

RAM upgrades for the A3010 computer

General.

Upgrading the A3010 computer to 2Mb or 4Mb of memory does not require any soldering. The only tool needed is a medium sized crosshead screwdriver. When upgrading from 1Mb to 2Mb you will require two 40-pin RAM chips. Upgrading to 4Mb requires a small memory card.

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, and applies to both a 2Mb and a 4Mb memory system. 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

Upgrading from 1Mb to 2Mb

- 1) Refer to fig. 1 above and adjust the link positions so that LK20 is 1-2, LK22 is 2-3, and LK21 is not fitted. (Normally only LK22 needs to be changed).
- 2) Take the RAM chips and make sure that you can identify pin 1 on them. Viewed from the side, the package should have a noticeable chamfer and/or spot on one corner, and pin 1 is at the same end as this mark. Refer to figure 2. You should retain the protective packaging used for the RAM chips for reasons which will become clear when you read the section dealing with 4Mb upgrades.
- 3) Push each RAM firmly into position, making sure that all the pins go into the sockets, and that pin one faces the front of the computer. Both chips are identical.
- 4) Reassemble the computer, connect the various peripherals, and test. The machine should show 2048K briefly after switching on, and the task manager, obtained by clicking select over the acorn symbol on the icon bar, should likewise indicate a total of 2048K.

Fig. 2. Pin 1 on the 40-pin RAM chips used for the 2Mb upgrade.



circuit board, but they are quite delicate and we suggest that you avoid doing so if possible. The assistance of a friend may be useful here, to hold the keyboard upright. If fitted, remove the metal cover from the RAM socket area to reveal the RAM sockets.

- 5) The diagram below shows the two sockets used for memory expansion, and also the three links, LK20, LK21 and LK22. You must now follow one of the two sections below, depending on whether you are upgrading to 2Mb or 4Mb of RAM.

Link settings - general

Three links on the main board 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. The diagram shows the default link settings for a 1Mb machine. LK20 is set 1-2, LK21 is not fitted, and LK22 is also set 1-2.

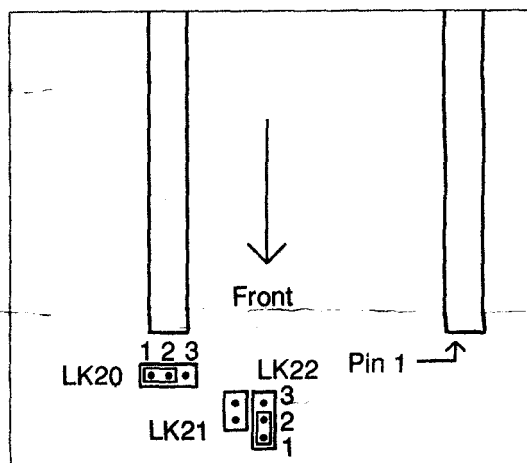


Fig.1
The link positions in the A3010 computer, shown here for use with a 1Mb machine.

Upgrading to 4Mb from either 1Mb or 2Mb

- 1) Refer to fig. 1 above and set LK20 to be 2-3. Now move the jumper from LK22 and place it over LK21.
- 2) If there are RAM chips in the two sockets (ie it is already a 2Mb machine), then these must be removed. Do so carefully because the chips can be used in other computers. The supplier of your 4Mb board may have agreed to take the chips in part exchange, and naturally they would have to be physically and electronically undamaged. That is why we recommend that you retain for future use the conductive tubes in which the RAM chips for a 2Mb expansion are sent.
- 3) Carefully remove any protective packing from the memory board, and check that none of the pins on it is bent or missing. These pins are gold plated in order to provide reliable contact over prolonged periods. They are expensive (and awkward) to replace, so treat the upgrade with respect.
- 4) With the components facing downwards, align these pins with the two sockets on the board, making sure that the arrow on the RAM board faces the front of the machine. The corners of the board are cut away not only to simplify checking the pin alignment, but also to make it easier to grip. Finally, push the board firmly and evenly into the sockets. You may find that pushing on the sharp pins is rather uncomfortable, and it helps to use the black foam as a "cushion".
- 5) Reassemble the computer, connect the various peripherals, and test. The machine should show 4096K briefly after switching on, and the task manager, obtained by clicking select over the acorn symbol on the icon bar, should likewise indicate a total of 4096K.