Replacement Spectrum Upper RAM PCB
Fitting Instructions

Dismantling the Spectrum:

Remove the screws from the underside of the machine, hold the two parts of the case together and flip it over. Lift off the top part, taking care to disconnect the two keyboard membrane cables from their sockets as they become accessible (they just pull out).

Installation:

Press the RAM PCB into the upper RAM IC sockets as shown in the photos below. Make sure Pin 1 of the PCB is aligned with Pin 1 of IC socket IC22 (the top left pin) and that the board is mounted squarely so that all the other pins are aligned correctly. On some motherboards (notably the “4S” types) disc-type ceramic capacitors are used which may be an obstruction. If they cannot be folded down out of the way, they can either be removed (as they are not required when the PCB is fitted) or replaced with smaller 22nf ceramic capacitors.

Note: The original support logic for the upper RAM must be installed for the PCB module to work. On earlier boards these chips were designated IC23, IC24, IC25 & IC26. On later boards the glue logic is contained in a single 40-pin chip: IC27)

Jumper links:

The jumper settings should be irrelevent for this PCB module, but a valid configuration should still be set:

Issue TWO boards - On the top right of IC1 (the large ULA chip) there are 3 pads, the top is marked “+5v”, the centre is unmarked and the bottom is marked “0v”. Either the top or bottom pad should be connected to the centre pad (with this RAM module it doesn’t matter which).

Issue 3 boards - On the right of the MIC socket (under the heatsink) there are two groups of pads marked “TI,L,H” (first column) and “OKI,3,4” (second column). If no pads are already linked, link the two pads marked “TI” and also link the two pads marked “4” . (If another valid configuration is already set, just leave it as it is - it doesn’t matter with this RAM module. Valid link selections are: a) TI linked (plus 3 or 4 linked) or b) OKI linked (plus L or H linked)

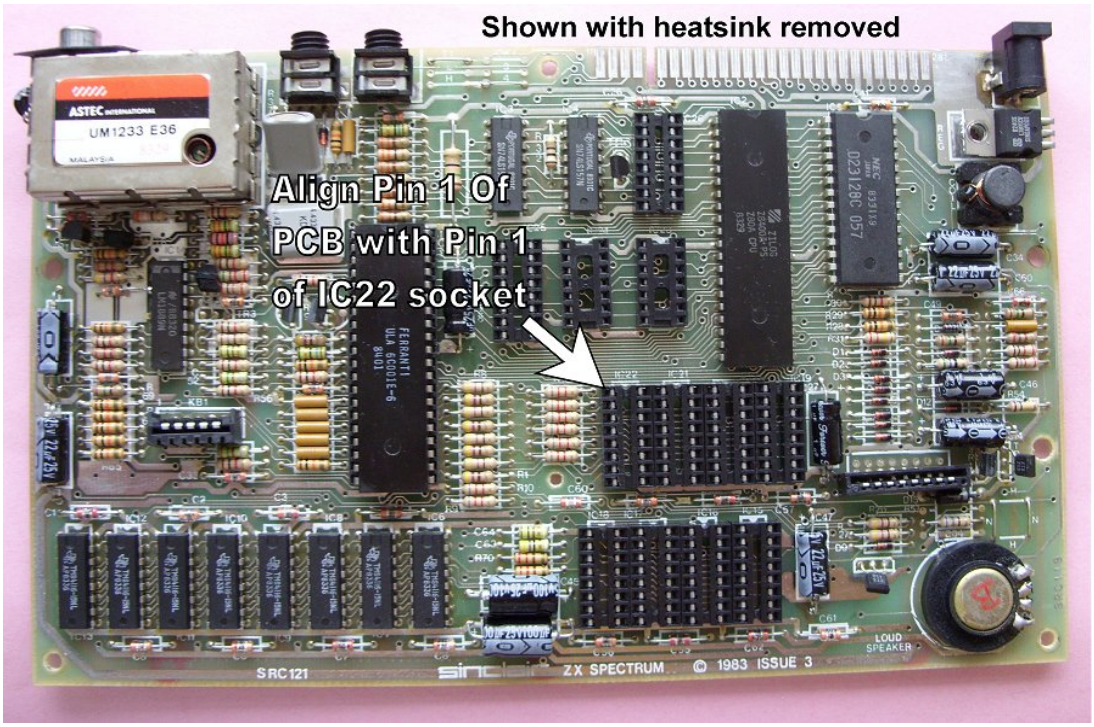
Note: Issue TWO boards have the heatsink in the bottom right and all other issue PCBs have the heatsink at the top, above the edge connector.

Reassembling:

At this point you can test the Spectrum (without the keyboard membrane attached). Power up and you should notice the copyright screen takes a little longer to appear than when only 16KB is present. Disconnect the power and proceed with reassembly: Push the membrane tails back into their sockets, replace the top section of the case (try to ensure the cables don’t become too pinched). Finally, replace the outer case screws.

Obviously if any problems are encountered, remove the power and module and the check pin alignment etc.

Before upgrade (issue 3 PCB shown)



After: