The Dataman 448Pro2 is a super fast PC based gang programmer with four independent 48-pin ZIF sockets, ISP capabilities and USB 2.0 connectivity. The 448Pro2 is built to meet the demands of super fast high volume production programming with minimal operator effort.

Supporting over 88,000 (April 2015) devices with new support being added monthly, the Dataman 448Pro2 can program without the need for family-specific modules, giving you the freedom to choose the optimal device for your design. Independent programming options combine with device insertion tests and a user friendly interface to give higher programming yields and reduced failure rates.

Hardware

General

- The 448Pro2 programmer offers the same advanced features as the 448Pro+ programmer but with up to 70% faster programming of high-capacity memory devices.

- FPGA based totally reconfigurable 48 powerful TTL pindrivers provide H/L/pull_up/pull_down and read capability for each pin of the socket. Advanced pindrivers incorporate high-quality high-speed circuitry to deliver signals without overshoot or ground bounce for all supported devices. Pin drivers operate down to 1.8V so you'll be ready to program the full range of tomorrow's advanced low-voltage devices.

- Each programming module performs device insertion tests and contact checks before it programs each device. These capabilities, supported by overcurrent protection and signature-byte check, help prevent chip damage due to operator error.

- Selftest capability allows diagnostics in the software to thoroughly check the health of the programmer.

- Built-in protection circuits eliminate damage of the programming module and/or programmed device due to environment or operator failure. All ZIF socket pin inputs of the Dataman 448Pro2 programmer are protected against ESD up to 15kV.

- The 448Pro2 programmer performs programming verification at the marginal levels of supply voltage, improving programming yield and guaranteeing long data retention.

- Wide range of socket converters are available to handle devices in PLCC, SOIC, PSOP, SSOP, TSOP, TSSOP, TQFP, QFN (MLF), SDIP, BGA and other packages.

- Up to 70% faster programming of high-capacity memory devices

- Over 88,000 (April 2015) devices supported with new devices added monthly

- Independent modules supporting concurrent programming

- ISP capable using the JTAG interface

- Hi-speed USB 2.0 connectivity

- Easy to use software compatible with the latest operating systems including Windows 8

- Comprehensive 3 years parts and labour warranty

- Free life-time software updates

Programmer Specification

- 4 x universal programming modules (4 x 48-pin DIL ZIF sockets and 4 x ISP connectors)
- Power and operation status LEDs
- USB 2.0 high-speed compatible port
- Protection against surge and ESD on power supply input
- Banana jack for ESD wrist strap connection
- Banana jack for connection to ground

Module Specification
Base Unit (DAC)

- On-board intelligence: powerful microprocessor and FPGA based state machine
- Three D/A converters for VCCP, VPP1, and VPP2, controllable rise and fall time
- VCCP range 0..8V/1A
- VPP1, VPP2 range 0..26V/1A
- Selftest capability

ZIF Socket

- 48-pin DIL ZIF socket accepts both 300/600 mil devices up to 48-pin
- Pindrivers: 48 universal
- VCCP/VPP1/VPP2 can be connected to each pin
- Perfect ground for each pin
- FPGA based TTL driver provides H, L, CLK, pull-up, pull-down on all pindriver pins
- Analog pindriver output level selectable from 1.8V up to 26V
- Current limitation, overcurrent shutdown, power failure shutdown
- ESD protection on each pin (IEC1000-4-2: 15kV air, 8kV contact)
- Continuity test: each pin is tested before every programming operation

ISP Connector

- 20-pin male type with missinsertion lock
- 6 TTL pindrivers, provides H, L, CLK, pull-up, pull-down; level H selectable from 1.8V up to 5V to handle all (including low-voltage) devices
- 1x VCCP voltage (range 2V..7V/100mA), can be applied to two pins
- Programmed chip voltage (VCCP) with both source/sink capability and voltage sense
- 1x VPP voltage (range 2V..25V/50mA), can be applied to six pins
- Target system supply voltage (range 2V..6V/250mA)
- ESD protection on each pin (IEC1000-4-2: 15kV air, 8kV contact)
- Two output signals, which indicate state of work result = LED OK and LED Error (active level: min 1.8V)
- Input signal, switch YES! equivalent (active level: max. 0.8V)

Software:
User Interface
Production Mode Control

- This part of the software is focused to the easy monitoring of high-volume production operations.
- Operator-friendly control software combines many powerful functions with ease of use. Graphic user interface provides an overview of important information, reducing the burden on the operator with unnecessary details.
- Project files are used to control the 448Pro2 and contain user data, chip programming setup, chip configuration, auto programming command

sequence. This helps minimize operator error as the project file is normally created by an engineer and then passed to the operator. The optional protected mode can be set avoiding unwanted changes to the project file.

- Each chip may be programmed with different data such as serial number, configuration and calibration information.

Engineering Mode Control

- This part of the software is focused to the quick and easy preparation of the project file for usage in the production mode control software.
- Each programming module is driven by an easy-to-use control program with pull-down menus, hot keys and on-line help. Selecting a device is performed by its class, by manufacturer or simply by typing a fragment of the vendor name and/or part number.
- Standard device-related commands (read, blank check, program, verify, erase) are enhanced by test functions (insertion test, signature-byte check) and additional special functions (auto-increment serialisation, production mode - programming starts immediately after chip is inserted).
- All known data formats are supported. Automatic file format detection and conversion performed during loading of file.
- The software provides extensive information about programmable devices including detailed drawings of all available packages. The software also provides explanations of chip labelling (prefixes and suffixes).

The Dataman 448Pro2 supports over 88,000 (April 2015) of the most popular devices in use today - with future devices being added monthly. Dataman 448Pro2 coverage includes the following device types:

Programmer (ZIF Socket)
EPROM, EEPROM, Flash EPROM, NAND Flash, LBA-NAND, mDOC H3, multi-chip devices, FRAM, MRAM, NV RAM, PROM, Serial E(E)PROM, Serial Flash, Configuration (EE)PROM, 1-Wire E(E)PROM, PLD, FPGA, Clocks, Microcontrollers

Programmer (ISP Connector)
Serial E(E)PROM, 1-Wire E(E)PROM, Serial Flash, Microcontrollers, PLD, FPGA

Package Includes:

- **Dataman 448Pro2 Super Fast Gang ISP Production Programmer**
  Dimensions: 361 x 234 x 56mm (14.2 x 9.2 x 2.2inches)
  Weight: 3.5Kg (7.72lbs)
  Operating voltage: 100-240V AC
  Power consumption: max. 60W active
- Moulded USB cable
- ISP cable (x4)
- Diagnostic POD for selftest of the programmer (x1)
- Diagnostic POD for selftest of the ISP connector (x1)
- Anti-dust cover for ZIF socket (x4)
- ESD wrist strap with cord and banana plug
- Vacuum pen
- User manual
- Software
- Transport case
- Optional range of adapters and socket converters also available

Warranty and Support

- 30 day money back guarantee* - If you don't like it, send it back.
- Three year guarantee - Three years parts and labour warranty, on the 448Pro2 universal gang programmer.
- Life-Time Technical Support - 448Pro2 technical support is available free via our website and telephone helpdesk for life.
- "Life-Time Software Updates – 448Pro2 software updates are available free via our website for life.

*Applies to orders from UK/US offices only

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