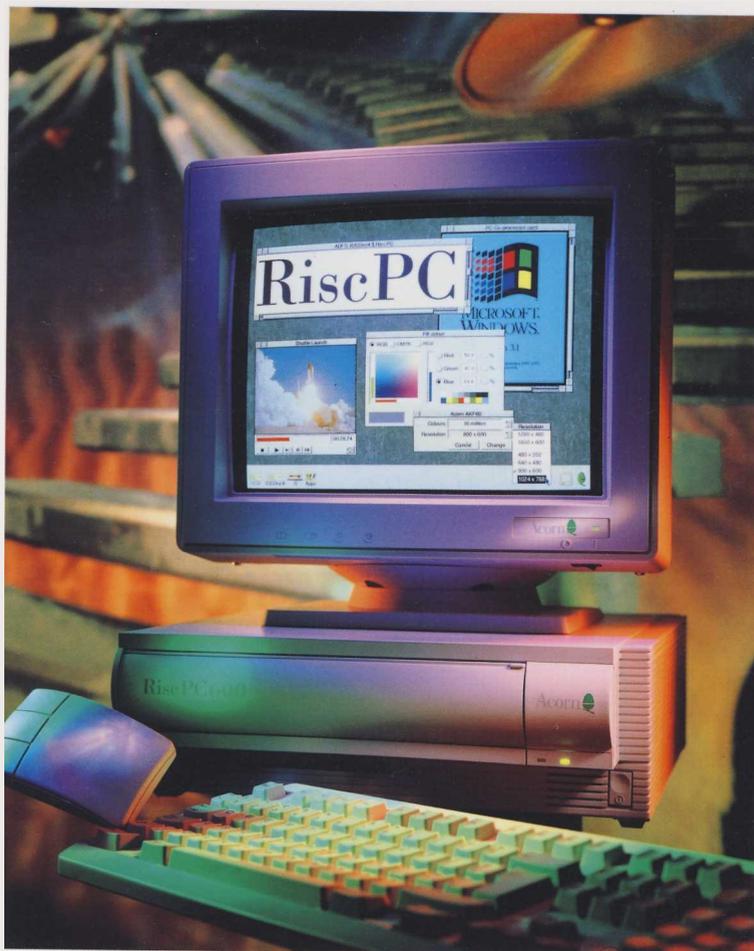


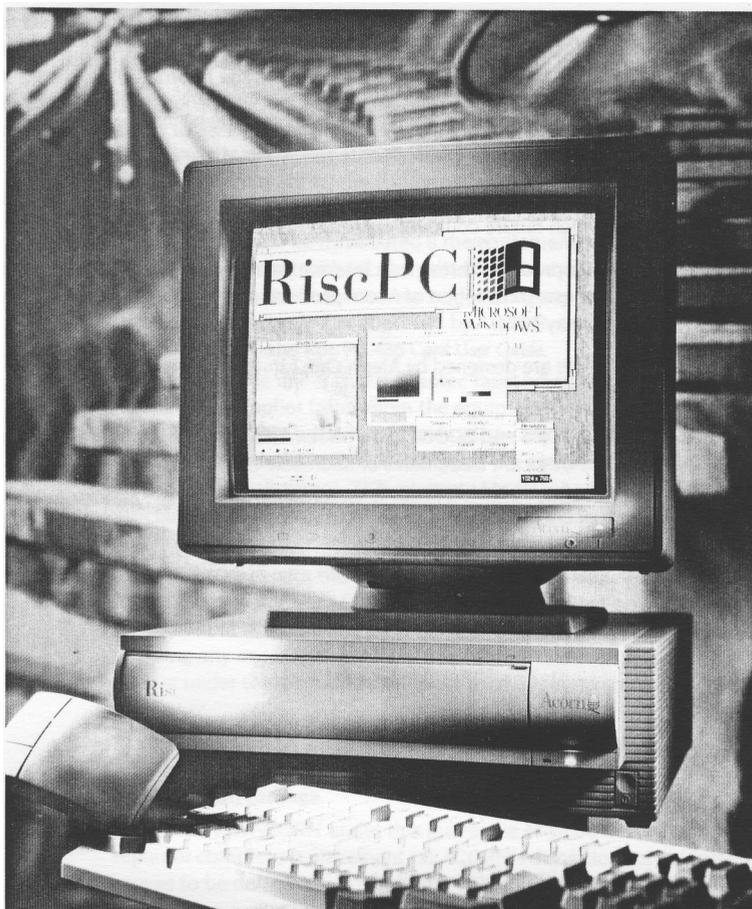
Risc PC 486 Card User Guide



Acorn 

Risc PC 486 Card

User Guide



Acorn 

Copyright © 1994 Acorn Computers Limited. All rights reserved.

Published by Acorn Computers Technical Publications Department.

Neither the whole nor any part of the information contained in, nor the product described in, this manual may be adapted or reproduced in any material form except with the prior written approval of Acorn Computers Limited.

The product described in this manual and products for use with it are subject to continuous development and improvement. All information of a technical nature and particulars of the product and its use (including the information and particulars in this manual) are given by Acorn Computers Limited in good faith. However, Acorn Computers Limited cannot accept any liability for any loss or damage arising from the use of any information or particulars in this manual.

This product is not intended for use as a critical component in life support devices or any system in which failure could be expected to result in personal injury.

Acorn supplies its products through an international dealer network. These outlets are trained in the use and support of Acorn products and are available to help resolve any queries you may have.

The Acorn PC cards are designed by Aleph One Limited on behalf of Acorn Computers Limited.

ACORN, ARCHIMEDES and ECONET are trademarks of Acorn Computers Limited MS-DOS and Windows are trademarks of Microsoft Corporation All other trademarks are acknowledged.

Published by Acorn Computers Limited
Part number 0491,703
Issue 1 October 1994

Guarantee (valid in UK only)

This equipment is guaranteed by Acorn Computers Limited ("ACORN") against mechanical and electrical defects subject to the conditions set out below.

Note

items which by their nature or design only have a restricted life are not guaranteed beyond such life.

Period of validity

This guarantee shall be valid for a period of twelve (12) months from the date of purchase.

Other conditions

- 1 This guarantee is personal to the original purchaser, is not transferable and shall not be valid unless the equipment was purchased from ACORN or from an approved ACORN supplier.
- 2 This guarantee will be invalidated if the equipment is misused or damaged or is modified in any way without the written consent of ACORN or if any original component or accessory has been replaced by any component or accessory of a type not recommended or approved by ACORN, or if operated other than in accordance with the Risc PC 486 Card User Guide.
- 3 Any claims made under this guarantee must whenever possible be made through the supplier from whom the equipment was originally purchased. if this is not possible a claim may be made to any other approved ACORN supplier appointed by ACORN to service the equipment (a list of whom can be supplied on application). This guarantee together with proof of the date of purchase must be produced when any claim is made. Any costs of carriage to and from the supplier must be paid by the purchaser.
- 4 If ACORN agrees with the supplier that the equipment should be forwarded to ACORN for repair then ACORN will arrange for collection and return of the equipment at no charge. in all other cases the supplier will be responsible for effecting any necessary repairs in accordance with ACORN's service policy. Any repairs under this guarantee will be carried out at no cost to the original purchaser.
- 5 if any equipment returned is found to comply with its original specification ACORN reserves the right to charge a reasonable fee for testing the equipment and for return carriage.
- 6 The liability of ACORN under this guarantee shall be limited to the cost of repair or complete replacement (at ACORN's discretion) of equipment which proves to be defective.
- 7 ACORN does not accept liability for any loss or damage during transit to or from the supplier or ACORN, but every effort will be made to investigate claims of loss or damage if these arise.

THIS GUARANTEE DOES NOT AFFECT OR PREJUDICE THE PURCHASER'S STATUTORY RIGHTS.

Guarantee procedure

To claim under this guarantee, proof of date of purchase is required. This is provided by your copy of the invoice from the supplier from whom the equipment was originally purchased. Keep the invoice safe and produce it to support any claim you may make under this guarantee.

You may find it useful to make a note in the box below of the serial number, date of purchase and details of any upgrades you fit, and quote them in any correspondence:

Serial Number _____	Date of purchase _____
Upgrades _____	_____
_____	_____

Guarantee (valid in Australasia only)

Please refer to the enclosed product warranty policy for full details of guarantee conditions in Australasia.

Risc PC 486 Card User Guide

Contents

Applicable models 1

Precautions in use 1

Packing List 2

Installing the Risc PC 486 card in your machine 2

Installing the software 4

Installing the latest version of DOSFS 4

Copying the Risc PC 486 card software 5

Setting up a DOS partition 5

Installing PC DOS 10

Installing optional tools at a later date 15

Use of the Risc PC 486 card 16

Starting the Risc PC 486 card 16

Using the Risc PC 486 card 17

Closing down the Risc PC 486 card 17

Resetting the Risc PC 486 card 18

Configuring the Risc PC 486 card 18

Using the keyboard with the Risc PC 486 card 19

Using the mouse with the Risc PC 486 card 19

Using Microsoft Windows with the Risc PC 486 card 20

Using the Windows 3.1 Screen Driver 22

Networking your Risc PC 486 card 23

Risc PC 486 card sound output 23

CD-ROM Drivers for PC systems 23

Transferring files between DOS and RISC OS 24

Translation of DOS and RISC OS filenames 25

Transferring files from DOS to RISC OS 26

Transferring files from RISC OS to DOS 27

Troubleshooting 28

Error Messages from AI CD.SYS 30

Where to go for support 31

Applicable models

The Risc PC 486 card is a second processor card which fits all Acorn Risc PC computers. It allows you to run standard DOS and Windows applications on a RISC OS computer.

Note that the Risc PC 486 card, and its associated software, requires a minimum of 4MB of DRAM in which to run.

Please take the time to fill in and return the appropriate registration card. The information this provides is used to improve the quality of our products and services.

If you are new to using PC DOS or Windows, we recommend that you buy one of the many books available on the subject, in addition to the manuals supplied with those products.

Precautions in use



To avoid electrostatic discharge when installing or removing the Risc PC 486 card, avoid contact with the IC and connectors, and hold only the edge of the printed circuit board.



After extended use, the chip will become warm to the touch. If you find it necessary to remove the Risc PC 486 card, make sure that the card has cooled down sufficiently before touching it.

Packing List

You should have a box containing the following items:

- This User Guide
- Release Note
- Risc PC 486 card software disc
- Owner Registration Card
- Product Warranty Policy (Australasia)
- PC DOS comprising:
 - Five floppy discs
 - PC DOS User's Guide
 - PC DOS Data Compression Guide
 - PC DOS Registration Card
 - Service statement
 - Certificate of use
- Risc PC 486 card

You should keep the box containing the card in case you need to return it for any future upgrades.

If any of these items are missing or damaged, please contact your Acorn Computers authorised dealer immediately.

Installing the Risc PC 486 card in your machine

If you don't feel confident about carrying out this installation, take the Risc PC 486 card and your computer to your supplier who will fit it for you. A charge may be levied by the supplier for installing the card; such a charge shall be entirely at the discretion of the supplier concerned.

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

Remove the top cover of 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.

To remove the top cover of your machine, follow the instructions in Part 3: *Inside the computer* of your Welcome Guide.

Fit the Risc PC 486 card

- 1 Remove the Risc PC 486 card from its packaging. Be careful to avoid touching the connector pins.
- 2 Check that all connector pins are straight. If any appear crooked or splayed, please contact your supplier.
- 3 Identify where the processor card slots are in the case of your Risc PC. There are two, situated next to one another, and their position is described in Part 3: *Inside the computer* of your Welcome Guide. The main processor card will be in one of the slots.

Important note: The Risc PC 486 card **must** be installed in the processor slot nearest the back of the computer, to ensure that both processors have sufficient air flow to cool them. If you find that your main processor is in this slot, you must remove it and place it in the processor slot towards the front of the case before installing the Risc PC 486 card.

- 4 Locate the Risc PC 486 card over the processor card slot nearest the back of the computer, making sure that it is in the same orientation as the main processor card, with the board offset on your left (assuming that the front of the Risc PC is towards you).
- 5 Push the Risc PC 486 card down firmly until it is seated on its socket.

Replace the top cover of the computer

Replacing the top cover of the computer is explained in Part 3: *Inside the computer* of the *Risc PC Welcome Guide*:

Installing the software

Before you can use your Risc PC 486 card you must

- install the latest version of DOSFS
- copy the Risc PC 486 card software onto your computer
- set up a DOS partition
- install PC DOS:

Installing the latest version of DOSFS

The latest version of DOSFS is supplied on the Risc PC 486 card software disc. This is a RISC OS module which allows you to view the contents of a DOS partition from within RISC OS as well as DOS. It is important that you update the version on your machine with the version supplied on disc before you set up your DOS partition.

To install the latest version of DOSFS:

- 1 Insert the Risc PC 486 card software disc into the floppy drive of your machine and click on the floppy disc icon. This displays the contents of the disc.



- 2 Copy the Boot application from the software disc into the root directory of your hard disc.

This will automatically add the new version of DOSFS to the !
Boot.Choices.PreDesk directory:

Note: You **must not** delete the Boot application from the root directory of your hard disc before copying the new version across: The version on the software disc only contains the new version of DOSFS, not the complete application.

Copying the Risc PC 486 card software

To install the PC software on your hard disc:

- 1 Make a new directory in your root directory: It is recommended that you name this directory PC. Copy into it the PC486 and PCConfig applications:



PC486 is the application which lets you use the Risc PC 486 card: PCConfig is an application for configuring the way that PC486 works, and is described in the next section:

- 2 After copying the files, you **must** remove the Risc PC 486 card software disc from the drive and reboot your machine.

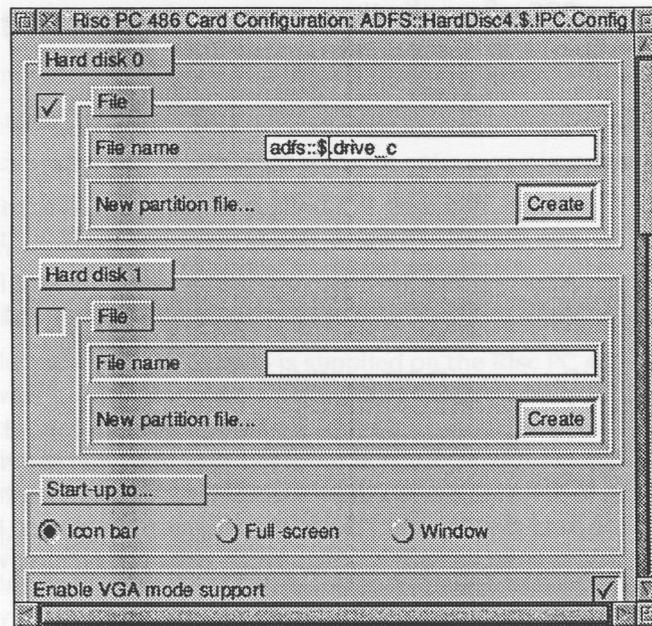
Setting up a DOS partition

Once you have installed your Risc PC 486 card, copied the software onto your hard disc and rebooted your machine, you must set up a DOS partition on your hard disc: This involves allocating space on the hard disc to make it look like a blank, unformatted PC hard disc: This is done using PCConfig, which gives you an easy way to set up the Risc PC 486 card as you want it.

Installing the software



Double-click on IPCConfig: A configuration window will appear: This allows you to set up a DOS partition, as well as specifying several other options which let you tailor the appearance of the PC system on your machine.



There are several settings you can configure in this window: All of them have pre-set defaults:

Hard disk 0

You use this area of the window to specify the name of the DOS partition and its size in megabytes: There are two things you need to specify:

- 1 The file name which will be used for the partition (as it appears to RISC OS).
- 2 Whether you are creating a new partition or using an existing one:

- **File name**

Specify the file name you want to use for the partition in this box: By default, `ADFS::4.$drive_c` is suggested as the name for the DOS partition.

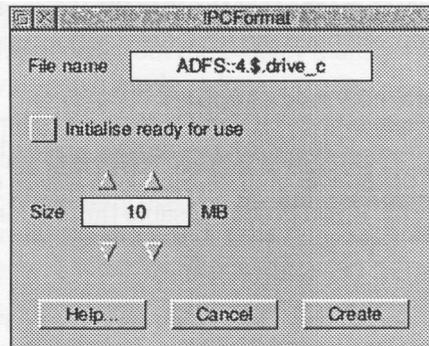
Note: If you wish to use an existing DOS partition on your machine (e.g. one set up using PC Soft, the software-based PC emulator) you should drag its icon into this box or type in its name and path:

- **Create**

If you are setting up a DOS partition for the first time you must now click on **Create**:

Important: You must NOT do this if you are using an existing DOS partition, or you will lose all information in It.

After clicking on **Create**, the PCFormat window will appear:



Use the arrows to specify the size of the DOS partition you wish to create.

If you intend to install and use Microsoft Windows, please refer to the section entitled *Using Microsoft Windows with the Risc PC 486 card* on page 20 before deciding on the size of your DOS partition.

When you have specified the size of the partition you want, click on **Create** in the PCFormat window: The DOS partition file will be created and the PCFormat window will close:

Installing the software

If you want to create a second partition file, fill in **Hard disk I** as appropriate.

Start-up to ...

This allows you to specify how the Risc PC 486 card will behave when you start up PC486:

- **Icon bar** — the PC icon will appear on the icon bar.
- **Full-screen** — the entire screen will be used. This mode is single-tasking only, which means that the Risc PC 486 card will run more quickly, but you will not have the RISC OS desktop available.
Once in this mode, you can return to the RISC OS desktop by clicking on Menu (the middle mouse button).
- **Window** — a window will appear. This mode is multi-tasking, which means that the Risc PC 486 card will run more slowly, but you will have the RISC OS desktop available.

Enable VGA mode support

By default, this option is enabled. Leave this setting if you have a monitor capable of displaying VGA screen modes, such as an AKF60 or AKF85. If you do not, disable this option.

Use RISC OS printer stream

This option allows you to set up the Risc PC 486 card so that DOS and Windows applications may print to the printer connected to the parallel port on your Risc PC. You should leave this set to the default, LPT1, to ensure that this can occur.

WinDrvMode

This option allows you to set the RISC OS mode that the Windows driver will run in. You should set it to a mode string such as the following:

```
X640 Y480 C16 EX1 EY1 F73
```

Windows will then use this screen mode whenever it is run.

For more details about mode strings, please refer to the RISC OS 3 *User Guide for the Risc PC*.

Note: A two digit old-type mode can also be specified. Please refer to Appendix G of the RISC OS 3 *User Guide for the Risc PC* for details of the old-type screen modes.

VideoRAM

This option allows you to specify, in KB, the amount of RAM to reserve for the PC video display buffer. The amount you choose is necessarily dependent on the value you have chosen for WinDrvMode, above, and should be equal to the amount of memory used by that screen mode.

To find out how much memory a given screen mode uses:

- 1 Change to the mode you require using the Display Manager. You can do this either by clicking Select on the Display Manager or by choosing **Mode** from the Display Managers icon bar menu and typing in a mode string.
- 2 Display the Task Manager window by clicking Select on the Task Manager icon – this is the acorn on the far right of the icon bar.
- 3 The amount of memory used by the current screen mode is listed as **Screen Memory** under the third section of this window - **System memory allocation**.

A list of some of the more common old style screen modes, together with the amount of memory they use and the number of logical colours, is given below.

Screen Mode	Logical Colours	Memory used
12	16	80KB
15	256	160KB
27	16	150KB
31	16	234.4KB
39	16	154KB
40	256	308KB

PCMemory

This option allows you to specify, in KB, the approximate amount of DRAM to be used by the Risc PC 486 card. In effect, it allows you to choose the "size" of PC that you want.

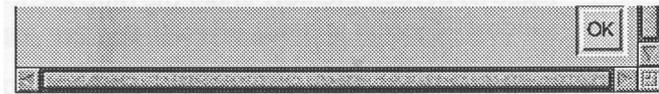
For instance, you could specify roughly 2000KB to create a 2MB machine, or 4000KB to create a 4MB machine, or 8000KB, and so on. Obviously, the amount you specify is dependent on the amount of DRAM in your Risc PC, and you can specify less than 2000KB if you do not have that much available: **You should never specify a figure greater than the total amount of DRAM on your machine.** Note that small values for PCMemory will limit the number and type of applications that you can run:

When using the Risc PC 486 card, PC486 will issue a warning if the amount of DRAM specified by PCMemory is not available:

Please note that the amount of memory needed to run PC486, and the amount of VideoRAM, do **not** need to be included in this option:

Saving the configuration

When you have finished specifying the options in the configuration window, scroll to the bottom of the window and click on **OK**:



The settings you specified will then be saved into a configuration file situated inside PC486:

Installing PC DOS

Once you have created a DOS partition you can install PC DOS. This consists of five steps:

- 1 Booting DOS from floppy disc:

To do this you need to insert the first PC DOS installation disc and reset the Risc PC 486 card: The PC DOS Setup program is run automatically:

- 2 Specifying international settings.
There are several global settings that need to be specified before PC DOS can be installed: In most cases, you will be able to use the defaults which have been chosen for you.
- 3 Specifying which optional tools to install.
PC DOS is supplied with several extra tools which you may find useful: You can choose which ones you want to install.
- 4 Backing up existing versions of DOS:
If you are using an existing DOS partition, rather than a new one, you can choose to back up your old copy of DOS on floppy disc: You can ignore this step if you created a new partition using PCConfig.
- 5 Performing the installation:
Once you have specified how the installation is to proceed (and optionally backed up your old version of DOS) the actual installation will take place:

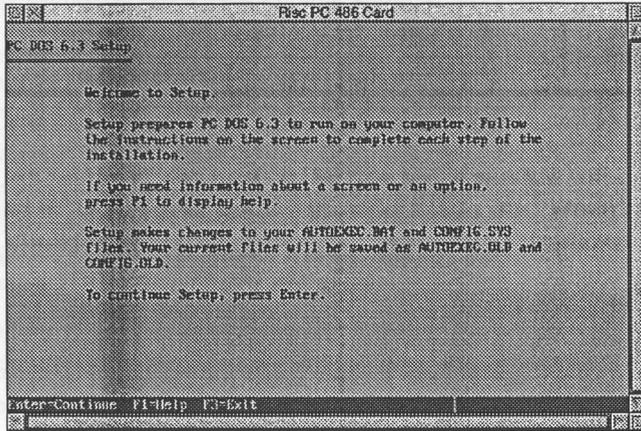
Booting DOS from floppy disc

- 1 Put the first PC DOS disc (labelled Diskette I) into the floppy drive:
- 2 Double-click on PC486. You should then see its icon appear on the icon bar:



Installing the software

- 3 Click on the PC486 icon on the icon bar. A window will appear and PC DOS will be booted from the floppy disc: When this is complete the PC DOS Welcome screen will be displayed:

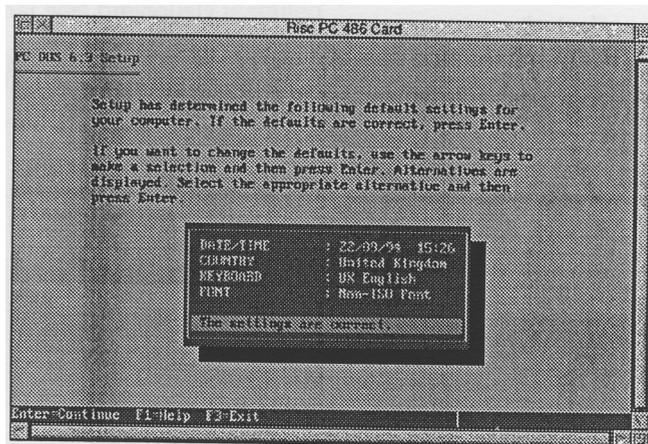


- 4 Press Return to continue:

Specifying international settings

After the DOS Welcome screen, a screen is displayed which lets you change the following international settings:

- time and date
- character set
- keyboard layout
- ISO font.



A set of reasonable defaults have been provided, so you should be able to go straight to step 2 below.

- 1 If you do need to change any of these settings, use the Up and Down arrows to scroll through the list: Press Return on any setting you want to change and follow the on-screen instructions.

Note: You should leave the keyboard layout as per the default:

Country : United Kingdom
Keyboard: UK English

this ensures that the keyboard gives the correct symbols — see the section entitled *Using the keyboard with the Risc PC 486 card* on page 19 for more details.

Installing the software

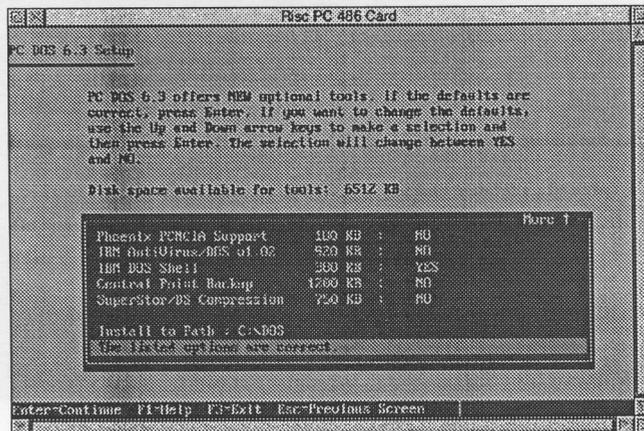
- 2 When you are satisfied that the settings are as you wish, scroll down to the line reading

The settings are correct

and press Return.

Installing optional tools

A new screen will be displayed which allows you to choose which PC DOS tools to install. By default, only the IBM DOS Shell is selected.



- 1 Use the Up and Down arrows and the Return key to select other tools you wish to install:
- 2 When you have selected all the tools you require, scroll down to the line reading

The listed options are correct

and press Return:

You do not have to decide which tools to install now, since other tools can be installed at any time: See below for more details:

Backing up old versions of DOS

Note: If you created a new DOS partition when you ran PCConfig, or you do not wish to back up your old copy of DOS, you can ignore this section:

Next, a screen is displayed which allows you to back up any old versions of DOS you may have onto floppy discs: This is only applicable if you have decided to use an existing DOS partition, rather than create a new one, and you wish to keep the version of DOS that was previously installed.

If you want to back up your old version of DOS, make sure you have plenty of blank, DOS 1.44M floppy discs — you will probably need about six. Follow the instructions on screen:

Performing the installation

The installation procedure itself is largely automatic: just follow the instructions on screen, inserting the remaining PC DOS installation discs when prompted:

A progress bar will be displayed, indicating how much of the installation is remaining:

Note: Depending on the number of optional tools you are installing, you may find that you do not need to use all five installation discs:

Installing optional tools at a later date

You can install any of the optional tools at any time, by running the PC DOS setup program again: This means that you do not have to decide precisely which tools you require when you install PC DOS:

To install other optional tools:

- 1 Place the first PC DOS installation disc into your disc drive:
- 2 From within DOS, type the following:

```
a:setup /e
```

Use of the Risc PC 486 card

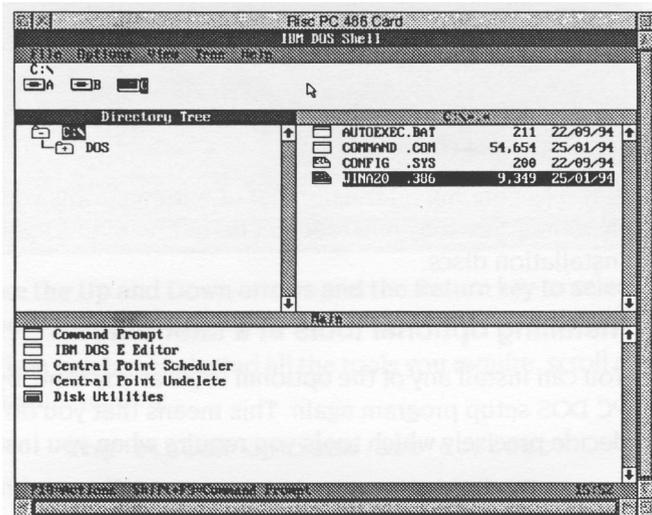
This will run the PC DOS Setup program. At the optional tools screen, you can select the tools you wish to install, and install them by following the on-screen instructions:

Use of the Risc PC 486 card

Starting the Risc PC 486 card



Make sure there are no floppies in the disc drive. Run PC486, and click on the PC486 icon on the icon bar or choose **Single Task** from its icon bar menu to start up the Risc PC 486 card. You will see the Risc PC 486 card start-up message followed by a memory test on the card: This is followed by the message `Boo ting from . . .` and the floppy disc light will be illuminated briefly even if you are booting from a hard disc. By default, the IBM DOS Shell program is run:



If your DOS hard disc partition is not bootable or you have inserted a RISC OS or non-system DOS disc into the floppy drive, an error message to this effect will appear. Insert a system DOS disc and try again: Once DOS has started up you will see the DOS prompt as usual – your Risc PC 486 card is now ready for use:

Using the Risc PC 486 card

The Risc PC 486 card can be configured to operate in either single-or multi-tasking modes:

- In single-tasking mode the full speed of the PC is available but the RISC OS Desktop is suspended whilst using the PC.
- In multi-tasking mode the PC runs in a window whilst other RISC OS applications are also running; this means the Risc PC 486 card must work cooperatively with the ARM chip and consequently runs more slowly, but extra features are available:

When running in a window the PC must have the input focus (as indicated by its title bar turning yellow) before it can be used: Click Select on the window to give it the input focus: When the window is already selected a double click within it will cause the PC to switch to single-tasking mode; you may return to the Desktop by pressing Menu (the middle mouse button), or Alt+Break as described in the next section:

If you close the window whilst the PC is in multi-tasking mode you can restore it by either clicking Select on the PC486 icon on the icon bar or choosing **Single Task** from the icon bar menu:

Saving and printing the screen

Multi-tasking mode provides a menu within the window (selected by pressing Menu) which allows the screen to be saved in sprite (i:e: Paint) and text (i:e: Edit) formats: Note that some PC applications use text-only or graphics-only display modes which will prevent data saving in one or other format; in this case the menu options will be grey and cannot be selected: This mechanism is provided as a replacement for the Print Scrn key:

Closing down the Risc PC 486 card

Make sure that you have saved any PC files you are working on before quitting: If you are running Windows you should exit it (for instance, by closing the Program Manager window) before quitting

PC486. It is important to exit Windows completely before quitting (by quitting any programs open and then quitting Windows) or data may be lost:

- To exit from the PC click the Menu button. This suspends the PC and returns control to RISC OS: A single click on the PC icon returns to the PC display again:
- To quit the PC application completely choose **Quit** from the icon bar menu.

Resetting the Risc PC 486 card

Reset the Risc PC 486 card using the key combination Ctrl+Alt+Del: This is particularly important if you have altered your CONFIG.SYS or AUTOEXEC.BAT files and wish the alterations to come into effect:

Configuring the Risc PC 486 card

When the PC starts up two important files affect its configuration. These are CONFIG.SYS and AUTOEXEC.BAT: These must be in the root directory of the DOS partition for DOS to be able to work.

CONFIG.SYS sets up the DOS operating system, by defining data structures which determine how many files can be open, what languages can be displayed, and what device drivers are installed to access memory, CD-ROMs, etc: It is consulted by DOS when the system (in this case the Risc PC 486 card) starts up:

AUTOEXEC.BAT is a standard batch file which contains executable DOS commands: It is read by the system after CONFIG.SYS, once DOS is running: It is here that any standard programs which you always want to be run are started (e:g: mouse drivers, virus checkers): Environment variables are also specified here:

Setting up these files is beyond the scope of this manual, and you should refer to *Chapter 2: Configuring your system* of the PC DOS User's Guide for more details. The subject will also be covered in detail in any commercially available book on DOS.

Using the keyboard with the Risc PC 486 card

To get the keyboard to give the correct symbols it must be configured as a UK English keyboard when you install PC DOS: A `KEYB` command will be added to your `AUTOEXEC.BAT` file during installation to ensure that all relevant DOS and Windows software behaves correctly:

Using the mouse with the Risc PC 486 card

There are a number of mouse drivers which you can use with the Risc PC 486 card. One is installed automatically with PC DOS, and will be run by default whenever you start up DOS. You will probably find that this mouse driver (called `MOUSE.COM`) is adequate for all your needs.

If you find that you run short of memory when using the Risc PC 486 card, you may wish to consider using an alternative mouse driver, `AMOUSE.COM`. This is supplied on the Risc PC 486 card software disc, and uses less memory than `MOUSE.COM`.

Once installed in your DOS partition, type `AMOUSE` at the DOS prompt to run it: Replace the relevant command in your `AUTOEXEC.BAT` file if you wish to use this driver every time you use the Risc PC 486 card.

Another mouse driver is supplied with Windows, and you may wish to consider using this: Also called `MOUSE.COM`, it is more comprehensive but uses more memory:

Note: If you are asked by PC application software what sort of mouse your system uses, you should specify a `BUS` mouse, since this is the type that is emulated:

Using the mouse in multi-tasking mode

When running in multi-tasking mode, up to two mouse pointers will be visible on your computer screen: the RISC OS pointer and the PC pointer (either DOS or Windows, depending on what software you are running):

The mouse can only drive one pointer at a time, so you must choose **Connect mouse** from the Risc PC 486 card window menu to allow the PC pointer to be used: Click Menu to reconnect the mouse to the RISC OS pointer:

When the mouse is connected to the PC pointer, you will not be able to switch from multi-tasking to single-tasking mode by double clicking: reconnect the mouse to the RISC OS pointer first:

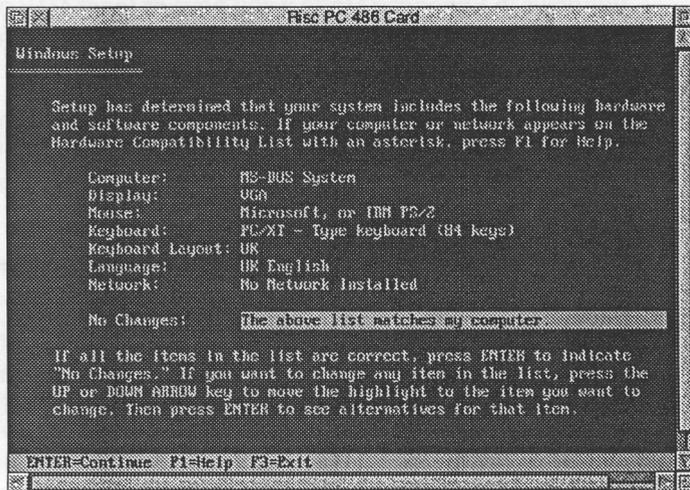
Using Microsoft Windows with the Risc PC 486 card

If you wish to install Windows in your DOS partition, you should allow around 20MB for the Windows installation itself, and anywhere between 30MB and 60MB for the swap file used by Windows: You will also need to ensure that there is space for any additional Windows applications you wish to install: remember that Windows software will typically take up more disc space than the RISC OS software you are probably used to:

These figures can be reduced if you do not perform a full Windows installation: see the Windows documentation for more details: As a very rough guide, however, you need to specify a DOS partition of **at least** 80MB if you want to use Windows comfortably:

In order to use the Risc PC 486 card with Windows 3.1 you must do the following when installing Windows:

- 1 Select **Custom Setup** in the Windows Setup window when installing Windows: The window will then change to allow you to set various options:



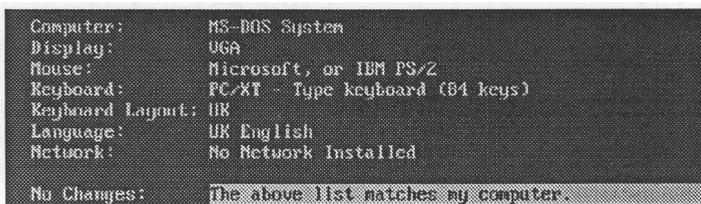
- 2 Go to the Display option and select **VGA (Version 3.0)** for the display driver.

We recommend that you also select the following options:

Mouse: **Microsoft, or IBM PS/2**

Keyboard: **Enhanced 101 or 102 key UK and Non UK keyboards**

Your final set of selections should then appear as follows:



After making these selections you can proceed with the installation.

The Risc PC 486 card may be used to run Windows in any mode (Standard, Enhanced or Extended), although different amounts of RAM will be required for each mode. Note that you can only run Windows in Enhanced Mode if you have **at least 4MB** of PC memory free. 8MB is preferable, and additional RAM will increase performance accordingly:

Before starting Windows, you **must** ensure that the amount of free memory on your Risc PC is equal to this value, plus the amount of memory needed to run PC486, if you want to achieve reasonable performance.

It is possible to run Windows in Standard Mode using less than 4MB of PC memory, but this is not recommended:

It is possible to run DOS applications in DOS boxes within Windows, using the Risc PC 486 card: To do this, set the execution options in the PIF file to exclusive, and not background:

Using the Windows 3.1 Screen Driver

The Windows Driver (to accelerate Windows on the Risc PC 486 card) is supplied as part of the Risc PC 486 card package: If you have the Windows Driver you will need to spend a few minutes copying the files and altering the Windows setup:

To install the enhanced Windows driver:

- 1 Copy the file ARMDRV.DRV from your Risc PC 486 card software disc into your \WINDOWS\SYSTEM directory:
- 2 Edit the file \WINDOWS\SYSTEM.INI (using a text editor such as Edit) as follows: Change the line that reads

```
display.driv=vga.driv
```

to read

```
display.driv=armdrv.driv
```
- 3 Now save the file again. The new driver will be loaded the next time you restart Windows, and a different hourglass shape is used to indicate its presence.

Networking your Risc PC 486 card

It is possible to link your Risc PC 486 card to PC networks, thus allowing you to communicate with other PCs. If you wish to do this, you should contact your Acorn dealer, who will be able to provide you with details:

Risc PC 486 card sound output

The standard PC beep is passed over to your machine in software so that error beeps are heard on the speaker:

With the optional Acorn 16-bit sound upgrade and Sound Synthesis software for the Risc PC it is possible to access the sound facilities available from many DOS and Windows applications. Recreating the sound generation facilities of the popular SoundBlaster card for PC clones, this upgrade will allow access to any software which conforms to this widely accepted standard: The device drivers provided with the Risc PC 486 card ensure that it is MPC II compliant, excluding sampled input, and that access is available from both DOS applications (including popular games) and software which adheres to the Microsoft Windows virtual sound interface:

For more information about the 16-bit sound upgrade and Sound Synthesis software, see your Acorn dealer.

CD-ROM Drivers for PC systems

It is possible to use CD-ROM drives attached to your machine from your Risc PC 486 card: A CD-ROM extension was automatically installed when you installed DOS: In addition, you will need to make several alterations to your PC setup:

- 1 Copy the file A1CD/SYS from the Risc PC 486 card software disc into your DOS partition.

A1CD/SYS is a DOS device driver for the CD-ROM extension; you must transfer it onto your DOS boot disk and add a line in your CONFIG.SYS file like this:

```
DEVICE=C:\DOS\A1CD.SYS /D:MSCD000
```

Transferring files between DOS and RISC OS

and include the line

```
C:\DOS\MSCDEX /D:MSCD000
```

in your AUTOEXEC.BAT file.

- 2 Set up RISC OS CDFS to recognise the CD-ROM drive:
You **must** alter the RISC OS configuration for CD-ROM drives to indicate that a CD-ROM drive is present: Note that the RISC OS CDFS does **not** require this, so you may not already have it correctly set, but PC486 does require it and will refuse to work otherwise, displaying the error message:

```
No CD-ROM drives working
```

- 3 Choose Configure from the CD-ROM's icon bar menu, and set the number of CD-ROM drives to 1 (or more if you have several CD-ROM drives) and then reset your machine using Ctrl+Break to bring the new configuration into effect.

Transferring files between DOS and RISC OS

You will make the most effective use of your Risc PC 486 card by sharing files between DOS (or Windows) and RISC OS, rather than treating the two operating systems as completely separate entities: There are bound to be tasks which you find are more suited to one environment, and you will be most productive if, in general, you use the method you prefer: The attractiveness of the Risc PC 486 card is that it gives you the ability to use both environments cooperatively, rather than treating them as two mutually exclusive machines:

For example, suppose you are preparing a spreadsheet for work, and you would prefer to create it using a RISC OS spreadsheet application: Many of these are able to save spreadsheets in a format known as CSV, and most PC spreadsheet applications can import CSV files, allowing you to transfer spreadsheets between the two systems relatively easily: In general, it is possible to transfer most types of data between RISC OS and PC applications, so long as a little care is taken to ensure that the data is saved in a format which can be read by the application that is receiving it:

For this reason it is useful to be able to transfer images, text files, spreadsheet information etc: from RISC OS to DOS and back again: This section offers advice on how to go about this: It does not provide strict instructions on how to deal with particular filetypes —this will depend on precisely what information you are transferring: Images, in particular, may require a degree of experimentation to transfer successfully:

Translation of DOS and RISC OS filenames

Transferring files between DOS and RISC OS is best achieved from within RISC OS itself. The DOS partition on your hard disc can be treated just like any other directory— simply double click on it to see the files it contains. You can then move files between RISC OS and DOS directories as you would move them between RISC OS directories: It is important to note the different restrictions that RISC OS and DOS place on filenames, however:

DOS filenames must be in "8:3" format, that is, a name of up to 8 letters, followed by a full stop, followed by an extension of up to 3 letters. The full stop and extension may be omitted, but in practice they rarely are:

When moving a file from DOS to RISC OS, the filename will automatically be changed: The full stop in a DOS filename will become a / character, and the filename will be truncated to 10 characters (including the /).

When moving from RISC OS to DOS, only the first 8 letters of the filename will be used: DOS filenames are not case sensitive, and will display in upper case:

For example, the DOS file `REPORT59.DOC` would become `REPORT59/D` in RISC OS, and the RISC OS file `NewReport` would become `NEWREPOR` in DOS:

There are other characters with special meanings in either DOS or RISC OS: These will automatically be translated when transferring files between systems: The following table gives a full list.

RISC OS	DOS
#	?
?	#
+	&
=	@
;	%
<	\$
>	^

Thus, if a DOS filename contains a % character, it will automatically become a ; when the file is transferred to RISC OS, and vice versa.

In general you are advised to use only alphanumeric characters for filenames which you want to transfer between file systems:

The command `*DOSMAP` may be used to specify mappings between DOS filename extensions and RISC OS filetypes: See Part 5 of the *RISC OS 3 User Guide for the Risc PC* for details.

Transferring files from DOS to RISC OS

Text based files

Transferring text based files from DOS to RISC OS will not usually be a problem. Any ASCII (text only) files created in DOS or Windows can be loaded into a RISC OS text editor such as Edit:

CSV files, such as those which can be created in many DOS and Windows spreadsheets, can be loaded into most RISC OS spreadsheet or database applications.

Images

Bitmap images from DOS or Windows may be in one of many different formats, such as TIFF, PCX, BMP or GIF. When moving images into RISC OS, you will usually want to convert them into a sprite, so that they may be viewed or included in any appropriate RISC OS application:

The ChangeFSI application, distributed with RISC OS, is able to convert many different image formats into sprite format: For full details about ChangeFSI, see Part 4 of the RISC OS 3 *User Guide for the Risc PC*, and see the text files within the ChangeFSI application itself.

As a rough guide, when you convert an image to a sprite you should always display as many colours as your machine will allow and for best results try to use a square pixel mode such as 640 x 480.

Figures created in PC applications similar to Draw will usually have to be saved in a format that ChangeFSI can read. Most such packages offer a number of output formats:

Transferring files from RISC OS to DOS

Text based files

Text based files can usually be transferred to DOS without difficulty. ASCII files will load into any DOS or Windows text editor, and CSV files created in spreadsheet applications on RISC OS will load into most DOS or Windows spreadsheets.

Images

A growing number of RISC OS applications are now able to save images to disc in one of the many formats understood by PC applications, such as GIF, TIFF or JPEG. If this is possible, using one of these formats is often the easiest way of saving an image so that it can be used in a DOS or Windows application:

Since many PC applications are able to import EPS files, this is often a good way of getting images created in RISC OS into a Windows- or DOS-based document.

Troubleshooting

To create an EPS file of any sprite or Draw file, configure the Printers application so that a PostScript printer driver is active, and the output is written to a file on disc, rather than to a printer attached to your computer. On printing the sprite or Draw file, an EPS file will be created which can be moved into your DOS partition and imported directly into the application. As is the case when transferring EPS files to RISC OS, the EPS image may only be visible when it is printed, and not on screen:

An EPS file can be created from any RISC OS application which makes the SWI call `PDriver_SelectIllustration` (as opposed to `PDriver_SelectJob`) to start a single page print job: Contact the publisher of the application for more details:

For more information about Printers, see Part 2 of the RISC OS 3 *User Guide for the Risc PC*:

Lastly, `ChangeFSI`, when run from the RISC OS command line, is able to convert sprites into a limited number of formats which can be recognised by DOS. In particular, `ChangeFSI` can create PBM (Portable Bitmap) files which can be transferred to a variety of other systems. For full information, refer to the text files in the `ChangeFSI` application itself:

Troubleshooting

Like any IBM-compatible computer, the Risc PC 486 card may fail to run some PC application software perfectly: games and utility programs which drive PC hardware directly are the most notorious culprits: While every effort has been made to support such software it is impossible to guarantee that every program in the world will work:

If you do find that one of your programs does not run on the Risc PC 486 card, please contact the appropriate support group, as described on page 31:

You can configure PC486 to generate extensive and useful debugging information as follows:

- 1 Hold down the Shift key while double clicking on PC486 to open a directory display on its contents.
- 2 Load the `Config` file into Edit and search for the line which reads

```
Trace Off
```

- 3 Change this line to read

```
Trace On
```

You will also need to direct the messages these tools generate to a file; otherwise they will appear on your screen: To save debugging messages in a file:

- 1 Load the `!Run` file into Edit and scroll to the end of the file. You will see two lines which begin with `Run . . .`, one of which is commented out with a vertical bar `|` at the start, and one of which is not:
- 2 Delete the vertical bar `|` from the start of the line which is commented out, and comment out the other line by inserting a vertical bar `|` at the beginning:
- 3 Save the file; this causes all trace information to go into a file called `TraceFile` inside the PC486 application directory:
- 4 Reload PC486 and run the problem program again. You may then examine it after you quit the application:
- 5 Copy the `TraceFile` onto a floppy disc and return it to your support hotline: Details about who to contact are given in the section entitled *Where to go for support* on page 31:

Error Messages from A1CD.SYS

The Risc PC CD-ROM driver uses several error messages to alert you to problems. These are as follows:

ERROR! Invalid line in CONFIG.SYS

This message means some of the text following `DEVICE=A1CD.SYS` in your `CONFIG.SYS` file is incorrect: Currently you may only have the phrase `/D:name` after this. *name* is the name by which the CD-ROM extensions will know the device driver; it should be no more than 8 characters long: If you do not specify *name* it will default to `MSCD000`: See the section entitled *CD-ROM Drivers for PC systems* on page 23 for full details about installing the CD-ROM device driver.

ERROR! Cannot find BIOS services

This means you are trying to run `A1CD.SYS` on a system which is not a Risc PC 486 card, e:g: a normal DOS system or PC Soft:

ERROR! No CD-ROM drives working

PC486 has been unable to find any working CD-ROM drives. This may be because the drive is switched off, or the Acorn CD filing system and driver (CDFS) is not loaded, or you have not configured at least one CD-ROM drive as noted above:

Where to go for support

In the event of a particular piece of software failing to function correctly on the Risc PC 486 card, you should contact the following organisations, **in the order specified below**:

- The supplier of the PC software which is failing to function.
- Your On-Site Service and Hotline Support, as described on your guarantee card:
- Acorn Customer Services.

Before contacting any of these organisations, it will save a great deal of time if you have the following information to hand:

- Version numbers of all software (and modules) in use:
- The hardware in use:
- The hardware configuration settings used by the software:
- The trace information from the Risc PC 486 card: See the section entitled *Troubleshooting* on page 28 for details of how to produce this information:

Where to go for support

Reader's Comment Form

Risc PC 486 Card User Guide

We would greatly appreciate your comments about this Manual, which will be taken into account for the next issue:

Did you find the information you wanted?

Do you like the way the information is presented?

General comments:

If there is not enough room for your comments, please continue overleaf

How would you classify your experience with computers?

Used computers before

Programmer

Experienced User

Experienced Programmer

Your name and address:

Cut out (or photocopy) and post to:
Dept RC, Technical Publications
Acorn Computers Limited
Acorn House, Vision Park
Histon, Cambridge CB4 4AE
England

This information will only be used to get in touch with you in case we wish to explore your comments further



ACORN LICENCE AGREEMENT

1. Licence

The system, application, utilities and other software supplied in and with the accompanying product ("the Software"), whether on disc, on ROM, on CD-ROM or on other media ("the Media") together with the related documentation are licensed to you by Acorn Computers Limited ("Acorn"). Acorn or its licensors retain ownership of all intellectual property rights in the Software. This licence permits you to use the Software on a single Acorn computer and you may make one copy of the Software for back-up purposes only. You may be granted additional rights, which will be specified in the accompanying Software. You must reproduce on any back-up copy of the Software all copyright and proprietary notices which appear on the original copy of the Software. You may transfer all of your licence rights in the Software and related documentation ONLY in conjunction with the transfer of the accompanying product AND provided that the transferee has read and agreed to accept the terms and condition of this licence.

2. Restrictions

Except as authorised above or expressly permitted by statute, you may not copy, modify, decompile, reverse engineer, rent, lease, gift, loan, distribute or transfer possession of the Software or the related documentation in whole or in part.

3. Termination

This licence is effective until terminated. You may terminate the licence by destroying the Software and all copies thereof and the related documentation. This licence will terminate automatically without notice if you fail to comply with any of its provisions. Upon termination you must destroy the Software and all copies thereof and the related documentation.

4. Limited Warranty and Disclaimer

Acorn warrants that the Media upon which the Software is supplied are free from defects under normal use for a period of ninety (90) days from the date of purchase, as evidenced by a copy of your receipt. Your Acorn Authorised Dealer will repair or replace defective Media if returned within ninety days of purchase.

The Software and the related documentation is supplied "as is" and Acorn and its licensors expressly disclaim any warranty, express or implied, as to the merchantability of the Software and the related documentation or their fitness for any particular purpose.

In no circumstances will Acorn, its licensors or its dealers be liable for any direct, indirect, consequential or incidental damage (including loss of profits, business interruption and loss of data) arising out of the use or the inability to use the Software or related documentation, even if Acorn or its Authorised Dealer has been advised of the possibility of such damage.

5. General

The above terms and conditions supersede any prior agreement, oral or written, between you and Acorn relating to the Software.

