

RAMBOard^(tm) Installation

READ THESE INSTRUCTIONS AT LEAST ONCE AND UNDERSTAND THEM FULLY BEFORE ATTEMPTING THIS MODIFICATION. NEITHER THE DISTRIBUTOR, OR THE MANUFACTURER WILL BE HELD RESPONSIBLE FOR ANY DAMAGE INCURRED IN THE INSTALLATION OR USE OF THIS PRODUCT.

WARNING ! : This modification will void **ANY Warranty** now in effect on your disk drive. Proceed at your own risk.

* 1541-C owners take note:

If you are installing the RAMBOard in a 1541-C disk drive please note that the 6502 processor, in some cases, **MUST** be removed from the motherboard of the drive and replaced with a socket. This task requires soldering and special tools. We suggest that you have a qualified electronics technician or a Commodore service center do the job. Removing a chip from the drive motherboard is **NOT** a task for an amateur. We have checked with a few companies and this service should only cost in the \$20 to \$30 range.

All RAMBOards have been tested and are in proper working order before we ship them. Please remember that you will be working with static sensitive devices, so prepare a work area with this in mind (a grounding source, no rugs, etc.). Also note that the RAMBOard itself is a fragile device. The pins are easily bent and may break off if not inserted properly. If after installing the RAMBOard the test program shows a non-functioning unit, please contact us as soon as possible at the Tech Support phone number.

PREPARATION:

1. Unplug all cables from the drive and turn it over so the bottom is facing up. Remove the four screws from the bottom of the case. Be sure to put them away where you'll be able to locate them later.
2. While holding both halves of the case, carefully turn the drive over so the top of the drive is facing up. Next, lift the top half of the case off and lay it aside.
3. Now, with the front of the drive facing you, look on the left side of the drive and locate the two screws that hold the metal RF Shield to the drive chassis. Remove these two screws and carefully lift the cover off the chassis. Notice on the right side of the cover are two small bumps. These bumps fit into the corresponding holes on the drive chassis. This is important to remember when replacing the cover later.

FINDING AND REMOVING THE 6502 CHIP:

1. Using a ruler, measure the length of the circuit board. Then consult the corresponding diagram on page 4 of these instructions to identify the 6502 processor chip. Remember, POSITIVELY identify the chip before removal. There is only one 6502 chip on the circuit board. Notice the small notch or semicircle at one end of the chip. This notch tells you which end is which. It should be at the end facing the rear of the drive. Make a note!

NOTE A : If you have a 12 inch circuit board and there are two metal boxes located next to the 6502 chip, you will need to buy two 40 pin DIP sockets (about \$2 at Radio Shack) to provide clearance for the RAMBOard. These install between the circuit board socket and the RAMBOard. This arrangement may cause problems when fitting the metal cover back on the chassis. (We have been running our drive without the RF Shield for some time without any noticeable problems.)

2. After identifying the 6502 chip, remove it with a chip puller. If you don't have a chip puller, you may use a small flat-bladed pocket knife. Place the blade between the chip and the socket and rotate the blade. The chip will lift slightly at one end of the socket. Now repeat the procedure at the other end of the chip. Keep doing this until you can pull the chip straight out of the socket. Be patient! You DO NOT want to bend the pins on the chip! If you do bend the pins slightly, you may be able to straighten them, but be CAREFUL, these pins do not take well to bending.

INSTALLING THE RAMBOard:

1. After removing the 6502 chip, take the RAMBOard and place it into the empty socket, (make sure all pins line up properly) with the narrow end of the RAMBOard pointing towards the back of the drive (see diagram). You may have to bend some disk capacitors down to provide clearance, so now is the time to check things out. Press the board in firmly until it fits against the socket. Do not press too hard notice that the circuit board does bend when pressure is applied. It will bend only so far before it breaks... So be careful!
2. Now place the 6502 into the empty socket on the RAMBOard using the same caution as before. Remember the notch placement! The notch should be facing the rear of the circuit board just as it was before you removed it. Check for any visible damage (broken capacitors, resistors, etc.) or improper chip placement before going on to the next step.
3. If possible, fit the metal cover onto the chassis and align the two bumps on the right side of the chassis to their proper holes. Replace the screws, and tighten them.

TESTING AND FINAL ASSEMBLY:

1. Before refitting the upper half of the drive case, connect the power cable and turn on the drive. If anything abnormal happens quickly turn the drive off. Remove the metal cover and, once again, check for any visible damage or improper chip placement. If nothing abnormal happened, turn off the drive and go to the next step.
2. Connect the drive to the computer and run the test program (see page 3 of these instructions). If the program reports that the RAMBoard is not functioning properly, call the Technical Support line as soon as possible and we will try and resolve the problem. The technical support phone number is (206) 695-9648. Support is available Mon - Fri 9am-5pm Pacific Time.
3. If all checks out well with the test program, turn off the computer and drive. Remove all cables from the drive and replace the upper half of the drive case. Carefully turn the drive over and replace the four screws. Reconnect the power and serial cables and use the drive as normal.

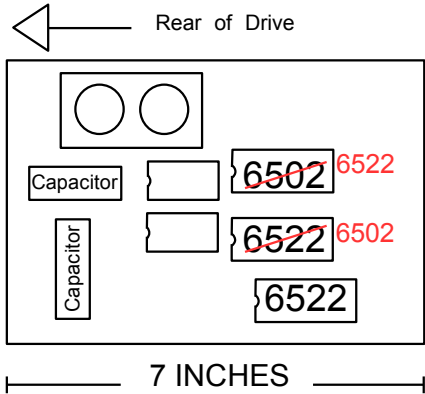
RAMBoard UTILITIES DISK:

RAMBoard Test Program: The diskette that was packed along with your RAMBoard contains, among other things, an installation test program. With the RAMBoard Utilities diskette in the drive, type LOAD "RAMBOARD TEST " ,8,1 and press RETURN. At the READY prompt, type RUN and hit RETURN again. At this point, follow on screen prompts to determine if your RAMBoard is properly installed.

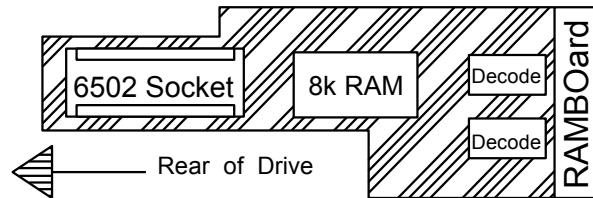
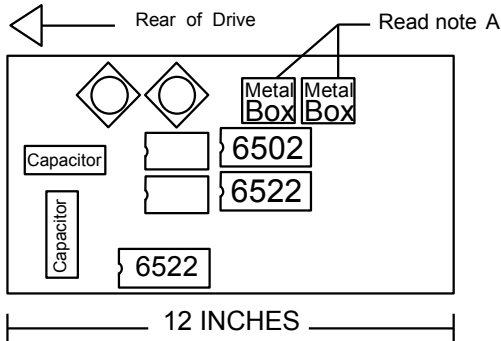
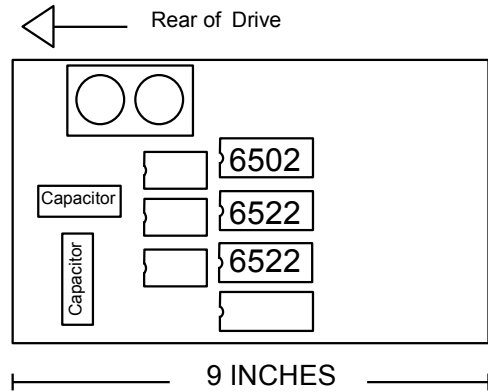
1541 Fast Data Copiers: With the RAMBoard Utilities diskette in the drive, type LOAD "*" ,8,1 and press RETURN. At the READY prompt, type RUN and hit RETURN again. You will be presented with a menu asking if you wish the single or dual drive version of the Fast Data Copier. Press the 1 or 2 key to load the appropriate copier. Once the desired copier has loaded, a quick study of the menu screen will familiarize you with the options available.

The copiers included with The RAMBoard have been designed to efficiently copy non-protected data from one diskette to another. They were not designed to handle **copy protected** programs. For that purpose, we strongly suggest the Renegade, also available from Software Support International. Renegade v2 will begin the parameter support for the RAMBoard. This combination of software & hardware promises to be the most powerful archiver ever developed for the Commodore 64.

RAMBoard ILLUSTRATIONS



Notes from preservation:
Chip identification got corrected



LIMITED WARRANTY

If at any time within 90 days of purchase, the RAMBoard or it's companion diskette become defective, you may call 1(800) 356-1179 ((206) 695-1393 outside of the 48 states) for a Replacement Authorization Number. This RA# must appear on the outside of the package containing the material being returned. We will replace your defective material as soon as possible. Replacements will be given at no charge, upon receipt of the defective item, postage paid.

The RAMBoard

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RAMBoard Test Program :(c) Chip Level Designs
1541/71 Fast Copiers :(c) K.J.P.B.

Distributed By

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