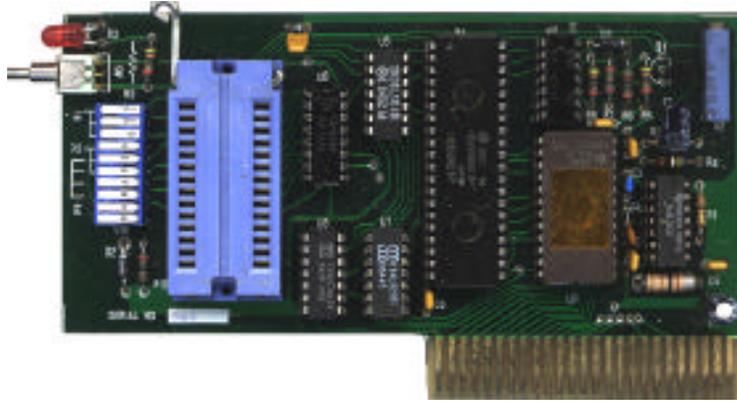


# AP-64e EPROM WRITER

*For Apple II, II+, IIe, III.*



Hobby Model

THE BEST combination programmer

Features:

1. Eprom: 2716, 27.32, 2764.
2. Reliable
3. Easy to use (no external equipment needed)
4. Auto blank check.
5. Auto verify.
6. Error indicated.
7. voltage for program adjustable
8. Type selection by DIP switch
9. Firmware included
10. Write, Read, Copy, Compare. Blankcheck, Monitor functions

Operations:

Introduction: The AP64e Eprom Writer is a programmer for Apple II, II+, IIe, III Computer. It offers very fast and easy programming methods through the fireware in board.

Installation: To install the AP-64e Eprom Writer, simply plug it into any slot inside the apple(except slot 0) as follows

1. Turn off the power to the Apple. This is very important to prevent damage to the computer and the AP-64e.

2 • The DIP switch on the board will define what EPROM you ore writing to set DIP switch as following

chart:

DIP switch position	1	2	3	4	5	6	7	8
2716	o	o	o	x	x	x	x	x
2732	x	x	x	o	o	o	x	x
2764	x	x	x	x	o	o	o	o

Please Confirm DIP' switch must beset right as above chart, otherwise EPROM could be damaged.

3. Remove the cover from the Apple. Inside along the rear edge of the circuit board, is a series of eight long narrow Sockets. called "SLOTS". Insert the AP64e into any slots except the left one with a gentle rocking-motion until fully Seated.

4. Now, turn your Apple on. Type PR#n (n is slot number). or type IN#n Integer Basic) From the monitor(whose prompt character is \*), you type CsØØG or s "CTRL P (s is a slot number).

Functions: There are six. functions for AP-64e EPROM WRITER:

1. WRITE: Program any a block of memory content into 2716, 2732 or 2764.

2.- READ: To move EPROM memory content to RAM location ,

3. COPY: Duplicate content. of master ROM Into copy EPROMS.

4 COMPARE. TO verify 2 blocks of memory between systems and EPROMS.

5. BLANK TEST: Test 2716, 2732 and 2764 is blank or not.

6. MONITOR: To enter the Apple machine language, you can examine, change, move, compare and run the contents of memory in machine language of 6502 CPU.

**User's guide:** After you make installations of AP-64e EPROM WRITER the following will be come to the screen:

A?—64 EPROM PROGRAMMER  
ENHANCED VELCCM WRITTEN BY CARL

2)2716

4)2732

8)2764

?

Now you must key in the number 2,4 or 8 to choice how many bytes you want to program your EPROMS. 2 represents 2K bytes (0000-07FF). 4 represents 4K bytes (C000-0FFF). 8 represents 8K bytes (0000-1FFF). Please reconfirm whether the DIP switch already set or not before you key in any number, Errors could

be occurred in the following steps if you make wrong selection

When everything is right, you will see the next lines come to the screen:

1) WRITE

2) READ

3) COPY

4) COMPARE

5) BLANKCHECK

6) MONITOR

Before you make any action, the first thing is to learn how to insert the EPROM into TEXTTOOL:

1. To pull up the stick of textool that can release any ROM or EPROM which already installed in place of textool.
2. To put the right EPROM into the textool. Because the textool is 28 pins DIP socket that is for 2764 EPROMs, and 2716,2732 EPROMs are 24 pins, so the installation of 2716 and 2732 must 2 pins below calculated from the up side of textool. It is very important to recheck the EPROM goes into the textool in right pins, otherwise it might be caused a damage.

3. To push the stick of textool down to the PCB side. Now the EPROM will be tightly held in the textool socket.

Now you may key in a number from 1 to 6 to choice any function we mentioned before. Details are as follows:

1) WRITE: When you type "1" that means you will programing any a block of memory content into EPROMs. The next line come to the screen is:

START ADDRESS ?

just key in a start address of memory in hex code and hit RETURN.

BLANK ? (Y/N)

A. If you went to "burn" a blank EPROM, now insert the EPROM and type "Yes", will test EPROM blank automatically.

ROM CHECK OK! (Means your eprom is ready to write)

SW ON

In case the EPROM has been programmed, Then

ROM CHECK ERR!! (Means your eprom can't write)

BLANK ? (Y/N)

Please change another one and do it again.

B. Sometimes you only want to correct data that already programmed in EPROM, So please type "No".

The blank check procedure will be omitted and directly display:

SW ON

Now you just turn on the switch which is on the front edge of AP-64e, and hit RETURN key. The writing function will start and address hex code should be show on the right down corner of the screen.

For 2716 it will take 95 seconds to fully programming,

When the "burning" is completed, the screen display:

COMPARE OK !!

SW OFF

Please turn the switch off and take the EPROM away from the TEXTTOOL, a new fully programming EPROM has been produced. Or the screen displayed as:

COMPARE ERR !! SW OFF

that means your EPROM not be written. as you need, please turn off the switch and change a new good EPROM and do again until you get a fully programmed EPROM.

- 2) READ: To instal the EPROM into the TEXTOOL and type 2, the follows will come to the screen:

START ADDRESS ? \$

Also please key in a start address of memory in hex code. Where wish to reed in from EPROMs. and hit RETURN. After one second, Read function finished:

READ (Show on the screen)

- 1) WRITE
- 2) READ
- 3) COPY
- 4) COMPARE
- 5) BLANKCHECK
- 6) MONITOR

Now you may key in 4 or 6 to check what you READ from EPROMs according the next procedures we will explained later.

- 3) COPY: To key in "3" means you Want to burn a new copy EPROM from a old master ROM. You will see the follows from the screen:

SET EASTER ROM

Please do it carefully, and hit RETURN

READ

SET BLANK ROM

Please take the master ROM away and put a blank EPROM in the textool, press RETURN:

BLANK ? (Y/N)

The next procedure is same as WRITE until you get a new copy EPROM.

- 4) COMPARE: To compare a block of memory and the master EPROM.

Only to hit "4" for compare function, the following come to the screen:

START ADDRESS ? \$

Please key in start address of memory location in where you want to compare with the master EPROM

which is inserted in the TEXTTOOL. and hit RETURN

SET MASTER ROM

please do it, or you already have done just hit RETURN, COMPARE OK!

or

COMPARE ERR!! CONTINUE ? (Y/N)

Just key in "Yes" for continue or "No" to Stop it.

If you want to compare two or more EPROMs, the first step is to read data from eeprom to the memory location of

your system as READ function and then set another eeprom as master rom and do COMPARE function.

- 5) BLANKCHECK: To test EPROMS is blank or riot. please key in "5" and then you will see the follows on the screen:

SET BLANK ROM

Please insert the EPROM you want to test and hit

RETURN:

ROM CHECK OK! (If the EPROM is blank.)

or

EPROM CHECK ERR!! (When the EPROM is not blank.)

- 6) MONITOR: To enter the Apple machine language when you type "6". You can examine, change, move, compare and run the contents of memory in machine language. Please refer the Apple reference manual for more details.

Problems and Solutions: After using AP-64e EPROM WRITER, you will find out so many advantages such as faster, portable and more reliable. But some problems will come to bother you too. Hereafter we like to point out problems may be occurred and show you how to settle.

1. The EPROMs can not be programmed: Since the EPROMs which could be already stored program, you can't write any more, except you erase and program again.
2. If you forget to key in ROM SIZE (represented by 2,4,8) the errors could be occurred when you use WRITE, READ, COPY functions, please reset your computer and boot AP64e again.
3. Don't forget to turn the switch off when you use AP-64e from cold start or when screen indicate you "SW OFF".