PPM4

PRODUCTION ISP PROGRAMMER

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

Selecting a project using the PPM4-MK1 programmer LCD display and 4 button keypad in **Standalone Mode**

The Equinox **PPM4-MK1** is a state-of-the-art **Production ISP Programmer** designed for high-speed **In-System Programming (ISP)** of FLASH microcontrollers and serial memory devices in a production environment. It supports programming of devices by most interfaces including SPI, JTAG, JTAG chain, SWD, I2C (2-wire) and UART Boot Loader. The fastest possible programming times are guaranteed due to a combination of highly optimised algorithms, local storage of Project Data and high slew-rate Line Driver Circuitry.

- **Production In-System (ISP) Programmer**
- **Designed for high-throughput production programming environments**
- **Supports In-system Programming (ISP) of many different programmable microcontrollers and serial memory devices**
- **Supports programming via SPI, JTAG, JTAG chain, I2C and UART programming interfaces**
- **Suitable for Standalone, Desktop or Programming Fixture use**
- **Supports 'Standalone' operation - no PC required after programmer has been configured**
- **Capable of storing up to 64 completely independent 'Standalone Programming Projects'.**
- **Interchangeable 'I/O Driver' and 'I/O Connector' modules**
- **All programmer I/O lines are fully ESD and over-voltage protected**

CE RoHS

STANDALONE PROGRAMMING

PRODUCTION PROGRAMMING

FIRMWARE UPGRADEABLE

EQUINOX
TECHNOLOGIES
EQUINOX TECHNOLOGIES UK LIMITED

The Embedded Solutions Company

PPM4

PRODUCTION ISP PROGRAMMER

Rear panel of the PPM4

Labels: DC Power Input, USB Port, RS-232 Communications Port, RS-485 Input, RS-485 Output

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
- Dedicated 2-wire I2C serial port
- Interchangeable **'I/O Connector Modules'**
- User replaceable **'Line Driver Circuit'** module (in case of damage)
- 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 3.0 and 5.0V
- Programmable frequency generator output on SCK2 pin - supports external clocking of AVR microcontrollers to speed up programming

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
- **TTL Control Port** for remote PLC control

Standalone Mode:
- Supports loading of up to 64 x **'Standalone Programming Projects'** into the programmer memory (8 Mbytes capacity)
- Standalone project execution can be triggered by local keypad, Fixture Lid Switch, Target Sensing Circuit, Remote Keypad or **ASCII Text Communications** protocol (for remote control)
- Project selection via the keypad and display (no PC required)
- Single-button **auto-program** operation allows repetitive execution of the selected project

Power control:
- Programmable **Target VCC** Supply: 3.0V - 5.0V @ 480 mA
- Target voltage and current monitored by programmer
- Fixed +12V **Target VPP** voltage generator for ATtiny HV devices
- Target Board short-circuit monitoring
- Power supply input: 9.0V to 24.0V

Device support:
- Atmel AVR SPI, AVR JTAG, XMEGA PDI, ATtiny TPI, ATtiny HV microcontrollers
- 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™
- Sigma - 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)

Additional features:
- Backwards compatible with PPM3-MK2 programmer
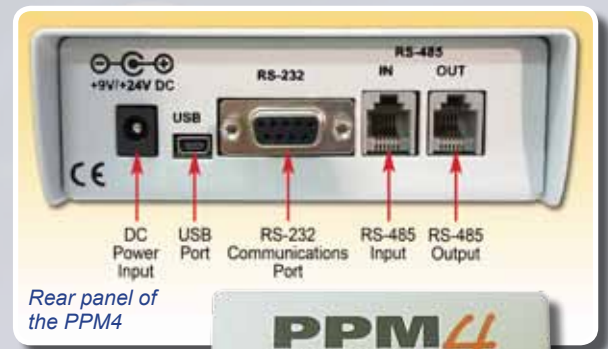- Remote Status LED Port

Typical applications:
- Medium to high volume **production programming** test fixtures
- Standalone desktop programming
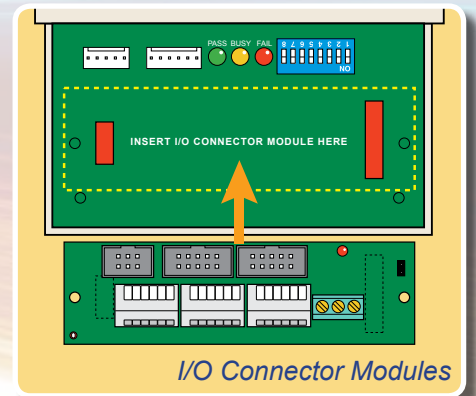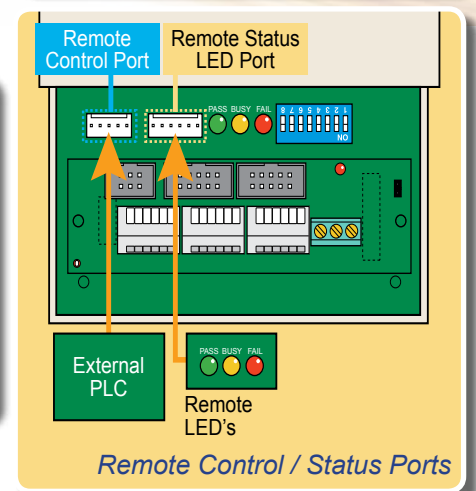- Remote PLC controlled programming fixtures

I/O Connector Modules

INSERT I/O CONNECTOR MODULE HERE

Remote Control Port, Remote Status LED Port, External PLC, Remote LED's

Remote Control / Status Ports

SELECT PROJECT PROJECT 1

030402 2.3.1.7 PROJECT 1

070101 3.4.2.3 PROJECT 2

240402 2.1.2.5 PROJECT 64

System Contents:
The picture shows the typical contents of the **PPM4-MK1** production ISP programmer kit.

Ordering information:

PPM4-MK1(UN)	- PPM4-MK1 Progarmmer Kit including AVR SPI, 8051 and Sigma 300 series device support
PPM4-MK1 (EQ-SFM-MAX-V1.3)	- PPM4-MK1 Progarmmer Kit including EQ-SFM-MAX-V1.3 Driver Module
EQ-SFM-1	- Standard I/O Driver Module (SFM) for PPM3-MK2 Programmer
EQ-SFM-MAX-V1.3	- High-speed I/O Driver Module (SFM) for PPM3-MK2 / PPM4-MK1 Programmer

EQUINOX TECHNOLOGIES
EQUINOX TECHNOLOGIES UK LIMITED

The Embedded Solutions Company