

CORTEX PART 3

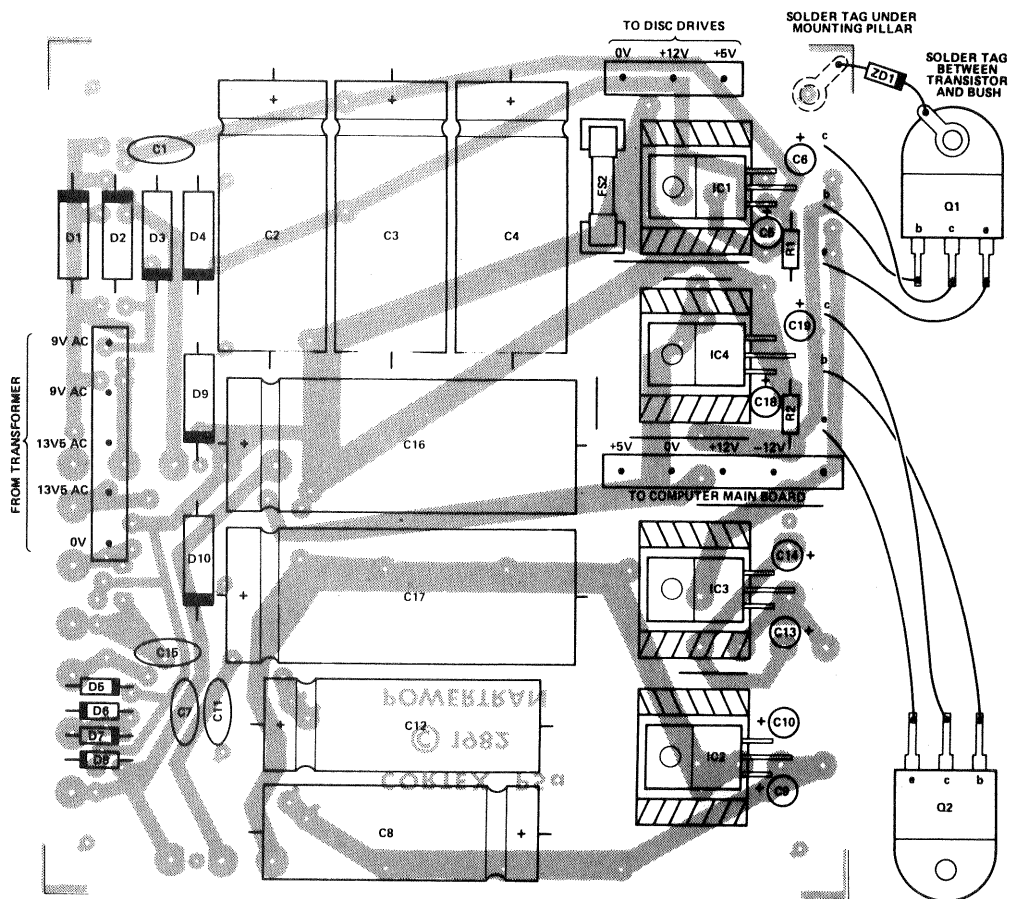


Fig. 1 Component overlay for the power supply.

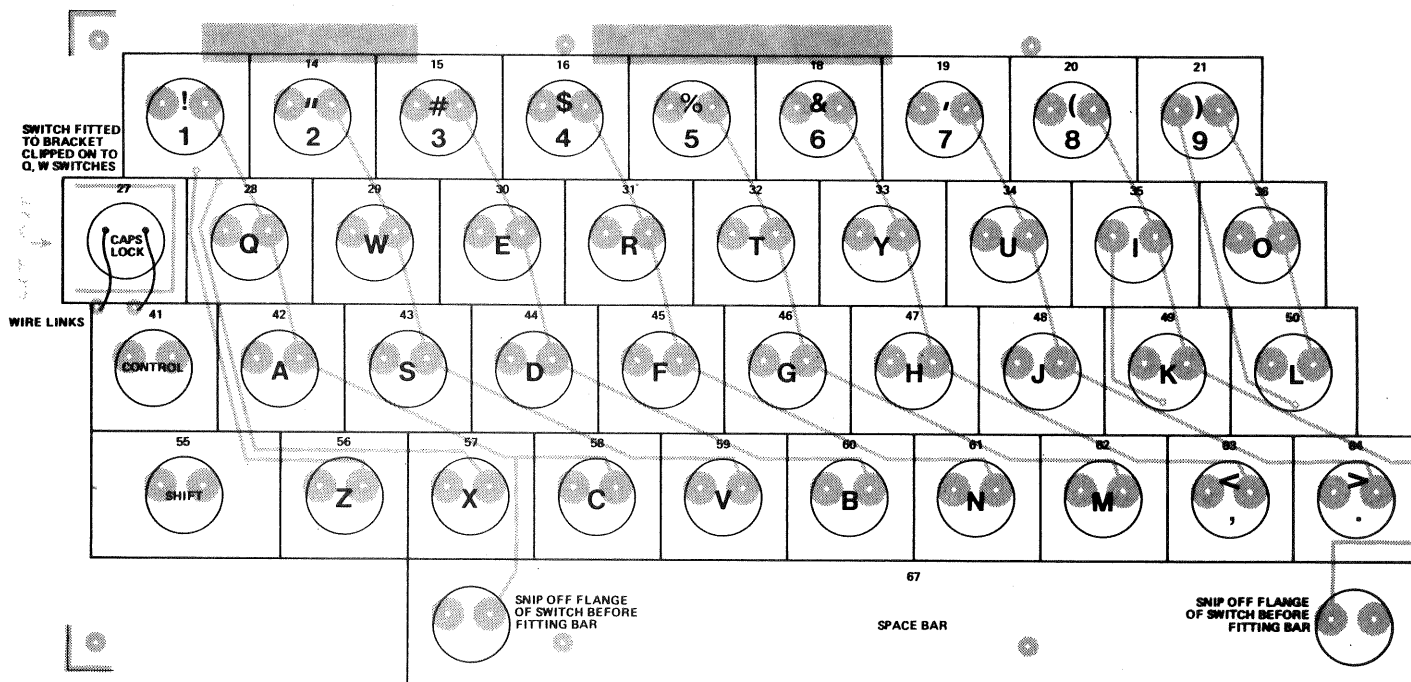


Fig. 2 The keyboard overlay, in two halves so it doesn't get stapled into illegibility.

PARTS LIST

POWER SUPPLY
Resistors (all 1/4W, 5%)
R1,2 10R

Capacitors
C1,7,11,15 100n polyester
C2-4 4700u 16 V axial electrolytic

C5,6,9,10, 13,14,18,19 1u0 35 V tantalum
C8,12 2200u 25 V axial electrolytic
C16,17 4700u 25 V axial electrolytic

Semiconductors
IC1 7805
IC2,4 7812
IC3 7912
Q1,2 TIP2955

D1-4,9,10 1N5402
D5-8 1N4002
ZD1 BCW70 5V6

Miscellaneous
PCB (see Buylines); one off three way connector; two off five way connectors; transformer (13.5-0-13.5 V at 3 A, 9 V at 4 A; fuseholder clips; four off TV5 heatsinks.

KEYBOARD
Resistors (all 1/4W, 5%)
R1,2,6,8 4k7
R3 18k
R4 12k
R5 680k
R7 100k

Capacitors
C1,2,5 220n 35 V tantalum
C3,4 4u7 16 V tantalum
C6 4n7 ceramic
C7 33p ceramic

Semiconductors
IC1 74LS123
IC2 74LS08
IC3 74LS157
IC4 2376
Q1 BC182L

Miscellaneous
PCB (see Buylines); 67 off momentary push-to-make switches; one off latching push-to-make switch; set of 67 double shot moulded key tops; IC sockets; switch mounting bracket; mounting pillars etc.

The CAPS LOCK switch is physically different from the rest and is wired in with wire links. Press this switch into its bracket together with the Q and W switches before fitting to the board. It is most important that the switches fit squarely on the board. The best way to be sure of this is to solder only one pin of each switch and then holding the board, press in turn each of the switches while reheating the soldered joint. If any are misaligned this will correctly position them. The key tops can now be pressed on and the remaining pins soldered.

The power supply is on a single-sided PCB with six wire links and it is best to fit these before any components. Connections to and from this board are made via connectors and to ensure that their

pins are soldered in squarely, fit the sockets on to them during soldering. The power supply is all on the back panel and the power transistors use this as a heatsink, being fitted to it with mica insulating washers.

As well as holding the input and output sockets, the rear panel has provision for a cooling fan and one should be fitted when disc drives are used.

The disc drives pass through the front panel and are screwed onto a mounting plate. Plates on the sides of the drives press against the panel, thereby making a rigid sub-assembly which fits into the cover of the computer. The standard kit has a panel with no cut-outs for disc drives and a new panel is provided with the drives when purchased.

There are two positions in which the main board can be fitted.

The board has provision for a Eurocard connector for expansion purposes and there is a cut-out in the side of the computer through which the connector passes; for external expansion the board fits at the far right hand side. However, if the add-on units are to be fitted internally then the position to the left is used.

BUYLINES

Powertran are supplying complete kits of parts and component packs for the Cortex. A complete 64K Cortex kit will cost £295 plus VAT, carriage free. A ready-built 64K Cortex will cost £395 plus VAT, carriage free. Prices for add-ons (eg floppy discs, RS232C interface, memory expansion etc) and for component packs (eg PCB, semiconductors etc) can be found in Powertran's brochure. Powertran Cybernetics, Portway Industrial Estate, Andover, Hants SP10 2NM. Telephone 0264 64455.

