



BEAR MICROCOMPUTER SYSTEMS LIMITED

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Design Note 14

Constructional Details of a 4K RAM Board

Ref 4k HD76. Exorciser compatible.

Introduction

This board was designed to extend the memory available for the Motorola MEK 6800 D1 kit using Motorola's standard 43 way double edged 0.156" edge connector. By doing so, it is also compatible with the Exorciser's bus.

The D1 kit was not fully buffered therefore can only support 12K of memory directly. An easy way to arrange to fully buffer a D1 kit is to use Design Notes 11 & 16 and standardise on the double eurocard system avoiding 0.156" connectors.

To minimise the cost of this board plated through holes have not been used. It has been assumed that low cost is more important than assembly time. (particularly for hobbyists & educational establishments). If plating through is essential, contact the "Bear".

It is necessary to solder both sides of the memory chips so that if sockets are used they must be of the "soldercon" type.

Construction procedure

- a) Familiarize yourself with the board:
 - 1) Identify the I.C. pads
 - 2) Identify the pads for the 14 decoupling capacitors and the electrolytic cap.
 - 3) Identify the pads for the 1K resistor.
- b) "through-plate" all remaining holes. - leave W, X, Y, Z (future development) Use e.g. resistor etc. wire cut offs. Put the board onto a thick piece of expanded polystyrene and push the wire through the holes; leave about $\frac{1}{2}$ " showing. Solder each on one side, remove the polystyrene and put on the other side. Solder other side off wires & clip ends.
- c) Solder I.C. sockets N.B. most need top soldering.
- d) Check with multimeter for shorts etc.
- e) Put remaining components (caps + res.) onto board + memory block selector wire.
- f) Test board in system by R/W without memory I.C.'s
- g) Likewise for a 1K bank
- h) And for the full 4K
- i) To select memory position for $\phi\phi\phi\phi$ to $1\phi\phi\phi$ strap pad marked A to ϕ etc.

Component Designation

X1, X2	8T26
X3, X4	8T97 or 74367
X5, X6	74LS138
X7	74LS02
32	2102-1 for 1MHz operation
14	0.1uF cap.
1	100uF capacitors
1	1K $\frac{1}{4}$ watt.

For ready assembled & tested boards & .156" edge connectors contact the "Bear".