

Dataman *New Product Specification:*

Dataman 48Pro Universal ISP Device Programmer



The Dataman 48Pro is a universal 48pin driver PC based programmer with ISP capabilities and USB 2.0 connectivity.

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Features:

First member of the new USB 2.0 compatible generation of Windows based programmers built to meet the strong demand of the developer's community for fast and reliable universal ISP programmers.

Supports all kinds of types and silicon technologies of today and tomorrow programmable devices without family-specific module. You have freedom to choose the optimal device for your design. Using built-in in-circuit serial programming (ISP) connector, the programmer is able to program ISP capable chips in circuit.

Dataman 48Pro isn't only a programmer, but also a tester of TTL/CMOS logic ICs and memories. Furthermore, it allows generation of user-definable test pattern sequences.

Extremely fast programming due to high-speed FPGA driven hardware and execution of time-critical routines. As a result, when used in production this one-socket-programmer waits for an operator, not the operator for the programmer.

Dataman 48Pro interfaces with IBM compatible PC's through USB 2.0/1.1 or any standard parallel port, including the IEEE1284 (ECP/EPP) high-speed parallel port. This allows compatibility with any PC, from latest notebook to an older desktop.

Hardware:

- **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 today's advanced low-voltage devices.
- The programmer performs device **insertion tests** (wrong or backward position) and **contact checks** (poor contact pin-to-socket) before it programs each device. These capabilities, supported by **overcurrent protection** and **signature-byte check** help prevent chip damage due to operator error.
- Built-in **protection circuits** eliminates damage of programmer and/or programmed device due to environment or operator failure. All the inputs of the 48Pro programmer, including the ZIF socket, connection to PC and power supply input, are **protected against ESD** up to 15kV.
- Dataman 48Pro programmer performs programming **verification** at the **marginal level** of supply voltage, which, obviously, improves programming yield, and guarantees long data retention.
- Various **socket converters** are available to handle device in PLCC, SOIC, PSOP, SSOP, TSOP, TSSOP, TQFP, QFN (MLF), SDIP, BGA and other packages.

Software:

- Programmer is driven by an **easy-to-use** control program with pull-down menu, hot keys and on-line help. Selecting of device is performed by its class, by manufacturer or simply by typing a fragment of vendor name and/or part number.
- **Standard** device-related commands (read, blank check, program, verify, erase) are boosted by some **test functions** (insertion test, signature-byte check), and some **special functions** (autoincrement, production mode - start immediately after insertion of chip into socket).
- All known data formats are supported. Automatic file format detection and conversion during loading of file.
- The rich-featured **auto-increment function** enables one to assign individual serial numbers to each

programmed device - or simply increments a serial number, or the function enables one to read serial numbers or any programmed device identification signatures from a file.

- The software also provides extensive information about programmable devices including **detailed drawings of all available packages**. The software also provides **explanations of chip labelling** (prefixes and suffixes) for each of the supported chips.
- The software provides full information for ISP implementation: Description of ISP connector pins for currently selected chip, recommended target design around in-circuit programmed chip and other necessary information.
- The remote control feature allows the PG4UW software to be controlled by other application – either using .BAT file commands or using DLL file.
- **Jam files** of JEDEC standard JESD-71 are interpreted by **Jam Player**. Jam files are generated by design software which is provided by manufacturer of respective programmable device. Chips are programmable in-ZIF or through ISP connector (IEEE 1149.1 Joint Test Action Group (JTAG) interface).
- **VME files** are interpreted by VME Player. VME file is a compressed binary variation of SVF file and contains high-level IEEE 1149.1 bus operations. VME files are generated by design software which is provided by the manufacturers of respective programmable devices. Chips are programmable in-ZIF or through ISP connector (IEEE 1149.1 Joint Test Action Group (JTAG) interface).
- Multiple devices are possible to program and test via JTAG chain: JTAG chain (ISP-Jam) or JTAG chain (ISP-VME).
- Multiple 48Pro programmers can be connected to the same PC (through USB port) achieving an **extremely powerful multiprogramming system**, which **support as many chips, as are supported by 48Pro programmer** and without obvious decreasing of **programming speed**. Concurrent multiprogramming is also supported allowing each programmer to work independently. If necessary, each programmer can simultaneously program a different chip.
- Keeping your programmer software up to date can be a costly business with some programmers. Dataman offers completely FREE software updates whenever you need them. The latest software is always available from our website.

Device Support:

The Dataman 48Pro supports over 21,000 of the most popular devices in use today - with future devices being added monthly.

Programmer, in ZIF socket

- EPROM: NMOS/CMOS, 2708*, 27xxx and 27Cxxx series, with 8/16 bit data width, full support for LV series
- EEPROM: NMOS/CMOS, 28xxx, 28Cxxx, 27EExxx series, with 8/16 bit data width
- Flash EPROM: 28Fxxx, 29Cxxx, 29Fxxx, 29BVxxx, 29LVxxx, 29Wxxx, 49Fxxx series, from 256Kbit to 32Mbit, with 8/16 bit data width, full support for LV series
- Serial E(E)PROM: 24Cxxx, 24Fxxx, 25Cxxx, 45Dxxx, 59Cxxx, 25Fxxx, 25Pxxx, 85xxx, 93Cxxx, NVM3060, MDAxxx series, full support for LV series
- Configuration (EE)PROM: XCFxxx, XC17xxxx, XC18Vxxx, EPCxxx, AT17xxx, 37LVxx
- 1-Wire E(E)PROM: DS1xxx, DS2xxx
- PROM: AMD, Harris, National, Philips/Signetics, Tesla, TI
- NV RAM: Dallas DSxxx, SGS/Inmos MKxxx, SIMTEK STKxxx, XICOR 2xxx, ZMD U63x series
- PLD: Altera: MAX 3000A, MAX 7000A, MAX 7000B, MAX 7000S, MAX7000AE
- PLD: Lattice: ispGAL22V10x, ispLSI1xxx, ispLSI1xxxEA, ispLSI2xxx, ispLSI2xxxA, ispLSI2xxxE, ispLSI2xxxV, ispLSI2xxxVE, ispLSI2xxxVL, LC4xxxB/C/V/ZC, M4-xx/xx, M4A3-xx/xx, M4A5-xx/xx, M4LV-xx/xx
- PLD: Xilinx: XC9500, XC9500XL, XC9500XV, CoolRunner XPLA3, CoolRunner-II
- other PLD: SPLD/CPLD series: AMI, Atmel, AMD-Vantis, Gould, Cypress, ICT, Lattice, NS, Philips, STM, VLSI, TI
- Microcontrollers 48 series: 87x41, 87x42, 87x48, 87x49, 87x50 series
- Microcontrollers 51 series: 87xx, 87Cxxx, 87LVxx, 89Cxxx, 89Sxxx, 89LVxxx, all manufacturers, Philips LPC series
- Microcontrollers Intel 196 series: 87C196 KB/KC/KD/KT/KR/...
- Microcontrollers Atmel AVR: AT90Sxxxx, ATtiny, ATmega series
- Microcontrollers Cypress: CY8Cxxxxx
- Microcontrollers ELAN: EM78Pxxx
- Microcontrollers Microchip PICmicro: PIC10xxx, PIC12xxx, PIC16xxx, PIC17Cxxx, PIC18xxx, dsPIC series
- Microcontrollers Motorola: 68HC05, 68HC08, 68HC11 series
- Microcontrollers National: COP8xxx series
- Microcontrollers NEC: uPD78Pxxx series
- Microcontrollers Scenix (Uvicom): SXxxx series
- Microcontrollers SGS-Thomson: ST6xx, ST7xx, ST10xx series
- Microcontrollers TI: MSP430 and MSC121x series
- Microcontrollers ZILOG: Z86/Z89xxx and Z8xxx series

- Microcontrollers other: EM Microelectronic, Fujitsu, Goal Semiconductor, Hitachi, Holtek, Princeton, Macronix, Winbond, Infineon(Siemens), NEC, Samsung, Toshiba, ...

Programmer, through ISP connector

- Serial E(E)PROM: IIC series
- Microcontrollers Atmel: AT89Sxxx, AT90Sxxxx, ATtiny, ATmega series
- Microcontrollers Cypress: CY8C2xxxx
- Microcontrollers Elan: EM78Pxxx
- Microcontrollers EM Microelectronic: 4 and 8 bit series
- Microcontrollers Microchip PICmicro: PIC10xxx, PIC12xxx, PIC16xxx, PIC17xxx, PIC18xxx, dsPIC series
- Microcontrollers Motorola/Freescale: HC08 GT, LJ, QY, QT series
- Microcontrollers Philips: LPC series
- Microcontrollers TI: MSP430
- PLD: Lattice: ispGAL22xV10x, ispLSI1xxxEA, ispLSI2xxxE, ispLSI2xxxV, ispLSI2xxxVE, ispLSI2xxxVL, M4-xx/xx, M4LV-xx/xx, M4A3-xx/xx, M4A5-xx/xx, LC4xxxB/C/V/ZC
- Various PLD (also by JAM player/JTAG support):
Altera: MAX 3000A, MAX 7000A, MAX 7000B, MAX 7000S, MAX 9000, MAX II
Xilinx: XC9500, XC9500XL, XC9500XV, CoolRunner XPLA3, CoolRunner-II

Package support

- Package support includes DIP, PLCC, SOIC, PSOP, SSOP, TSOP, TSSOP, TQFP, QFN (MLF), SDIP, BGA and other
- Support all devices in DIP with default socket
- Support devices in non-DIP packages up to 48 pins with universal adapters
- Programmer is compatible with third-party adapters for non-DIP support

Specification:

Base unit, DACs

- USB 2.0 port
- FPGA based IEEE 1284 slave printer port, up to 1MB/s transfer rate
- 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
- Autocalibration
- Selftest capability
- Protection against surge and ESD on power supply input, parallel port connection

ZIF socket, pindriver

- 48-pin DIL ZIF (Zero Insertion Force) 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 1.8 V up to 26V
- Current limitation, overcurrent shutdown, power failure shutdown
- ESD protection on each pin of socket (IEC1000-4-2: 15kV air, 8kV contact)
- Continuity test: each pin is tested before every programming operation

ISP connector

- 10-pin male type with missinsertion lock
- 5 TTL pindrivers, provides H, L, CLK, pull-up, pull-down; level H selectable from 1.8V up to 5V to handle all (low-voltage including) devices.
- 1x VCCP voltage (range 2V..7V/100mA), can be applied to pins 1, 3
- Programmed chip voltage (VCCP) with both source/sink capability and voltage sense
- 1x VPP voltage (range 2V..25V/50mA), can be applied to pins 2,3,4,6,8,10
- Target system supply voltage (range 2V..6V/250mA)

Package Includes:

- Dataman 48Pro Universal ISP Production Programmer
 - Dimensions: 160x190x42 mm (16.3x7.5x1.7 inches)
 - Weight: 0.9kg (1.98 lb)
- Switching power adapter 110/240V AC/15V DC/1A
- Moulded USB and Parallel Cable
- ISP cable
- Diagnostic POD for self test of the programmer
- Anti-dust cover for ZIF socket
- User manual
- Software
- Transport case

- Optional range of [adapters and socket converters](#) also available

Warranty and Support:

The Dataman 48Pro universal ISP programmer comes with:

- **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 48Pro universal device programmer.
- **Life-Time Technical Support** - 48Pro technical support is available free via our website and telephone helpdesk for life.
- **Life-Time Software Updates** - 48Pro software updates are available free via our website for life.

Downloads:

You will require a PDF reader to view some of these files. To download Adobe Acrobat Reader for free, click the icon below.



Software - Download the **free** 48Pro software (9x/ME/NT/2000/XP): [ZIP format](#)

Manual - Download 48Pro manual: [PDF format](#)

Device List - View 48Pro supported devices list: [PDF format](#)

*Applies to orders from UK/US offices only.