** and **IOMOD7** connector module as standard.



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