MEMC1a Upgrade Kit Fitting Instructions

WARNING!

Your computer contains hazardous voltages so before removing any cover, switch off and disconnect from the mains supply as failure to do so may cause injury.

CAUTION!

OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES. Your computer and upgrade can be damaged by careless static discharge. Earth yourself and try to avoid touching any of the electronic circuitry.

Note: The computer board and upgrade chips are static sensitive and excessive handling can damage them. It is recommended that the MEMC1a is left in its protective packaging and only removed immediately prior to plugging it into the machine. Precautions should be taken to reduce static by wearing an earthed anti-static strap or by occasionally touching an earthed surface. As the fitting of this upgrade is outside our control, no responsibility can be accepted for any consequential loss or damage caused by its incorrect installation.

Purpose

To replace the original memory controller with an improved version which will speed up memory accesses by 10%.

Tools Required

A small cross-head screwdriver for removing the case, a small flat-bladed screwdriver or 'BIC' pen-top, and a PLCC extractor tool to remove the MEMC1 from its socket.

Fitting

The fitting of the MEMC1a involves the removal of the metal cover and the floppy drive to give access to the MEMC socket.

1) Disconnect the power cable and all other connecting cables from the the computer, placing the monitor and keyboard in a safe place. The cover can now be removed by using the cross-head screwdriver to unscrew the two side screws and the three rear screws and carefully sliding the cover to the rear until it clears the rest of the machine. Place the cover in a safe place. (This operation is explained in more detail in appendix B of the Archimedes User Guide : Maintaining the Archimedes computer in the section *Changing the Batteries*.)
2) Carefully detach the ribbon cable and power cable from the rear of the right-hand floppy drive and curl them back out of the way.
3) Now using the cross head screwdriver, undo the two screws securing the drive cradle to the drive bridge and carefully lift clear and place in a safe place.
4) With the MEMC socket now fully exposed, the old MEMC chip can now be removed from its socket using the PLCC extractor. Holding the tool vertically in one hand, both metal hooks of the tool are pushed into the two extraction slots of the socket at diagonally opposite corners of the chip so that the plastic body of the tool rests upon the upper face of the socket.
(You should be able to move the hooks of the tool freely up and down slightly in the slots of the socket . If the hooks do not move then they have not cleared the side of the chip and tool must be rocked gently back and fore by a few degrees in line with the slots so that the hooks become free and latch round the underneath of the chip.) Holding the tool upright, gently squeeze the two elbows together. This causes the hooks to pull the chip upwards out of the socket. Under no circumstances should you pull upwards or tilt the tool as this will damage both tool and socket - let the tool do the work! When the extracting action is complete, the chip will be just clear of the top of the socket, being clamped firmly between the hooks and base of the tool and can be lifted clear.
DO NOT touch the contacts within the socket as the grease on your fingers will cause future connector failure with the socket.
The 20 pin PAL chip in the turquoise socket between the ARM and MEMC sockets now has to be removed by gently levering up each end of the chip using either the flat-bladed screwdriver or clip of a 'BIC' pen top. The old chips can be stored in the conductive packaging accompanying the upgrade just in case you decide to refit them at a later date.

Fitting the Upgrade

Take the square MEMC1a from the packaging and carefully place it over the top of the MEMC socket. Orientate the MEMC1a chip so that the small dot half way along the bevelled edge is adjacent to the pin 1 marking on the PCB and the chamfered corner of the chip matches the chamfer on the socket. Using your thumbs, gently press downwards on the chip with even pressure, trying to keep it level with the main PCB until the chip clicks home flush with the top of the socket. Now take the 20 pin PAL chip and plug it into the PAL socket making sure that pin 1 (identified by either a notch at one end or moulded dot on the top left of the body) is towards the rear of the machine. You will need to bend the legs of the chip inwards so it will fit the socket by rolling each side on a flat surface. Check that both chips are socketed correctly and then replace and secure floppy disk cradle with its two screws and reconnect the ribbon and power cables. Be careful not to misregister the ribbon cable with its connector as there is no shroud to aid in its alignment.

Before replacing the cover check once more that all cables have been reconnected and that all screws have been replaced. You may wish to take the opportunity of changing your fan-filter and batteries before the computer is fully assembled.