



Corsham Technologies, LLC

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KIM-1 6530 Replacement Board

Introduction

A common problem with older systems like the KIM-1 is that some components fail and are no longer available, such as the 6530-002 (U2) and 6530-003 (U3). They were mask programmed at the factory and haven't been made since the early 1980s when the KIM-1 went out of production. This board provides a way to replace either of those chips.

Please note that this board was the result of borrowing good ideas from other people, so the designs of this board and related documentation are public domain. Many thanks to all the people who posted notes and ideas about a 6530 replacement, but a special thanks goes to Ruud Baltissen for two of his pages that gave me all the information needed:

<http://www.baltissen.org/newhtm/6530repl.htm>

<http://www.baltissen.org/newhtm/buildkim.htm>

Look on the Corsham Technologies web pages for the design files for this board, EEPROM images, etc.

Setting JP1, JP2 and JP3

The three jumpers each have a position labeled U2 and U3. Set them to the correct device that you will be replacing on the target KIM-1. There is no further configuration necessary.

Notes for Kit Building

Here are some hints for anyone building the board from a kit or from a blank board.

Don't use standard break-apart headers for the pins that plug into the socket on the KIM-1, as they are very wide and tend to bend the contacts on the IC socket on the KIM-1. A suggested part is a CNC Tech 220-1-40-006 which is Digikey number 1175-1527-5-ND. Have the very thin pins face down so they plug into the KIM-1.

There is a chicken-and-egg problem with the header for IC1 and the socket for IC2. One will cover the pins for the other, so to allow parts to be installed without problems, I cut out the center webbing from a 40 pin IC socket and install the two halves for IC2. When it's time to solder on the header for IC1, all the pins will be easy to solder. If you purchased a kit from us, we've already cut the IC socket in half for you.

Pay attention to which pins are IC1 and which are IC2! They're easy to mix up.

IC3 and IC5 face the opposite direction of the other chips, so be careful when soldering in the sockets and inserting the chips.

When programming the EEPROM, use the same offsets in the EEPROM as the files would be located in the KIM-1's memory map. Ie, IC2's image is from 1800 to 1BFF in memory and the EEPROM.

Revision History

Version	Changes
1	Initial version.

Errata

None.

Parts List

Part	Number	Description
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PCB	1	Printed Circuit Board (Corsham Tech, or your own)
IC1	1	40 pin header such as CNC Tech 220-1-40-006
IC2	1	6532 RIOT (hard to find, but out there)
IC3	1	74LS00
IC4	1	28C64 EEPROM or 27C64 EPROM with KIM-1 image
IC5	1	74LS138
JP1, JP2, JP3	3	3 position jumper block
C1, C2	1	.1uf disc capacitor, .1" lead spacing
	3	Shorting plugs for JP1, JP2 and JP3
	1	40 pin IC socket for IC2 (see building tips)
	1	14 pin IC socket for IC3
	1	28 pin IC socket for IC4
	1	16 pin IC socket for IC5