BAL 500 SERIES

AUTO-EPROM PROGRAMMER

for Apple II, Apple II +, Apple //e

RP 525

USER's MANUAL

BAL-500 ROM PROGRAMMER
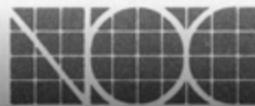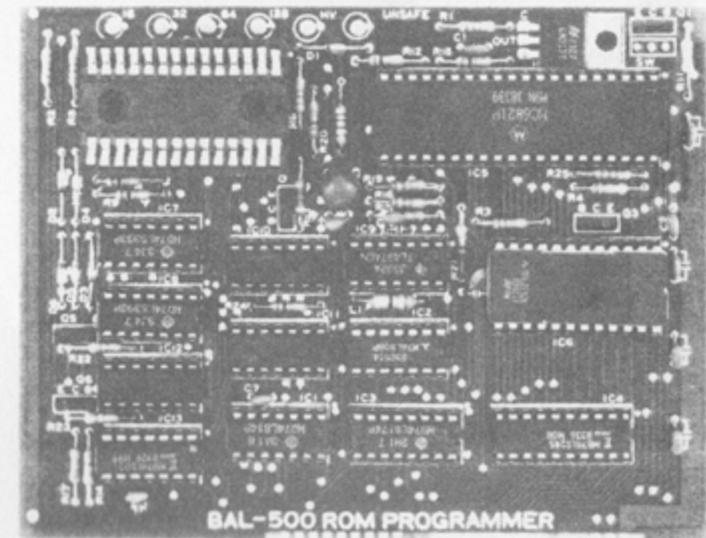
NOC
Nihon Office Communications

10-4-1-1S361SP

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INTRODUCTION

The RP525 is the friendliest, fastest, easiest to use, most cost effective EPROM writer available for APPLE II type computers. The internal menu driven software automatically selects the EPROM type without the need for personality modules that other EPROM writers require. The RP525 can be installed in ANY slot in any Apple II series computer (except slot 0 in the Apple //e). The extra height of the RP525 card allows it to stand above all other cards in your Apple to provide for easy insertion and removal of EPROMS with the power ON. No more pinched fingers and dropped EPROM's.

I. FEATURES

* Writes 16K, 32K, 64K and 128K EPROMS.
* Automatic switching between EPROM types.
* No personality modules required.
* LED's indicate EPROM-type selected and WRITE activity.
* UNSAFE LED indicates unsafe to insert EPROM.
* Operates in any slot.
* READ / WRITE / VERIFY / ERASE / COPY / ERASE VERIFY functions.
* High-speed reading/writing option. Writes a 2764 in 26 seconds.
* Screen display of each read/write byte.
* User selectable starting address page.
* Display of EPROM end address in memory.
* Easy insertion/removal of EPROM.
* All software contained in the EPROM writer.
* Fast/Slow/No display of READ/WRITE bytes.
* Label on socket indicates correct EPROM insertion.
* Label on socket indicates correct EPROM insertion.
* Golf plated edge connectors and EPROM socket for long life.

II. INSTALLATION

First, make sure that the power to your Apple is turned OFF, and install the RP525 in a slot of your choice. Be very careful to insert and remove the EPROM programmer only when the power to your Apple is turned OFF. We cannot be responsible for failure to observe this cardinal rule of Appledom, and severe damage to your computer and the EPROM writer could result if you fail to observe it.

III. OPERATION

Once installed, turning on the EPROM Programmer is merely a matter of typing "PR#" + the EPROM Programmer's Slot Number ⟨ret⟩. For example, PR#4 ⟨ret⟩ would initialize the EPROM writer in SLOT 4 and you should be greeted with the opening menu. As long as all of the LED's are OFF it is OK to insert and remove EPROMS. You will always be prompted by a message on the screen display to insert and remove EPROMS. Otherwise, the best time to change EPROMS is when you select the EPROM type. Be careful to insert EPROMS correctly as indicated by the diagram in the EPROM socket. Correct insertion requires positioning of the EPROM to the front of the socket with the notch in the EPROM to the rear. Also take care to select from the menu the EPROM type you actually inserted into the Programmer. A wrong selection can ruin the EPROM.

Having selected the EPROM type you wish to work with, the next menu asks what you want to do with it, i.e., READ, WRITE, VERIFY, COPY, ERASE CHECK, or exit to the MONITOR. Except when actually using one of these functions, you always have the option to quit and go back to the main menu by pressing the ⟨spacebar⟩.

The EPROM Programmer can perform READ/WRITE/ VERIFY functions starting at the beginning of any "page" in

memory. After selecting the function READ/WRITE/VERIFY, you will be asked for the address in memory to use. The beginning of a "page" is any address with the two right most digits ending in "ØØ". Thus $23ØØ is the beginning of a "page" and $23Ø1 is NOT the beginning of a page. When using any of these three functions, you will be prompted for a Starting Address, and only the two left most digits can be specified. The two right most digits which are always "ØØ". The default address is $10ØØ and pressing ⟨return⟩ accepts this address if you choose not to input your own.

If the program you want to write using the EPROM Programmer does not start on a page boundary, enter the monitor and move it there. If you are using a program from diskette, it is simpler to "BLOAD" it to a user specified starting address (ex. "BLOAD TEST, A$10ØØ").

When using DOS to load or save EPROM files, be careful not to set the initial address very high in memory or DOS will be wiped out. For instance, reading a 2716 starting at $9ØØØ would kill DOS and no files could be loaded or saved to diskette. The RP525's default value of $10ØØ is always OK, even for the 27128 and will not wipe out DOS. Now for a look at each of the EPROM Programmer's functions.

1. WRITE

The WRITE Option writes data to the EPROM from memory at a user specified address. The default address is $10ØØ and can be selected by pressing ⟨return⟩. The ending address will then be displayed to the right of the starting address.

The next option asks "FAST WRITE MODE (Y/N)" and if you type "Y", or ⟨return⟩ to accept the default, you will execute the high-speed write mode. Entering "N" will start the normal speed write mode. The difference between these two options has to do with how fast the EPROM is written and the amount of data displayed on the screen.

The normal mode will display the starting address and every data byte written to the EPROM with 8 bytes per line.

The high speed mode writes much more quickly but displays only the first byte of each page being written. For instance, to write a 2764 in the normal mode requires about 41Ø seconds, but the high speed mode requires only 26 seconds. Therefore, the fast-write mode is more than 15 times faster than the normal mode.

Before an EPROM is written, the Programmer verifies that the EPROM is blank (containing hex data FF). If the EPROM is not blank, an error message "ERASE ERROR AT:" followed by the EPROM's address and hex data of the first occuring error. Press any key to return to the main menu.

2. READ

The READ function loads into memory the contents of the EPROM. The default starting address is $10ØØ, but the initial page can be anywhere the user specifies. If $10ØØ is satisfactory, simply press⟨return⟩ to use the default or enter your own starting page when the "ADDRESS" message is displayed. The ending address in memory is calculated and displayed for the EPROM type selected immediately to the right of the starting page.

Next you will be asked "DISPLAY DATA? (Y/N)". Here you have the option of quickly reading data into memory with no display by pressing "N" or reading into

memory with a byte-by-byte display by pressing "Y". The default is "Y" for display data and may be accepted with a carriage return. Since the display moves too fast to see individual bytes, you may wish to press a key to slow down the display temporarily.

3. VERIFY

The Verify option allows comparison of EPROM and memory data. The memory to start comparison is user selectable when the "Address:" message is displayed and can start at the beginning of any page. Pressing return accepts the default of $1ØØØ. If both EPROM and memory are identical, the message "VERIFY OK!" will appear. When memory and EPROM differ, the message "VERIFY ERROR AT:" and the FIRST address at which they differ will be displayed for both EPROM and memory along with the hex data each contains. This provides a convenient way of comparing EPROM's to see if they are identical.

4. COPY

The Copy option does just that — it copies EPROMS. You will be prompted to insert the EPROM to be copied and when to insert the blank EPROM. The Copy function automatically uses the high-speed read and write mode to get the job done quickly.

5. ERASE VERIFY

The Erase Verify option checks EPROM's to see if they are BLANK (erased). All blank EPROM's should contain hex value "FF". If any part of an EPROM does not contain "FF" then the message "ERASE ERROR AT:" is displayed along with the address in the EPROM at which the first such error occurs. The EPROM Programmer does NOT

allow writing to EPROMS that are not completely erased so this is a good way to check EPROMS to ensure that they are blank. When using the WRITE function, the ERASE VERIFY function is performed automatically before the write sequence starts. It is included as a separate function so that the user can quickly check EPROMS without writing to them.

6. ENTER MONITOR

The Monitor option simply quits the Programmer and puts you in the Apple monitor. If you want to modify memory prior to writing an EPROM, the Apple Monitor is the place to do it. Using the memory move function, data can be aligned at the beginning of a page so the EPROM Programmer can write it. You can easily return to the Programmer with your data intact and ready for writing.

IV. LED LAMPS

The LEDs on the EPROM programmer provide a quick reference on what process is being performed. Remember that if any LED is lit, you should neither insert nor remove an EPROM. The diagram below shows the functions of the various LEDs. Get to know them, they provide a quick reference on the EPROM Programmers various functions.
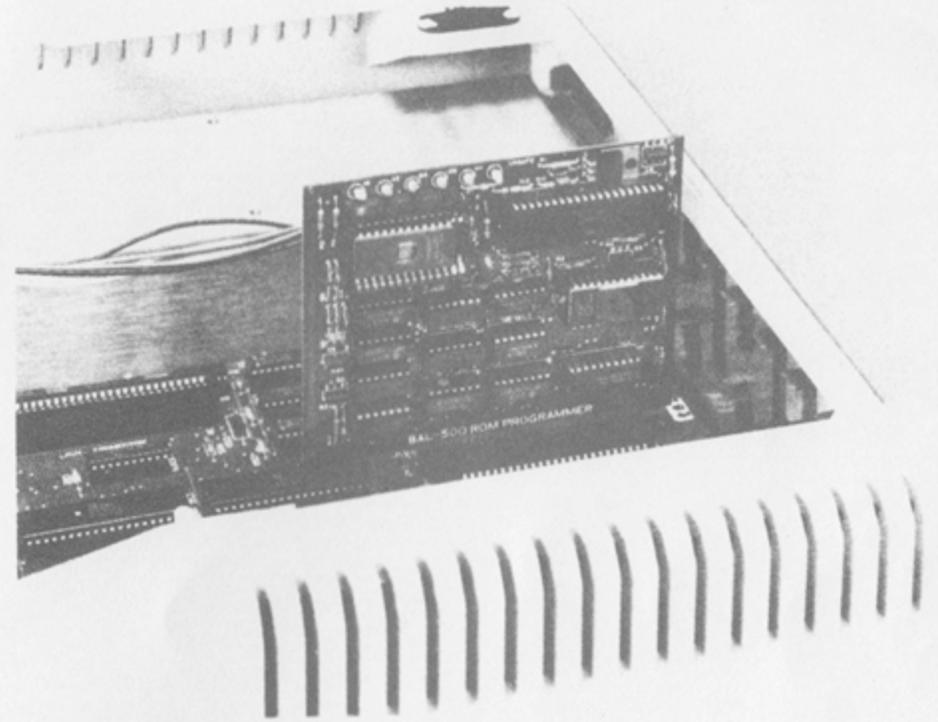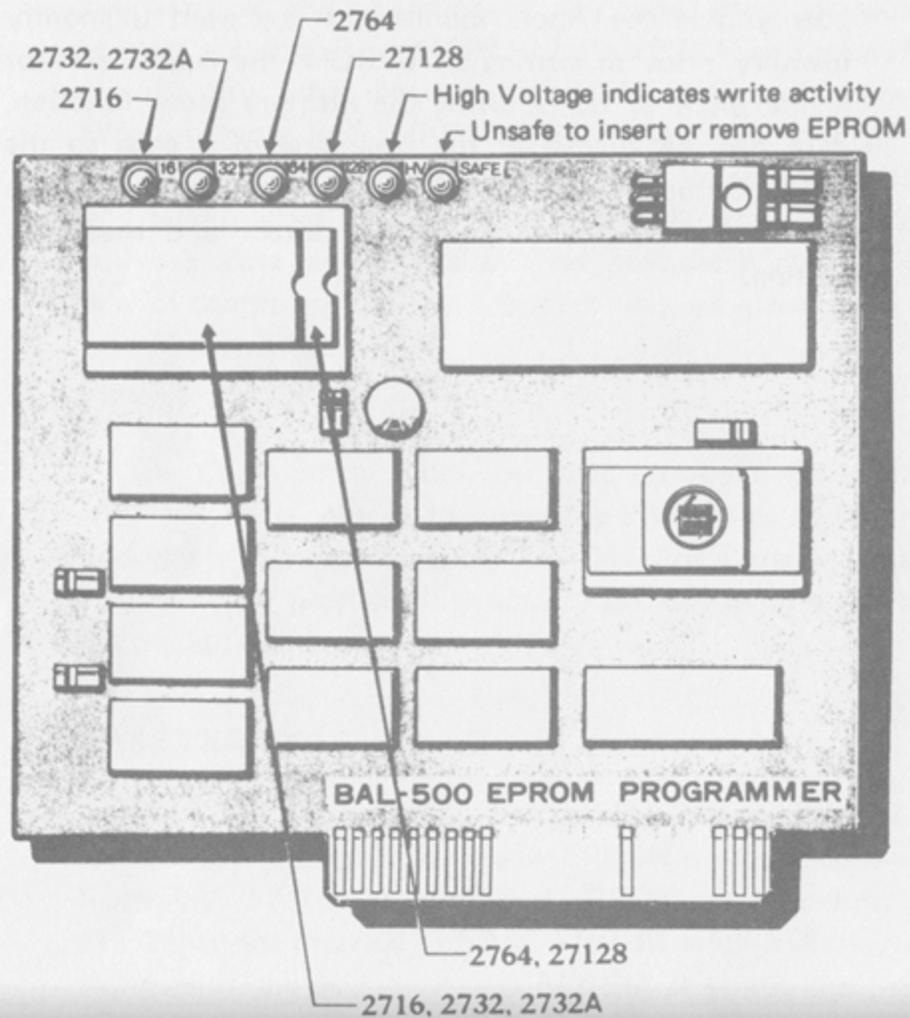
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