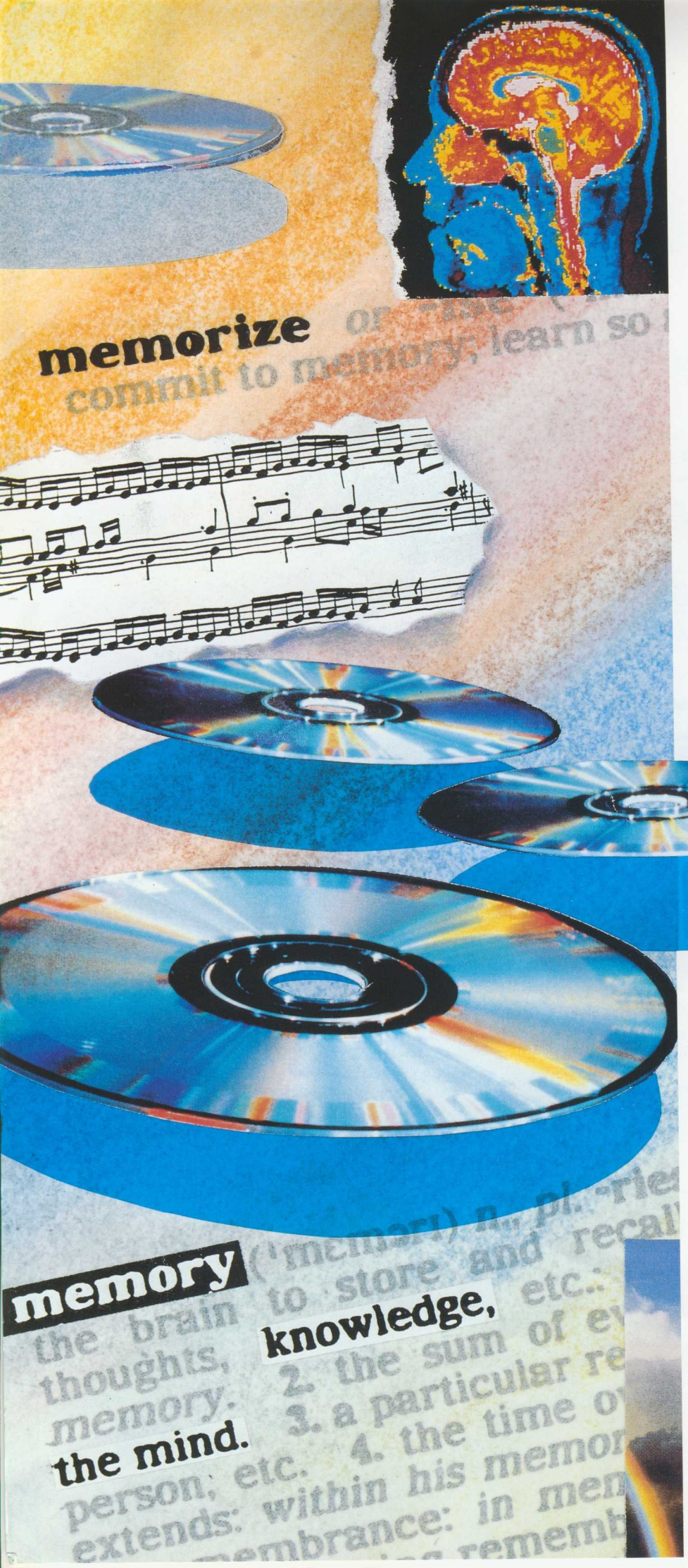
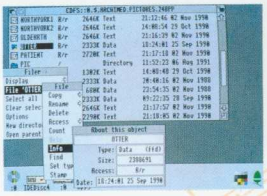
Acorn and CD-ROM

The Natural Choice

Acorn





What is CD ROM?

CD-ROM (Compact Disc Read Only Memory) discs are much like audio CDs but in addition to storing digital audio, the discs can include digital data either in place of the audio or mixed with it. In excess of 600 Megabytes of information can be stored on one disc, making it an ideal media for delivering large volumes of data to the user. For example, the Encyclopaedia Brittanica can fit on just one CD-ROM which makes it a very cost effective way of delivering information.

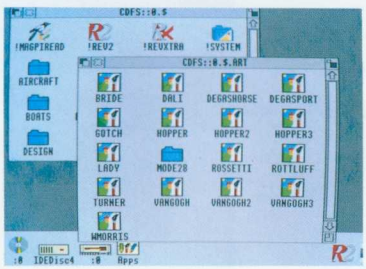
How Does It Work?

The discs are covered in a long spiral chain of pits burnt into a metallic layer buried in the plastic of the CD. A small laser beam tracks the spiral and reads the presence and absence of pits as a series of ones and noughts. The digital stream is in an international standard format, ISO 9660. The computer interprets it as a complete hierarchical file structure just like any other computer storage medium, such as the floppy disc.

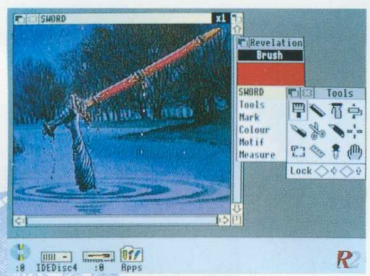
Acorn has developed a CD Filing System, CDFS, that conforms to the ISO 9660 standard, allowing full access to the wealth of CD-ROM titles produced around the world.

Why use an Acorn CD-ROM multimedia system?

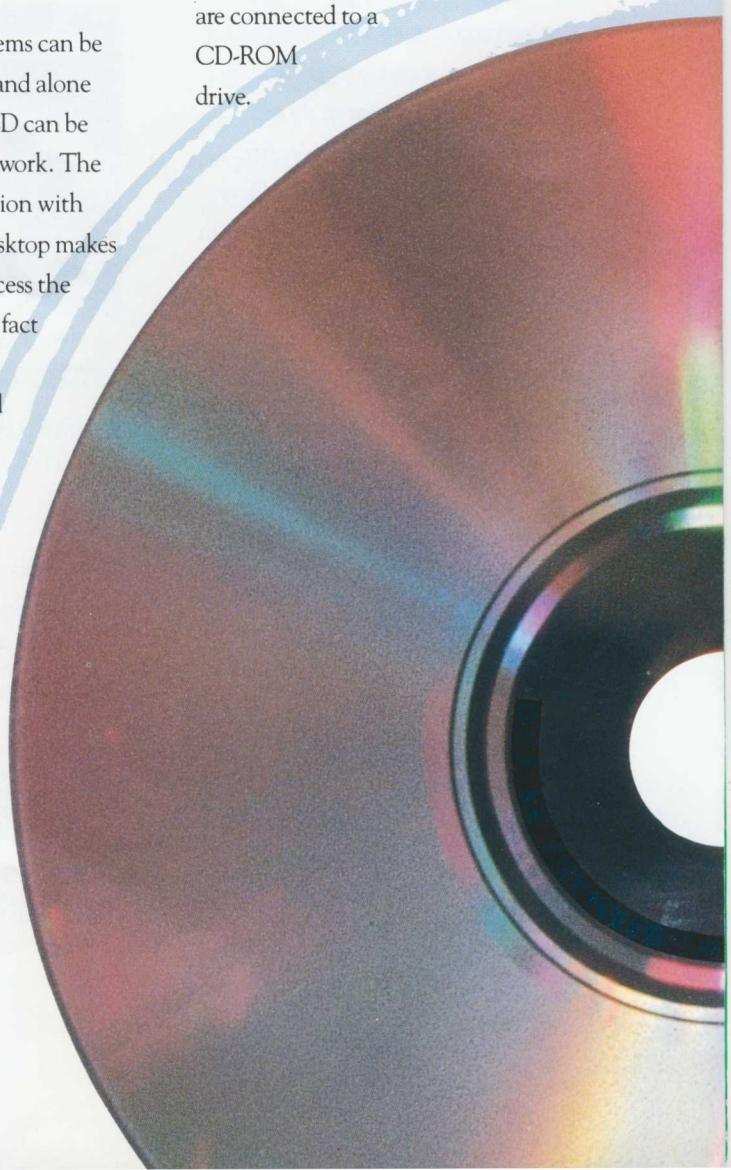
As well as giving access to the world of PC CD ROM discs, Acorn multimedia CD-ROM systems also allow data to be extracted electronically from CDs using the RISC OS desktop. Students can use text, pictures, diagrams or even sound snippets from the CD in their own work with word processors, hypermedia or graphics packages – with Acorn CD-ROM systems you have a true resource for the whole school.



Acorn CD-ROM systems can be used locally as stand alone systems, or the CD can be shared over a network. The seamless integration with the RISC OS desktop makes it very easy to access the CD-ROMs. The fact that existing computers can be adapted to take CD-ROM drives provides for cost effective solutions.



In addition to standard discs from the commercial world there is already innovative curriculum material available on CD-ROM for Acorn computers. Many of the software houses responsible for the excellent educational software for Acorn computers are now developing on CD-ROM. With the future in mind, Acorn is developing a new technology, Acorn Replay, to enable full motion video to be included on CDs. This will be usable by any of the BBC A3000, Archimedes or A5000 computers currently in schools, once they are connected to a CD-ROM drive.



What Can I Do With The CD-ROM?

Many different types of CD-ROM titles are available. Possibly the most basic, but none the less very useful, are those that contain libraries of clip art in various formats for importing into DTP documents. In the past these libraries have been shipped on many floppy discs – now a CD can offer several hundred floppy discs worth!

With such large storage capacity available it soon becomes necessary to have some application available to navigate through all the data. These programs often reside on the CD-ROM and are common in encyclopaedia type discs. Some of these are simple to use text based versions that can rapidly present you with general knowledge information. Others are more sophisticated offering images and possibly audio clips.

There is an increasing amount of more specialised curriculum material and educational software becoming available on CDs. These CDs often allow the user to access the information in a much more natural way and on the Acorn System you have the added advantage of being able to capture the data you find for inclusion in a document or presentation.

It is a also possible to play audio CDs usually destined for the home CD player. All Acorn CD Systems come with a utility for playing such CDs and it is also possible to instruct the CD to play any track using an application written specifically on multimedia tools, such as Genesis.

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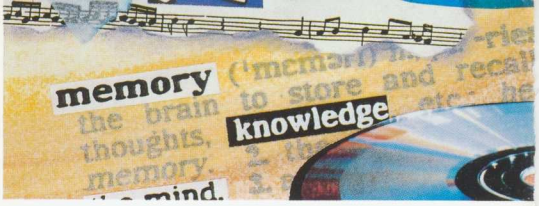


How Do I Access Discs Made For Other Computers?

RISC OS presents the data from the CD in directories, just like the directories on a hard disc. Very often the data on the disc is of a type recognised by RISC OS so that it can simply be transferred into text editors.

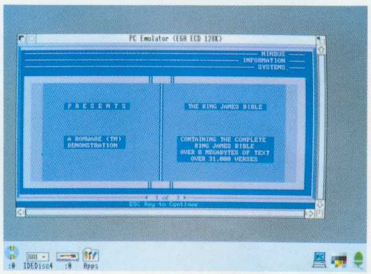
An image manipulation program, ChangeFSI, is provided to convert graphics to Acorn sprites for use in RISC OS applications. Many schools are finding this an invaluable way of utilising the wealth of CD-ROM data.

The Acorn PC Emulator allows the majority of PC CD ROMs to be run using their retrieval software. The PC Emulator can display the CD either full screen or in a window alongside other RISC OS applications.

What Do I Need?

Complete systems are available through your supplier or, where appropriate, a system can be constructed with suitable components for your specific requirements.

CD-ROM discs are read in a CD drive. These connect to the Acorn System through an SCSI (Small Computer System Interconnect) connector. The A540 is shipped with an SCSI socket as standard but cards are available for all Archimedes and A3000 computers to give them SCSI support.



When ordering an SCSI card it is important that you inform your supplier of its intended use with a CD-ROM drive. This will ensure the card is supplied with the CD Filing System, CDFS, installed.

If you already have an SCSI card you can contact your supplier for an upgrade to support CDFS. This will take the form of a replacement EPROM for the card.

This configuration will allow you to access Acorn CD-ROMs and navigate the data on any ISO standard CD-ROM. However, you may wish to be able to run the PC applications that are supplied with many CD-ROMs. In this case you need to use Acorn's PC Emulator version 1.6 or later. These versions provide support for CD-ROM access from the emulator.

The precise configuration for accessing DOS CD-ROMs via the PC Emulator will depend upon the specific application software requirements. For example, many DOS CD-ROMs assume the presence of a hard disc drive, and this would therefore be required to access the particular title.

Numerous CD-ROM drives are available which may be used with Acorn computers, allowing much flexibility in selecting a suitable system.

What Discs Titles Are Available For The Acorn CD-ROM System?

Acorn CD-ROM systems provide access to all ISO 9660 format discs. In addition, with the PC Emulator the majority of PC CD-ROM discs can be accessed using the retrieval software on the disc.

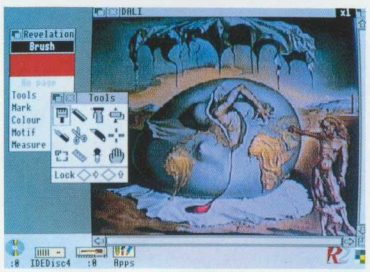
Other titles are available that have been designed specifically for the Archimedes. Examples include the CD-ROM versions of Revelation II that come with hundreds of clip art resources and from Iota their RISC OS tutorial package, First Class.

Many discs are available that contain collections of images that can be directly accessed from RISC OS and used as clip art, for study or for inclusion in a student's work. An example is the set of Planetary Data System discs from NASA that contain thousands of images collected by their spacecraft. Increasingly RISC OS applications are being developed to aid access to the CD data available on these discs.

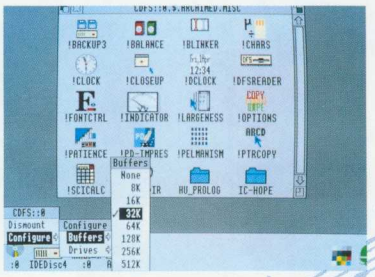
New titles are regularly appearing and you should contact your dealer for the latest information.

Future Developments

While CD-ROM is a worldwide standard, optical technology is rapidly developing. Acorn is already tracking these developments closely, as can be demonstrated by the full motion video capability provided by Acorn Replay.



As new technologies evolve into practical solutions, Acorn will be leading the way to delivering appropriate solutions into the hands of the user.



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