

# *845-Rom*

# User's Manual

Version 1.0

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## Introduction

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Thank you for purchasing a BK Precision product. We have made every attempt to provide quality tools at reasonable prices. If you have any questions, comments or suggestions, please feel free to contact us by FAX, Voice or EMail and express your opinions.

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## How To Reach BK Precision

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You can reach us at any of the following :

Voice: (714) 237-9220

Monday-Friday, 9:00-5:00 Pacific

FAX: (714) 237-9214

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## 845-Rom Package Contains:

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- 845-Rom unit, Size 85 x 56 x 30 mm
- 32/28 pin DIP target cable
- 8 feet download cable
- Printer port Modular adapter
- Reset output cable and connector
- 3 Jumper shunts for emulator ID selection
- Reset output cable and connector
- User's Guide
- Installation software(1.44MB) and warranty card

### ADAPTERS

**PA28-PP** Heavy duty 28 pin PLCC Adapter, EPROM up to 512Kbit

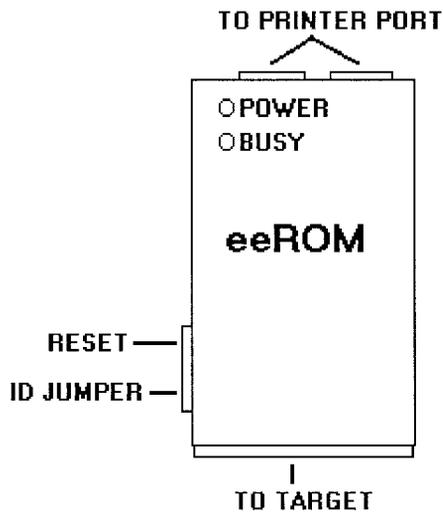
**PA32-PP** Heavy duty 32 pin PLCC Adapter, EPROM up to 1Mbit

**PA44-PP** Heavy duty 44 pin PLCC Adapter, 40 pin DIP to 44 pin PLCC  
**(1QT,2000)**

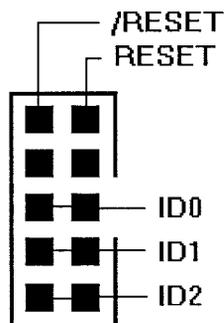
*NOTE: Be sure to read this user's guide before execution the 845-Rom emulator.*

As Engineers, we understand that you do not have time to troubleshoot your test equipment. You need to be able to trust your test equipment. With that in mind, we thoroughly test each and every 845-Rom to insure that you receive a fully functional unit. In addition, we provide a self-test function to enable you to verify proper emulator operation at any time.

### Configure the emulator



### ID jumper to configure daisy chained 845-Rom emulators



## ***Disable Any In-Circuit Programming Voltages***

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EPROMs are usually programmed with “super voltages” (> 5V) and are designed to handle such voltages on some pins; *845-Rom* is not! If your target is capable of in-circuit EPROM programming, disable or isolate the high voltage, not just the high voltage control signals. Even short surges during power cycling could be damaging.

***845-Rom* is a 5volt ONLY device. Any voltage greater than 5 Volts or less than 0 Volts will damage it.**

## ***Plug the emulator into your target***

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Turn the target power off. Plug the supplied target interface cable into the target’s EPROM socket. Be careful to align the PIN 1 end of the cable (designated with a stripe) with the PIN 1 end of the target’s socket (usually designated with a notch, a dot or a ‘1’).

**PLUGGING THE CABLE IN BACKWARDS WILL  
DAMAGE *845-Rom*!**

*845-Roms* include both 28pin and 32pin DIP cables. Use the 28pin cable if you are emulating a 28pin EPROM; the 32pin cable if emulating a 32pin EPROM. If you are emulating PLCC type devices, you will need to purchase a DIP to PLCC adapter. These are available from BK Precision as well as all popular adapter manufacturers.

## ***Connect RESET***

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The RESET line must be connected to enable proper target operation. The reset signal is automatically asserted during each emulator access. This prevents the target from “running stupid” while we change its code space. The reset signal is released at the completion of the transfer, allowing the target to restart with the new code image.

*845-Rom* provides two reset outputs. RESET is an ACTIVE HIGH output. /RESET is an ACTIVE LOW output. Connect the appropriate output to your target’s RESET circuitry.

*845-Rom*’s reset signal should be connected to the target’s reset circuitry at the most “upstream” point available. This is usually an RC combination that senses the target’s power up or a manual reset switch. Sometimes this circuitry is connected directly to the CPU reset input. In other targets, it will be connected to the input to a reset chip, power management chip, a watchdog timer chip or a Schmitt trigger gate.

**DO NOT CONNECT *845-Rom*’s RESET OUTPUT  
ACROSS A TOTEM-POLE OR BIPOLAR GATE.  
THIS MAY RESULT IN DAMAGE TO *845-Rom* OR  
THE TARGET.**

Call our technical support if you are unsure about which output to use or where to connect to your target.

## ***Turn on the Target's Power***

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The emulator is powered from the target. The target power must always be on to access the emulator from either the target or the HOST side. When target power is applied, the emulator's POWER LED should glow steadily. This LED is powered DIRECTLY by the target's power.

**If the POWER LED does not glow, immediately turn off target power and correct the problem before reapplying power!**

The only possible causes for the LED not to light are:

- target cable plugged in backwards or incompletely,
- insufficient target power,
- incorrect target cable adapters (wrong PLCC adapter, etc.),
- incorrect target socket wiring,
- bad target interface cable or
- a damaged emulator.

## ***Connect the Download Cable***

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Select an unused **PRINTER** port on your PC. Remove any "dongles", security keys, printer switch boxes or extension cables from the port. Plug the supplied download cable directly into the selected printer port. Plug the other end of the cable into *845-Rom's* "IN" port.

**PLUGGING *845-Rom* INTO A SERIAL PORT WILL DAMAGE THE EMULATOR!**

## ***Load your program***

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Start with a file that is known to work in this target. The binary image of a functioning EPROM is the best file to start with. Most EPROM programmers can read an EPROM and save its contents into a raw binary file. The new *845-Rom* loads binary file only and will be available for other file formats such as Intel HEX or Motorola 'S' format.

ER.exe loads binary files into one or more *845-Roms*. If your image file is in a HEX format, use a utility file to binary before running the ER.exe program.

Run ER.EXE without parameters to see a help screen on the command line parameters. Notice that all parameters are optional and have logical defaults. You only need to specify the parameters you would like to change from their defaults.

## EXAMPLE LOAD PARAMETERS:

ER file.bin	ER file.bin /P1 /C0 /D010 /V0 /E1
ER RESET	Activate a reset pulse from all 845-Roms which are connected to this printer port
ER file.bin /P2 /C1 /E2 /V1	Loads FILE.BIN into 845-Rom #2 and verify using LPT2(3BCh) which connects to 845-Rom in TopMax programmer

## Command Format:

ER [file.bin] [/Px] [/Cx] [/Ex] [/Vx]

ER.EXE requires a configuration file to be located in the same directory. In general, ER will activate the reset signal and then download the image file for each 845-Rom unless an option is entered to override this download action.

/Px Printer Port Option  
Printer port address, P1(LPT1:368h), P2(LPT2:3BCh), P3(LPT3:278h) Default : /P1

/Cx 845-Rom Connection Option  
/C0: Connects to a Printer port in PC directly Default : /C0  
/C1: Connects to 845-Rom port in TopMax

/D EPROM size option  
/D64 2764  
/D128 27128  
/D256 27256  
/D512 27512  
/D010 27010  
/D020 27020  
/D040 27040  
/D080 27080(OPTION)

/Vx Verify Option  
/V0 No verification after downloading  
/V1 Execution Verification after downloading  
/V2 Execution Verification only

/E Number of 845-Rom unit that you up to 8 Default : /E1

/F The default value of the loading file that doesn't have data in HEX Default: /Fff

During the load and/or verify, the "SELECTED" LEDs of all involved emulators will light. At the completion of the transfer, all "SELECTED" LEDs will extinguish.

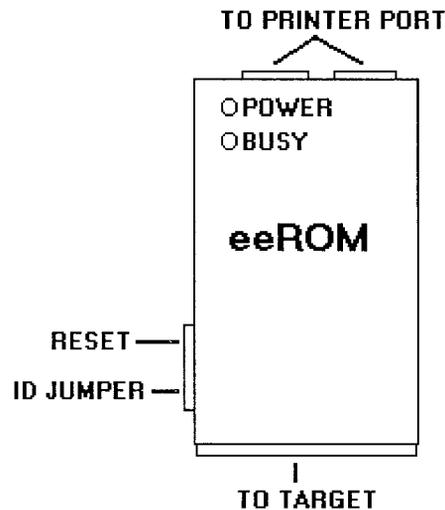
# 845-Rom

## Cost Effective EPROM Emulator

With our 845-Rom EPROM Emulator, the entire process of changing to and testing new firmware can be as easy as typing a few keystrokes. Users can now forget the time-consuming and hassling process of removing and reprogramming EPROMs. Connecting directly between the user's target board and PC via its parallel port, new code images can be downloaded and updated to the target board in seconds. Furthermore, all EPROM functions and signal integrity are completely emulated and maintained by our 845-Rom EPROM Emulator. For owners of our Model 845 programmer, our 845-Rom EPROM Emulator can also be connected directly between the programmer and the target board.

New codes can be loaded onto the programmer and then downloaded and tested on the target board before programming to EPROMs. Download 27010 in 1.5 sec.(on Pentium 120)

### MAIN CAPABILITIES



- ◆ DAISY-CHAIN PORT:  
Cascade up to 8 units for 16/32 bit target
- ◆ TARGET RESET,/RESET:  
Automatically Generated During Download
- ◆ Electrical Requirements: 5V+10% @5Ma max., 1mA typical
- ◆ MODULAR DOWNLOAD PORT:  
Connects to Standard IBM-PC and compatible printer Port  
Up to 1Mbit /1.5 sec downloads  
Flexible 8 wire modular cable included  
Printer port(DB25) to Rj45 adapter included  
Works with LAPTOPs
- ◆ UNIT ID JUMPER:  
Select any one of 8 possible emulators
- ◆ TARGET EXTENTION CABLE:  
32 and 28 pin cable provided  
PLCC adapters available
- ◆ MEMORY :  
4 Mbit standard SRAM(90ns) included and easy to upgrade up to 8 Mbit  
All inputs and outputs are TTL and 5V CMOS compatible
- ◆ Small size : 3.5(h) x 2 x 1 inch

Product is available in May 1999