RISC OS ROM upgrade kit
installation and configuration instructions
(For use with Archimedes 300 and 400 Series computers)

These instructions describe how to upgrade the Archimedes computer operating system from Arthur to RISC OS. Also included are guidelines for reconfiguring your computer and details of the new floppy and hard disc formats available under RISC OS.

Parts list

In this upgrade kit you should have:
- four RISC OS ROM chips, pressed into an anti-static foam strip
- Applications discs 1 and 2 and the Support disc
- the Archimedes Welcome and User Guides (Edition 2)

Installation

T0 fit the upgrade you will have t0 remove the cover 0f the computer unit, the backplane (if fitted) and any expansion cards (if fitted). The tools you will require are a No. 1 Pozidriv screwdriver and an IC extraction tool (or a flat-bladed electrical screwdriver).

Please read through the following instructions carefully before you start. If you d0 not *feel* confident about carrying out this installation, take this upgrade and your Archimedes computer to your supplier who will fit it for you. A charge may be levied by the supplier for installing the upgrade; such a charge shall be entirely at the discretion of the supplier concerned.

Please take care while fitting this upgrade. You will need to protect the R0M chips from static electricity, as this can seriously damage them. Any damage caused while fitting this upgrade is unlikely to be covered by the guarantee.

Removing the cover of the computer

1 Switch off the computer at the rear and unplug the power cable from the mains supply. Disconnect the keyboard, monitor and any peripherals and move them out of the way.

2 Locate the screws holding the cover in place (see Figure 1). Remove the three screws at the top rear of the unit. Then remove the single screws located 0n each side of the unit, towards the front.

3 Slide the cover to the rear 0f the machine, and then remove it completely. Slightly springing the sides of the cover outwards will make it easier to slide.

Figure 1: Removing the screws holding the top cover

Removing the expansion cards and backplane (if fitted)

1 Unplug and remove any expansion cards fitted (refer t0 the expansion card instructions supplied with each card).

2 Unplug the backplane by removing the two screws, one 0n each side of the backplane support bar (see Figure 2). Take care when removing the screw next to the power supply as it can easily fall through the hole in the power supply's case.

3 Lift the backplane bar up (this unplugs the backplane connector SKI) and rest it gently 0n top of the power supply. It is not necessary to disconnect the wires connecting it to the power supply.
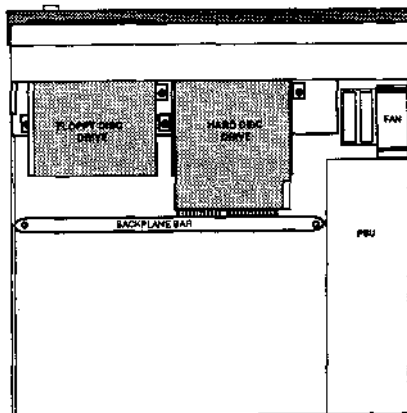

Figure 2: Unplugging the backplane

Locating the ROM sockets on the board

Position the computer so that you are facing the front panel, looking down on the main circuit board. The ROM sockets will then be located halfway along the right-hand side. The sockets are labelled IC24, IC25, 1026 and 1C27 (see Figure 3).
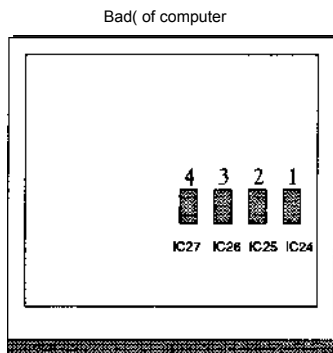
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Figure 3: Locating the ROM sockets

Removing the existing ROMs

It is important that you remove the ROM chips extremely gently, 0therwise you may bend the pins or damage the sockets.

Remoye the existing ROM chips from their sockets with an IC extraction tool. Put the ROM chips to one side, and be careful not to confuse them with the new set of ROM chips. Alternatiyely you can use a small flat-bladed screwdriyer to lift up each end of the chip in turn, then, when the chip is released from the socket, pull it out by hand. Take care not to damage the surface 0f the circuit board with the screwdriver.

Inserting the new ROMs

You are now ready to insert the new ROM chips. Before you start, touch an 'earthed surface' t0 discharge any static electricity. Hold each chip by its plastic case between frnger and thumb. Ayoid touching the metallic pins.

1 Take the new set of ROM chips 0ut of the packaging. Identify the chips according to the following table.

ROM	Markings	*Alternative* Markings
1	0283,022	ROM1
2	0283,023	ROM2
3	0283,024	ROM3
4	0283,025	ROM4

The ROMs will be inserted into the following IC sockets:

ROM	Insert in socket
1	1C24
2	IC25
3	1C26
4	1C27

2 Check that all pins on the ROMs are parallel and straight. If any appear crooked or splayed, you will need to realign thein. Hold the chip sideways 0n and press the pins on 0ne side gently against a firm flat surface (see Figure 4). Straighten the other row of pins if necessary.
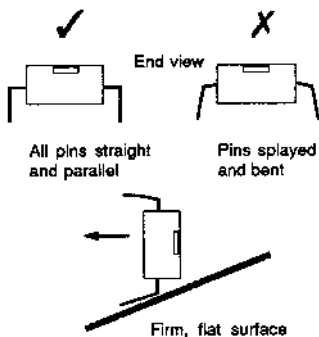

Figure 4: Correcting pin alignment

3 Locate ROM chip socket IC24 (see Figure 3).

4 Take the chip identified *as* ROM 1 and holding it by the plastic case, align it as follows (with reference to figure 5):

- *If* the chip has a semi-circular notch at one end, position this towards the notched end of the chip socket.
- If the chip has a groove down one side, you should position the chip so that the groove is 0n the left hand side of the chip.

The sockets have 32 pin positions whereas the ROMs have 0nly 28 pins, s0 four pin positions will be unused. Always align the ROMs so that the four free positions are at the notched end of the socket (see Figure 5).
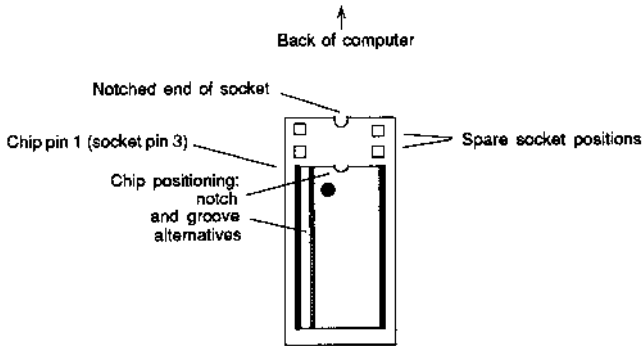
Figure 5: Positioning the new ROM chip

5 When you are sure that the chip is positioned correctly, apply firm pressure to the chip until you feel it press home, but do not force it. When the chip is in place, it appears to be slightly raised.

6 Check that all the pins have entered the socket and that none are bent or caught underneath.

7 Insert the remaining ROMs; ROM2 int0 socket IC25, ROM3 into socket IC26, ROM4 into socket 1C27.

Reassembling the computer

1 Replace the backplane (if fitted) by inserting the backplane connector into socket SKI and pressing frrmly. Then replace the screws, one at each end of the backplane support bar (see Figure 2). Take care when inserting the screw next to the power supply as it can easily fall through the hole in the power supply's case. If you are also replacing expansion cards, don't tighten the backplane screws yet.

2 Put back any expansion cards that you have removed; refer to the expansion card installation instructions for more information. Once all the cards are in place and connectors fully home, tighten the backplane securing screws.

3 Slide the cover 0f the Archimedes unit on from the rear, making sure that it is correctly located in its slots on each side 0f the base.

4 Replace the screws at the rear and sides of the unit and tighten them (see Figure I). Be careful not to overtighten these screws.

5 Connect the monitor and keyboard, and then plug in the mains supply.

Resetting the CMOS RAM settings

It is adyisable to reset all CMOS RAM settings to their initial default yalues. Hold down the Delete key (not backspace) and power 0n the computer. Keep the Delete key held down fo1 several seconds after you have powered on. Resetting all the CMOS RAM settings will also reset those settings specific to any expansion cards fitted (refer t0 your expansion card instructions for more information 0n CMOS RAM settings).

Configuring the monitor

If you are using a multi-frequency scanning colour 0r high-resolution monochrome monitor, reconfigure the computer to recognise the monitor as follows:

1 Power off your computer.

2 If you have a multi-frequency scanning colour monitor press and hold down numeric keypad 1, or if you haye a high-resolution monochrome monitor press and hold down numeric keypad 2.

3 Power on the computer.

4 Keep the numeric key held down for several seconds.

If the computer is now correctly confrgured for your monitor type, you should see the standard R1SC OS desktop displayed (see the Archimedes Welcome Guide Edition 2).

Configuring discs

If you have a second floppy disc 0r a hard disc fitted, you will need to change the configuration 0f the computer before you can use them. T0 d0 this you must temporarily exit from the desktop (press function key F12).

If you have tw0 floppy discs, at the * prompt type:
```
*Configure Floppies 2
```
0r if you have a hard disc, at the * prompt type:
```
*Configure HardDiscs 1
```
If you have a hard disc, this can be made the default drive (i.e. the one accessible immediately after Ctrl Break o1 switching on) by typing:

```
*Configure Drive 4
```

Now press Ctrl Break to reset the computer. You should see the standard RISC OS desktop displayed again, complete with the additional drive.

Important notes

Memory allocation

Under the Arthur operating system, RAM units were mostly specified in pages; RAM units can now also be specified in kilobytes. It is preferable t0 use kilobytes (for example `*Configure ScreenSize 8 0 k)` as page size is dependent upon memory size.

New disc format

A new floppy and hard disc format, called the E format, has been introduced with this upgrade. This format offers improved utilisation of free space fragmentation on the disc (and so does not need to be occasionally compacted), increased security against disc corruption and improyed speed of random access. When using floppy discs, the E format is now the default. If you need to transfer files to an Archimedes computer still running Arthur, always select D format when formatting discs.

The E format discs have marginally less free space than D format discs and so you cannot copy a *totally full* D format disc onto an E format disc.

If you1 computer uses a hard disc, and you want t0 take advantage of the new format, you will have to reformat the disc. Formatting destroys all files on the disc, so you should first copy your files to floppy discs.

The hard disc formatting program, HFORM, *is* described in the Archimedes User Guide (Edition 2) supplied with this upgrade, and an updated copy of this program *is* supplied 0n the Support disc. Hard disc owners should delete any earlier copies 0f HFORM and should keep a copy of this updated HFORM in a safe place.

RunnIng existing Arthur applIcations under RISC OS

Most existing Arthur applications will run without change under R1SC OS. Many applications can be made to behave more like R1SC OS applications by using the utilities supplied on the Support disc. The Support disc contains information, supplied by Acorn and independent software developers, which has been developed to help you modify existing software t0 use the RISC OS environment. Each software deyeloper has contributed a directory of information, ranging from a text file of simple instructions to an alternative set of application modules. Als0 included 0n the disc is an information file called ! Re adMe. This ! Re a dMe file contains the latest information about the contents 0f the Support disc.

If the software you **use** is not listed 0n this Support disc, please contact your supplier or the software supplier/manufacturer for more information.