EQUIPMENT
ADVANTECH

INTELLIGENT

TRULY UNIVERSAL

FASTEST SPEED

FULL WINDOW SUPPORT

OVER 5000 CHIPS SUPPORT
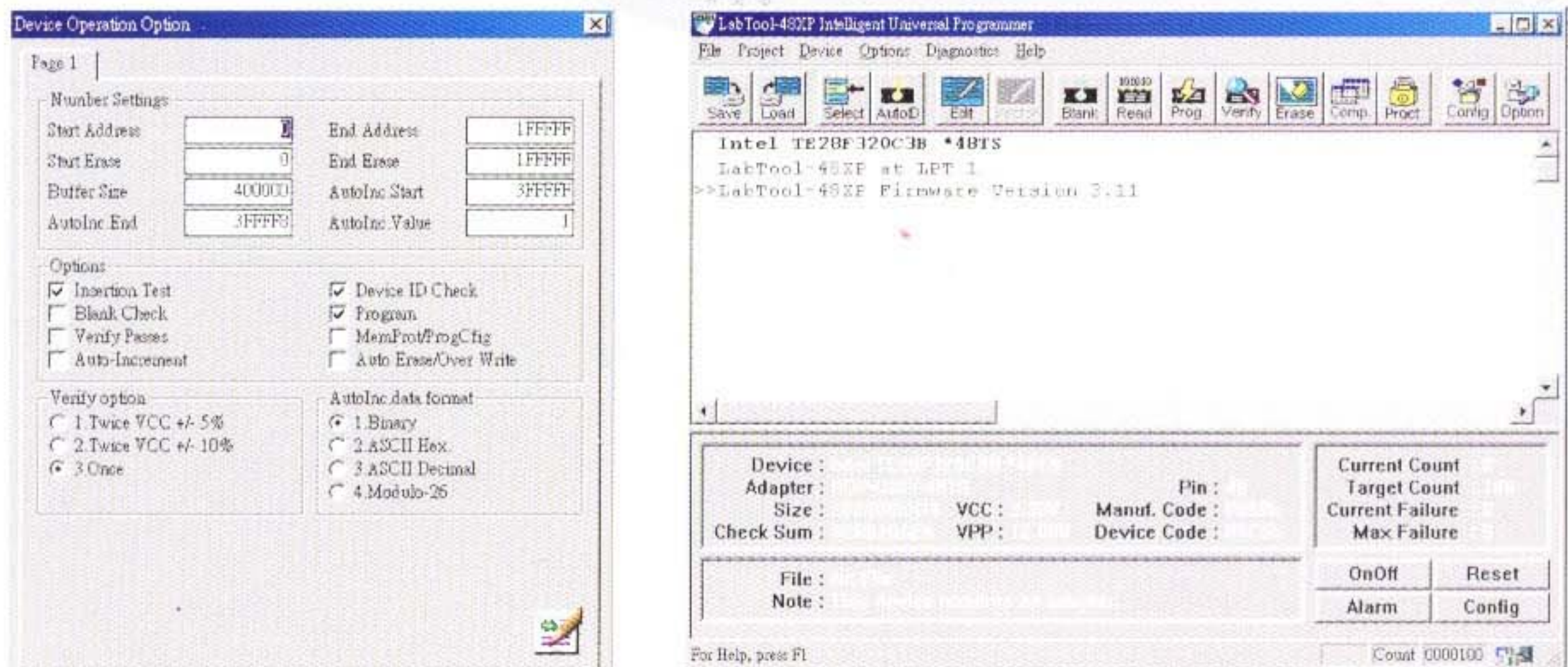
EQUIPMENT
ADVANTECH
XP

INTELLIGENT UNIVERSAL PROGRAMMER

CE Windows XP

LabTool-48XP
INTELLIGENT UNIVERSAL PROGRAMMER

LabTool-48XP Intellige

INTRODUCTION

The LabTool-48XP is a universal device programmer, which works through your PC's parallel port. It features a 48-pin universal pin driver and an expandable TTL pin driver. It supports over 5000 different devices (including memory, logic and single chip) in current software release, new chip will add to the support in quarterly based software update.

Universal pin driver--No adapter required for DIL devices

The LabTool-48XP features universal pin driver, each pin can supply four different voltage, ground, it also can be configurable as TTL high/low levels with pull-high/pull-low, high-speed clock and high impedance. This advanced pin design lets you program any DIL device of up to 48 pins without needing an adapter.

Unbeatable programming speed

The LabTool-48XP's on-board intelligence reduces system overhead to a minimum. The LabTool-48XP has 100% more performance then its predecessor product, it can program a Intel 32 M bit flash chip in less then 60 seconds.

Following is the programming speed example of labtool-48XP.

	Intel 28F320C3B	AMD 29DL323DB
Blank check	18.6 sec	18.9 sec
Program	57.5 sec	76.2 sec
Verify	32.5 sec	33.0 sec
Total	108.6 sec	128.1 sec

The LabTool-48XP is much faster than its competitors, making it much more productive with today's high density, multi-megabit memory devices.

FEATURES

- Printer-port interface with auto-switch power
- Support 5V and 3.3V low voltage devices, 1.8V chip support through low voltage adapter.
- Less then 2 seconds per M bit Programming speed for high density flash chip .
- No adapter required for DIL chip up to 48-pin
- 48-pin universal pin driver and current limit
- Auto-sense/ Self programming with statistical report
- Device insertion /continuity check
- Universal adapter for 44-pin PLCC/ QFP/ TQFP/PSOP and 40/48 TSOP
- Supports Windows 95/98, Windows 2000, windows XP and NT
- Automatic EPROM/ Flash ID search

- Serialization for Memory/μP chip
- Memory buffer H / L byte swap
- Project file save / load function
- User-selectable verify Vcc with one or two-pass verify voltage
- Automatic file format detection and conversion
- User-changeable programming parameters
- Pin swapping table provided for all adapters
- 3 years warranty
- software update via web

TECHNOLOGICAL INNOVATION AND PERFORMANCE LEADERSHIP

Device insertion and contact checks--No mistakes!
The LabTool-48XP performs device insertion and contact checks before it programs each device. It can detect poor pin contact and devices inserted upside down or in the wrong position. This function protects your pocketbook by preventing expensive chip damage due to operator error.

EPROM and Flash memory ID detection and Search
Many EPROM and Flash memories have a build-in device ID and manufacturer ID. The LabTool-48XP can read the device's ID by press hot key to detect the ID and compare its database and determined the chip's correct vendor and product number. This feature is especially useful with secondhand chips and devices that have had their part number accidentally (or intentionally) removed (this function only applied to 28 pin or 32 pin EPROM and Flash).

Auto-sensing and self-programming
To meet mass-production requirements the LabTool-48XP has implemented new patented technology in both its hardware and software. After entering the Mass-production Mode, the production line operator inserts a device into the ZIF socket. An LED on the LabTool-48XP indicates the device is ready and the operator simply removes it and replaces it with a new one. No formal training is necessary adding flexibility and saving time and money. In addition, the LabTool-48XP's auto-sensing feature ensures the device has been inserted correctly and then automatically programs the device. Furthermore, in the mass-production mode the system keyboard is automatically disabled preventing the operator from making any inadvertent mistakes.

Project file save and load
User can create and save a project file which contains device selection, buffer data and all the programming set-up options, this project file can be called upon at any time for future use without having to go through the setting up procedure again, your design file can easily pass to production department without making any mistake.

Serialization function
If your memory devices need individual serial numbers with different increment sequence and initial value, the LabTool-48XP has an Auto Increment function. This simply increments the serial numbers in the buffer each time a new device is inserted. This saves time and money.

User-selectable verify voltage, one or two-pass verification
The LabTool-48XP lets you select the verify voltage after you have programmed the device, e.g., Vcc, Vcc $\pm$5%, Vcc $\pm$10%. The Vcc voltage can be 2.0V to 6.5V. This feature ensures that your device has been programmed properly, preventing failures due to programming errors and ensuring data retention.

Non-DIL device support through versatile converters
The LabTool-48XP's universal pin driver capability lets it program all 48-pin DIL devices, including all single-chip Micro-controllers without DIL-to-DIL adapters. However there are many different packages beside DIL package, such as PLCC, SOP, TSOP, QFP and SDIP. We have developed over 100 different adapters to support these special-package devices.

3 Year warranty and software update via web
The LabTool-48XP has additional safety features such as a built-in current limit and pin continuity check function. This prevents damage from faulty chips during the programming cycle. As a result we have provided a 3 year warranty on parts and labor for the LabTool-48 XP(limited 50,000-cycle warranty on ZIF socket). Free software updates are also available via web at **www.aec.com.tw**.

Universal 44-pin PLCC, QFP, PSOP and TQFP adapter supports 44-pin chips

The universal pin driver on the LabTool-48XP enables you to support all 44-pin chips such as EPLD, EPROM, Flash, EPLD and Micro-controllers. You need only one 44-pin universal adapter which eliminates the need to buy multiple adapters and saves money. Moreover, different package devices within 48 pins will only require one adapter.

Pin swapping table-Build the adapter yourself

The LabTool-48XP provides all adapter pin swapping tables you need (no active components) via web at www.aec.com.tw/products/adapters.pdf. You can simply download the relevant table and build the adapter by yourself if necessary. You do not need to order an adapter and wait for it to arrive saving valuable time and money.

Low voltage chip support

The LabTool-48XP support 2.0V ~ 5.0V logic level input/output, and it can supply 2.0V~21V analog voltage (such as VCC). Support lower then 2.7V low voltage chip such as 1.8V also possible by special low voltage adapter on top of its 48 pin ZIF socket.

SPECIFICATIONS

Socket and pin driver

- 48-pin DIL/ ZIF socket with receptacle for 8-pin to 48-pin 300/ 600-mil devices.
- Four DACs for Vcc, Vpp1, Vpp2 and Vpp3 with 8-bit resolution. Software controllable rises time and current limit protection.
- Logic driver supports pull-up/ pull-down or high impedance on all 48 pins with 2.0V-5V level.

Device support

- Memory : PROM, EPROM, EEPROM, Flash, Serial PROM, NVRAM
- Logic: PAL, GAL, CEPAL, PEEL, CDLD, EPLD,
- Others: OTP/Flash Micro-controllers

Device operations

Read, blank check, device insertion/ contact check, verify, checksum, EPROM ID check, compare, erase chip, function test, program, memory protect, device configuration setting, device search, edit buffer, mass production mode, modify vector, serialization, H/L byte buffer swap, buffer search.

PLD vector tester

- Accepts JEDEC test vectors up to 48 pins
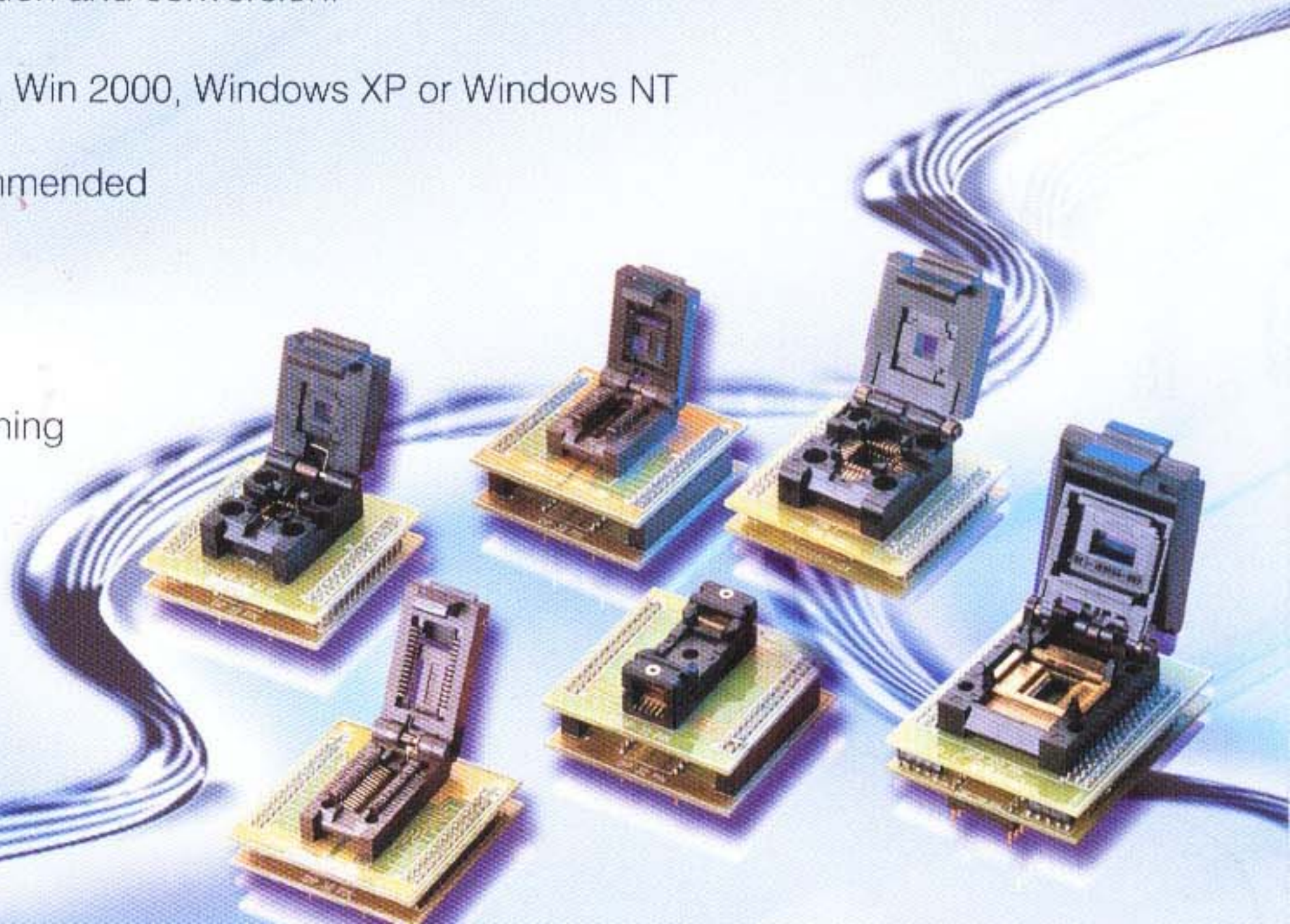- 2500V/usec. rise time

File format conversion

- JEDEC, POF, Binary, Intel HEX, Intel EXT HEX, Motorola S, HP 64000ABS, Straight Hex and TEKTRONIC Hex, Automatic detection and conversion.

PC system requirements

- Operating system: Windows 95/98, Win 2000, Windows XP or Windows NT
- Processor: 386 and above
- 8 MB RAM minimum, 32 MB recommended
- Hard disk with 16 MB free space
- Parallel port with EPP mode
- CD ROM driver

General

- Power: 100 to 240 VAC, auto-switching
- Frequent range : 47 to 63 Hz
- Power consumption : 25 W
- Operating temperature:
  5 to 45 ℃ (41 to 113℉)
- CE & LVD certified
- Weight 1.8KG

ORDER INFORMATION

LabTool-48XP
Universal programmer with WIN 95/98 , WIN 2000, WIN XP and NT software Driver

Adapter

PLCC2020-01	20 pin PLCC adapter for 20 pin PLCC GAL/PAL
PLCC2824-04	28 pin PLCC adapter (NC =1, 8,15,22) for 28 pin PLCC GAL/PAL
PLCC3228-11	32 pin PLCC adapter (NC= 1,12,17,26) for E/EEPROM below 512 K
PLCC3232-11	32 pin PLCC adapter for E/EEPROM with 1M and up
SDP-UNIV-16/TS	16 pin TSOP universal adapter for 8-16 pin TSOP
SDP-UNIV-16SO	16 pin SOIC (150mil) universal adapter for 8-16 pin SOIC
SDP-UNIV-16SO/170	16 pin SOIC (173 mil) universal adapter 1.27m pitch
SDP-UNIV-20SO/200	20 pin SOIC (207mil) universal adapter for 8-20 pin SOIC
SDP-UNIV-20SO	20 pin SOIC (300mil) universal adapter for 16-20 pin SOIC
SDP-UNIV-28SO/300	28 pin SOIC (300mil) universal adapter for 24-28 pin SOIC
SDP-UNIV-28SS/200	28 pin SSOP universal adapters for 200mil x 0.65mm pitch
SDP-PIC-20SS/200	20pin SSOP universal adapter for PIC MCU 200mil x 0.65mm pitch
SDP-UNIV-24SS/150	24 pin SSOP universal adapter for 150mil x 0.635mm pitch
SDP-UNIV-48SS/300	48 pin SSOP universal adapter for 300mil x 0.635mm pitch
SDP-UNIV-28TS	28 pin TSOP (8mm x 14mm) universal adapter for 28 pin TSOP Flash memory
SDP-UNIV-28TSS/170	28 pin TSSOP (173 mil) universal adapter pitch 0.65mm
SDP-UNIV-32TS	32 pin TSOP (8mm x 20mm) universal adapter for 32 pin TSOP Flash memory
SDP-UNIV-32TS/W	32 pin TSOP (8mm x 14mm) universal adapter for 32 pin TSOP Flash memory
SDP-UNIV-32TQ	32 pin TQFP universal adapter
SDP-UNIV-40TS	40 pin TSOP (10mm x 20mm) universal adapter for 40 pin TSOP Flash memory
SDP-UNIV-40TS/W	40 pin TSOP (10mm x 14mm) universal adapter for 40 pin TSOP Flash memory
SDP-UNIV-40TSS	40 pin TSSOP universal adapter for 40 pin TSSOP Flash memory
SDP-UNIV-44TS	44 pin TSOP universal adapter for Samsung /Toshiba 44pin TSOP NAND Flash memory
SDP-UNIV-44	44 pin PLCC universal adapter
SDP-UNIV-44TQ	44 pin TQFP universal adapter
SDP-UNIV-44PSO	44 pin PSOP universal adapter for 44 pin PSOP Flash memory
SDP-UNIV-44Q	44 pin PQFP universal adapter
SDP-UNIV-48TS	48 pin TSOP (12mm x 20mm) universal adapter for 48 pin TSOP Flash memory
SDP-UNIV-48TS/W	48 pin TSOP (12mm x 14mm) universal adapter for 48 pin TSOP Flash memory
SDP-UNIV-48TSS	48 pin TSSOP (10mm x 14mm) with 0.4mm pitch universal adapter for Flash memory
SDP-UNIV-44C	44 pin PLCC (clamshell socket) universal adapter
SDP-UNIV-42SD	42 pin Shrink DIP universal adapter
SDP-7064-68	68 pin PLCC adapter for ALTERA 7064/7096
SDP-7064-84	84 pin PLCC adapter for ALTERA 7064/7096
SDP-7128-84	84 pin PLCC adapter for ALTERA 7128/E
SDP-7160-84	84 pin PLCC adapter for ALTERA 7160/E
SDP-7064-100Q	100 pin QFP adapter for ALTERA 7064
SDP-7096-100Q	100 pin QFP adapter for ALTERA 7096
SDP-7128-100Q	100 pin QFP adapter for ALTERA 7128/E
SDP-7160-100Q	100 pin QFP adapter for ALTERA 7160/E
SDP-9572-84	84 pin PLCC adapter for XILINX XC9572
SDP-95108-84	84 pin PLCC adapter for XILINX XC95108
SDP-95108-100Q	100 pin QFP adapter for XILINX XC95108
SDP-6811-52B	52 pin PLCC adapter for Motorola 68 HC11 A1/E9/E1/E2, 68 HC711E9/E20
SDP-908AS-52	52 pin PLCC adapter for Motorola 68HC908AS
SDP-705B-52	52 pin PLCC adapter for Motorola 68705B5/B16/B32
SDP-C530-52	52 pin PLCC adapter for Dallas 87C530
SDP-7552-68	68 pin PLCC adapter for Philips 87C552
SDP-7592-68	68 pin PLCC adapter for Philips 87C592
SDP-11L6-68	68 pin PLCC adapter for Motorola MC68HC711L6
SDP-11F1-68	68 pin PLCC adapter for Motorola 68HC11F1

SDP-196K-68	68 pin PLCC adapter for Intel 87C196KB/KD/KC
SDP-196J-68	68 pin PLCC adapter for Intel 87C196KR/KQ/JR
SDP-320E-68	68 pin PLCC adapter for TI TMS320E25
SDP-C752-68	68 pin PLCC PIC 17C752/6 adapter
SDP-C923-68	68 pin PLCC adapter for Microchip PIC 16C923/924
SDP-11K1-84	84 pin PLCC adapter for Motorola XC68HC11K1/K4
SDP-96MH-84	84 pin PLCC adapter for Intel 87C196MH/MC
SDP-AD816-52Q	52 pin QFP adapter for Analog device AduC812/816 MCU
SDP-705X-64Q	64 pin QFP adapter for Motorola 68HC705X32
SDP-C923-64TQ	64 pin TQFP adapter for PIC 16C923/4
SDP-C508-64Q	64 QFP adapter for Infineon C508-4E
SDP-C515-80Q	80pin QFP adapter for Infineon C515/C505L
SDP-908AZ-64Q	64QFP adapter for Motorola 68HC908AZ60
SDP-1024-68	68 pin PLCC adapter for LATTICE PLSI1024
SDP-1032-84	84 pin PLCC adapter for LATTICE PLSI1032/2064
SDP-i320-48U	48 pin uBGA (0.75mm)adapter for Intel GT28F320B3/C3, 28F160B3/C3
SDP-i320-48VF	48 pin VFBGA(0.75mm) adapter for Intel GE28F320B3C/C3D, 28F160C3C
SDP-i640-48VF	48 ball VFBGA (0.75mm)adapter for Intel GE28F640C3
LVT-128W18-56U	56 ball VFBGA (0.75mm)adapter for Intel GE28F128W18
LVT-128W30-56U	56 ball VFBGA (0.75mm)adapter for Intel GE28F128W30
LVT-128K3-56U	56 ball VFBGA (0.75mm)adapter for Intel GE28F128K3
LVT-640W18-56U	56 pin VFBGA (0.75mm)adapter for Intel GE28F320/640/ (1.8Vcc, I/O)
LVT-640W30-56U	56 pinVFGBA (0.75mm)adapter for Intel GE28F320/640W30 (1.8Vcc, 3V I/O)
LVT-6408W30-80F	80 pin FBGA (0.8mm)adapter for Intel RD28F6408W18 CSP Flash
SDP-F256-80F	80 ball FBGA (0.8mm)adapter for Intel RD28F256SJ3AM, D28F192SJ3AM, RD28F128SJ3AM
SDP-EBGA-001	72 pin EBGA (1.0mm pitch) adapter for Intel RC28F800/160/320F3/C3
SDP-EBGA-002	72 pin Easy BGA (1.0mm pitch) adapter for Intel RC 28F320/640/128J3A
SDP-F1316-64F	72 pin CSP (0.8mm pitch) adapter for SHARP LRS1306/1316A
SDP-1329-64F	72 pin CSP (8mm x11mm) adapter for SHARP LRS1329/1340/1349/1356
SDP-1331-64F	72 pin CSP (8mm x 11mm) adapter for SHARP LRS1331/37/41/42,LRS1357/58,LRS1362/63/64/65
SDP-1826-64F	64 ball FBGA adapter for SHARP LRS1826 and ATMEL AT52BR3244/3248
SDP-3204-64F	72 pin FBGA(0.8mm) adapter for Intel RD28F1604/RD28F3204
SDP-3208-64F	64 pin FBGA(0.8mm) adapter for Intel RD28F3208
SDP-A320-48F	48 pin uBGA adapter (0.8mm)for AMD 29DL32X (6x12mm size)
SDP-A320-63F	63 pin uBGA adapter(0.8mm) for AMD29DL32X (8x14mm size)
SDP-41DL16-69F	69 ball FBGA adapter(0.8mm) for AMD 41DL16xxMCP
SDP-42DL32-73F	73 ball FBGA adapter for AMD 41DL32xxMCP
SDP-ST064-56TS	56 pin TSOP adapter f(0.8mm)or ST 58LW064A
SDP-F400-56TS	56 pin TSOP adapter for Intel 28F400/28F200
SDP-F320-56SS	56 PIN SSOP adapter for Intel 28F160/320S3/S5
SDP-BL802-56SS	56 PIN SSOP adapter for AMD29BL802C/1602C
SDP-A160-48F	FBGA adapter for AMD 29LV160 (0.8mm pitch)
SDP-A640-48F	FBGA adapter (0.8mm pitch) adapter for AMD 29DL640D
LVT-ADS323-48TS	1.8V low voltage adapter for AMD 29DS32X(48TSOP)
GDP-1305-48TSS	48 pin TSSOP adapter for SHARP LRS1305
GDP-130X-48TSS	48 pin TSSOP adapter for SHARP LRS 1306/8
GDP-F016-56TS	56 pin TSOP adapter for Intel 28F016/032S3/S5
GDP-F320-56SS	56 pin SSOP adapter for Intel 28F320/640/128J5/J3
GDP-F640-56TS	56 pin TSOP adapter for Intel 28F320/640J5/J3