

SmartProg2



Universal, ISP capable programmer

Short description:

- **18800** supported devices by 2.44 version of SW (15. Nov. 2007)
- small, fast and powerful universal programmer
- DIL40 ZIF socket, devices in DIL package up to 40 pins are supported without adapters
- connector for in-circuit programming (ISP)
- connection to PC: **USB port**
- USB 2.0 full speed and USB 1.1 compatible
- comfortable and easy to use control program, Windows 95/98/Me/NT/2000/XP/2003/XPx64 compatible
- free SW update, download from Internet
- power supply, cable and software included
- approved by CE laboratory to meet [CE](#) requirements
- warranty - 3 years

Available accessories:

- [socket converters](#)
- [Diagnostic POD for ISP connector](#)

Note: see also [SmartProg](#) programmer, that have identical features, but LPT port connection to PC.

Features

GENERAL

- SmartProg2 is the next member of new generation of Windows 95/98/ME/NT/2000/XP/2003/XP64 based ELNEC **universal programmers**. Programmer is built to meet the demands of development labs and field engineers for universal, but portable programmer.

- **SmartProg2** is a small, fast and powerful programmer of all kinds of programmable devices. Using build-in in-circuit serial programming (**ISP**) connector the programmer is able to program ISP capable chips in-circuit. SmartProg2 isn't only a programmer, but also a static RAMs **tester**.
- Provides **very competitive price** with excellent hardware design for reliable programming. Nice "**value for money**" in this class.
- **Very fast programming** due to high-speed FPGA driven hardware and USB 2.0 full speed port.
- SmartProg2 interfaces with the IBM compatible PC, portable or desktop personal computers through **USB port**, what is important for new, LPT-port-less computers (notebooks for example).

HARDWARE

- 40 **powerful TTL pindrivers** provide H/L/pull_up/pull_down and read capability for each pin of 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 test** (wrong device position in socket) and **contact check** (poor contact pin-to-socket) before it programs each device. These capabilities, supported by **signature-byte check** help prevent chip damage due to operator error.
- SmartProg2 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, SSOP, TSOP, TSSOP, TQFP, QFN (MLF) and other packages.

SOFTWARE

- Programmer is driven by an **easy-to-use** control program with pull-down menus, 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 enhanced by some **test functions** (insertion test, signature-byte check), and some **special functions** (autoincrement).
- All known data formats are supported. Automatic file format detection and conversion during loading of file.
- The rich-featured **autoincrement 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 provide a many information about programmed device. As a special, the **drawing of all available packages** are provided. The software provide also **explanation of chip labelling** (the meaning of prefixes and suffixes at the chips) for each supported chip.
- The software provide a 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.

CARE FOR THE CUSTOMERS

- It is important to remember that a support most of the new devices requires **only a software update** due to the SmartProg2 hardware. With our prompt service you can have a new device added to the list of supported devices within hours! See [AlgOR](#) (Algorithm On Request) service for details.
- **Free software updates** are available by [download](#) from our WEB site.
- **Keep-Current and AlgOR services, our next step towards customer satisfaction.**
 - [Keep-Current](#) service means, that ELNEC ships the latest version of programmer software and updated user documentation (Keep-Current package) to customer . The Keep-Current service is your hassle-free guarantee that you are doing the highest quality programming on ELNEC programmers, at minimal cost.
 - [AlgOR](#) (Algorithm On Request) service gives the user a tool to influence to amount and types of programmed devices as needed.
- Advanced design of the SmartProg2 programmer and careful manufacturing and burning allows us to provide a **three-year warranty** on parts and labor for the programmer (limited 25 000-cycle warranty on ZIF socket).

Specification

HARDWARE

Programmer

- two D/A converters for VCCP and VPP, controllable rise and fall time
- VCCP range 2V..7V/350mA
- VPP range 2V..25V/200mA
- USB 2.0/1.1 compatible interface
- autocalibration
- selftest capability

ZIF socket, pindriver

- 40-pin DIL ZIF (Zero Insertion Force) socket accepts both 300/600 mil devices up to 40-pins
- pindriver: 40 TTL pindrivers, specialized GND/VCC/VPP pindriver
- FPGA based TTL driver provides H, L, CLK, pull-up, pull-down on all pindriver pins; level H selectable from 1.8V up to 5V
- 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) (*1) and 1x VPP voltage (range 2V..25V/50mA)
- programmed chip voltage (VCCP) with both source/sink capability and voltage sense
- (*1) - *the programmer is not capable to supply a target system from VCCP pin. If you have such demand, use please a BeeProg programmer*

DEVICE SUPPORT

Programmer, in ZIF socket

- EPROM: NMOS/CMOS, 27xxx and 27Cxxx series, with 8/16 bit data width, full support of LV series (*1*2)
- EEPROM: NMOS/CMOS, 28xxx, 28Cxxx, 27EExxx series, with 8/16 bit data width, full support of LV series (*1*2)
- Flash EPROM: 28Fxxx, 29Cxxx, 29Fxxx, 29BVxxx, 29LVxxx, 29Wxxx, 49Fxxx series, with 8/16 bit data width, full support of LV series (*1*2)
- Serial E(E)PROM: 24Cxxx, 24Fxxx, 25Cxxx, 59Cxxx, 25Fxxx, 25Pxxx, 85xxx, 93Cxxx series, full support for LV series (*1)
- Configuration (EE)PROM: XCFxxx, 37LVxx, XC17xxxx, EPCxxx, AT17xxx, LV series including
- NV RAM: Dallas DSxxx, SGS/Inmos MKxxx, SIMTEK STKxxx, XICOR 2xxx, ZMD U63x series
- PLD: series: Atmel, AMD-Vantis, Cypress, ICT, Lattice, NS, ... (*1)
- microcontrollers 51 series: 87Cxxx, 87LVxx, 89Cxxx, 89Sxxx, 89LVxxx, LPC series from Atmel, Atmel W&M, Intel, Philips, SST, Winbond (*1*2)
- microcontrollers Atmel AVR: ATtiny, AT90Sxxx, ATmega series (*1*2)
- Microcontrollers Cypress: CY8Cxxxxx
- Microcontrollers ELAN: EM78Pxxx
- Microcontrollers EM Microelectronic: 4 and 8 bit series
- microcontrollers Microchip PICmicro: PIC10xxx, PIC12xxx, PIC16xxx, PIC17Cxxx, PIC18xxx, dsPIC series, 8-40 pins (*1*2)
- microcontrollers Scenix (Ubicom): SXxxx series

Programmer, through ISP connector

- Serial E(E)PROM: IIC series
- Microcontrollers Atmel: AT89Sxxx, AT90Sxxxx, ATtiny, ATmega series
- Microcontrollers Cypress: CY8C2xxxxx
- Microcontrollers Elan: EM78Pxxx
- Microcontrollers EM Microelectronic: 4 and 8 bit series
- Microcontrollers Microchip PICmicro: PIC10xxx, PIC12xxx, PIC16xxx, PIC17xxx, PIC18xxx, dsPIC series
- Microcontrollers Philips: LPC series

Notes:

- (*1) - suitable adapters are available for non-DIL packages
- (*2) - there exist only a few adapters for devices with more than 40 pins. Therefore, please, consider a more powerful programmer (LabProg+, BeeProg, JetProg), if you need to program devices with more than 40 pins
- for all supported devices see [actual DEVICE LIST](#)