

mini EPROM card

a miniature memory extension for the Junior Computer

This is an elegant, low-cost solution for Junior Computer owners seeking a suitable RAM extension (to accommodate the Junior BASIC or a large assembler, for instance). At the same time, the board takes up a minimum of space.

Book 3 in the series on the Junior Computer explained how to fetch the three NMI, RES and IRQ vectors from EPROM connected to the bus board (see page FF). Appendix 3 gave an example of this using a 82S23 PROM. A 2716 EPROM, however, provides a better solution, as it is much more straightforward to program (see the EPROM programmer' in the January issue, E-81). The miniature board described here is designed to cater for 1 K of EPROM.

The circuit diagram for the miniature EPROM card is shown in figure 1. The EPROM stored in IC2 is addressed by way of IC1. The memory range comprises addresses \$F800...\$FFFF. Two wire links enable the range to be accessed either by way of pin OE (Output Enable) or by way of pin CE (Chip Enable). On the one hand the Output Enable method speeds up EPROM operation, but consumes a fair amount of stand-by current. On the other hand, Chip Enable addressing saves up to 100% current and is slightly slower. Readers may choose either method, provided they remember to ground the enable pin and connect the other to the output of IC1. This is carried out with the aid of the links shown in the circuit diagram.

Finally, the following data must be programmed into the final six locations in the \$F800...\$FFFF memory range: address \$FFFA should store 2F; address \$FFFB should store 1F; address \$FFFC should store 1D; address \$FFFD should store 1C; address \$FFFE should store 32; address \$FFFF should store 1F. The remaining 2018 memory locations are entirely at the disposal of the operator.

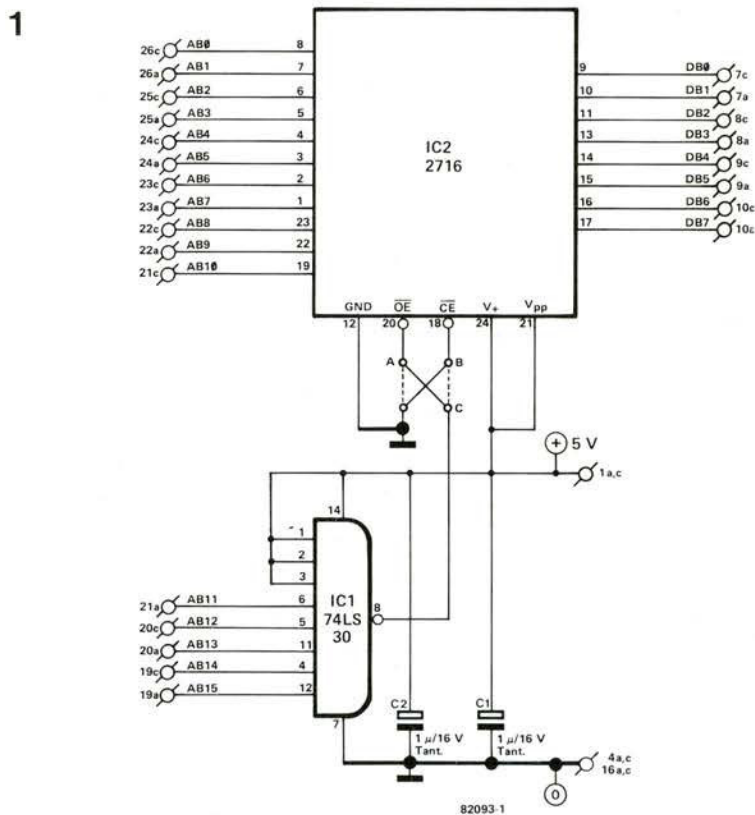


Figure 1. The 'mini' EPROM circuit diagram.

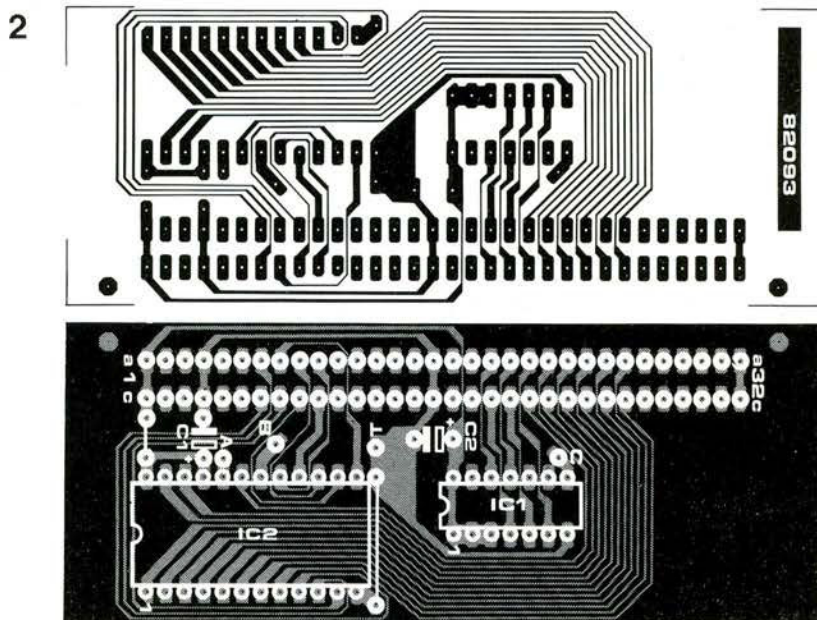


Figure 2. The component overlay and the copper track pattern for the mini EPROM printed circuit board.

Parts List

- | | |
|---------------------------|---|
| Semiconductors: | IC1 = 74LS30 |
| | IC2 = 2716 |
| Capacitors: | Miscellaneous: |
| C1,C2 = 1 µ/16 V tantalum | 1 64-pin male connector ('a' and 'c') 41612 |