LV48 Series Programmers

POWER TOOLS FOR THE DEVELOPMENT ENGINEER

MICROMASTER LV48

Powerful Universal programmer for all types of memories, microcontrollers and programmable logic devices.

OVER 7500 devices supported

SPEEDMASTER LV48

Flexible multi device programmer for all types of memories, basic 8748/51 microcontrollers and programmable logic devices.

EPMASTER LV48

High speed development programmer for Flash and all other types of memories.

FEATURES

- Support for virtually all currently available programmable device types
- Software updates as new devices are released
- Supports Low Voltage devices down to 1.8V, with +/-5% marginal verification
- Powerful and comprehensive software interface is easy to use
- Compatible with Windows® 95/98, Windows® NT4/2000
- Fast, accurate programming cuts down development times
- No adapters required for **ANY** DIP devices up to 48 pins
- Full range of package adapters available

- Full device security and configuration features
- Approved and recommended by major semiconductor manufacturers
- Intelligent auto-sensing of sockets for Hands-Free programming
- Interfaces to PC parallel port
- Full on-board diagnostics
- Battery or mains power operation
- Low cost passive package adapter modules available for PLCC, PSOP, SSOP, TSOP, SOIC, QFP, BGA etc.
- Built in IC tester for TTL, CMOS, DRAM and SRAM devices
- Optional built in 8 and 16 bit ROM/RAM emulator cards

SOFTWARE FUNCTIONS

- File load, edit and save
- Project load, edit and save. Saves device selection, programming parameters and data file in one environment file.
- Data formats: Intel Hex, Motorola S records, Hex auto recognition, TekHex, Extended TekHex, AS-CII, Raw/binary, Octal, MOSTech, Altera POF, STAPL etc..
- Extensive buffer editing commands.
- Password protected buffer option.
- Checksum in 3 popular formats, CRC checking.
- Read, Checksum, Verify Data, Verify Signature, Blank check, Bit Test, Erase, Over Program.
- Device parameter options for serialization, marginal verify, auto program pre-test etc.
- Supports all microcontroller features including oscillators, brown-out, watchdog timer, RAM size etc.
- Full security and encryption array support.
- JEDEC fuse map editing capability.
- Edit and apply test vectors.
- Chiptester for TTL, CMOS, SRAM and DRAM devices

Windows Software Special Features
- Hands Free mode allows continuous programming. The programmer detects when a device has been removed and begins the programming cycle when a new part has been inserted.
- Programming success/fail counter, plus pass rate percentage display
- Program / verify time on-screen monitor.
- On-line Help

DOS Software Special Features
- Pressing the F10 key repeats the process.
- Batch software enables user macros to be written for customised software interfaces

PROGRAMMING TIMES

Device	Program	Verify
28F400B3	4.5	3
28F800B3	9	6
29F040	16	6
28F128J3A	237	122
PIC16C73B	3.5	0.5

Times in seconds

LOW VOLTAGE SUPPORT

The LV48 series features low voltage logic circuits which enable correct handling of devices down to 1.8V and below. Verification at plus or minus 5% is fully supported to ensure programming integrity.

QUALITY AND RELIABILITY

Since 1991 when ICE Technology's first programmers were launched, tens of thousands of satisfied users have programmed millions of devices using our programmers. Major semiconductor manufacturers have given the LV48 series their seal of approval, so you can be confident in the integrity of programming for all of your devices. IC manufacturers use ICE Technology programmers to test the programmability of their latest die revisions, and recommend our programmers to their customers.

The programmer checks for device ID, position and overcurrent before applying programming voltages.

The self test software supplied with the programmer indicates any hardware problems before they can affect programming.
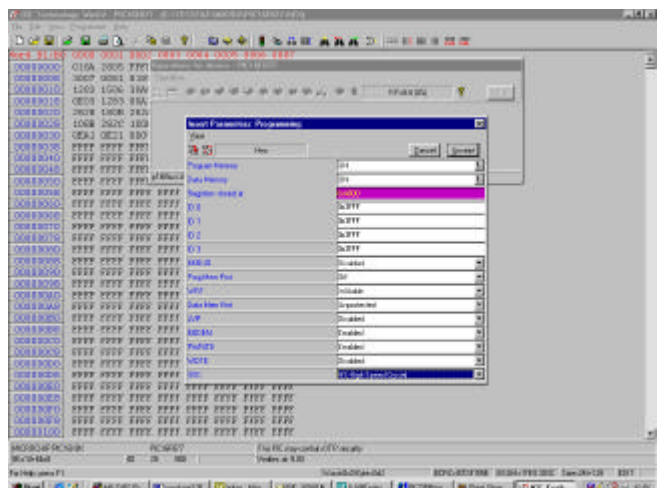
INCLUDED AS STANDARD

Both Windows® 9x/NT4 and DOS software are included as standard with the LV48 series.

One of the main reasons why engineers prefer ICE Technology programmers over others is the WinLV™ software interface.

WinLV™ has many advanced features including comprehensive buffer editing capabilities, and can accept all popular file formats. Full support for device specific features such as sector protect, oscillator types, user options, etc. is also provided in this easy to use, intuitive programmer interface. Serial numbers of different formats can be programmed into any device.

Try it for free - demonstration software can be downloaded from **www.icetech.com**.

DEVICE SUPPORT

Micromaster LV48
- ✓ EPROM, Paged EPROM, Parallel & Serial EEPROM, FPGA Configuration Serial PROM
- ✓ Flash up to 512Mbit including Battery voltage, Super-Low voltage, Single voltage, Dual voltage, Simultaneous operation, Intel Strataflash™, Advanced Boot Block, Page mode, etc.
- ✓ NOVRAM and BPROMs
- ✓ Standard Programmable Logic: PAL & GAL, PEEL, PALCE etc.
- ✓ Complex PLDs: Xilinx EPLD, Vantis MACH, Altera MAX, including Altera STAPL support
- ✓ Peripheral Devices: PSD, FirmWareHub etc.
- ✓ 8748/51/196, PIC, 89Cxxxx, 89Fxx, 87LPCxx, AVR, SAB-C5xx, XA-G3, ST62, Z86, MC68HC705/711, MC68HC908/912, W78Exx, CY63000 USB, COP8, TMS320/370 etc.

Speedmaster LV48
- ✓ EPROM, Paged EPROM, Parallel & Serial EEPROM, FPGA Configuration Serial PROM
- ✓ Flash up to 512Mbit including Battery voltage, Super-Low voltage, Single voltage, Dual voltage, Simultaneous operation, Intel Strataflash™, Advanced Boot Block, Page mode, etc.
- ✓ NOVRAM and BPROMs
- ✓ Programmable Logic: PAL & GAL, PEEL, PALCE
- ✓ Complex PLDs: Xilinx EPLD, Vantis MACH, Altera MAX, including Altera STAPL support
- ✓ Peripheral Devices: PSD, FirmWareHub etc.
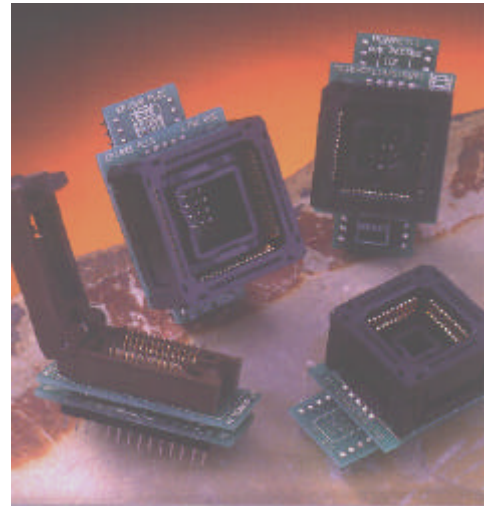- ✓ Basic 8748/51 microcontrollers

EPMaster LV48
- ✓ EPROM, Paged EPROM, Parallel & Serial EEPROM, FPGA Configuration Serial EPROM
- ✓ NOVRAM
- ✓ Flash up to 512Mbit including Battery voltage, Super-Low voltage, Single voltage, Dual voltage, Simultaneous operation, Intel Strataflash™, Advanced Boot Block, Page mode, etc.

BATTERY OPERATION

When out in the field the LV48 series can still be used with a laptop, by running the programmer from 8 AA batteries. The programmer is also an advanced battery charger; NiCAD batteries are automatically discharged prior to recharging, in order to eliminate memory effects. Power management features protect battery life by powering down the programmer when it is inactive.

PACKAGE ADAPTERS

A full range of passive package adapters is available for the LV48 Series of programmers. For most devices up to 48 pins, the module is not device specific, thus reducing the overall number of adapters needed. Package types supported currently include PLCC, PSOP, TSOP, SSOP, SOIC, QFP and BGA. New package types are always being added, and custom made adapters can be developed upon request. To obtain the correct order code please refer to the programmer software or ask your dealer.

OPTIONAL BUILT IN EMULATOR CARDS

Configurations
LVEC-EMUL8: 128Kx8 ROM, 128Kx8 RAM.
LVEC-EMUL8M: 512Kx8 ROM, 256Kx8 RAM.
LVEC-EMUL16: 128Kx16ROM, 256Kx8 ROM,
        2x128Kx8ROM, 512Kx8 RAM.
LVEC-EMUL16M: 512Kx16ROM, 1024Kx8 ROM,
        2x512Kx8 ROM, 1024Kx8 RAM.

Features:
- Access time 100nS standard, optional 50nS.
- Emulates in 3.3V and 5V systems.
- Bi-directional communications channel.
- Active low/high reset, programmable active low/high interrupt.
- Modify on the fly - change code while emulating.

POWER TOOLS FOR THE DESIGN ENGINEER

The LV48 series of device programmers from ICE Technology is a range of powerful and easy to use tools designed specifically to speed up the development process.

Three levels of device support are available. The EP-Master LV48 supports memories, including high-density flash devices, while the Micromaster LV48 supports the whole range of device types, including memory devices, standard and complex programmable logic and microcontrollers including Flash micros, without the need for costly, device specific modules or additional software. The Speedmaster LV48 multi device programmer provides memory and PLD support with some basic microcontrollers included.

All LV48 series programmers have a 48 pin DIP socket as standard, and there is a complete range of socket adapters available for other packages.

HIGH-SPEED PROGRAMMING

With today's larger and larger devices, development cycles can be slowed down significantly by programmers using old technology. The LV48 series harnesses the latest innovations in hardware and software, enabling very large devices to be programmed at almost theoretical speeds.

ENVIRONMENTAL SPECIFICATIONS

CE Compliance :
All LV48 programmers comply with the requirements of the Low Voltage Directive 73/23/EEC and EMC directive 89/336/EEC.
- EN55022 Emission Test (Class A)
- EN50082-1 Immunity Tests
- FCC Level B

Safety Standards :
- UL1950, TUV EN60950

Operating Temperature :
- +41ºF to +104ºF (+5ºC to +40ºC)

Humidity :
- 20% to 80% RH non-condensing

PHYSICAL SPECIFICATIONS

- Dimensions: 240x150x50mm (9.5" x 6" x 2").
- Weight: 1kg (2lb) excluding power supply.
- Shipping Weight: 3kg (6lb).
- Software runs under Windows® 9x/NT4 on any PC with SPP / ECP parallel port.
- Hard-Disk requirement: approx 9MB

Package Includes:
- Programmer / Chiptester
- Power supply adapter as specified in order
- 2m Parallel Cable
- Installation guide
- WinLV & DOS Software

Optional emulators include:
- Emulator card
- 34 way IDC cable(s) with 32 pin DIP plug (1 for 8 bit emulators, 2 for 16 bit emulators)
- 16 bit emulators also include 40 pin header plug

ORDERING INFORMATION

Micromaster LV48: MMLV48-xxx
Speedmaster LV48: SMLV8-xxx
EPMaster LV48: EPMLV48-xxx
xxx = power supply:
(USA: 115V, JAP: 100V, EUR: 230V, UK: 240V)
Emulator Cards:
- LVEC-EMUL8   LVEC-EMUL8M
- LVEC-EMUL16   LVEC-EMUL16M

Package Adapters:
For adapter order codes see price list or check required device in demo software.
Software Updates: Software updates are available from our web page.
Warranty and Support:
Three year parts and labour warranty. Technical support available from your local sales office or rep.

Premium support & Service contracts are also available.

CONTACT INFORMATION

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