



model: **UNP2 Universal Programmer**

### Short description

- small, fast and powerful universal programmer
- DIL40 ZIF socket, devices in DIL package up to 40 pins are supported without adapters
- in-circuit serial programming (ISP) capability included
- connection to PC - parallel (printer) port
- high-speed IEEE 1284 printer-port interface, up to 1MB/sec. transfer rate
- easy to use control program, DOS and Windows 95/98/Me/NT/2000/XP compatible
- power supply, cable and software included
- approved by CE laboratory to meet CE requirements



### Features

#### GENERAL

- UNP2 is next member of new generation of Windows 95/98/ME/NT/2000/XP based MEC **universal programmers**. Programmer is built to meet the demands of the development labs and field engineers to universal, but portable programmer.
- **UNP2** 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. UNP2 isn't only programmer, but also **SRAM tester**.
- Provides **very competitive price** but excellent hardware design for reliable programming. Nice "**value for money**" in this class.
- **Very fast programming** due to high-speed FPGA driven hardware and support of IEEE1284 (ECP/EPP) high-speed parallel port. Surely faster than competitors in this category.
- UNP2 interfaces with the IBM PC, AT or above, portable or desktop personal computers through any **standard parallel (printer) port** (no special interface card needed). Therefore you can take programmer and move it to another PC without assembly/disassembly of PC.

#### 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.
- UNP2 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 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 load of file.
- The rich-featured **autoincrement function** enables to assign individual serial numbers to each programmed device - or simply increments a serial number, or the function enables to read serial numbers or any programmed device identification signatures from a file.

## Specification

## HARDWARE

### Programmer

- two D/A converters for VCCP and VPP, controllable rise and fall time
- VCCP range 0..7V/350mA
- VPP range 0..25V/200mA
- FPGA based IEEE 1284 slave printer port, up to 1MB/s transfer rate
- 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, universal GND/VCC/VPP pindriver
- FPGA based TTL driver provides H, L, CLK, pull-up, pull-down on all pindriver pins, level H selectable from 1.8 V up to 5V
- in-circuit serial programming (ISP) capability included
- continuity test: each pin is tested before every programming operation

## DEVICE SUPPORT

### Programmer

- 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: 17Cxxx, 24Cxxx, 24Fxxx, 25Cxxx, 59Cxxx, 85xxx, 93Cxxx, full support of LV series(\*1)
- Configuration PROM: 17xxx series, 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 MCS51 series: 87Cxxx, 87LVxx, 89Cxxx, 89Sxxx, 89LVxxx series from Atmel, Atmel W&M, Intel, Philips, SST, Winbond (\*1\*2), parallel and serial (ISP) mode
- microcontrollers Atmel AVR: ATtiny, AT90Sxxx, ATmega series (\*1\*2), parallel and serial (ISP) mode
- microcontrollers Microchip PICmicro: PIC12Cxxx, PIC16C5x, PIC16Cxxx, PIC17Cxxx, PIC18Cxxx series, 8-40 pins (\*1\*2), parallel and serial (ISP) mode
- microcontrollers Scenix (Ubicom): SX18xxx, SX20xxx, SX28xxx series

### Notes:

- (\*1) - suitable adapters are available for non-DIL packages
- (\*2) - there exist only few adapters for devices with more than 40 pins.

## I.C. Tester

- Static RAM: 6116 .. 624000

### Programming speed

*Note. This times strongly depend on PC speed, LPT port type and operating system free resources. Therefore values of two different PC configurations are given for comparison.*

Device	Operation	Time A	Time B
27C010	programming and verify	28 sec.	24 sec.
AT29C040A	programming and verify	38 sec.	28 sec.
AM29F040	programming and verify	102 sec.	87 sec.
PIC16C67	programming and verify	13 sec.	11 sec.
PIC18F452	programming and verify	11 sec.	9 sec.

**Time A conditions:** Pentium MMX, 250 MHz, ECP/EPP, WIN98.

**Time B conditions:** Athlon, 750 MHz, ECP/EPP on PCI bus, WIN98.

## SOFTWARE

**Algorithms:** only manufacturer approved or certified algorithms are used. Custom algorithms are available at additional cost.

**Main features:** revision history, session logging, on-line help, device and algorithm information.

### Device operations

- **standard:**
  - intelligent device selection by device type, manufacturer or typed fragment of part name
  - blank check, read, verify
  - program
  - erase
  - configuration and security bit program
  - illegal bit test
  - checksum
- **security**
  - insertion test
  - contact check
  - ID byte check
- **special**
  - auto device serial number increment
  - statistic
  - count-down mode

### Buffer operations

- view/edit, find/replace
- fill, copy, move, byte swap, word/dword split
- checksum (byte, word)
- print

### File load/save

- no download time because programmer is PC controlled
- automatic file type identification

#### Supported file formats

- unformatted (raw) binary
- HEX: Intel, Intel EXT, Motorola S-record, MOS, Exormax, Tektronix, ASCII-SPACE-HEX

## **GENERAL**

### **Minimum PC system requirements**

- Processor: AT-286, free 512 KB RAM
- Hard disk with 5 MB free space
- Operating system: Windows 3.x or higher
- Free parallel (printer) port

### **Recommended PC system requirements**

- Processor: Pentium 100 MHz, 32 MB RAM
- Hard disk with 10 MB free space
- Operating system: Windows 95 or above
- Free parallel (printer) port on PCI bus, IEEE 1284 compatible (ECP/EPP)

### **Operation**

- operating voltage 15V DC, max. 0.5A (adapter included in package)
- power consumption max. 6W active, about 0.5W sleep
- dimensions 160x95x35 [mm] (6.3x3.8x1.4 [inch])
- weight (without external power adapter) ca. 500g
- temperature 5°C to 40°C (41°F to 104°F)
- humidity 20%..80%, non condensing

### **Base configuration package includes**

- UNP2 programmer
- connection cable PC-programmer
- ISP cable
- diagnostic POD for selftest
- anti-dust cover for ZIF socket
- wall plug adapter 220V to 15V DC/500mA
- CD containing software & user manual