Description: Radix 2532 to EPROM Adapter for 2764 - 27512 EPROMs V1.01

Compatibility: CBM 3000 / 4000 / 8000 main boards

Last Revised   December 2022

Overview

The 2532 to EPROM adapter is a simple adapter to allow a more modern and easily available EPROM to be used to replace the 2532 or similar devices commonly found in many Commodore PET main boards.

The adapter replaces one Commodore ROM with one EPROM and requires no modifications to the main board, apart from installing a socket, if the original part was soldered in, or if the socket needed replacement, if it was damaged or not making good contact. The original white sockets fitted to many boards are known for poor connections.

The adapter board has links and an optional switch to allow any of the 16 possible 4KB blocks (when using a 27512) to be selected for a given socket. This allows an EPROM to be created with each of the required chips stored in different blocks, and the same EPROM to be used by simply changing the Address Select links on the small PCB.

In addition, the A15 link has the provision to have a switch installed instead, allowing simply use of the Commodore diagnostics ROM, which needs to be deselected after the first part of the test to run the remaining tests. By arranging the ROM to have the appropriate Diagnostics ROM in the lower half of the EPROM (A15 low) and the F000 Kernel ROM in the upper half (A15 high), the diagnostics can be run very easily.

Circuit Diagram:

The board is very simple and mostly deals with the different pin arrangement between the 2532 ROM and newer 28 pin EPROM pin connections.

In addition, 4 pairs of header pins and a switch allow the top four address lines A12 – A15 to be configured as required.

A resistor pack provides pull-ups to +5V if the links or switch are open circuit and there is also a decoupling capacitor.

Parts List
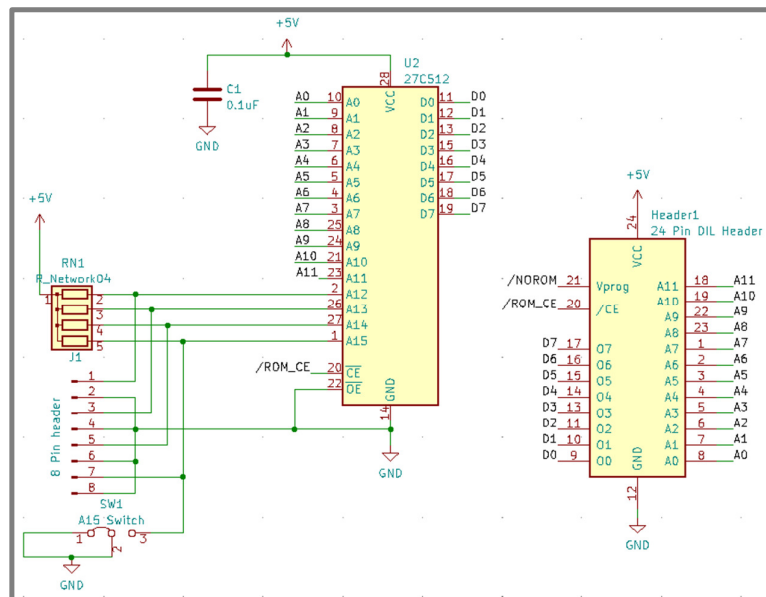
Component Ref	Value	Description
Header1	2 x 12 pin	2 x 12 pin SIL header, 0.1" (2.54mm) pitch
U2	28 pin 0.6"	28 pin DIL socket, 0.6" row spacing
RN1	1K – 10K	5 pin resistor network, 1K – 10K
C1	0.1uF	0.1uF decoupling capacitor
Header2	1 x 8 pin	1 x 8 pin 0.1" (2.54mm) pitch pin header
PCB Jumpers	0.1" x 4 off	4 x 0.1" (2.54mm) PCB header links / jumpers
SW1 (Optional)		(Optional) 3 pin, 0.1" pitch (2.54mm) PCB mount changeover switch – useful for F000 ROM socket if using Commodore Diagnostics

Construction

If you have a bare PCB, take care to check which side is the top of the board – the IC outlines are on the top, while most of the text is on the bottom of the PCB.

Do not use "normal" PCB header pins instead of the SIL headers – they are too big for EPROM sockets and do not fit, or damage the socket.

Pin 1 of the resistor network is usually marked with a dot and should be next to the "1K" designation on the top of the board.

Fit the SIL header pins **BEFORE** the 28 pin socket – or it will be hard to solder. I suggest using a small piece of Veroboard or an IC socket to keep the pins straight initially and to solder one pin near the middle of each row of 12 first, then check the pins are straight and properly aligned, before soldering the other pins.

The completed adapter is shown – note that the bare PCB shows the BOTTOM of the board.

The much thinner SIL header pins can be seen, compared to the normal header pins on the top of the PCB

The switch pulls A15 low when the switch lever is nearest pin 15 and is marked "=0" on the top of the board.

If the jumper for A15 is installed, the switch has no effect and A15 will be held low regardless.
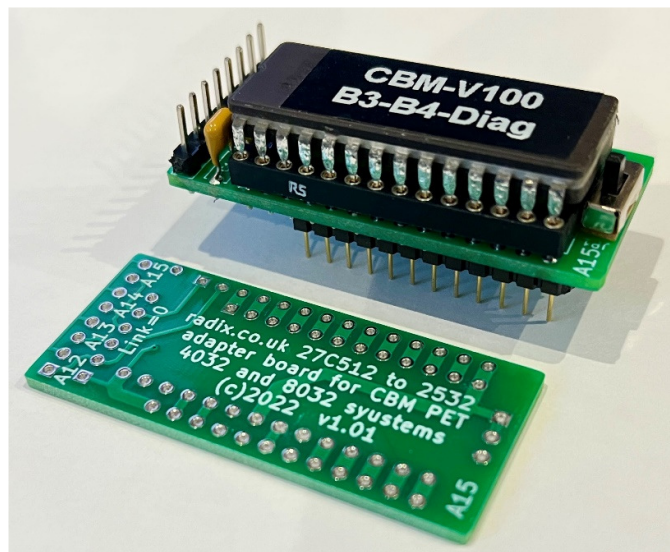
Using the adapter board

The board can be used in many ways, but in the simplest case, program an EPROM with the desired data in the **last** 4K block of the EPROM, so no push on jumpers are required and simply fit the EPROM to the 28 pin socket and put the adapter into the required socket on the PET main board.

You could also use the **first** 4K block of the EPROM and fit **all** the jumpers – or use wire links – and then the resistor pack is not needed as the address lines are forced low..

You can also choose between up to 16 different ROM images by programming them into different 4K address blocks in the same EPROM and use the jumper positions to choose which image is seen by the PET, for example:

Commodore PET ROM Map for 27C512 adapter into 2532 socket V1.01

4K Bank		Start Addr	Link/SW A15/SW	Link A14	Link A13	Link A12	Chip Part No	Description
0	0	0000	In/=0	In	In	In		
1	1	1000	In/=0	In	In	Out		
2	2	2000	In/=0	In	Out	In	901465-01	B3 C000
3	3	3000	In/=0	In	Out	Out	901465-02	B3 D000
4	4	4000	In/=0	Out	In	In	901447-24	B3 E000 Standard
5	5	5000	In/=0	Out	In	Out		
6	6	6000	In/=0	Out	Out	In		CBM 40 Col Diagnostic
7	7	7000	In/=0	Out	Out	Out	901481-01	CBM 80 Col Diagnostic
8	8	8000	Out/A15	In	In	In	901465-23	B4 B000
9	9	9000	Out/A15	In	In	Out	901465-20	B4 C000
10	A	A000	Out/A15	In	Out	In	901465-21	B4 D000
11	B	B000	Out/A15	In	Out	Out	901474-04	B4 E000 50Hz Business 80 Col
12	C	C000	Out/A15	Out	In	In	901498-01	B4 E000 50Hz Graphic 40 Col
13	D	D000	Out/A15	Out	In	Out	901465-03	B3 F000 3000/4000 9"
14	E	E000	Out/A15	Out	Out	In	901465-22	B4 F000 4000/8000 12"
15	F	F000	Out/A15	Out	Out	Out	901465-22	B4 F000 4000/8000 12"

In the table above, you can see how a number of images have been programmed into he same 27C512 EPROM and the link setting required.

B3 and B4 refer to Commodore Basic 3 and 4.

Note that the Kernel F000 Rom is duplicated to allow the correct diagnostic ROM to be selected for 40 / 80 column systems. The Kernel ROM is the same for both systems, but the diagnostic rom is different. Installing only the link for A12 allows the 40 column diagnostic to be used instead of the 80 column version.

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