
Acorn StrongARM card and RISC OS 3.7 Upgrade Instructions

These upgrade instructions tell you

- how to install new ROMs and a new hard disc image to upgrade your computer to RISC OS 3.7, taking advantage of the latest network and printing developments
- how to install a StrongARM upgrade card to replace an existing ARM610 or ARM710 processor.

Before you start

As well as these instructions, this pack contains the following:

- StrongARM upgrade kit, comprising a new StrongARM processor card
- RISC OS 3.7 upgrade kit, comprising:
 - 2 × RISC OS 3.7 ROMs
 - 4 × floppy discs, containing a new hard disc image (including new !Boot, printer drivers and network configuration software) and a README file.
 - 1 × CD-ROM, containing various RISC OS demos.
- Anti-static wrist strap for use during hardware installation.
- Guarantee card.

If any of these items is missing or damaged, please contact your supplier immediately.

Overview

This section gives very brief outline of the steps you'll need to follow to upgrade your computer successfully.

- 1 Back up any important files, including network and applications, then remove any applications that use software protection from your hard disc. See *Making software backups* on page 3.
- 2 Install the new hard disc image from the floppy discs supplied. See *Software installation instructions* on page 4.
- 3 Install the new RISC OS 3.7 ROMs and the StrongARM processor card. See *Hardware installation instructions* on page 7.
- 4 Restart your computer with factory default CMOS RAM settings. See page 9.
- 5 Reconfigure your system software. See page 10.
- 6 Reconfigure your network setup. See page 10.
- 7 Reconfigure your printing setup. See page 17.
- 8 Update ARMovie. See page 18.
- 9 Update !Boot!DECD. See page 19.
- 10 Restore applications and other software. See page 19.

Tools required

You'll need a ROM extractor tool to fit the upgrade.

Important information

Any modification or upgrade carried out to the printed circuit board (PCB) of any Acorn equipment is undertaken at the sole risk of the person carrying out the modification or upgrade.

Acorn Computers Limited cannot accept any liability for damage caused to the product during installation of internal upgrades, whether or not carried out in accordance with the instructions in this document.

Before commencing an upgrade, please read all of the instructions carefully. If you do not feel confident to carry out this upgrade, please take the upgrade kit and your computer to an Acorn Computers authorised dealer, who will install it for you. A charge may be levied by the supplier for installing the upgrade kit; such a charge shall be entirely at the discretion of the supplier concerned.

Static electricity

IMPORTANT: Most electronic devices can be damaged by static electricity. To reduce the possible adverse effects of static electricity, note the following when installing any component(s) or upgrade:

- Avoid working in areas where there are man-made fibres, such as nylon carpets and nylon clothing.
- After the computer is disconnected from the mains, connect the static wrist strap supplied to a suitable metal earth point on the machine, e.g. the shell of the serial port. Fit the loop of the strap securely around your wrist.
- Avoid touching the pins of ICs or components on the processor card during fitting.

Making software backups

Before you install the upgrades supplied in this pack, you need to back up any important files, as you would before performing any hardware or software upgrade.

We recommend that you back up onto a second IDE disc or SCSI device with sufficient storage capacity, if you have one. This will save having to use multiple floppy discs.

- 1 Back up any applications that use software protection, and then remove them from your hard disc.
- 2 Back up any other important applications.
- 3 Back up any important files.

See your *User Guide* for details on backing up.

Software installation instructions

This section explains how to install the new hard disc resources from the first three floppy discs supplied. The installation is controlled by an application called !Installer, supplied on Floppy disc 1.

Note: Please check the ReadMe file on Floppy disc 1 before starting, as any late changes will be notified there.

During the installation process, various dialogue boxes will be displayed containing advice and information. At each stage you can check the information and click **Continue** to proceed, or **Cancel** if you want to quit the installation.

The installer does allow you to make a few choices, but is designed so that the default choices are those you require as part of the RISC OS and StrongARM upgrade. Therefore, we strongly recommend that you do not alter the choices unless you fully understand their implications.

The installer will install new versions of the following resources:

- !Boot
- Apps
- Printing
- Utilities

Your current resources are **not** deleted. Instead, the installer moves them to a directory for 'inactive resources', called `$.InactiveRes` by default. This is sensible because the new resources are a minimal set and also obviously do not include any third party resources. If you have more than one hard disc, then note that the new resources will be installed on the disc that contains the current resources (primarily !Boot).

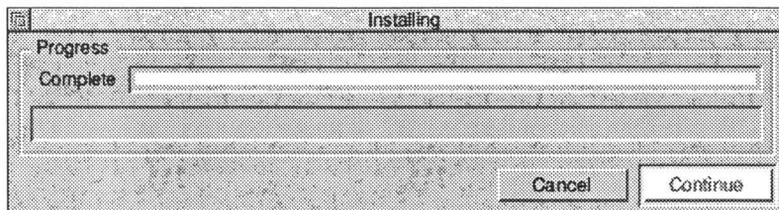
You will typically be able to add back any extras from the old resources later on, although some may not be compatible with RISC OS 3.7, or with the StrongARM processor. (Please refer to the ReadMe text file on Floppy disc 1, which may have more up-to-date information.)

To perform the installation:

- 1 If you are currently using your computer, save any work and shut down the computer.
- 2 Restart your computer.
- 3 Insert the supplied Floppy disc 1 into the floppy disc drive and click on the floppy icon on the icon bar. This will open a directory display containing the !Installer icon:



- 4 Double-click the !Installer icon to start the installer.
- 5 Read the advice and information offered by the installer, and click **Continue** to proceed when you're satisfied.
Installation will begin after the first few dialogue boxes of information and advice. Progress is indicated by a green bar:



- 6 When the installer pauses with a message asking for the next floppy disc, replace the current floppy disc with the next one and click **Continue**. Repeat this each time you are asked.
Note: If the installer should pause with another message, then refer to *Installation troubleshooting* below.
- 7 When installation is complete, the computer will shutdown.
Do not restart the computer, since you now need to install the ROM and processor upgrades.
- 8 Switch off, and disconnect from the power supply, so that you can proceed with the hardware installation (see *Hardware installation instructions* on page 7).

Installation troubleshooting

If the installer pauses with a message other than one telling you to swap floppy discs, note that you do not have to cancel the installation immediately. You should be able to correct the problem described and then click **Continue** to proceed.

The possible problems and their remedies are described below:

- **There is not enough free space on your hard disc**
This is the most likely reason for the installer being unable to proceed. The message will give you an estimate of the space required. Back up and remove files until you have enough free disc space.
- **The name of the inactive resource directory already exists**
The installer needs to create a directory for the inactive resources (normally `$.InactivRes`) but the name clashes with an existing file or directory. Simply rename the existing item, or refer to *Cancelling and restarting* below.
- **Your root directory is full (too many items)**
The installer will tell you how many more items it needs to create, but cannot because the system limit has been reached. You must either move some existing items into another directory, or back up and remove them. Do not remove the standard resource items (!Boot, Apps etc).

After correcting any of the above problems, you can click **Continue** and the installation will proceed as normal.

Cancelling and restarting

If you do cancel the installation for any reason, the directory for inactive resources (`$.InactivRes` by default) will contain any partial results of the installation. These will be the new resources extracted so far, but not yet activated.

After double-checking that your existing resources are unaffected, you can delete the inactive resource directory. This frees the disc space again, and ensures that the installer will not see a name clash (as above) when you restart it.

Important: Do not delete the inactive resource directory once installation is complete, since it will then contain your old resources, some of which you may want to reactivate later.

Hardware installation instructions

This section explains how to install the new RISC OS ROMs and the StrongARM processor card upgrade.

Disassembling the computer



Before removing the top plastic cover of the computer

- 1 switch off the computer
- 2 remove the power lead from the wall socket.

Do not reconnect the power lead to the wall socket until you have replaced the cover of the computer.

Do not make any adjustments inside the computer while the power lead is connected to the wall socket.

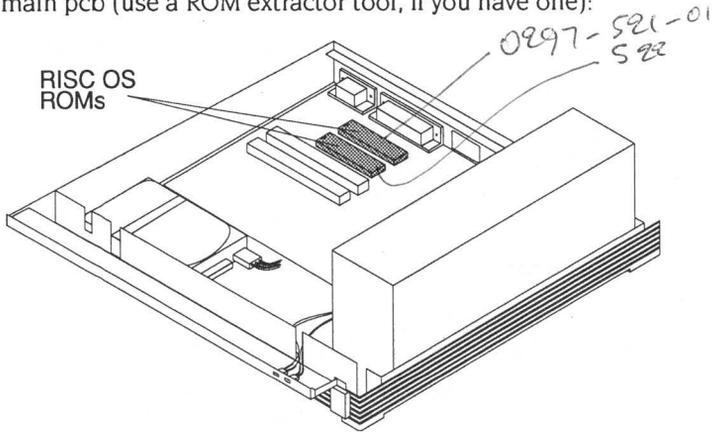
- 1 Remove the top cover and middle section of the computer (follow the instructions in *Opening the computer* in the *Welcome Guide* supplied with your computer).
- 2 Connect the static wrist strap supplied to a suitable metal earth point on the machine, e.g. the shell of the serial port. Fit the loop of the strap securely around your wrist.
- 3 Remove any Acorn or 3rd party expansion cards (e.g. the Acorn CD internal expansion card) by following the instructions supplied with the cards.

Note: For the purposes of testing, we recommend that you don't refit expansion cards until you're sure your computer is functioning properly without them.

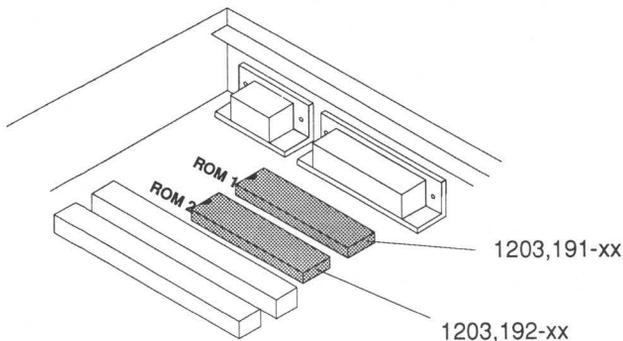
Fitting the ROM upgrade

To fit the new ROMs:

- 1 Remove the existing RISC OS ROMs from their sockets on the main pcb (use a ROM extractor tool, if you have one):



- 2 Take the new ROMs out of their packaging. Be careful not to touch the connectors with your fingers (as chips can be damaged by static electricity) or to drop the upgrade.
- 3 Fit the new ROMs, noting that the end of the ROM bearing a dimple or other distinguishing mark must point to the lefthand edge of the computer's case, looking from the front. The ROMs have different part numbers printed on them. Fit part number **1203,191-xx** into slot labelled 'ROM 1', and fit part number **1203,192-xx** into the slot labelled 'ROM 2':



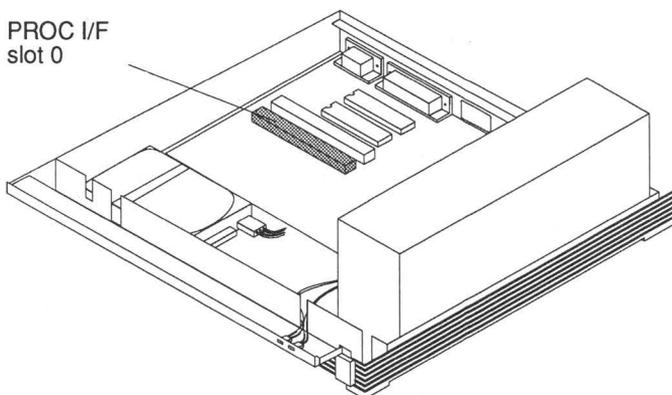
Note: The **-xx** suffix represents an issue number, e.g. **-01**.

Fitting the StrongARM processor card

For detailed instructions on installing a processor card upgrade, please refer to the *Welcome Guide* that came with your computer.

Note that the StrongARM card **replaces** the main processor card in your computer: that is, you should remove the processor card from your computer, as described in your *Welcome Guide*, and replace it with the upgrade. Make sure that you keep the original processor card in a safe place, in case you need to re-install it for any reason.

You should install the upgrade in the slot labelled 'PROC I/F slot 0':



Reassembling the computer

- 1 Remove the static wrist strap.
- 2 Replace the top cover and middle section of the computer (follow the instructions in *Opening the computer* in the *Welcome Guide* supplied with your computer).

Note: Do not reinstall any 3rd party expansion cards or reconnect any peripherals at this stage.

Restarting the computer

Restart the computer using factory default CMOS RAM settings: Hold down the Delete key and switch on the computer. Keep the Delete key held down until the Desktop appears.

Reconfiguring your system

Double-click on !Boot and use Configure to customise any settings from the factory default as normal. Typically this includes configuring the monitor and display mode. You can reinstate extra items such as custom monitor definitions from the old resources, if you want.

Note: You must not reinstate old Choices settings (such as a previous desktop boot file), because of possible incompatibilities. Instead, you should always reconfigure and save new choices.

The following sections give more details on reconfiguring common parts of the system.

Reconfiguring your network settings

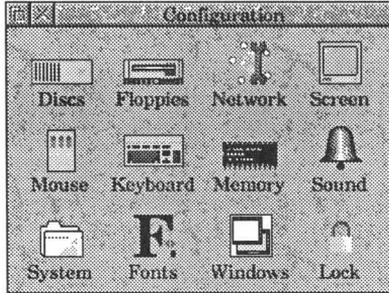
This section describes how to rebuild your network configuration.

Notes:

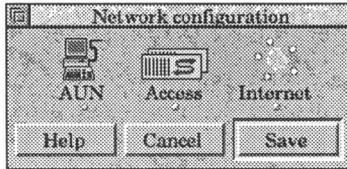
- **Do not** use old !Internet and !BootNet applications – make sure your boot sequence does not boot them.
- These instructions only apply to machines on a site network, i.e. in situations where you would have previously used !Internet and !BootNet. They do **not** apply to dial-up modem connections (e.g. InterTalk).
- You may need to reinstall your old networking software if you find this new software does not work with a third-party application. In that case, remember that any old networking software in !Boot will now be in the inactive directory (InactivRes.!Boot).

Here's how to load the network configuration software:

- 1 Open the directory display for your hard disc and double-click on !Boot icon to display the Configuration Window:



- 2 Click on the Network icon. You'll see the following window:

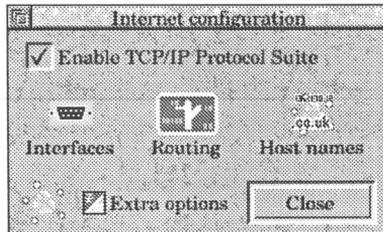


- 3 Click **Help** if you want interactive help to be displayed while you're performing these configuration instructions.

Configuring your Internet connection

Note: These instructions only apply if you are on a full TCP/IP network (e.g. if you have an Internet connection, or are on a network with Unix computers). If this is not the case, turn to *Enabling AUN* on page 15.

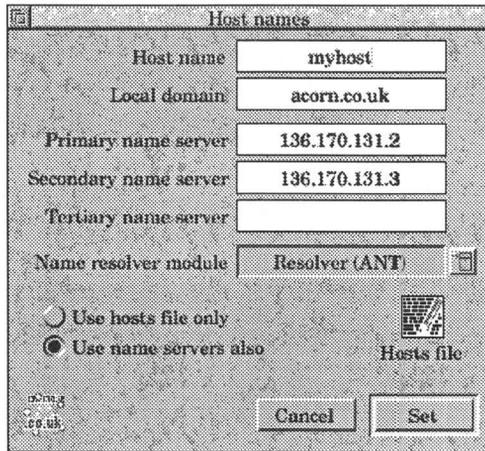
- 1 Click on the Internet icon in the Network configuration window to display the Internet configuration options:



- 2 Click **Enable TCP/IP Protocol Suite**.

Setting the Host name

- 1 Click the Host names icon to display the Host names options:



- 2 Type in your host name.
- 3 If you're using a name resolver, enable **Use name servers also** at the bottom of the window.

Note: No name resolvers are supplied with this software, but InetSetup is aware of the most common name servers:

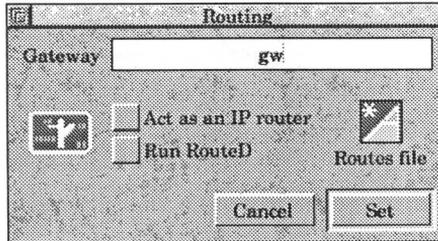
- ANT's Resolver module
- Gnome's Resolve module
- InetDB
- ResolverZM

InetSetup will look for these in your System directory as `System:Modules.Network.<resolver_name>`.

- 4 An empty Hosts file is supplied. To specify the hosts on your network, you can either drag an existing Hosts file onto the **Hosts file** icon in the dialogue box, or double click the **Hosts file** icon to edit the default version.
- 5 Click **Set** to dismiss the Host names dialogue box.

Setting the routing options

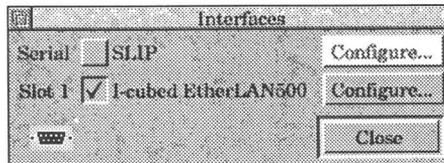
- 1 Click the Routing icon in the Internet configuration window to display the routing options:



- 2 If you have a connection to an external network, enter the name of your gateway machine, otherwise leave this field blank.
- 3 If necessary, set other options in the dialogue box:
 - **Act as an IP router** – this lets your machine act as a gateway if you've got more than one network interface.
 - **Run RouteD** – this is normally greyed out, unless you have the full TCP/IP Protocol Suite (in which case, please see the documentation for that product). Clicking Menu will allow you to choose your RouteD options.
 - **Routes file** icon – lets you specify more advanced routing information – either click the icon to edit the default file, or drag a custom Routes file onto the icon.
- 4 Click **Set** to dismiss the Routing dialogue box.

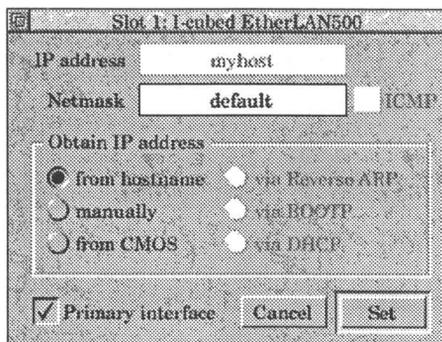
Setting up network interfaces

- 1 Click the Interfaces icon in the Internet configuration window to display the network interface configuration options:



If you only have one interface card, it will be enabled automatically (as above).

- 2 Click **Configure...** to display the interface configuration options for a specific card:

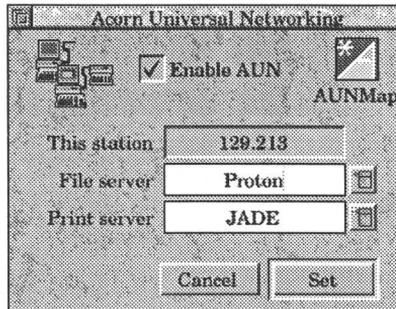


- **from hostname** – This reflects whatever is entered in the Host name field in the Host names dialogue box. You will need to enter the Netmask (contact your network administrator).
 - **manually** – Enter the IP address of the interface manually (either as a name, or numerically). This is normally used with a second interface.
 - **from CMOS** – You can use this option if a suitable version of SetStation has been run on your machine (in which case the IP address is supplied automatically)
 - **via Reverse ARP**
 - **via BOOTP** – Available only if you have IfRConfig (supplied with the TCP/IP Protocol Suite – please see relevant documentation).
 - **via DHCP** (Dynamic Host Configuration Protocol) – Not yet supported.
- 3 Click **Set** to dismiss the specific interface dialogue box.
 - 4 Click **Close** to dismiss the Interfaces dialogue box.

Enabling AUN

If you are going to use Level4 Fileserver or any Econet protocols:

- 1 Click the AUN icon in the Network configuration window to display the AUN dialogue box:

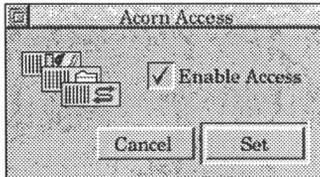


- 2 Tick **Enable AUN**. This is not necessary if you are using native Econet.
- 3 If you're using AUN and Internet together, double-click the **AUNMap** icon (or drag an existing AUNMap file onto the dialogue box) and enter any mappings between IP addresses and Econet addresses. For details, see the *AUN Manager's Guide*, or comments in the AUNMap file itself.
- 4 Enter names for your default File server and Print server.
Note: If your network is already up and running, you will be able to choose from the appropriate menu icons instead of typing in names manually.

Enabling Acorn Access

If you have Acorn Access, or an Access Plus card fitted:

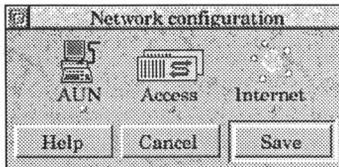
- 1 Click the Access icon in the Network configuration window to display the Acorn Access dialogue box:



- 2 Tick **Enable Access**.
- 3 Click **Set** to dismiss the dialogue box.

Saving your network configuration

At this point, the Network configuration dialogue box should still be displayed:



To save your configuration:

- 1 Click **Save**.

This writes setup files to your !Boot application, and modifies certain CMOS settings (e.g. inserts or unplugs modules as appropriate).

- 2 Click **Reset now** to restart your computer and ensure the new settings take effect.

Network troubleshooting

As part of the new networking software you've installed, there is a new Internet module on ROM. This is largely compatible with existing applications, but a few may fail to work (especially those that try to alter the setup of your machine).

If you experience problems with this new networking software, you can disable it using Configure (double-click on !Boot). You can then revert to your old network setup (restore any backed up networking modules to the System folder, and re-run the old versions of !Internet and !BootNet.

Reconfiguring your printing settings

The new version of !Printers in RISC OS 3.7 is considerably enhanced from that delivered with RISC OS 3.5 or 3.6. The main enhancements are:

- Support for PostScript Level 2 printers
- Faster and higher quality drivers for colour inkjets
- Simplified options for non-PostScript printers.

To reconfigure your setup, refer to the *User Guide* for your computer. However, please note the following differences:

- If your User Guide is for RISC OS 3.5, you will now find that the new !Printers is in ROM, and so can be accessed by clicking on the Apps icon on the icon bar. This is the same as for RISC OS 3.6.
- If you are using an upgraded !Printers on disc (!Printers 1.52 or 1.53), you will now find that a newer !Printers is available in ROM, and so can be accessed by clicking on the Apps icon on the icon bar. You will probably then be familiar with the other differences mentioned here.
- You can now load a new printer definition file (PDF) by double-clicking on it. If you do need to load a PDF into !PrintEdit, do this by loading !PrintEdit and dragging the PDF onto its icon bar icon.

-
- For colour inkjet printers, the low quality and slow options (256 colours and 32 thousand colours) are no longer available. Colour means full 16 million colour quality. Small halftones are now referred to as 'fine halftones'. The diffused quality option (previously referred to as 'error diffused') is recommended for most printing purposes.

Please refer to the `Read_Me` text file in the new directory `Printing.Printers` (and also any `Read_Me` in the directory for your make of printer) for information on support for different printers.

Updating ARMovie

ARMovie has been updated to include some features previously only shipped with the Replay Starter Kit, but some files have not been supplied because they are very large. To update your version of !ARMovie fully you need to merge the `Shapes` directory from your original copy of !ARMovie (now in directory `InactivRes.!Boot.Resources`) with the new copy in `!Boot.Resources`.

A floppy disc supporting movie encoding is also supplied (Floppy disc 4). When installed, it provides all the functionality of the software supplied with the Replay Starter Kit.

If you have a copy of the Replay Starter Kit, you should not reinstall any of its software as the software described above provides you with full functionality.

Updating !BootIDECD

If you have a Cumana CD-ROM drive for the IDE bus, then before restoring !BootIDECD to the current

!Boot.Choices.Boot.PreDesk, you **must** edit the file !BootIDECD.!Run. This is to prevent loading of the module ADFSPatch.

Change the line of the form:

```
rmload <Obey$Dir>.ADFSPatch
```

to read:

```
rmensure utilitymodule 3.60 rmload <Obey$Dir>  
.ADFSPatch
```

Restoring other software

Before restoring other software and applications, remember that there may be some compatibility problems with RISC OS 3.7 or with StrongARM. You should be particularly cautious with software that involves changes to !Boot (e.g. adding modules to !System). Please check the ReadMe file on Floppy disc I for the latest information on compatibility, and on any patches that are provided.

If you experience problems with the upgrade

We expect your StrongARM upgrade to install without any problems. However, we recognize that extra help is occasionally needed and so we have provided the answers to some frequently-asked questions on our World Wide Web page:

<http://www.art.acorn.co.uk/SALES^{RESOURCES}/installfaq.html>

The information is updated regularly and addresses the comments and queries we receive from our customers; we hope you find it helpful.

There is also a StrongARM help line for those people who encounter serious problems when installing their upgrade. If you suspect that either your hardware, your software, or the upgrade itself is faulty, you can call the help line number between 10am and 4pm weekdays (or use the Email address) to contact us:

StrongARM help line number: **01223 577 878**

StrongARM Email address: **strongarm@art.acorn.co.uk**

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