

# PC Emulator Version 1.70

## Release Note

### Introduction

This release note contains information that was not available at the time the *PC Emulator Guide* was printed.

### Package contents

The following items are included with the PC Emulator:

- Four 3.5" floppy discs:
  - the large PC emulator disc (called MDA/CGA/EGA Multi-tasking)
  - the small PC emulator disc (called CGA Single-tasking)
  - MS-DOS 3.30 disc (DOS format)
  - CD-ROM support disc (DOS format)
- PC Emulator Guide
- An MS-DOS licence agreement
- A CD-ROM DOS licence agreement
- Acorn Registration card
- Prepaid envelope
- This release note.

The large and small PC Emulator discs are RISC OS format, while the MS-DOS 3.30 disc and CD-ROM support discs are DOS format and can only be read with the emulator or by using the MultiFS application. The section *Accessing DOS directories using MultiFS* in the guide describes how you can display the contents of DOS discs in standard RISC OS desktop directory displays.

### Registration card and licence agreements

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

Please also read, fill in, and return both the MS-DOS licence and the CD-ROM licence agreements to Customer Services at Acorn, using the prepaid envelope. If you do not agree to any of the licence conditions, return the complete package to your dealer and your money will be refunded.

## Reporting bugs

If you have problems running software on the Acorn PC Emulator which you have used successfully on a PC clone, please let us know. Write to Acorn Customer Services, Fulbourn Road, Cherry Hinton, Cambridge CB1 4JN, giving details of the software, the PC clone (make, memory, graphics cards, etc), the version of DOS used, and how you have configured the PC Emulator. Please write 'PC Emulator' on the outside of the envelope.

## Memory and monitor requirements

If your computer has 2MB or more of RAM, then use the large emulator, PCEm. If your computer has 1MB of RAM, use the small emulator, PCEmS. See page vi of the guide for a description of the differences between PCEm and PCEmS. Note that you may need more than 2MB to use some of the EGA ECD and EGA+ screen modes.

If your computer has a medium resolution RGB monitor, it is recommended that the emulator be configured to emulate either CGA or EGA CD. If your computer has a VGA or multiscan monitor it is recommended that the emulator be configured to emulate either EGA ECD or EGA+. This recommendation is because it is not possible to use single-tasking mode with EGA ECD or EGA+ emulation on a medium resolution RGB monitor.

## Before starting

Please make backup copies of all the discs before using them. Your *RISC OS User Guide* explains how to do this for the two RISC OS discs, whilst the section *A brief introduction to DOS* in the guide will tell you how to backup the two DOS format discs.

If you have an earlier version of the PC Emulator, read the section *Upgrading your current version of DOS* in the guide.

You should also read the section *Configuring the PC Emulator*, and, if you have a hard disc, *Installing the emulator on a hard disc*.

## Keyboard configuration

Within MS-DOS, the default keyboard configuration is that of a US keyboard, and this is the recommended configuration for machines with UK keyboards. Computers with keyboards designed for use in other countries should be configured to that country.

With the default US keyboard layout, the key to the left of the backspace key has no effect. To enter the £ symbol, hold down Alt and type 1 5 6 on the numeric keypad.

## Using !Merge

After using !Merge to update !System and !Fonts, you should reset your computer (by holding down Ctrl and pressing RESET, or alternatively by switching off and then on) to implement the update before using the PC Emulator or MultiFS. This is not described in the manual.

## Support for CD-ROM drives

The CD-ROM support disc supplied is needed by users of CD-ROM drive units. CD-ROM upgrade kits, which are obtainable from your dealer, should explain the use of this disc.

Please note that this CD-ROM support software is specifically for use with MS-DOS.

## Application compatibility list

The following list covers the more significant applications which have been successfully tested:

- Database:
  - DBase IV
  - Retrieve
  - Neris
  - Simis
- Spreadsheet:
  - Excel
  - Lotus 123 V2.1
  - SuperCalc 4
  - Symphony
  - MS Works
- Publishing:
  - Timeworks
  - Ventura 2.0
  - DeskPress 1.01
- Word processing:
  - Brief
  - MS Word V5
  - Wordstar Prof V6
  - WordPerfect
  - Locoscript
- Planning:
  - PC Planner
  - BYL
- Communications:
  - Crosstalk
  - Procomm
  - DRDOS FileLink
- Programming:
  - MS MASM
  - MS C V5

- Quick C
- GWBasic
- Turbo Pascal V5
- SmallTalk/V
- ProFORTRAN77
- Graphical user interfaces:
  - Windows 3
  - GEM 3
  - DRDOS ViewMax
- Operating systems:
  - MSDOS 3.21 (but must use DRIVPARM = /D:0 /F:2)
  - MSDOS 3.30
  - DRDOS 3.41
  - DRDOS 5.0

The following applications have exhibited some problems or work better if the advice given is followed:

- Windows 3: Best if configured for VGA and run under EGA+. Note that even with an ARM 3, Windows 3 runs slowly.
- Harvard graphics: Run under EGA with ECD, or under EGA+.
- Turbo Pascal 5.00: Screen redraw is sometimes incorrect when using MDA. Use EGA.
- Locoscript: Best if configured to use BIOS scrolling, not hardware scrolling.
- Benchmarking utilities such as Norton Utilities, PC Labs, etc. can report incorrect clock speeds.
- Flight Simulator: Sometimes (particularly on ARM 3 machines) the aeroplane can become unstable and crash. Try configuring for VGA and running under EGA+.
- Microsoft mouse driver: This fails. Use AMOUSE.
- Zortech C++: Single stepping in the debugger fails.
- DeskLink: This fails.

## Copy protection

Applications that use a hardware device on the parallel port for protection, or that use non-standard floppy disc formats will not run on the emulator.

## General notes on using the emulator

If the PC application you are using allows any configuration options on how to address the screen, typically called "Direct" and "BIOS", then choose BIOS. ProComm is one such application.

If the application offers a choice in how to performing scrolling, then do not select hardware scrolling. Locoscript is one such application.

When working in windowed mode, in a 16 colour RISC OS mode (eg mode 12), the DOS colours will often not be mapped correctly. This is because the 16 colours used by RISC OS are not the same colours used by DOS. This is less apparent in a 256 colour RISC OS mode (eg mode 15). The colours will be mapped correctly in single-tasking mode.

The large model allows CGA, EGA, and EGA+ screens to be saved as text as well as sprites. This is not described in the guide.

## Unsupported features

Appendix A describes the emulated PC. Note that the parallel port is output only and EGA+ is only a partial implementation of VGA. In particular PC mode 19 (640x200 x256 colours) is not supported, and many applications will fail to recognise that a VGA adaptor is available.

Additional restrictions include:

- Some limitations in sound emulation
- EGA screen blanking not supported
- DMA chip is not fully implemented
- Blinking text is not supported
- EGA smooth scrolling not supported
- Long start up texts in the configuration file may fail. Use the start up text to run a .BAT file.
- 3.5" discs formatted under DOS 3.21 will, by default, be formatted to 360KB rather than 720KB. To overcome this add the following line to your CONFIG.SYS file: DRIVPARM = /D:0 /F:2 If you have a second drive then also add DRIVPARM = /D:1 /F:2
- EGA Print screen (screen dump) is not supported.
- EGA does not support plane chaining. The consequence is that in 64K mode there may be fewer pages available than expected.
- MS-DOS 3.21 and MS-DOS 3.30 can access only two configured hard discs. DR-DOS 3.41 and DR-DOS 5.0 can access four (although DR-DOS FDISK will only recognise two at a time).

## The serial interface

The serial chip in early A305, A310, and A440 machines contained a number of faults which affected hardware handshaking. If you have such a machine and are having problems with the serial port, please contact your dealer.

Always configure any serial communications packages to use hardware handshaking. Do not use XON/XOFF handshaking (this is likely to fail because of the extra layer of buffering provided by RISC OS between the PC application and the serial chip).

When using serial communications the emulator should be in single task mode (in multi-tasking mode, other RISC OS applications may deny the PC Emulator enough cpu power to emulate the serial chip fast enough).

## Talking to a serial printer

Use an IBM AT to serial printer cable.

## Talking to a modem

With a modem the signals are wired straight through, therefore an IBM AT to modem cable will usually work. This should be wired as follows:

Archimedes/A3000 9-way D-type (female)			Modem 25-way D-type (male)		
Pin		Signal	Signal		Pin
1	<	DCD	DCD	<	8
2	<	RXD	RXD	<	3
3	>	TXD	TXD	>	2
4	>	DTR	DTR	>	20
5		GND	GND		7
6	<	DSR	DSR	<	6
7	>	RTS	RTS	>	4
8	<	CTS	CTS	<	5
9	<	RI	RI	<	22

## Talking to another PC

The following cable will allow communication between two Archimedes, two IBM ATs, or between an Archimedes and an AT:

Archimedes/A3000 9-way D-type (female)			Modem 25-way D-type (male)		
Pin		Signal	Signal		Pin
1	<	DCD	DCD	>	1
2	<	RXD	RXD	>	2
3	>	TXD	TXD	<	3
4	>	DTR	DTR	<	4
5		GND	GND		5
6	<	DSR	DSR	>	6
7	>	RTS	RTS	<	7
8	<	CTS	CTS	>	8
9	<	RI	RI	>	9

## Baud rates

With hardware handshaking enabled and operating in single-tasking mode the emulator can operate at up to 9600 baud (although the actual transfer rate will be considerably lower).

Without handshaking the maximum data rate is 300 baud.

## Using existing PC hard disc partition files

The format for hard disc partition files has not changed. If you already have an existing hard disc partition file (eg. \$.PC.Drive\_C) and wish to use it, then do not follow the instructions for creating a PC hard disc partition file, but just type in the name of the existing PC hard disc partition file in the configuration dialogue box and save the configuration.

## Formatting under MSDOS 3.21

3.5" discs formatted under DOS 3.21 will, by default, be formatted to 360KB rather than 720KB. To overcome this, add the following line to your CONFIG.SYS file:

```
DRIVEPARM = /D:0 /F:2
```

If you have a second drive then also add

```
DRIVEPARM = /D:1 /F:2
```

## Differences between versions 1.70 and 1.60

Version 1.70 contains the following improvements over version 1.60:

It works on all Acorn's hardware platforms. In particular it works on the new A5000 and related hardware platforms. Note that version 1.60 will not work on these new hardware platforms.

It includes support for 1.44MB high density floppy disc drives, as used on the A5000 and related hardware platforms.

Support for the double-stepping of external 80-track 5.25 inch floppy disc drives has been withdrawn. The DoubleStep floppy configuration key word has been removed.

A number of minor faults in the emulation have been corrected.

## MultiFS

### Configuring MultiFS

If you have modified the MultiFS !Run file after running MultiF, you should enter the \* command:

```
Unset PCe$Drive_*
```

MultiFS will then use the new PCe\$Drive\_\* variables when it is next run.

### Name translation

Name translation options have been added. This overcomes the problems that occur when long DOS file names are truncated whilst moving files between DOS discs.

If you are performing DOS-to-DOS file transfers then use Full or Hierarchical name translation. If you are transferring files from DOS-to-RISC OS then use Truncated or Hierarchical name translation.

Hierarchical name translation is provided so that files which are otherwise inaccessible because they have a long name, can be accessed (for example, copied or renamed). AUTOEXEC.BAT is an example of such a file

### **Known problems**

The intended use of !MultiFS is to transfer files between DOS and RISC OS file windows in the desktop. It is not recommended that it be used as an alternative general purpose RISC OS filing system.

Clicking menu on a long file name (more than 10 characters) with untruncated translation will generate the error 'not a heap block'.

Copying with Hierarchical name translation may attempt to copy the same files many times, so that the copying takes an unacceptably long time. The problem occurs if the source is a DOS directory containing several files of the same extension. The work around is to use Full name translation.

Some characters are valid in DOS filenames but invalid in RISC OS filenames. The characters \$, #, \*, %, & and ^ are mapped to !, +, [, ;, ] and > respectively. Note that this can cause unexpected behaviour. For example, it is not possible to rename a file whose RISC OS name contains +.

!MultiFS should not be used simultaneously with any other program that offers similar functionality.

### **Errata**

On page 4 of the Guide, in step 4 of the section *Copy the DOS utilities onto the hard disc*, there should be no space between the ; and the c.

In the same section, in the pathname you type to show the name of the current subdirectory, insert a = between PROMPT and \$P\$G.

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