Overview

The Equinox Production Programming Module or PPM is a high-end programming module capable of fast in-system programming (ISP) of Atmel AVR and AT89S microcontrollers in a production environment. It is possible to network up to 16 PPM's to a single PC using an RS-485 bus making very high programming throughputs possible. Each PPM is capable of operating completely independently of other PPM's on the network allowing programming stations to operate in an asynchronous fashion.

The PPM is currently av ailable as an integrated module in the following Equinox Production ISP systems:

Equinox programmer	Part Description	Picture of programming system
pro101	Single channel Production ISP System	
pro104	4-channel Eurocard Rack Production ISP System	
pro108	8-channel Eurocard Rack Production ISP System	

Please note:
- Each of the above systems contains one or more identical PPM modules.
- A PPM module has a unique 'Node Address' on the RS-485 network in the range of 0 to 15.

System Contents

PRO101

Hardware
- **PRO101 Programmer**
- **PPM Test Module**
- **PPM Programming Adaptor Board**
- **PPM Programmer** *(for updating PPM firmware)*
- **Mains Power Supply Adaptor**
- **9-way to 25-way Adaptor**
- **9-way Female to 9-way Male Cable**
- **25-way Male to Female cable**
- **25-way Male to 9-way Female Cable**
- **ISP Cable** *(10-way IDC to 10-way IDC)*

Software
- **EQTools**
  (Project Management Utility for Equinox Production ISP Programmers)
- **ISP-PRO**
  (Production ISP Monitoring Software)

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System Contents Continued

PRO104

Hardware

- **PRO104 Programmer**
- **RS-232 to RS-485 Convertor**
- **PPM Test Module**
- **PPM Programming Adaptor Board**
- **PPM Programmer** *(for updating PPM firmware)*
- **Mains Power Supply Adaptor** *(for RS-232 to RS-485 Convertor)*
- **9-way to 25-way Adaptor**
- **RS-485 Cables**
- **9-way Female to 9-way Male Cable**
- **25-way Male to Female cable**
- **25-way Male to 9-way Female Cable**
- **ISP Cable** *(10-way IDC to 10-way IDC)*
- **IEC Power Cable**

Software

- **EQTools** *(Project Management Utility for Equinox Production ISP Programmers)*
- **ISP-PRO** *(Production ISP Monitoring Software)*

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System Contents Continued

PRO108

Hardware
- **PRO108 Programmer**
- **RS-232 to RS-485 Convertor**
- **PPM Test Module**
- **PPM Programming Adaptor Board**
- **PPM Programmer** *(for updating PPM firmware)*
- **Mains Power Supply Adaptor** *(for RS-232 to RS-485 Convertor)*
- **9-way to 25-way Adaptor**
- **RS-485 Cables**
- **9-way Female to 9-way Male Cable**
- **25-way Male to Female cable**
- **25-way Male to 9-way Female Cable**
- **ISP Cable** *(10-way IDC to 10-way IDC)*
- **IEC Power Cable**

Software
- **EQTools** *(Project Management Utility for Equinox Production ISP Programmers)*
- **ISP-PRO** *(Production ISP Monitoring Software)*

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