

- 8 independent fully isolated 48 pin ZIF sockets
- Support Flash, EPROM, EEPROM, Micro-processor with 5V & 3V
- Program 8 pcs 8MB Flash chips within 30 seconds
- Target quantity and failure rate alarm
- Auto-sense, self-start with standard/semi-concurrent mode
- Independent modules allow flexible configuration
- Universal adapters for 48TSOP/44PSOP/40TSOP Flash chips support



*Support Win95/98, WinNT, Win2000*



# LABTOOL-848

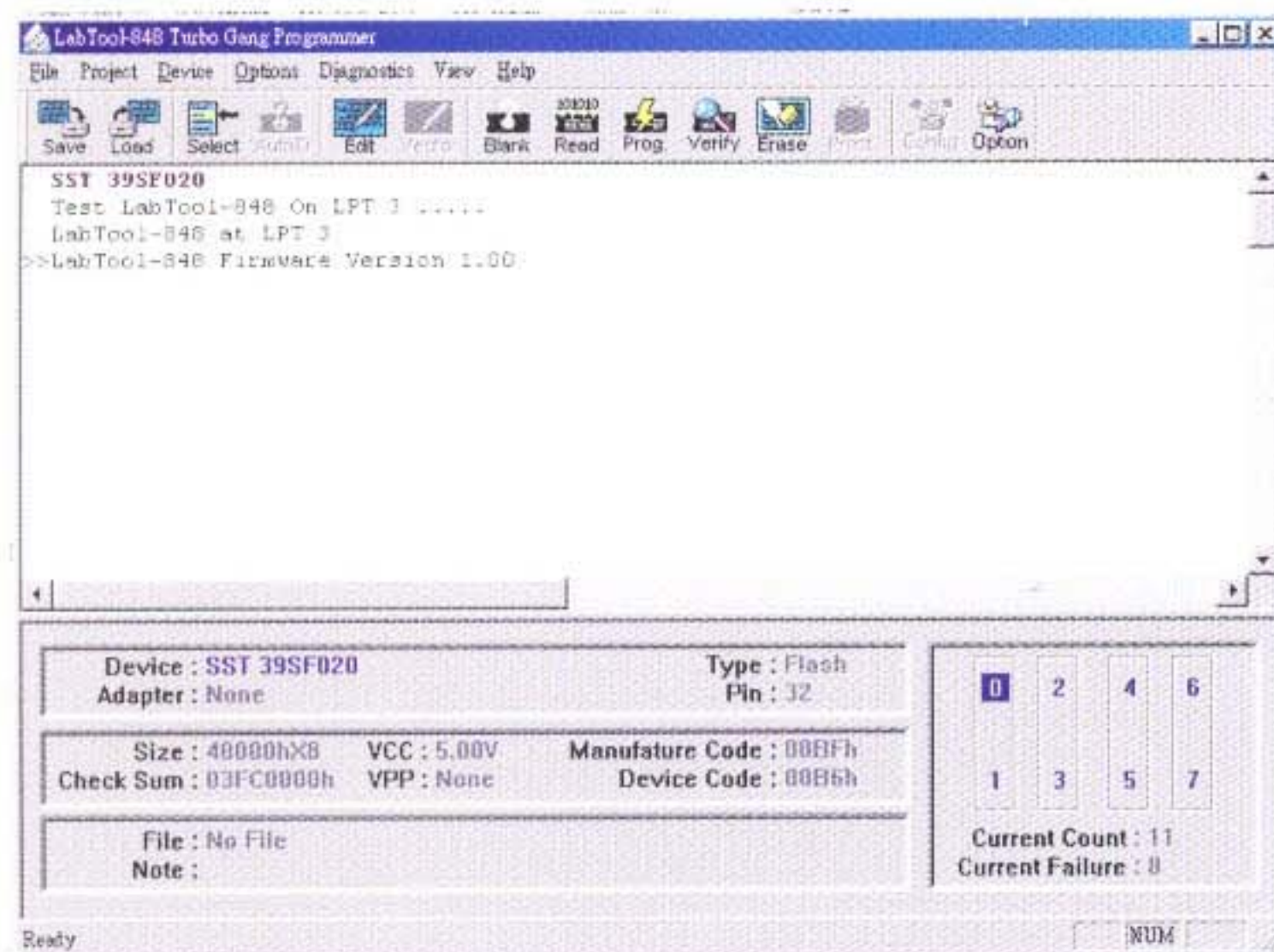
## TURBO GANG PROGRAMMER

# LabTool-848 Turbo gang

## INTRODUCTION

The LabTool-848 is a PC's parallel port base gang programmer. It features 8 pcs fully isolated 48 pin ZIF socket, extremely high throughput, standard 5V and 3V chip support, device insertion and continuity check, with PC base design the device update through software give customer more flexible and quick access to the new chip support. The LabTool-848 support EPROM, EEPROM, FLASH and 87C5x, 89C5x, and PIC16Cxx microprocessor support.

The LabTool-848 has flexible design in mind if customer has special chips that not in our standard support list, we can provide a special program that allow the LabTool-848 become a customized special chips production gang programmer.

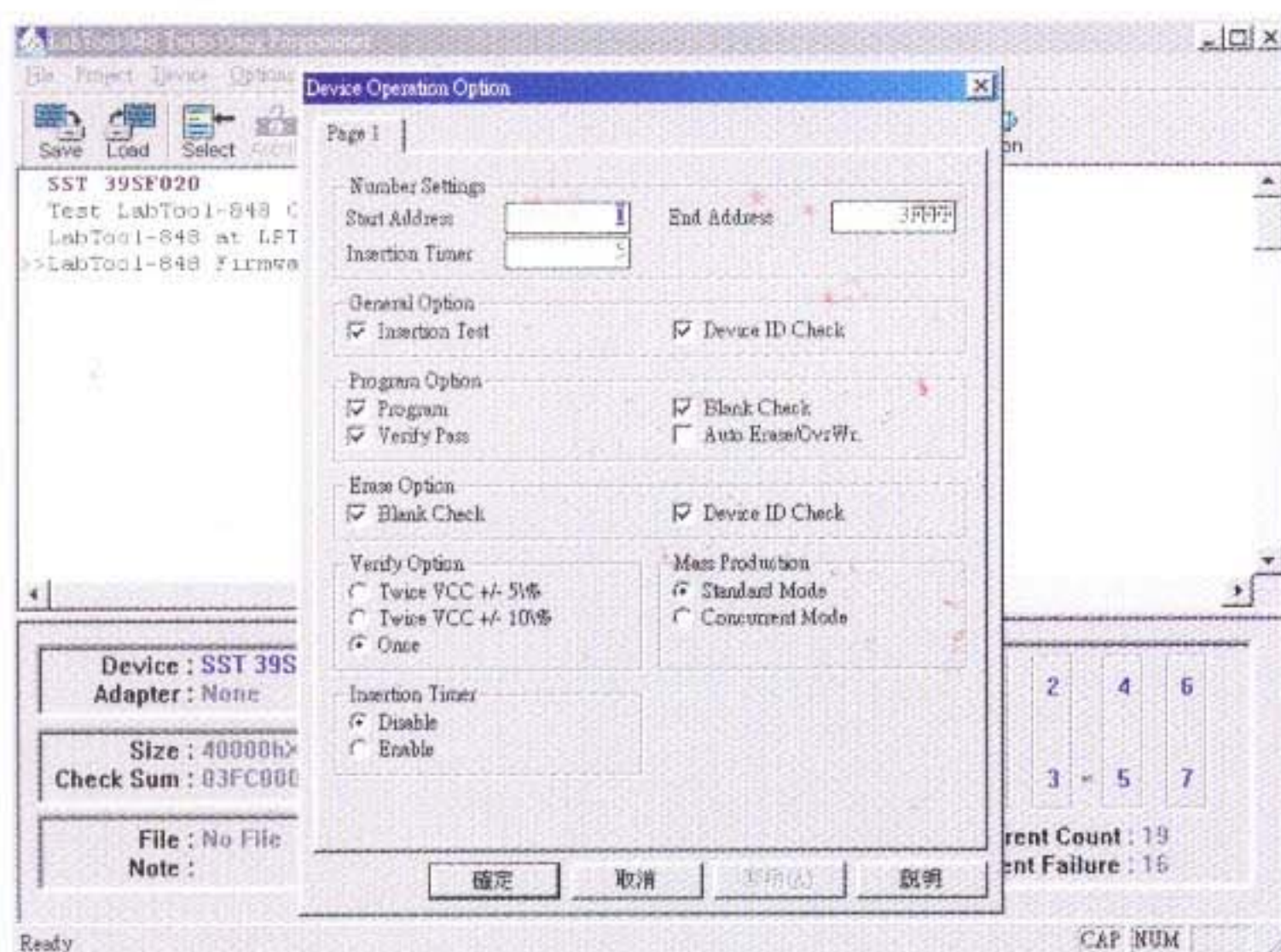


### • Universal Adapter for Flash chips

The LabTool-848 is designed to meet your future need in high density flash chips, it using PC's resource to support 128K bit up to Giga bit memory chips in the future without upgrade the hardware. The LabTool-848 also provide 48pin TSOP, 44pin PSOP, 40pin TSOP, and 32pin TSOP universal adapter for all the flash chips which eliminates the need to buy multiple adapters and saves lots of money.

### • Unbeatable speed through semi-concurrent programming technology

The LabTool-848's on board intelligence reduce the system's overhead to minimum. It can program 8pcs x 8Mb flash chips within 30 seconds (Intel 28F800B3 as example), an experience operator can program thousands of high density chips per day. Further more the LabTool-848 has semi-concurrent programming capability, in the semi-concurrent mode you can divide the 8 socket into two groups (4 sockets each). Programming the first four chips while insert/remove rest of the chips simultaneous to increase the throughput, this feature allow the customer to interface the fine pitch pick and place handler for fine pitch chips. In standard mode after all 8pcs inserts to the sockets, the LabTool-848 will start program the chip automatically.



# ing programmer

## LabTool-848 performance ( PC with PII 450Mhz, 64 M RAM )

Chip	28F400B3B	28F800C3B	28F160C3B	28F320B3B
Blank Check	3.6 sec	6.9 sec	13.4 sec	26.5 sec
Programming	14.9 sec	29.5 sec	59.0 sec	118.0 sec
Verify	12.5 sec	24.0 sec	48.0 sec	96.0 sec
Total	31.3 sec	60.1 sec	120.4 sec	240.5 sec

### Optional Turbo Mode software increase two times through-put

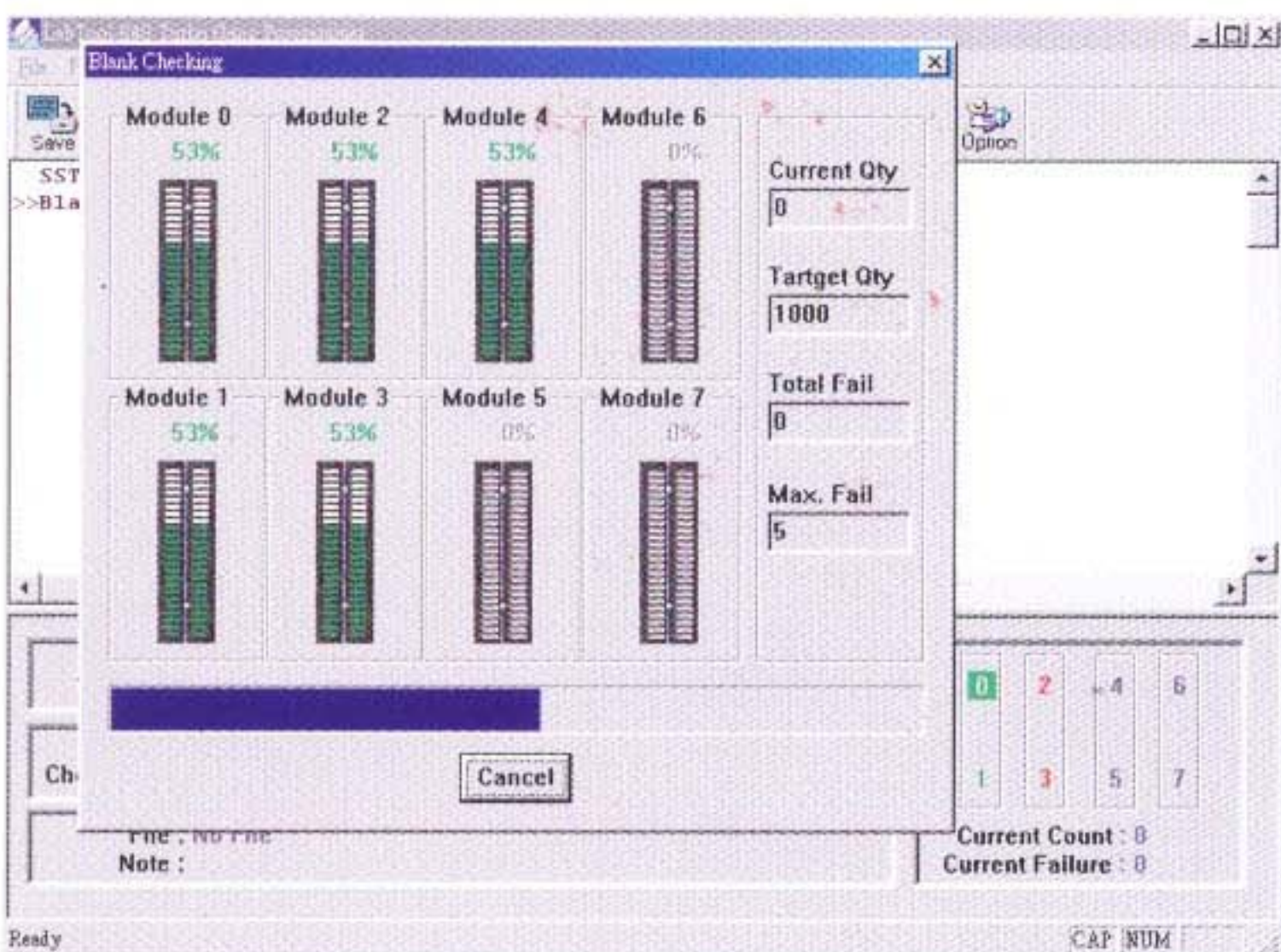
For high quantity / high density Flash customer, an option software can be purchased separately, this special software package contents special algorithm with limit quantity high density Flash memory support, the same hardware( LabTool-848) can output almost double the quantity chip programming in the same time.

## LabTool-848 Option Turbo Mode performance ( PC with PII 450Mhz, 64 MRAM)

Chip	Blank Check	Programming	Verify	Total
28F160C3B	6.4 sec	25.6 sec	33.2 sec	65.2 sec

### Fully isolated ZIF socket

The LabTool-848 has fully isolated circuit (> 1M ohm) to each socket's address/ data bus/control lines, power supply and programming voltage, each socket has its build-in Vcc and Vpp current limit circuitry. A defective device will not affect the programming integrity of other devices remaining in the socket.



### Devices insertion and continuity checks-No mistakes!

The LabTool-848 performs device insertion and continuity checking before program each device. It can detect poor pin contact and device insertion upside down, wrong position, pin number mismatch. This function protects your pocketbook by preventing expensive chip damage due to operator's mistake.

### • Auto-sensing and self programming

The LabTool-848 has implemented patented technology in design, after the chips insert into the ZIF sockets. The LabTool-848 will check if the chips are inserted properly, it has a adjustable time. If the poor insertion is not corrected by the operator within the time period, the LabTool-848 will shutdown the poor contact socket and program the rest of chips automatically without any key touch.

### • Target quantity and maximum failure rate alarm

The LabTool-848 software has the capability that allow user to set the target quantity chip he intends to program and set the maximum failure rate he can accept. After enable this option in software. Once the failure rate exceed on the accumulated programming chip reach the target, the software will generated warning message in the screen. Customer can take further action.

### • Independent modules design

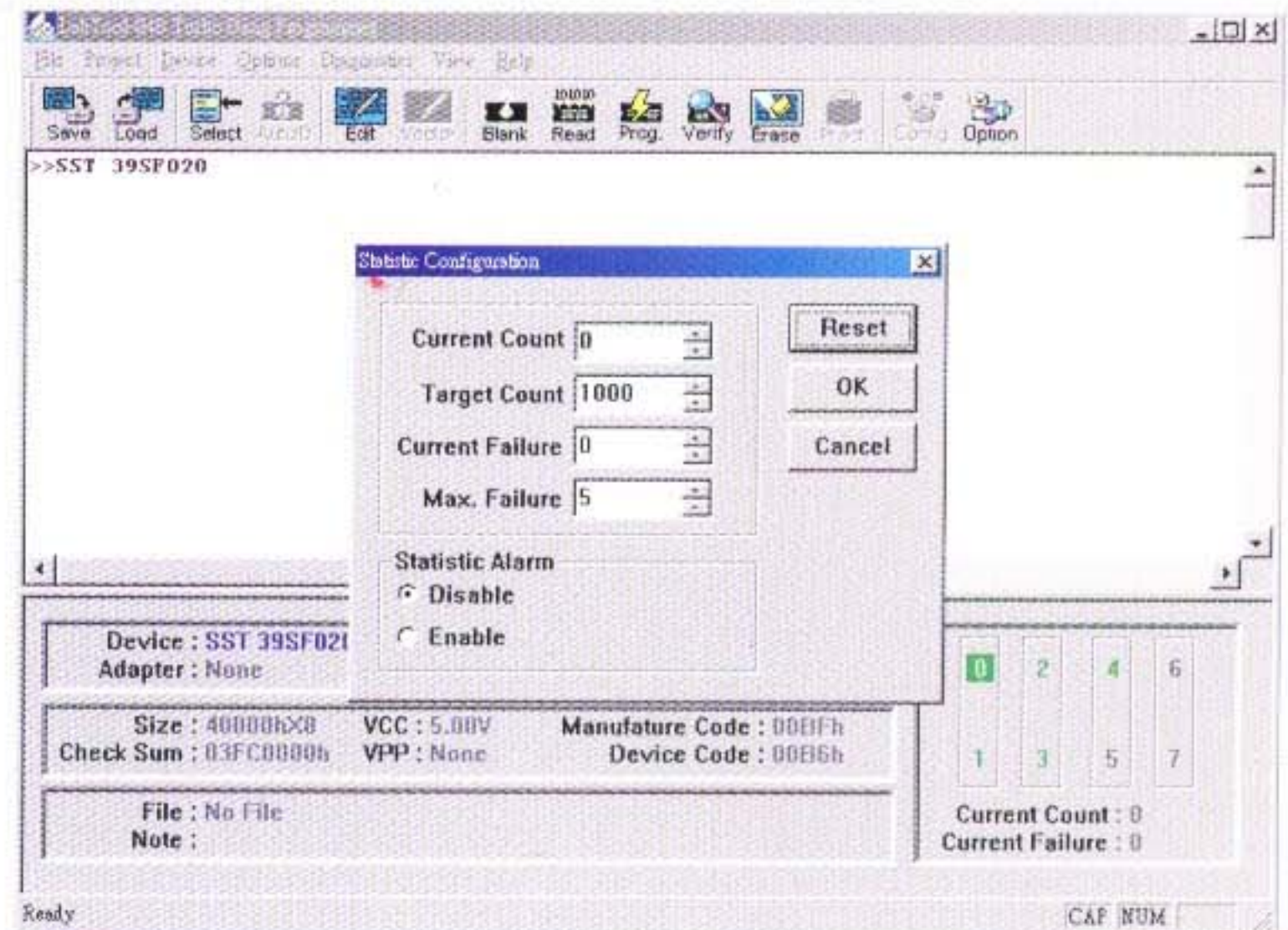
The LabTool-848 is designed to have minimum down time. The 8 socket is divided into 4 independent modules, each module has two sockets and it is identical to rest modules, if any of the modules is failure customer still can operate rest of socket without sacrifice from the turn around time of repair. Customer can order the extra module as spare kit too.

### • Project file "Save and Load".

Customer can save a project file which contains the device selection, buffer data and all programming set-up option, this file can be recalled at any time for future use without go through the setting up procedure again, your design file can easily pass to production department without mistake.

### • Variable VCC with one or two-pass verification

The LabTool-848 lets you select the verify voltage after programmed the chips, e.g., Vcc +/- 5%, Vcc +/- 10%. Vcc voltage can be from 2V to 7.5V. This feature ensures chips have been programmed properly without worry data retention.



## • Features

- 8 independent fully isolated 48pin ZIF sockets.
- Fully windows software support WIN 95/ 98 , WIN 2000 and NT 4.0
- Device insertion and continuity test.
- Support both 5V and 3V chips.
- High throughput, program 8 pieces 8Mb flash chips within 30 seconds.
- Semi-concurrent programming with auto-sensing / self-start automatically.
- Target quantity and maximum failure rate alarm.
- Independent modules allow flexible configuration and minimum down time.
- Universal adapters support 48TSOP/44PSOP/40TSOP flash chips.
- Project file save/load function.
- Variable verify voltage with one/two pass.
- Print port interface with auto switch power supply.
- Optional handler interface.

## DEVICE SUPPORT SUMMARY

EPROM : 27xxx series 128k to 64M with 8/16 bit data width.

FLASH: support NOR, NAND, AND, DI-NOR, EEPROM technology  
256K to Giga Bit flash cover all major chips venders.

Microprocessor : Intel 87C5x compatible, ATMEL 89C5x compatible, Micro-chip PIC16Cxx , Motorola 68HC705C8/9, 68HC705P6/9A.

FPGA configurable PROM : Altera EPC 1xx, Atmel 17Cxx.

## SPECIFICATIONS

### • Socket and pin driver

8 fully isolated 48 pin ZIF socket with receptacle, over 1 M ohm resistance between each socket.  
Four DACs for Vcc, Vpp1, Vpp2 and Vpp3 with 8bit resolution.  
Vcc range 2V to 7.5V, resolution 50mV  
Vpp1,2&3 range 5V to 16V resolution 100mV  
Over current protect on all voltage source  
Logic level 5V to 2.7V programmable by SW.

### • Device Operation

Read, blank check, insertion/contact check, verify, check sum, erase chip, program, memory protect, edit buffer, configuration, load file, save file, project file load/save.

### • File Format

Binary, Intel HEX, Intel extend HEX, Motorola S, HP64000ABS, TEK HEX ,Straight Hex.

### • PC system requirement

Win 95/98 Win 2000 or NT 4.0 and later  
CPU486 and above , 16M RAM minimum, 32M recommend  
Hard disk : 8M Byte free space.  
Interface: D-25 connector with stand parallel port or ECP /EPP

### • General

Power: 100V to 240Vav, 47-63HZ auto switch.  
Power consumption: 65W.  
Operation temperature: 5 to 45 degree C.  
Safety: CE&LVD certified.  
Weight: 8.5Kg net, shipment 10Kg.

## ORDER INFORMATION

LabTool-848 8 socket 48pin Turbo gang programmer.  
Standard Windows software, manual, parallel port cable include.  
PCLS-848 Turbo Extra high-speed software for high-density Flash memory.

## ADAPTERS AVAILABLE

PLCC3228-11	32 pin PLCC to 28 pin DIP adapter (NC= 1,12,17,26) for EPROM
PLCC3232-11	32 pin PLCC to 32 pin DIP adapter for EPROM/FLSAH
SDP-UNIV-28TS	28 pin TSOP universal adapter (8mm*14mm) for EPROM
SDP-UNIV-32TS/W	32 pin TSOP universal adapter (8mm*14mm) for FLASH
SDP-UNIV-32TS	32 pin TSOP universal adapter (8mm*20mm) for EPROM/FLASH
SDP-UNIV-44	44 pin PLCC universal adapter for EPROM and 87CXX MCU
SDP-UNIV-44Q	44 pin QFP universal adapter for 87/89CXX MCU
SDP-UNIV-44PS	44 pin PSOP universal adapter for FLASH/EPROM
SDP-UNIV-40TS	40 pin TSOP universal adapter (10mm*20mm) for FLSAH
SDP-UNIV-40TS/W	40 pin TSOP universal adapter (10mm*14mm) for FLASH
SDP-UNIV-48TS	48 pin TSOP universal adapter (12mm*20mm) for FLASH
SDP-UNIV-48TS/W	48 pin TSOP universal adapter (12mm*14mm) for FLASH
SDP-PIC-20SS/200	20 pin SSOP adapter for PIC
SDP-i320-48U	48 pin uBGA(6x8 ball 0.75mm pitch)adapter for Intel GT/E28F160/320B/C3-B/T
SDP-A160-48F	48 pin FBGA (6x8 ball 0.8mm pitch) adapter for AMD/Fujitsu 29DL16X
SDP-EBGA-001	72pin EBGA( 1.0mm pitch) adapter for Intel 28F800/160/320C3.
SDP-EBGA-002	72pin EBGA ( 1.0mm pitch) adapter for Intel 28F320/640/128J3A.
GDP-F016-56TS	56 pin TSOP adapter for Intel 28F016/32 S3/S5
GDP-F640-56TS	56 pin TSOP adapter for Intel 28F320/640J5/J3A
GDP-F320-56SS	56 pin SSOP adapter for Intel 28F320/640/128J5/J3A
GDP-DIP-001	DIP adapter for Motorola 68HC705C8/C9/P6/P9 and Atmel 90SXX,
GDP-DIP-002	DIP adapter for Altera EPCXX, Atmel 17Cxx PROM
GDP-PLCC-4401	44 pin PLCC adapter for Motorola , PIC16CXX, AT90SXX
GDP-1611-48TS	48 pin TSOP adapter for Mx29L1611.
GDP-1305-48TSS	48 pin TSSOP adapter ( 0.4mm pitch) for SHARP LRS1305
GDP-130X-48TSS	48 pin TSSOP adapter for SHARP LRS 1306/8.
SDP-3224-100Q	100pin QFP adapter for STV0680
SDP-1316-64F	72pin CSP(0.8mm) for SHARP LRS1316
SDP-1329-64F	72pin CSP(0.8mm) for SHARP LRS1329, 1340, 1349, 1356
SDP-1331-64F	72pin CSP(0.8mm) for SHARP LRS1331/37, 1341/2, 1357/8, 1362/3/4/5



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