Needham's Electronics - (916) 9 8037

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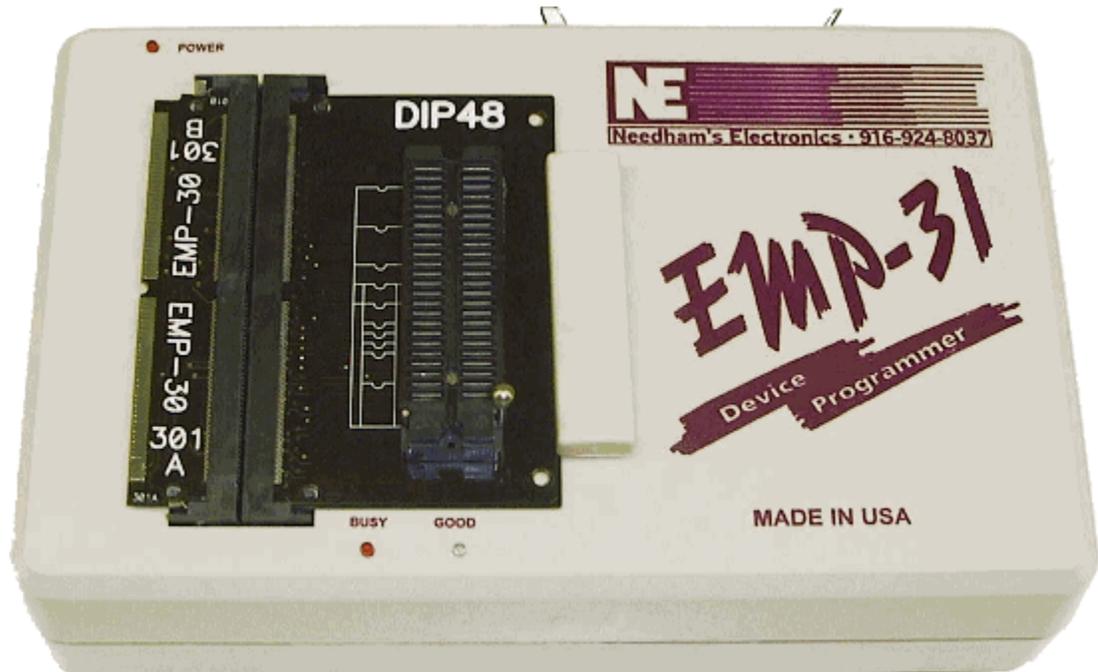
The EMP
Device
Programm
$1099.95
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| Software | Devices | Adapters | Prices |

The EMP-31 is an upgrade to one of the most advanced programmer that supports digit
voltages from 1.8 Volts to 7 Volts and analog voltages (such as VCC or VPP) from 0 to 2
volts. Now with USB support, the EMP-31 makes the best even better. It is the fastest, n
reliable and most versatile programmer in the EMP line. It supports more device types w
larger pin counts than the smaller units in the EMP line. Changing Family Modules is not
required as often. The socket module on top of the EMP-31 is removable, allowing differ
modules to be plugged in to accommodate different device packages. This helps elimina
the confusion often caused by third party adapters. The EMP-31 comes standard with a
pin DIP Socket Module and thirteen Family Modules. The unit contains three
microprocessors, and automatically performs self-test and calibration verification upon
power-up. Needham's Electronics has spent several years developing the EMP-31,
carefully designing it to prevent premature obsolescence and provide exceptional value
our customers. Relays and discrete DAC-controlled analog drivers provide power and
ground connections. Software for the EMP-31 is windows based only.

SPEED

The EMP-31 USB communication gives users the same parallel port I/O scheme as the
of the EMP series programmers, for an extremely fast communication, but in an easier
interface.

Programming and verifying on a Pentium		
Manufacturer	**Device**	**Time**
Intel	27C010	19 Seconds
Lattice	22V10	3 Seconds
Atmel	89C51	7 Seconds

PORTABILITY

With it's added versatility, the EMP-31 is larger than our other programmers, but it is still
quite portable; since it doesn't fit inside your PC, you can pack it up and take it with you
anytime you wish, and use it with any standard parallel port or USB port. The programm
parallel cable, USB cable, transformer, thirteen Family Modules, and DIP-48 Socket Moc
weigh about 7 pounds.

STABILITY

- The EMP-31 carries a 1 year warranty on all parts and labor, and a 30 day money-
  back guarantee (restocking fee may apply)

- The EMP-31 is static-protected at the Adapter Socket, Family Module socket, USB
  port, parallel port, and power connector. The static protection on the parallel port a
  gives it under and over voltage protection.

- It's case is made of tough .125" thick ABS plastic.

- CE Compliant, for sale into the European Community.

FAMILY MODULES

Family Modules are not an entirely new idea. They have been use
other programmers from time to time, to inexpensively route powe
and ground to the device. When you're programming devices fairly
slow, then straight, slide-in connectors are just fine. However, the
EMP-30 programs at speeds near the theoretical maximum of som
devices, so the digital signals traveling to the device must be clear
and the power and ground lines must be solid. Slide-in connectors

can experience noise problems, higher resistance, and corrosion.

The purpose of Family modules is to allow us to use a few high quality pin drivers, instea
of using a cheaper pin driver on each pin on the Adapter Socket. This translates to clear
more manageable waveforms, at a much lower price.

SYSTEM REQUIREMENTS

To use the EMP-31, you must have the following:

- **Operating System:** For USB: An IBM-Compatible PC, Windows 98SE, ME, 2000
  XP(for use of USB, with 16Mb of RAM
                        For Parallel Port: An IBM-Compatible PC, Windows 95 and
  above, with 16Mb of RAM

- **Hard Drive Space:** At least 40Mb of free space

- **Interface:** USB port, or a standard parallel port

- **Power:** 12-16 Volts @ 2.5 Amp, AC or DC

INCLUDED ITEMS

- A standard parallel port cable

- A standard usb cable

- A DIP-48 socket adapter

- An AC 110V transformer (a 220V transformer at additional cost is available upon
  request)

- **Numbers 300-312** Family modules are included with the EMP-31, in a small carryi
  wallet