



- Up to 70% faster programming of high-capacity memory devices
- Over 51,000 (Jan 2010) devices supported with new devices added monthly
- Intelligent pin drivers operate down to 1.8V so you'll be ready to program the full range of tomorrow's advanced low-voltage devices
- ISP capable using the JTAG interface
- Hi-speed USB 2.0 connectivity
- Easy to use software compatible with the latest operating systems including Windows 7
- Comprehensive 3 years parts and labour warranty
- Free life-time software updates

The Dataman 48Pro2 is a super fast PC based universal 48-pin programmer with ISP capabilities and USB 2.0 / parallel connectivity. The 48Pro2 is built to meet the demands of development labs and field engineers for super fast universal programming.

Supporting over 51,000 (Jan 2010) devices with new support being added monthly, the Dataman 48Pro2 can program without the need for family-specific modules, giving you the freedom to choose the optimal device for your design. Using the built-in, in-system programming (ISP) connector, the programmer is able to program ISP compatible chips in circuit.

## Hardware

### General

- The 48Pro2 programmer offers the same advanced features as the 48Pro+ 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. Improved pin drivers operate down to 1.8V so you'll be ready to program the full range of tomorrow's advanced low-voltage devices.
- The programmer performs device insertion and contact tests before programming 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 to the programmer and/or programmed devices due to environment or operator failure. All the inputs of the 48Pro2 programmer, including ZIF socket, connection to PC and power supply input are protected against ESD up to 15kV.
- The 48Pro2 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.

### Programmer Specification

- 1 x universal programming module (1 x 48-pin DIL ZIF socket and 1 x ISP connectors)
- Power and operation status LEDs
- USB 2.0 high-speed compatible port
- FPGA based IEEE 1284 slave printer port
- Protection against surge and ESD on power supply input and parallel port connection
- 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

- The programmer 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 versatile auto-increment function allows each programmed device to be assigned an individual or incrementing serial number. This function also enables the operator to use serial numbers or device identification signatures from an external 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 software provides full information for ISP implementation: Description of ISP connector pins, recommended target design and other necessary details.
- The remote control feature allows the software to be flow controlled by another application - either using .BAT file commands or DLL file (C/PAS/VBASIC/.NET).
- Multiple devices can be programmed and tested via a JTAG chain: JTAG chain (ISP-Jam), JTAG chain (ISP-VME), JTAG chain (ISP-SVF) or JTAG chain (ISP-STP).
- Multiple 48Pro2 programmers can be operated from the same PC creating a high volume production environment with all the benefits of the standard 48Pro2. Up to four 48Pro2 programmers can be connected simultaneously providing a highly scalable gang programming system.

The Dataman 48Pro2 supports over 51,000 (Jan 2010) of the most popular devices in use today - with new devices being added monthly. Dataman 48Pro2 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 48Pro2 Super Fast Universal ISP Programmer**  
Dimensions: 195 x 140 x 55mm (7.7 x 5.5 x 2.2inches)  
Weight: 0.9Kg (1.98lbs)  
Operating voltage: 100-240V AC  
Power consumption: max. 20W active / approx. 2W sleep
- Moulded USB cable
- ISP cable
- Diagnostic POD for selftest of the programmer
- Diagnostic POD for selftest of the ISP connector
- Anti-dust cover for ZIF socket
- User manual
- Software
- 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 48Pro2 universal device programmer.
- Life-Time Technical Support - 48Pro2 technical support is available free via our website and telephone helpdesk for life.
- Life-Time Software Updates - 48Pro2 software updates are available free via our website for life.

\*Applies to orders from UK/US offices only

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