

4Mb RAM upgrades for the A3010 computer

General.

Upgrading the A3010 computer to 4Mb of memory does not require any soldering. The only tool needed is a medium sized crosshead screwdriver. You should be aware that the RAM upgrade is quite a delicate unit, and the pins may be bent or even broken completely if care is not taken. You may wish to ask a dealer to install it for you, although a charge may be made for this service. Any such charge is entirely at the discretion of the dealer. IFEL offer a three-day fitting service for £30+VAT, which includes collection and delivery (UK mainland).

These instructions relate to RAM boards marked MA104C Iss 1. These boards are fitted with two 1Mx16 chips, which together give a full 4Mb of RAM. This approach minimises the power consumption and loading on the computer's circuitry. The 1Mb of RAM in the machine is disabled. This upgrade is therefore equally suited to a 1Mb machine, or one which has been expanded to 2Mb.

Precautions.

For safety reasons, you should never remove the computer's cover without first disconnecting the machine from the mains supply. The RAM upgrade (and indeed the main circuit board) can be damaged by static electricity, and it is wise to take some sort of handling precautions. A simple method is to periodically touch an earthed object, such as the metal frame of a lamp or radiator. The procedure for accessing the RAM sockets is in fact described on page 88 of the A3010 Welcome Guide.

Method.

- 1) The first stage is to gain access to the section of the circuit board which is used for memory expansion. Start by switching off and unplugging from the mains the computer and all peripherals, such as the monitor, printer etc. Place the computer upside down on the work surface.
- 2) Remove the three screws which are located on the underside, along the front edge.
- 3) Remembering that the lid is now no longer attached to the rest of the machine, carefully stand the computer the right way up. Cautiously lift up the front edge, being careful that the hinges at the back do not break.
- 4) The keyboard now needs to be held in a vertical position so that the RAM bay can be revealed. Be certain not to damage the thin cables which attach the keyboard to the main circuit board. It is in fact possible to disconnect these cables from the circuit board, by gripping each end between finger and thumb, and pulling gently upwards. If fitted, remove the metal cover from the RAM socket area to reveal the RAM sockets.
- 5) If your machine is already fitted with an extra 1Mb (ie 2Mb total), then carefully remove the two chips from the sockets on the main circuit board. It helps to gently rock them from side to side, while simultaneously pulling them upwards at each end. You will not need these chips again, although your supplier may have agreed to accept them in part exchange, providing they are in good condition and working order. They should therefore be handled carefully.

Chips being returned to your supplier should be sent in proper antistatic material.

- 6) The diagram shows the two sockets used for memory expansion, and also the three links, LK20, LK21 and LK22. These links are used to control the amount of memory "seen" by the computer. Two of these links, LK20 and LK22, consist of three pins, and a black "jumper" can be used to join the middle pin to one of the remaining two. Sometimes the link may even be removed completely. LK21 is only a 2-pin link, and the jumper will either not be present at all, or fitted over both pins. Perform the following action with the links (a pair of precision pliers being handy here). Remove the jumper from LK22 and place it over the two pins of LK21. Make sure that LK20's jumper joins pins 2 and 3 (ie the middle pin to the rightmost pin).
- 7) Take the RAM board (which should be marked MA104C Iss 1) and carefully align its pins over the sockets on the main board. The diagram shows the outline of the RAM upgrade and its relative position over the sockets (dotted). Make sure the arrow on the upgrade points towards the front. The upgrade needs to be pressed fully home, although you will find that it is quite a tight fit (a consequence of the type of sockets used in the computer). Try to avoid pressing on any components directly.
- 8) It now remains to reassemble the machine, this being the reverse of steps 1 to 4. Switching on should reveal a total of 4096K, indicating a successful upgrade. Problems of any kind are usually caused by incorrect installation. The most important points are to make sure that the pins on the upgrade align properly with the sockets on the main board, and that it is pushed firmly home. Also check the link settings.

Link settings - general summary

RAM Size	LK20	LK21	LK22
1Mb	1-2	Not fitted	1-2
2Mb	1-2	Not fitted	2-3
4Mb	2-3	Fitted	Not fitted

(NB Other types of 4Mb upgrade may need different settings)

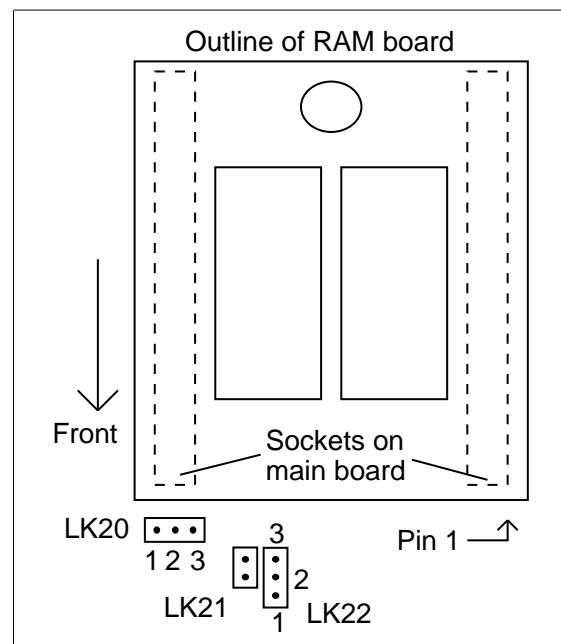


Fig.1 The link positions in the A3010 computer.