MULTIMEDIA

EAGLE M2

Expansion card — & Software

WILD VISION

Computer Concepts Ltd

USER GUIDE

Developed in association with
Acorn Computers Limited

Acorn
Replay ™

Manual issue 1.4
January 1994

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Acknowledgements

Contents

About this manual

This manual describes the key aspects of the Eagle MultiMedia package: the expansion card itself, hardware connections and peripherals, and its associated software. It describes in depth the use of software applications which are provided exclusively with this product. However, only the briefest details are given for `stand alone' programs for which separate manuals exist. Information about using these applications can be found in the relevant user guides as listed in the section *What you should have received.*

It is assumed that you have a basic knowledge of the RISC OS conventions and are familiar with standard applications. If this is not the case, it is advised that you first familiarise with the use of the computer by consulting the *Welcome Guide* supplied with it.

Typographic conventions

This manual uses these conventions:

Menu options are shown like this: *Save image.*

Dialogue box switches are shown like this: *Monochrome.*

Where you use the keyboard for control, the name of the key is shown in *italics.* (For example, *Return.)*

Mouse buttons

We use the Acorn convention for the three mouse buttons:

the left-hand button is called **Select,**
the middle button is called **Menu,**
the right-hand button is called **Adjust.**

Where we say click on something but do not specify a mouse button, use **Select.**

1. Introduction

About MultiMedia

Taken literally, the term 'MultiMedia' implies the use of many different kinds of communication media to convey a single message. However in recent years the word has earned a more specific meaning, namely the combination of a computer with video, audio and the printed page, united for the purpose of adding colour and depth to the information presentation process, with the help of a computer.

MultiMedia is the communication style of the nineties. In education and training, traditional learning material is brought to life, with video and audio technology adding a new dimension. As a promotional tool, the MultiMedia-based information system is a powerful method of retaining the browser's interest; small wonder that big-time retailers such as Rover cars are using this technology in consumer marketing programmes. Or that large institutions such as museums use MultiMedia stations to guide their visitors around buildings. The beauty of MultiMedia is that while digitally controlled (and therefore self-contained), it can be interactive, letting you explore a subject freely, accessing supporting material, images, film and sounds in your own time, and according to your own preferences.

The Acorn RISC computer, with its multi-tasking desktop and highly graphical user interface, is the ideal platform for MultiMedia work. This is emphasised by the advent of CD-ROM to the Acorn platform, and by the sheer quality of material which can be shown on the Acorn desktop. Even the traditional 'barrier' of a fixed 256-colour desktop palette was lifted with the appearance of the ColourCard graphics accelerator card.

The Eagle package

Eagle provides multi-media capabilities for both audio and video (still and moving images). You can use Eagle either as a standalone package or in conjunction with other movie editing applications.

What Eagle can do...

It can receive video signals from a wide variety of sources (from, for example, a camcorder or VCR) and then:

- Display the moving image in a window on-screen. (You can watch TV on your computer monitor.)
- Grab a single frame of the video.
- Record the moving image to disc for later replay to create a `movie'. (You can save the image in raw, uncompressed format or, if you have the Eidos extension software, in a compressed format.)

When saving the movie, you can also save:

- the audio input associated with the video source,
- audio signals from an external source (such as a hi-fi amplifier).

Eagle calls this the 'soundtrack'. (You can also save movies without a soundtrack.)

You can play movies from disc, pausing and frame advancing as required. Eagle is fully compatible with the Acorn Replay movie format. (Eagle includes the Replay applications, licensed from Acorn Computers Ltd.)

Using a different application, you can record sound samples from an external source and manipulate them in a wide variety of ways. You can save the samples to disc in any of several different formats, some suitable for use on other types of computer.

Eagle provides a high-quality stereo sound output. Using this, you can output sound samples to, for example, a hi-fi system.

Eagle also includes a MIDI interface. This lets you interface third party software on the computer to MIDI-compatible peripherals such as keyboards.

As with all new software, the best way to gain an appreciation of the capabilities of these programs is to experiment. If you have any problems, refer first to the troubleshooting sections of your manuals. Remember that there are also separate *ScanLight, Audio Works* and *MIDI* manuals.

Please return your product registration card to ensure swift technical support and eligibility for any future software upgrades.

Abbreviations

These abbreviations are used in this manual:

bpp bits-per-pixel – measures colour depth.

fps frames-per-second – measures the video frame rate.

System requirements

Eagle can be used with Acorn computers having standard, half-width expansion slots. (These include the A300/A400 series Archimedes, A540 and A5000 computers. The A3000 is also suitable with certain limitations.) Eagle is **not suitable** for A3010, A3020, A4000 or A4 portable computers.

If your computer meets these system requirements:

- RISC OS 3.1 or greater,
- at least 2 Megabytes of RAM (memory),

then you can use Eagle for:

- video image live display,
- capture of still video images in colour or monochrome,
- audio sample capture and playback through the stereo connector on the Eagle,
- MID1 connection.

Outputting sound samples through Eagle requires an ARM3 processor. (ARM3 is standard on the A540 and A5000 computers and available as an upgrade to other computers.) With a slower ARM 2 processor, sound output is only available through the computer's internal speaker. This gives lower-quality results.

Movie-making

The nature of digital video movies is such that their storage, processing and playing back requires large amounts of memory, both in terms of hard disc space and available RAM.

3

If you wish to use your Eagle card for movie-making you will
require a computer with:

- at least 4 Megabytes RAM,
- a high-data-rate hard disc (IDE or SCSI),
- an ARM3 processor.

The only Acorn computers that meet these requirements as
standard are the A5000 (4 **MB+** versions) and A540. Other,
upgraded computers may also be suitable.

Possible extras:

Depending on which features of the Eagle package you wish to
use, you may also need some or all of the following:

- S-Video or composite video source such as a camcorder or
  VCR (video cassette recorder) or video disc player.
- Video cable for connection to BNC (for composite) or 4-pin
  mini-D1N (for S-Video) inputs.
- Audio equipment with line-level input/output, such as hi-fi
  equipment, CD player, or amplifier.
- Microphone (with built-in amp or connected via other
  suitable equipment).
- MIDI equipment.
- 'Active' or 'MultiMedia' speakers (with line-level inputs —
  those with headphone level inputs are not suitable).

The internal speaker

Eagle can play audio samples (in mono only) through the Archi-
medes' internal speaker on Archimedes, A540 and A5000
computers. This is not possible on the A3000 — audio playback
using Eagle is only possible through external speakers via the
stereo connector on the hack panel of the card.

On all computers you can play samples through the internal
speaker using the internal sound system (not the Eagle hardware).

15-bit and 24-bit display

A multisync monitor greatly enhances the functionality of the Eagle. It is recommended that a monitor such as the AKF18, normally supplied with the A5000, is the **minimum** specification monitor that should be considered.

To appreciate fully the quality of the live image display facility of the Eagle it is best to use 15-bit display modes. This option is currently open only to users of graphics accelerator cards such as the ColourCard.

Image and movie capture in 15bpp and 24bpp is possible without such a card. However, to fully appreciate the results of video or graphics work using the Eagle, you should consider purchasing a ColourCard. The enhancements it provides are well worthwhile.

The applications suite

On the Eagle disc:

!TakeTwo– use this to:
- view an incoming video picture,
- grab a still image,
- grab a movie image, or
- view a movie image stored on disc.

For more information refer to *4. Viewing and grabbing images* and *5. TakeTwo* later in this manual.

!SysMerge– this updates the *!System* directory on your computer. This is detailed later.

!RInstall– this installs software associated with the Acorn movie compression. This is described later.

On the Scan Light disc

!Scanner– the ScanLight Plus application. Use this to grab grey-scale still images. For more information, refer to the ScanLight Plus manual.

!SysMerge– do not use this version. It is provided for when ScanLight is sold as a separate package.

On AudioWorks disc 1:

!AudioCtrl– this has two uses:
   • to play audio samples, and
   • to set-up audio parameters.

!AudioWrks– use this to record and play back audio samples.

For more information on these applications, refer to the Audio-Works manual. For information on using *!AudioCtrl* to set-up Eagle audio parameters refer to 7. *Audio options.*

!SysMerge– do not use this version. It is provided for when AudioWorks is sold as a separate package.

On AudioWorks disc 2:

This disc contains a selection of audio samples.

On the Replay disc:

!ARMovie, !ARPlayer and *!MultSound* — these are the standard Replay applications and are licensed from Acorn Computers.

!ARMovie provides the software needed to replay movies. You do not need to run *!ARMovie.* Other applications automatically load it when required.

!ARPlayer lets you play a movie and provides controls such as pause and frame advance. These functions are also provided by *!TakeTwo.*

!MultSound lets you replay just the soundtrack of a movie. This function is also provided by *!AudioWrks.*

!CfsReader– *!ARMovie, !ARPlayer* and *!MultSound* are supplied in compressed format. *!CfsReader lets* you uncompress these files. (This operation is detailed later.)

2. Installation

Caution!
Static electricity can damage the Eagle expansion card. Store the card hi its protective bag until you install it, and do not allow the board to come into contact with static-productive materials such as man-made fibres, wool, polystyrene or plastic bags not designated anti-static. If possible, handle the board by the back panel only and first discharge any static build up from your hands by touching one of the metal screws on the computer case.

What you should have received

Check that you have received the following:

- Eagle expansion card in anti-static packaging,
- this manual,
- ScanLight Plus manual,
- AudioWorks manual,
- MID] manual,
- five floppy discs,
- ribbon cable,
- MID1 cable,
- half-width blanking panel,
- registration card.

Installing the Eagle expansion card

Caution!
No special skills are required to fit the Eagle. However, the suppliers cannot accept responsibility for any damage that may result from incorrect installation. If in any doubt, consult your local supplier.

The Eagle is suitable for installation in any Archimedes or A5000 with backplane fitted. It may also be used with the A3000 using the external expansion slot. In all cases your attention is drawn to *System requirements*.

The card is **not suitable** for installation in the A3010, A3020, A4 portable or A4000, for which there is no standard expansion card provision.

Tools

The only tool required is a No. 2 (medium) cross-head screwdriver.

Disconnect power

Before installing the Eagle, switch off the power to the computer. However, leave the power lead connected. Disconnect all other leads to the computer. Remove anything (such as a monitor) that may be on top of the case.

Remove the computer's cover — Archimedes on|y

1 Remove the five screws that secure the cover:
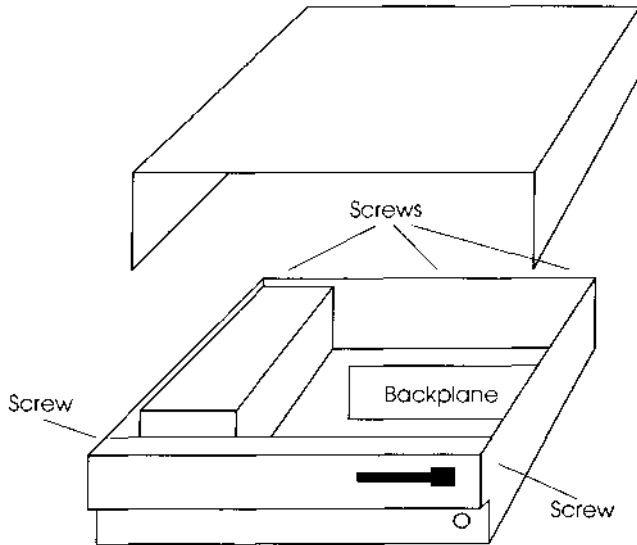
2 Slide the cover hack off the computer.

3 If you have an A305 or A310 computer — Ensure a backplane is fitted. This is a vertically mounted circuit hoard, positioned approximately half-way across the main circuit board. It provides two or four sockets into which expansion cards can be fitted.

Other types of computer — the backplane is already fitted.

Remove the computer's cover — A5000 only

The cover is secured by six screws (three each side) located underneath the case. Take care tilting or lifting the A5000 as the screw-heads can scratch a wooden or polished surface.

Remove all six screws. The cover should then slide back off the computer.

Expansion card positioning — Archimedes & A5000

With no expansion cards fitted, the rear panel of the main unit consists of three metal blanking plates, each secured to the case by screws at both ends.
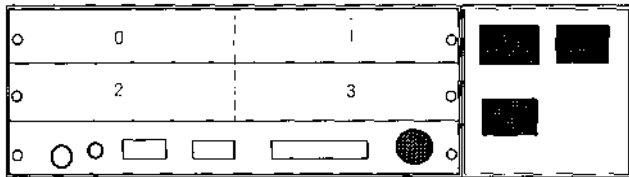
The lowest plate (containing various sockets) is secured to the main circuit board and **should not** be removed during expansion card installation. The upper two plates are temporary fitments that are removed when expansion cards, such as the Eagle card, are installed.

One standard width expansion card occupies half the width of the back panel. The numbers 0...3 on the diagram above indicate the positions in which expansion cards may be fitted. With a two-socket backplane only positions 0 and 2 are available.

Connecting the ribbon cable...

The ribbon cable supplied is for connecting the Eagle to the computer's internal sound system. This option is not possible for users of the A3000 (see *System requirements).*

> *Caution!*
> *Incorrectly connecting the ribbon cable can damage your computer.*
> *Carefully follow the instructions in this manual and pay particular*
> *attention to the orientation of the cable. The suppliers of Eagle cannot*
> *be held liable for any damage that results from incorrect installation. If in*
> *any doubt contact your local supplier.*

Because of hardware differences you need to know exactly which type of computer you have. The front panel of the computer shows the model number. The options are:

- Archimedes 300 & 400 series,
- Archimedes 400/1 series,
- Archimedes 540,
- A5000.

The ribbon cable may seem longer than necessary but this lets it reach any expansion card slot. Carefully fold any surplus cable under the expansion card to make sure it doesn't snag with the computer's cover.

If an existing expansion card is already fitted in the lower slot, the connector on the computer may be slightly obscured.

The dark band in the following diagrams denotes the red stripe on one edge of the cable.

...*on* an Archimedes 300 & 400 series
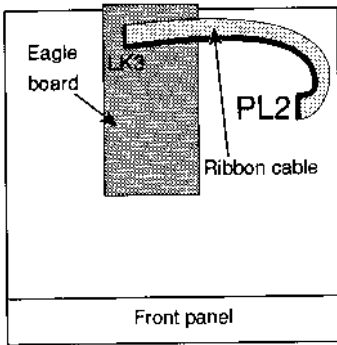
The cable plugs into connector PL2 on the far right of the Archimedes circuit board, partly under the right-hand expansion card (looking from the front of the machine). Note that the cable turns through 180° (a half-turn) so the rearmost pin on the Eagle card connects to the frontmost pin on the Archimedes circuit board.

There may be two plastic-covered links on PL2. Remove them but keep them in a safe place. You may need them in the future if you change your monitor. The Archimedes User Guide gives more details. (Look under *Connecting the monitor.)*
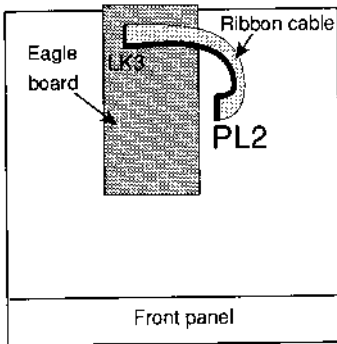
## ...*on* an Archimedes 400/1 series

This is similar to the 300 series except that PL2 is towards the centre of the circuit board, partly under the left-hand expansion card.
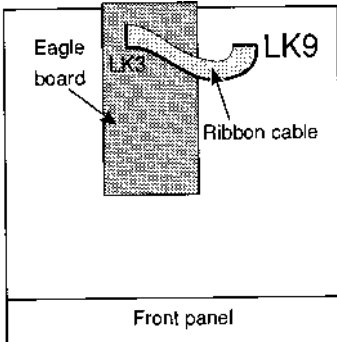
...on an Archimedes 540

The cable plugs into connector LK9, which is towards the rear of the Archimedes circuit board (looking from the front of the machine). Note the orientation of the cable as shown in the diagram.
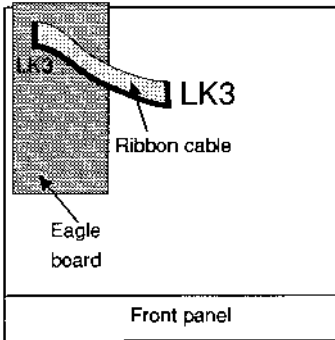
...*on* an A5000

The cable plugs into connector LK3, which is towards the centre of the A5000 circuit hoard. Make sure the cable is not twisted; the rearmost pin on the Eagle card connects to the rearmost pin on the A5000 circuit hoard.

Fitting the expansion card — Archimedes & A5000

Unscrew and remove the chosen blanking plate from the rear of the case. The Eagle card can be fitted into any position.

The Eagle expansion card may now be inserted (usually from the rear) and, whilst held horizontally, pushed into a corresponding backplane socket. The backplane is supported by a strong metal bar; however it is advisable to support it with one hand whilst pushing the expansion card into place with the other hand.

If the Eagle expansion card is fitted adjacent to another card, bolt their rear panels together after installation using the T-piece provided. However, if no adjacent card is present, screw the half-width blanking plate supplied to the Eagle rear panel.

Replace any screws that you removed from the blanking plate. Ensure that the Eagle expansion card is screwed to an adjacent expansion card or to the half-width blanking plate.

The Eagle card is now fitted ready for initial testing. Replace the cover by sliding it hack onto the computer from the rear. Replace the securing screws.

Fitting the Eagle expansion card — A3000

Before plugging Eagle into an A3000 you must change two links on the Eagle card. These are:

> **LK4 and LK5 Change both jumpers from pins 2-3 to 1-2. (Pin 1 is marked with a dot.)**

The position of these links is shown in 9. *Technical information.*

Fitting the card

1 Disconnect the mains lead and all peripherals. You do not need to remove the top cover of the computer.

2 Plug the expansion card into the external socket at the back of the A3000.

Any expansion card plugged into an A3000 has little protection against accidental damage. We therefore recommend that you protect the card with a metal casing. Alternatively, Wild Vision can supply an A3000 Expansion Box which provides three expansion sockets. Your A3000 then has a total of four expansion sockets, the same as the Archimedes and A5000. Contact Wild Vision for further details.

There are no further connections to make, as you cannot connect the Eagle to the A3000's internal sound system.

Initial testing (Archimedes, A3000 & A5000)

Reconnect any previously connected peripherals, and switch power on to your computer.

When the computer has finished its initialisation, go to the command line (press *F12)* and type

P o dules and press *Return.*

This lists the expansion cards fitted in the computer. In the list the following should appear:

W i l d   V i s i o n / C C   E a g l e   M 2   V x . x x

where x . xx is the version number.

Press *Return* to return to the normal desktop display.

Copying the software

Copying *!ARMovie, !ARPlayer & !MultSound*

These are on the Replay disc and are in compressed format. *! ARMovie* is used by TakeTwo to record and play movies. As described earlier in *The applications suite, !ARPlayer* and *!MultSound* duplicate functions provided by TakeTwo and AudioWorks. It is therefore not essential to copy *!ARPlayer* and *!MultSound.* (They supplied as part of the standard Acorn Replay applications suite.)

To decompress these applications to a hard disc:

!CFSReader 1 Double-click on *CfsReader* (also on the Replay disc). This disolaʸs a disc drive icon on the icon bar:
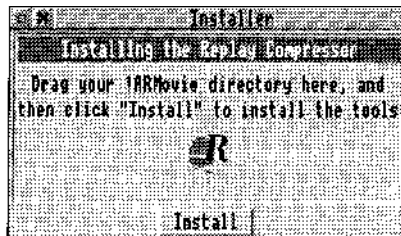
<div align="center">▓▓CFS▓
ADFS 0</div>

2 Click on the drive icon. This opens a directory window (the CfsReader window) showing the contents of the Replay disc.

3 Open a directory window (the destination window) onto a suitable directory on your hard disc.

4 Drag the *!ARMovie, !ARPlayer* and *!MultSound* icons (as required) from the CfsReader window to the destination window. This decompresses and copies these files.

RInstall

This is on the Eagle disc. You only need to run this if you want to use the Acorn movie compression routines. (We recommend using the Eidos compression routines if these are included in your version of Eagle.) The Acorn routines and *!RCompress,* a front-end utility, occupy about 120KB of hard disc space.

1 Double click on *.!ᴿhzstall.* This opens a window:

<div align="center">

┌─────────────────────────────┐
│ ▓ ℛ ▓   Installer   │
│ ▐ Installing the Replay Compressor ▌ │
│ Drag your !ARMovie directory here, and │
│ then click "Install" to install the tools │
│   ℛ   │
│   Install ▌   │
└─────────────────────────────┘

</div>

2 Click on *Install to* start the installation process.

RInstall copies *!RCompress* into the same directory as *!ARMovie. (!
RCompress* controls the compression routines and is described
later.) If you have an existing version of *!ARMovie,* the compres-
sion routines inside *!ARMovie* are updated if necessary.

RInstall fronts the directory window showing *!ARMovie* and *!
RCompress.*

The other applications

We recommend copying the Eagle applications onto a hard disc
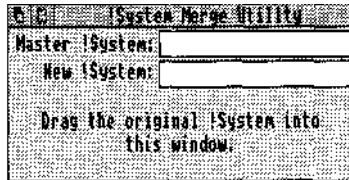for normal use. After copying, store the original discs in a safe
place.

Updating *!System*

**Do not delete your existing version of *!System*. Do
not copy *!System* from the Eagle disc.**

Instead you must merge the two *!System* files. To do this:

On the Eagle disc is a program called *!SysMerge.* **(Do not**
use *!SysMerge* from the ScanLight or AudioWorks disc.)
Load this in the usual way by double-clicking on its icon.
This opens a small window:

!SysMerge

> System Merge Utility
> Master !System:
> New !System:
>
> Drag the original !System into
> this window.

2 Drop your existing *!System* icon onto the window. *(!System*
is on your hard disc, if you have one, or your hoot disc.)

3 Drop the *!System* icon from the Eagle disc onto the window,
This creates a new, combined version of *!System* and
automatically updates the existing version.

4 When the window shows **!System updated,** click on its
Close icon to exit from *!SysMerge.*

2. Installation

3. Getting started

Connecting a video input

Eagle provides two video connectors:

- a 4-pin mini-DIN connector for S-Video sources, and
- a BNC (bayonet-style) connector for Composite video (standard VHS) sources.

Different manufacturers use alternative names:

- S-Video may be called *Hiband, S-VHS,* or *Hi8.*
- Composite video may be called *CVBS, Video out,* or *SCART.* (Not all SCART outputs produce composite video signals – check the specification before plugging into Eagle. You will require a SCART to composite video [BNC] adaptor.)

Signals from connectors marked *UHF, Aerial, RF,* or *TV* are **not** suitable.

Suitable video sources include: video camcorder, video recorder, TV (via a VCR - a demodulated signal is required), Canon Ion still video camera, or video laser disc player. Sources may be colour or monochrome, but must he PAL or NTSC standard (the UK and US formats). SECAM (the French and Russian standard) is not currently supported.

S-Video connector
(4-pin mini DIN)

Composite video connector
(BNC)
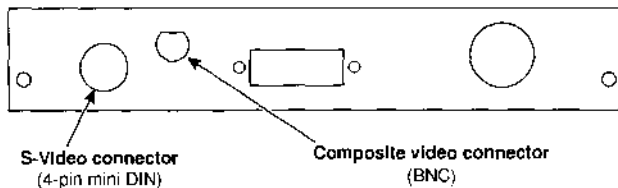
The S-Video connection is similar to a mouse connector; the arrow on the connector should face the top of the socket. The pin-out of this socket is given in 9. *Technical Information.*

We recommend using 75 ohm coaxial cable for video work. Preferably keep all cables as short as practical, and avoid sources of possible noise in its routing, such as other electric or electronic equipment.

Make sure that power is supplied to your video source. In particular, users of the Canon Ion camera should note that a time-out function may come into operation if the camera is left standing for a time. See section entitled *8. If problems occur...*

Connecting an audio input

The Eagle has a 5-pin DIN socket for audio input and output.

Stereo audio line-level connector
(5-pin DIN)
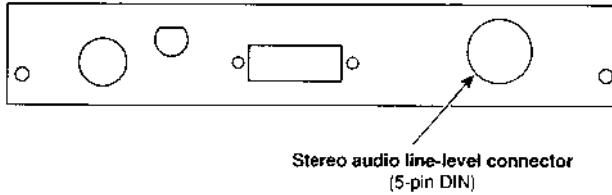
The pin-out of the socket is given in 9. *Technical Information.*

Suitable audio sources include: CD players, amplifiers, or hi-fi equipment.

Microphones may be used if connected through an external amplifier or other equipment offering line-level output (such as a hi-fi). Some microphones are supplied with their own amplifier. The input line-level is selectable as 0.5V or 1 V r.m.s. (see 6. *Audio options).* You should check that the line-level for any equipment used does not exceed the selected line-level for the card.

Connecting the audio output

You can use the 5-way DIN socket to connect Eagle's stereo output. The 5-pin DIN has both stereo input and output connections.

Suitable devices include: a VCR for video dubbing; an amplifier and thence to stereo speakers; direct to `active'or multimedia' speakers; a tape deck for recording; and so on.

The output line-level is 1 V r.m.s. (or 2.8V p-p). Note that this is a high impedance line-level output. It is not suitable for devices intended for connection to a headphone socket. You should check the specification of your equipment for compatibility.

Use *!AudioCtrl* to set the variables affecting the level and quality of the sound being played back - refer to the *Audio options* section.

Playback using the computer's internal speaker

To play back through the computer's internal sound system using Eagle's superior sound reproduction facilities, the ribbon cable must be connected. (Refer to *2. Installation:* see also *System Requirements.)* Sound played back through the speaker in the computer is in mono only. This is a limitation of the computer.

When playing back to the internal speaker only, set the *Internal* volume in the Eagle mixer (in *!AudioCtrl)* to minimum.

Otherwise, sound played back through the internal speaker will be slightly louder with the low frequencies emphasised (compared to the same sound played back through the speaker with no Eagle fitted).

Playback using external speakers

See *System requirements* for details of suitable speakers.

When using external speakers, you should turn off the computer's internal speaker:

1 Click on *Apps* on the icon bar. This opens a directory window.

2 Double-click on *!Configure* in the directory window. A computer-shaped icon appears on the icon bar.

3 Click on this icon.

4 Click once on the bell icon labelled 'Sound'.

5 Deselect the **Loudspeaker enabled** option.

Jf the ribbon cable is fitted, the computer's internal sound system can 'play' through the Eagle. (The volume is controlled by *Internal* on the Eagle mixer).
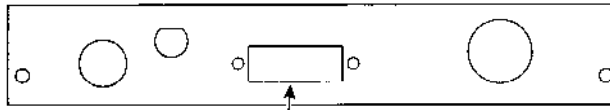
Connection to MIDI

Caution! Use only the MIDI cable supplied.

A cable has been supplied especially for use with the Eagle's MIDI circuitry. This terminates in three 5-pin DIN sockets, for:

- **MIDI in** (blue hand),
- **MIDI out** (red band) and
- **MIDI Thru** (yellow band).

The cable plugs into the 15-pin D-type socket on the Eagle card.

MIDI connector for use with supplied MIDI cable
(15-pin D-type socket)

This cable should be connected into your M1DI system as required. (The manual on the Acorn MIDI support software includes more information on connecting MIDI devices.)

Please refer to the separate manual for details of the Acorn MIDI support software.

Eagle can be used with any third-party MIDI software (such as Glares' *Rhapsody* and *Serenade)* that operates under RISC OS 3. You can also use *Maestro* (supplied with the computer on applications disc 2 – refer to the computer's *User Guide* for more information).

4. Viewing and grabbing images

This section provides an overview of using the facilities in Eagle. Later sections give more details.

Viewing a live video image

Load TakeTwo. (Refer to *5. TakeTwo* for a detailed description of this application.)

You can either:

- click on the TakeTwo icon on the icon bar, or
- choose *Show live display* from the Icon Bar Menu.

Either action opens the live display window (described later).

When you first open the window, there may be no picture or a poor quality image. This usually means that a video signal is not connected or that the Video options in the *Picture Controls* dialogue box are not correctly set.

Grabbing a still image

You have two options for grabbing a still image:

- *ScanLight*— this is suitable for grabbing grey-scale Sprites.
- *TakeTwo*— you can grab colour images in Sprite, TIFF or Clear format.

ScanLight

The ScanLight application is called *!Scanner.*

Refer to the *ScanLight Plus* manual for full details of using ScanLight. After grabbing an image, you can manipulate it (or any Sprite of up to 8bpp format) in a variety of ways. Examples include changing the grey-map or enhancing or blurring the image.

You do not need to run TakeTwo but grabbing the image is easier if you can preview it in the TakeTwo live display window.

To grab an image:

1 Load *!Scanner.*

2 Click on the Scanner icon on the icon bar. This opens the *Scan* dialogue box.

3 When ready to grab the image, click on *Scan.* This opens a window (called the *Original window)* showing the grab.

4 You can save this image or, to manipulate the image, open the *Altered window.* To open the Altered window, either choose *Altered* from the ScanLight menu or double-click on the Original window.

Take Two

1 Load TakeTwo. The live display window shows the incoming video signal.

2 If necessary, change the *Video source* switches in the *Picture controls* dialogue box to get a satisfactory image.

3 Display the *Grab choices* dialogue box either using *Grab choices* on the TakeTwo menu or by clicking **Select** on the live display window.

4 Choose the required file format *(Sprite, TIFF* or *Clear).*

5 Set up the file save path by dragging the icon to a directory window. See *Grab choices dialogue box* for more information.

6 If necessary, set-up the *Format* and *Size* options.

7 When the live display window shows the required image, click on the *Record* button. This grabs the image and saves it to disc. The image is grabbed as soon as you click on *Record* but processing and saving to disc may take a second or two.

Grabbing a movie

This is similar to using TakeTwo to grab a still image:

1 Load TakeTwo. The live display window shows the incoming video signal.

2 If necessary, change the Video source switches in the *Picture contro/s* dialogue box to get a satisfactory image.

3 Display the *Grab choices* dialogue box either using *Grab choices* on the TakeTwo menu or by clicking on the live display window.

4 Set the file format to *Replay.*

5 Set up the file save path – see *Grab choices dialogue box* for more information.

6 If necessary, set-up the **Format** and **Rate** options.

7 If necessary, set-up the mixer controls in AudioCtrl. See the *Audio options* section of this manual for more details.

8 When the live display window shows the required image; click on the *Record* button. This starts recording the movie.

9 Click on the *Stop* button to stop recording. (Recording also stops if the disc becomes full.)

10 The title page of the movie is displayed. Click on *Play* to play the movie or *Stop* to return to the live display.

How Replay movies are processed and stored

Grabbing movies makes heavy demands on the computer. A movie image represents a large amount of data to process in real-time. You can also quickly fill a disc with the movie data, especially if it is stored uncompressed.

The Replay format has two speeds, 12.5 or 25fps. 25fps gives the best results but only very fast computers can process the data. At 12.5fps, data is read in and processed in two second "chunks". At 25fps, the chunks are one second long. Chunks are initially stored in RAM (memory) as they are received. When a chunk is complete, it is processed and then stored on disc. If you have the Eidos software and have selected *ESCaPE,* the chunk is also compressed before storing.

The RAM requirements to hold the chunks depend on the save format. For grey-scale format (the smallest), 1Mbyte is needed, for RGB format (the largest), 2Mbyte.

For information on compressing a movie using the Acorn compression routines, refer to 7. *RCompress.*

Grabbing a movie soundtrack

You can grab just the soundtrack (and not the associated video image) by using AudioWorks to produce a sound sample. This is described in detail in the AudioWorks manual.

Viewing movies

Before you can play a movie, the *!ARMovie* application must have been "seen" by the computer. This means displaying *!ARMovie* in a directory window. You never need to load it.

You can use either TakeTwo or ARPlayer. We recommend TakeTwo.

> 1 Drop a movie (Replay) file icon onto either:
>
> - the TakeTwo live display window, or
> - the TakeTwo icon on the icon bar.

2 Click on *Play* to play the movie.

Click on *Stop* or *Pause* to stop or pause the movie.

If you have just recorded a movie, step (1) is unnecessary. Click on *Play* to play the movie.

Playing only the soundtrack

This is similar to viewing a movie. That is, you drop the movie file icon onto either AudioWorks or MultSound. We recommend AudioWorks for short movies; MultSound for long movies. (AudioWorks loads the complete soundtrack into memory before playing it; MultSound reads direct from disc and so requires less memory. However, AudioWorks provides extra features.)
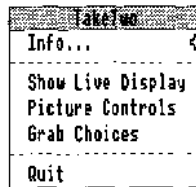
5. TakeTwo

TakeTwo is a digitising program written especially for Eagle. It makes full use of the 24-bit video capabilities of the Eagle video hardware. It provides the necessary controls to:

- display a video image,
- capture still images in colour or monochrome,
- capture digital movies with or without sound in Acorn Replay format. (The ESCaPE real-time video compression module lets you record and compress movies in real-time.)

To use TakeTwo, first load the application by double-clicking on its icon. The *!TakeTwo* icon appears on the right-hand side of the icon bar:

Click **Menu** on the icon on the icon bar to display the TakeTwo menu:

Info displays an information box about TakeTwo.

Show live display opens the live display window (described below). You can also open this window by clicking **Select** on the icon on the icon bar.

Picture controls opens the *Picture controls* dialogue box (described below).

Grab choices opens the *Grab choices* dialogue box (described below).

Quit closes all TakeTwo windows and removes the application from memory.

Live display window

This window displays the received video image. If the window is black, the picture is unstable or the colours are wrong, you need to change the Video settings in the *Picture controls* dialogue box (described below).

The Title bar of the window shows the current resolution of the display in pixels (horizontally) and lines (vertically).

The buttons along the top of the window act like the buttons on a conventional video recorder:
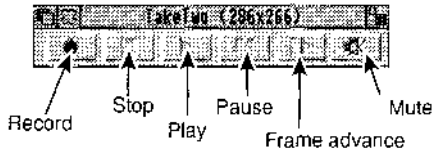
When viewing a live video image:

Record either:

starts recording a movie, or

grabs a single frame. (This is controlled by *File format* in the *Grab choices* dialogue box.)

Stop displays the title page of a pre-recorded movie, if there is one loaded, or returns to the live display.

Play starts playing a pre-recorded movie, if there is one loaded. (Refer to *P/aying a movie.)*

Pause freezes the current image in the window.

Frame advance starts playing a pre-recorded movie by displaying the first frame.

Mute only has an effect when preparing to record a movie. It sets the *Mute* opt ion in the *Grab choices* dialogue box.

When recording a movie:

Record has no effect.

Stop stops the recording of a movie and displays the title page of the movie. Press *Play* to play the movie or *Stop* to return to the live display.

Play has no effect during recording. After recording, click on it to play the movie.

Pause has no effect.

Frame advance has no effect.

Mute has no effect.

When replaying a movie:

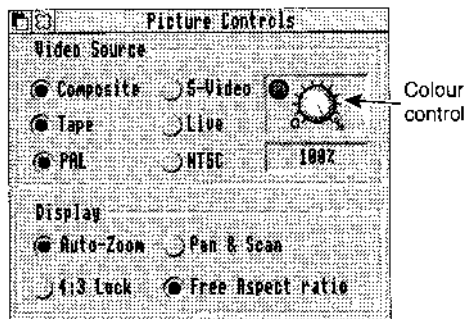*Record* has no effect

Stop stops the movie.

Play starts or resumes playing a pre-recorded movie. (Refer to
  Playing a movie.)

Pause freezes the current image in the window.

  Frame advance advances the movie by one frame.

Mute mutes the sound.

Picture controls dialogue box

To display this either:

• choose *Picture controls* from the TakeTwo menu, or
• Adjust-click on the live display window.

This dialogue box sets options for the live display window.

Video Source

Change the current settings if there are problems with the dis-
played video image.

Composite/S-Video

If you select the wrong option, there will be no image displayed in
the TakeTwo window. (Also check that you have properly connected
the video lead and that the video source is live.)

Composite selects input from the BNC connector on the Eagle hack panel. This is suitable for standard CC1R sources, such as Video cameras, recorders, and so on.

S-Video selects input from the 4-pin mini-DIN connector on the Eagle hack panel. This is suitable for S-Video (S-VHS) sources, including Hi-8.

Tape/Live

If you select the wrong option, the image may be unstable or distorted. This is more likely to happen when playing a tape with *Live* selected.

Tape is optimised for signals from video tape recorders.

Live selects the correct syncs for video from live display equipment such as demodulated TV signals, Canon Ion live display, CCD cameras, or direct output from video camcorders.

PAL/NTSC

If you select the wrong option, the image appears unstable and in the wrong colours.

PAL is the UK standard for video and selecting this button ensures that the Eagle recognises the incoming video signal as standard 50Hz, 625 line video.

NTSC is the north American TV standard and should be selected by US and Canadian users or European users with imported NTSC video equipment.

Colour control

This is similar to the colour control on a conventional television. Colour settings suitable for the computer desktop may be too vivid for normal video images (for example, from a video camera). You can then "turn" the colour knob to adjust this. There is no correct setting; it depends on personal preference.

Turning the control to 0% displays the image in black and white. If you have a ColourCard, select the 256-grey palette for the best possible grey-scale quality. (Use FlipTop to change the palette.)

Auto-Zoom/Pan & Scan

These affect the scaling of the live image.

Auto-Zoom – this switches to an image scaling function, where resizing the window automatically scales the whole of the video image to fit within the window. The aspect ratio of the image adheres to the chosen shape of the window and may therefore be distorted vertically or horizontally to achieve "squashed" or "elongated" effects. To keep the correct aspect ratio, select the *4:3 Aspect Ratio* button.

Pan & Scan – the live window behaves in the normal R1SC OS way. Scrolling or resizing the window results in panning around the image which remains at the current scale. You can check the current resolution by looking at the live display Title Bar which shows the resolution in pixels x lines.

4:3 aspect ratio/Free aspect ratio

These, as suggested above, are used in conjunction with *Auto-Zoom.*

4:3 aspect ratio – the aspect ratio of the image remains fixed whatever the display size.

Free aspect ratio – the aspect ratio corresponds to the shape of the resized window.

Grab choices dialogue box
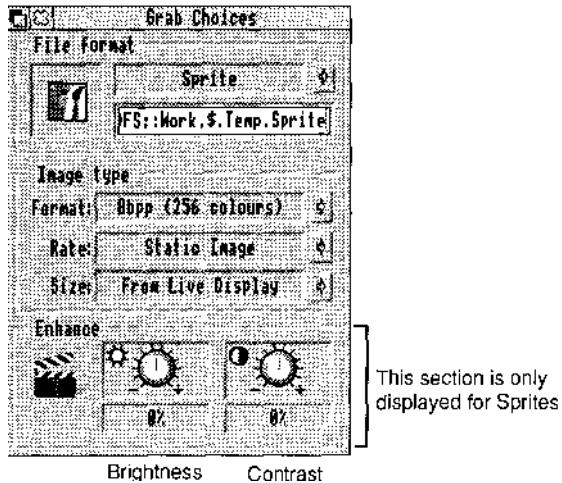
To display this either:

- choose *Grab choices* from the TakeTwo menu, or
- click **Select** on the live display window.

This dialogue box sets options for grabbing an image or movie. However, an image grab is not initiated from this box but from the *Record* button on the live display window.

File format

This dictates the file type, destination and name of the grabbed image or movie. On the left it shows the icon for the selected image or movie file type. These are chosen from a menu that appears when you click on the icon to the right of the dialogue box. The available options are:

Sprite – the normal bitmap format for RISC OS. 8bpp (256 colours) is widely used. Some applications cannot display the newer "deep-colour" 15bpp and 24bpp Sprites.

TIFF– a format that allows for easy cross-platform transportation of images. (For example, to IBM-compatible PCs and Apple Macs.)

Clear— this format also allows "deep-colour" images. Some older applications can display Clear format but not deep-colour Sprites.

Replay— the Acorn digital movie format.

File icon and editable field

These let you tell the computer where to save the grab:

1 Type a suitable file name into the editable field. If you want to make several still frame grabs, we recommend names of eight characters or less (see below).

2 Drag the file icon to the required directory window.

This does not save the image; it just tells the computer where to save the grab when you click on the *Record* button.

For still frame grabs, you only need to do this before making the first grab. For second and subsequent grabs, Eagle adds a numeric suffix to the file name. For example, if you type in *filename,* Eagle saves the first grab as *filename,* the second as *filename0,* the third as *filename1,* and so on.

Dragging the icon tells the computer to overwrite any existing file with that name. So, in the example above, any existing file called *filename* in that directory is overwritten when you click on *Record.*

Adjust-click on the Close icon for this dialogue box to open a directory window onto the selected directory.

Image type

The previous settings for *Format, Rate* and *Audio/Size* are redisplayed if you change to a different image type.

Still frame grabs: Format

Options:

Sprite	*8bpp,*	*15bpp, 24bpp*
TIFF		*15bpp, 24bpp*
Clear		*24bpp*
Replay	*see movie grabs (below)*	

Number of colours:

8bpp	*256*
15bpp	*32 thousand (approximately)*
24bpp	*16.7 million (approximately)*

Which option you choose is based on:

- **Memory —** 15 & 24 bpp images are notorious for eating Kilobytes. A 15bpp Sprite can easily fill an 800K floppy disc.
- **Viewing the image —** Many applications can handle 8bpp Sprites. However, fewer applications can handle 15 or 24bpp Sprites or can only handle Clear files. *(Impression Style* or *Publisher* or *ArtWorks* version 1.5 can handle 15bpp and 24bpp images.)*

  For best quality display of 15bpp or 24bpp images, you currently need ColourCard or other graphics accelerator card.
- **Printing —** If you want to print the grab, choose either 8bpp grey-scale or 15/24bpp sprites.

Rate

For Sprite, TIFF and Clear options, this field reads *Static.*

Size

There are two options:

- *From Live Display*— only the image area shown in the window is grabbed. Any image areas outside the window are ignored.
- *Maximum size* — the entire image (768x288 pixels) is grabbed.

M o v i e   g r a b s :

Format

This menu is in two parts – Replay movie save options and sampling format. For more information on sampling format, refer to *Introduction* in the AudioWorks manual.

Replay save options:

ESCaPE– this saves the movie using the additional Eidos compression routines. It is the recommended format if this option is available. To grab a movie requires about 1.3MByte of memory free.

8 bit greyscale – black-and-white format. This requires least memory – about 1MByte.

15 bit RGB – colour format. This format is not recommended unless you intend to use an application that requires RGB format. This requires most memory – about 2MByte.

20 bit YYUV– colour format. This requires less memory than *15 bit RGB*– about 1.2MByte.

15 bit RGB and *20 bit YYUV* provide the best quality but generate the largest files. (YYUV quality is slightly less than RGB and produces smaller files. However, ESCaPE provides good results with the benefit of smaller files than either RGB or YYUV.)

Sampling format:

Mute - the movie is grabbed without a sound track. You can also choose this option by clicking on the *Mute* button on the Live display window.

8 bit lin/8 bit log/16 bit lin – we recommend *8 bit log.* However, some movie editing applications only work with linear (lin.) sound recordings.

8 bit lin gives the lowest quality sound; *16 bit lin* the best but requires most memory. The results from *8 bit log* are almost as good as *16 bit lin* and require far less memory.

If you select *16 bit lin,* Eagle actually samples in 12 bit linear quality (the maximum available from the hardware) but stores the sample in 16 bit linear format.

For more information on linear (lin.) and logarithmic (log.) sampling, refer to *Introduction* in the AudioWorks manual.

Rate

This menu is in two parts – frame rate and audio frequency.

You have a possible choice of12.5 or *25* fps, depending on the hardware resources available.

25 fps gives better results but requires more memory and processor power. It is only available on top specification computers. You cannot use ESCaPE compression with 25fps movies; you must use the slower Acorn compression routines.

7kHz/11kHz/22kHz/44kHz

This sets the sampling frequency. Increasing the sampling frequency, increases the sound quality but also uses more memory. If you intend to replay the movie using the computer's internal speaker, *11kHz* gives acceptable quality and processor overhead. For more information on sampling frequency, refer to *Introduction* in the AudioWorks manual.

You also need to set the mixer controls in AudioCtrl. Refer to the 6. *Audio options* section of this manual.

Size

At present the Replay format has a fixed image size of 160x128 pixels. Future developments may permit other image sizes. (The window size when replaying movies is 320x256 pixels.)

Brightness and contrast controls

These modify the brightness and contrast of a grabbed Sprite or a paused image in the live display window and let you optimise the incoming video signal.

To set the controls before grabbing an image click on the pause button. You can now change the brightness and contrast by using the mouse to "turn" the knobs. The centre position (0%) represents no change.

6. Audio options

AudioWorks gives extensive audio manipulation options. It lets Eagle users create and play back audio samples in stereo or mono and up to 12 bit in resolution. Detailed instructions on using AudioWorks are given in the accompanying manual. However, AudioWorks includes extra features when used in conjunction with an Eagle card.

You will note that AudioWorks recognises Eagle as an available input/output device in its **Preferences =>Devices** dialogue box:
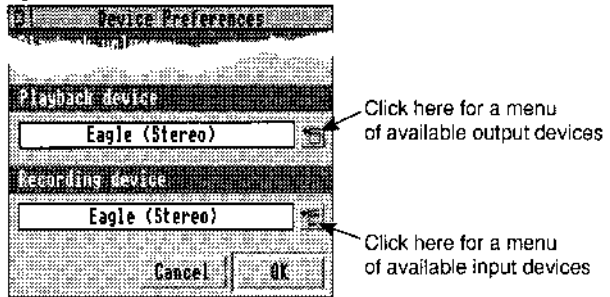
and in the recording dialogue box:
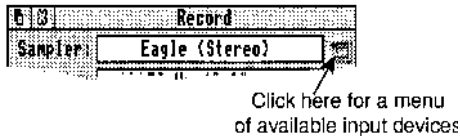
In these dialogue boxes you will find that two sampling *devices* are available for use: *Eagle (Stereo)* and *Eagle (Mono).* Choosing the former accesses Eagle as a stereo sampling source, while the latter makes Eagle pretend to be a mono sampler by mixing the left and right channels together:

When Eagle is installed in your computer, an Eagle option appears in the !A *udioCtrl* preferences window.

Clicking upon the *Eagle* icon opens the mixer preferences window:
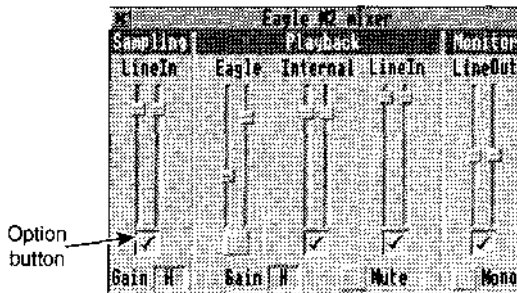
This window allows you to configure the Eagle mixer settings to adjust signal levels for the sound input and output channels. Each mixer option has a stereo slider associated with it — by dragging the left or right slider buttons up or down, you can increase or decrease the overall level of that input/output.

To alter the levels on the left and right channels independently, click on the option button at the base of the slider, and then drag the left or right slider as appropriate. Clicking again on this button links the channels together if you want them equal.

The five slider pairs control:

Sampling Line In

This sets the level of the input signal used when recording samples.

Playback (Eagle)
Playback (Internal)
Playback (LineIn)

These three sliders control mixing of the three playback signal sources:

• the Eagle card (when playing sound from the computer through the Eagle),

Normal operation
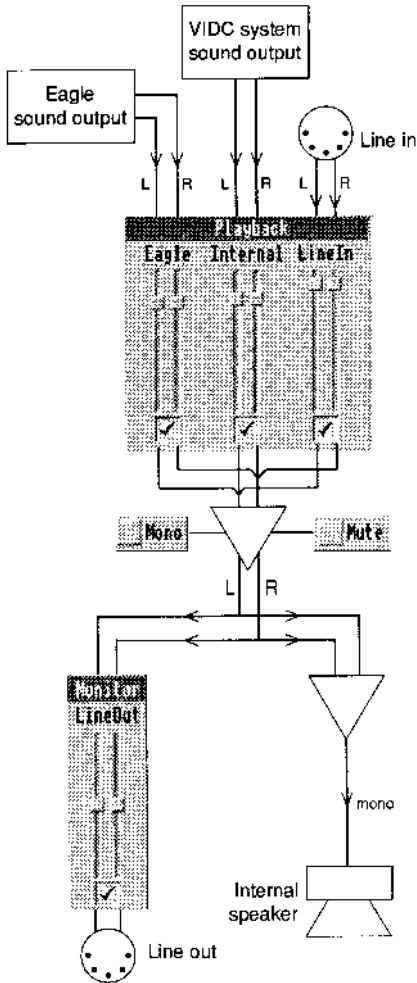
Sampling
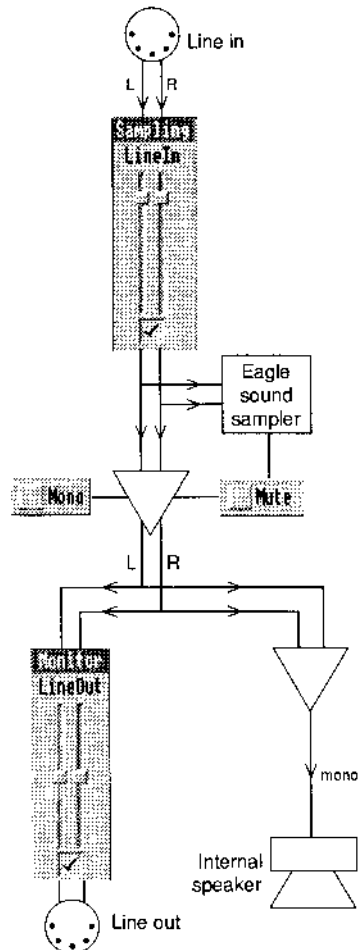
Using the mixer controls

- the computer's internal (VIDC) sound system, and
- the line input socket at the back of the Eagle card.

Monitor Line Out

This controls the output volume from Eagle's line out.

There are further options available at the bottom of the window:

Sampling Gain control

The input signal can be boosted with two different gain levels (Low, 0.5V r.m.s. or High, V r.m.s.). The icon shows *L* or *H* to indicate the current setting. Clicking on the icon displays a menu allowing you to set a new gain level.

Playback Gain control

The output signal can be boosted with three different gain levels (Low, Medium, and High). The icon show *L, M,* or *H* to indicate the current setting. Clicking on the icons displays a menu allowing you to set a new gain level.

Mute

This mutes the Eagle card so that it inputs and outputs no sound.

Mono

The Eagle card mixes left and right channels of the output signal to give a mono sound output.

Choose *Save preferences* from the main AudioCtrl menu to save the current settings as your permanent preferences.

To use your preference settings in the future, you can either:

- *Save preferences* from the main AudioCtrl menu, and run AudioCtrl each time before using the Eagle card, or
- Save a desktop boot file including commands to set up the Eagle card mixer according to the settings currently showing in the Eagle mixer window. See *Desktop boot files* in your RISC OS 3 *User Guide* for more details on these files.

7. Acorn movie compression routines and <u>*RCompress*</u>

Acorn movie compression routines

These are an alternative to the optional Eidos *ESCaPE* routines.

The Acorn routines compress movies in two stages. They operate on the stored movie. (Unlike ESCaPE, which can compress a 12.5fps movie as it is stored to disc.) However, they let you compress 25fps movies. The routines are accessed using *!RCompress* (described later).

Stage 1 — compression

This stage compresses the movie, frame-by-frame, into a series of files in a specially created directory. The result of this stage is called an *exploded movie* (because it has exploded into several files). For details of these files, see 9. *Technical information.*

This stage uses a module inside *!ARMovie* called *Differ:* Compression is slow – each frame takes several second to process.

The first frame in the movie is as a complete frame. For subsequent frames, only the differences from the preceding frame are stored. Thus, a slowly changing or static picture has little difference between frames and so good compression is achieved. A rapidly changing image has more differences and so is compressed less. A dialogue box (described later) specifies the minimum permitted compression for each frame. If necessary, *Differ* reduces the image quality for individual frames to meet this compression. Usually this reduced quality is unnoticeable because subsequent frames have fewer changes. This gives better compression and so they can be displayed at higher quality.

Stage 2 — combining the files

This stage merges the exploded movie files into a single compressed Replay movie file.

This stage uses a module inside *!ARMovie* called *Join.* Combining is much quicker than compression and takes only a few seconds to complete.

You can then play the movie to check it. If the quality is satisfactory, you can delete the exploded movie directory and the original, uncompressed movie.

!RCompress

Load *!RCompress* in the usual way by double-clicking on it.

Setting the compress options

Click on the *!RCompress* icon on the icon bar to display a dialogue box:
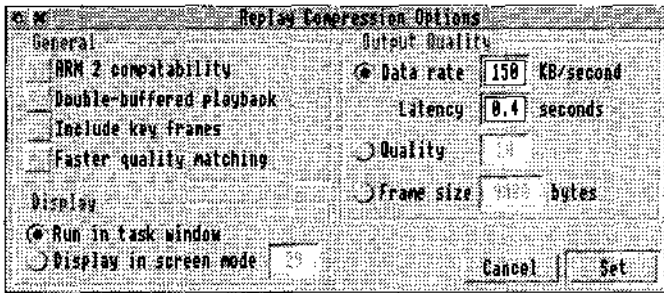
You only need to display this dialogue box if you want to change the settings.

Click *Set* to implement any changes you make.

ARM 2 compatibility
This option selects a compression format better suited to the slower ARM 2 processor. (ARM 2 processors are fitted to A300/A400 series and A3000 computers.) It has no effect for 25fps movies as these require an ARM 3 processor.

Double-buffered playback
This is suitable for playback from storage devices that have slow transfer rates. However, it requires more memory to play the movie.

Include key frames
Normally, a movie is stored as a complete first frame and then the changes between subsequent frames.

This option stores key (or complete) frames at regular intervals in the compressed movie. This lets editing software process the

movie from any key frame. (Applications such as TakeTwo and ARPlayer always play movies from the beginning. Therefore, this option is only useful if you want to use the compressed movie with editing software.) The disadvantage is that compression is less efficient.

Faster quality matching

This speeds up compression slightly but with a possible quality penalty.

Run in task window

This allows *Differ* and *Join* to multi-task with other applications. This has the advantage that you can use the computer for other tasks while compressing a movie. (Although other tasks run slowly.) The disadvantage is that compression takes slightly longer and you do not get a frame-by-frame preview.

A window shows compression progress. It has three buttons:

Abort — terminates compression and discards any processed data.

Suspend — stops compression after processing the current frame and saves processed data. You can resume processing later — see below.

Pause — pauses processing but does not terminate. Click *Pause* a second time to resume processing. Pausing compression allows more time for other applications to run.

Display in screen mode

The selected screen mode must be at least 256 colours.

When you click *Set,* RCompress switches to the selected screen mode and then starts compressing the movie. For suitable screen modes (those large enough), a frame-by-frame preview is displayed with the compressed image on the left and the original image on the right.

Press *Esc* to abort processing (see above) or *Space* to suspend processing.

This option requires about 128KB more memory than *Run in task window*.

Output quality

This specifies the minimum permitted compression. The default values are those recommended by Acorn. You can specify the output quality in three different ways:

Data rate/latency

This lets you set a quality suitable for a particular storage device. *Data rate* is the sustained data transfer rate. *Latency* is the typically the time required to access the data.

Quality

This specifies a minimum quality level. *(Differ* uses a higher quality if possible.) *0* is the highest (little quality reduction). Values above *15* give a noticeably poorer quality.

Frame size

This lets you specify the maximum number of bytes used to store a frame.

Compressing a movie

Drop the uncompressed movie file on the RCompress icon on the icon bar. This opens a dialogue box:
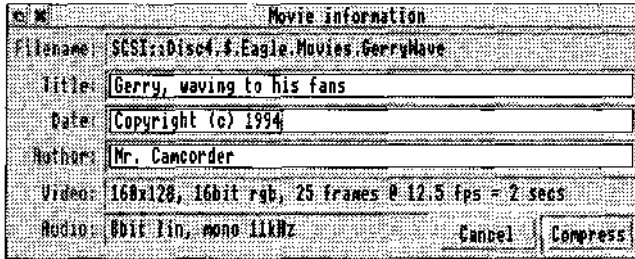
This displays information about the movie. (It is sometimes useful to drop a movie onto RCompress just to display this information.) You can edit the *Title, Date,* and *Author* fields. The other fields are information only.

The *Video* and *Audio* fields show the technical details:

size (160x128 pixels),
data type (16bit RGB),
number of frames (25),
frame rate (12.5fps),
total play time (2 seconds),
audio data format (8bit linear signed),
mono/stereo, and
playback rate (11kHz).

Make any changes you wish to the editable fields and then click
Compress. This displays a standard Save box.

The default name of the directory is the first eight characters of the
original movie name with *_E* appended. For example, if the original
movie is called *Gerry Wave,* the compression directory is called
GerryWav_E You can rename this file if you wish.

Either:

- drag the icon from the Save box to a suitable directory
  window, or
- click OK to save the exploded movie directory in the same
  directory as the uncompressed movie.

RCompress displays compression progress. How progress is
displayed depends on which option you selected earlier *(Run in task
window* or *Display in screen mode n).*

At any time you can suspend compression by clicking *Suspend* (if
running in a window) or pressing Space (if single tasking).
RCompress suspends after processing the current frame.

Resuming after suspending

To resume processing, drop either:

- the exploded movie directory or
- the original movie

on the *RCompress* icon on the icon bar. Save the movie to the
same exploded directory.

Joining an exp|oded movie

Drop the exploded movie directory onto the RCompress icon on
the icon bar: This displays a standard Save box with a Replay icon.

The default filename is the original movie name with_C appended to
it. (In the example above, the filename would be *GerryWav_C*) You
can rename this file if you wish.

Either:

- drag the icon from the Save box to a suitable directory window, or
- click *OK* to save the joined movie in the same directory as the exploded movie.

We recommend playing the movie to check it before deleting the exploded movie.

8. If problems occur...

"System Resources cannot be found"

This message appears upon loading RISC OS applications if the *!System* folder has not first been seen by the computer. One way to avoid this happening on machines with hard discs is to install *!System* in the root directory of the hard disc, with applications stored in secondary folders so that *!System* is always "seen" before the application. Another is to build an instruction to run *!System* into an auto-boot file so that it is automatically "seen" and run whenever the machine is switched on or after a reset.

"The copy of ABI Modu|e in !System is out of date. Please refer to the section 'Updating ABI' in the manual."

The ABI module covers the user interface of TakeTwo and other Computer Concepts applications. The above error message means that the application requires a more recent version of ABI than is currently in your *!System* folder: To remedy this, run *!SysMerge* – see *2. Installation* for more information.

Podule not recognised

If, upon typing P odul e s against the star on the command-line, the Eagle does not appear as a listed expansion card, you should switch off your computer, and check that the card is properly installed. In particular, check that the card is firmly pressed into the expansion card backplane.

Failing this, remove the card from your machine, and contact Wild Vision.

Live dispay is black

The live display window may sometimes be black when the *Show live display* option is first selected from the TakeTwo menu. Within a few seconds, Eagle usually detects that the brightness and contrast are wrong and corrects the picture.

If the window remains black, the reason could be:

- the *Picture controls* dialogue box is not set-up correctly (set *Video Source* according to the video source you are using), or
- the video cable is not plugged in, or
- the video source is not sending data.

Live display is greyscale on|y

This normally indicates either that:

- you are in a 16-colour screen mode, or
- your colour saturation setting is set to zero or a very low value, or
- if you have a ColourCard, you have selected a grey-scale palette.

In 16-colour screen modes, TakeTwo displays a live image in grey shades so as to optimise the quality of the live image, but continues to grab in colour if this is the selected grab format.

Cannot view 15bpp or 24bpp sprites

15bpp and 24bpp sprite formats are not yet supported by many applications, so you may find that applications such as Paint and Draw are unable to display these images. However, they can be viewed by any of the following means:

- ColourCard owners can load these sprites into the *!Clearly* application
- Owners of Impression Style, Impression Publisher, or ArtWorks (version 1.5 or later) can load these sprites into their documents. They may then be viewed in any screen mode, although owners of ColourCard Gold will see the best colour representation in the 15bpp desktop screen modes provided by that card.

Cannot record sound

This procedure works only if the audio ribbon cable is connected. You therefore cannot use this test on an A3000.

First try using *Audio Works*. Load *AudioCtrl* and display the mixer panel. Drag the *Playback LineIn* mixer to its top setting, and set the sampling gain to *H*. Check the *Mute* button is not pressed.

(You may wish to use an external amplifier connected to *LineOut* as a monitor for this procedure if you are sure that this works whilst a sound source is connected to the Eagle board. Check *LineOut* is also set to full.)

Check that the computer's sound system and speaker are switched on. To do this:

  1 Click on *Apps* on the icon bar. This opens a directory window.

  2 Double-click on *!Configure* in the directory window. A computer-shaped icon appears on the icon bar:

  3 Click on this icon.

  4 Click once on the bell icon labelled 'Sound'.

  5 Check *loudspeaker enabled* is selected.

  6 Check the volume is high enough so you can hear the computer beep. The computer beeps every time you adjust anything in this dialogue box.

If you still cannot hear the sound source through your internal speaker, then the sound source is either:

  • Silent. Check that any controls on the sound source are correctly set.

  • Incorrectly connected. Refer to the diagram of the stereo line-level socket in *9. Technical information*.

  • Unsuitable. Note the requirements for sound input sources in *System requirements*. Note especially that a line level source is required. A normal microphone **not** suitable.

If the sound is too loud and distorted through the internal speaker, adjust *Playback LineIn* on the mixer panel.

Now adjust *Sampling LineIn* on the mixer panel to the same level as *Playback LineIn*.

Select *Create new sample* in AudioWorks (a stereo sample is best for this test), and choose *Record*. Ensure the stereo Eagle sampler is selected in the record dialogue box, select *Continuous recording* and check that *high quality* is not selected. Click *OK*.

You should continue to hear your sound source through the internal speaker. The incoming waveform should be displayed. You can now adjust the volume of the incoming signal using *Sampling LineIn* on the mixer panel. Adjust this so that the waveform is as large as possible without 'clipping' (touching either the top or the bottom of the display).

If you can no longer hear your sound source, then you have set up the mixer panel incorrectly.

If you can hear the sound source but nothing appears in the AudioWorks sample display, then you have probably not set up AudioWorks properly.

When you are satisfied, click on *Stop.* Press *Play* and you should hear your sound source played back.

If you wish to record a movie with sound, then you should follow the same procedure. However, you cannot alter the *LineIn* setting whilst recording a movie (or when recording in AudioWorks with *High Quality* on). Thus you must set the level before using the above procedure.

Sound output does not work

This procedure works only if the audio ribbon cable is connected. You therefore cannot use this test on an A3000.

Check the computer's internal sound system is switched on. See *Cannot record sound* for details.

Now load *AudioCtrl* and display the mixer controls. Check the mute switch is not selected, and drag the slider for *Playback internal* to full volume, and set the playback gain setting to *high.*

Now load *AudioWorks,* and double-click on a sound sample such as *BellString.* This loads the sample into AudioWorks. Click **Menu** on the AudioWorks icon and choose *Preferences.* A window should appear: Click on the *Devices* icon to open the *Device preferences* window. Click **Menu** over the playback device, and select *Eagle M2 44.1kHz st.* Click *OK.*

Now select *Repeat play* in the AudioWorks sample window and press *Play.* The play cursor should move indicating the sample is playing.

You should hear the sound playing through the internal speaker: If not, you have probably connected the audio connector incorrectly or have set-up the mixer panel incorrectly.

If you wish to test the connection of the Eagle to an external amplifier, note that the Eagle's output is at line level, and is not suitable for driving equipment designed for direct connection to a headphone socket. Connect Eagle to the amplifier using the DIN connector. The pin-out of the connector is shown in 9. *Technical information.*

Whilst the sound is still playing through the internal speaker, increase the setting of the *Monitor LineOut* slider on the mixer: You should now hear the sound playing through your external amplifier. (It may be helpful to disable the internal speaker using the *! Configure* application.) You may need to adjust the volume and/or input source on your amplifier: If you do not hear any sound, it is likely that your amplifier is incorrectly connected.

Sound playback and/or recording are punctuated by bursts of noise

This is due to other expansion cards or other programs in the machine interfering with the correct operation of the Eagle. The problem (in technical terms) is that the other product introduces too much `IRQ latency' into the system.

To check that this is the problem, remove all other expansion cards from the machine. Switch-on the machine in such a way that it does not load any programs. (Depending on your setup, you might do this by holding down *Shift.)* Now try the Eagle software again.

If it works, then an expansion card or another program is interfering with the correct operation of the Eagle. By a process of elimination (gradually re-introducing elements hack into the system), you should be able to tell which expansion card or software is at fault. If you wish to use the Eagle card successfully you should remove the offending card or not run that program. Contact the supplier of the product that causes the problem.

This problem can also occasionally occur in high bandwidth screen modes on some machines . The computer has to spend so much time handling the screen that there is insufficient time to

handle the Eagle card correctly. The solution to this problem is to switch into a lower bandwidth screen mode (try Mode 12). Alternatively, you might consider purchasing a ColourCard from Computer Concepts or Wild Vision. This reduces the processor bandwidth needed to display equivalent screen modes (as well as offering you greatly enhanced graphics performance).

Sound recording / playback is of poor quality and/or volume

Sound recording quality improves if the sampling rate is raised, or if the number of bits per sample is increased. When recording movies, the recommended format is 8 bit logarithmic.

If changing the sound format and rate does not cure the problem, check your sound source is of sufficient quality. Try listening to it directly through the internal speaker:

The sound quality of the internal speaker is limited — an external amplifier connected to the sound DIN connector on the Eagle provides far better quality.

To adjust the volume, use the mixer controls. As well as the sliders, remember you can also alter the gain settings.

Movie recording fails due to lack of memory

Movie recording requires a large amount of memory. The memory in the computer can be used up in a number of ways. Click on the Acorn on the icon bar to display the task manager: This shows you how much memory is being used by the various components of your system. You can reduce this by:

* Quitting other applications.
* Reducing your Font Cache, System Sprites and RAM disk.
* Switching into a smaller memory screen mode.
* (If all else fails), reboot your machine and do not load any other applications. This is the only reliable way to reclaim memory from the section marked 'module area'

Because movie recording needs so much memory, it is unlikely that you can run many other applications on a 4MB machine. The only solution to this problem is to upgrade your machine.

Movie recording fails with the error 'Your machine is not fast enough to record with these settings'

The Eagle card offers movie recording at rates beyond the capabilities of many Acorn computers. Refer to *Movie making* in *System requirements.* You will not be able to perform 25fps recording in colour on all but exceptional (that is, customised) A5000 & A540 machines. This is a machine limitation. Also movie recording requires a fast hard disk. This means a data rate of 600MB per second or greater (ST506 hard disks are not suitable; we recommend fast 1DE or SCS] hard disks). A fast hard disk is not so essential for compressed recording (ESCaPE) as there is less data to write when it is compressed. Thus you may find you have more success recording compressed movies than uncompressed ones.

8. If problems occur...

9. Technical information

1. Eagle link positions

The following diagram illustrates the position of various links on the Eagle which may or may not be shorted by default. **Do not alter any of these link settings unless you are sure what you are doing. If in any doubt, you should in all cases first contact Wild Vision.**
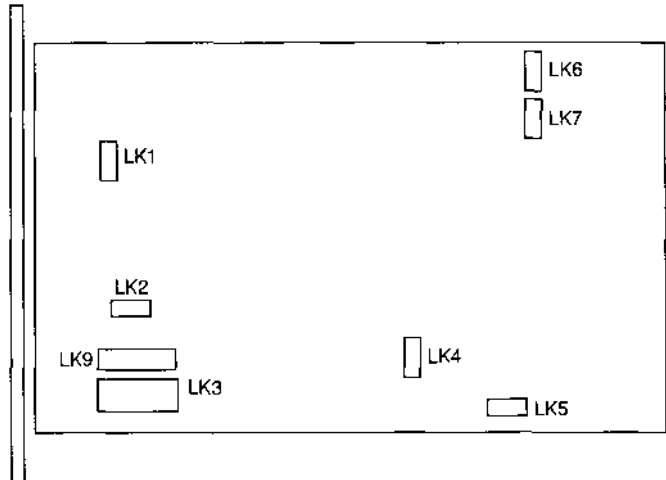
Eagle link positions

LK1 75 ohm video termination resistor

LK2 Auxiliary sound input L and R

LK3 VIDC Sound header for ribbon cable

LK4 Audio power supply: 1-2 for A3000; 2-3 for other types

LK5 Video In power supply: 1-2 for A3000; 2-3 for other types

LK6 EPROM Select — do not change

LK7 FIFO Select — do not change

LK8 *not fitted*

LK9 Effects header

2. Stereo line-level socket: pin-out.

The following is the pin-out for the stereo audio line-level connector on the rear panel of the Eagle, provided for those users needing to make up their own connecting cables.
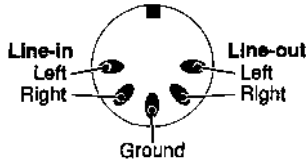
(Viewed from back panel with expansion card PCB held away)

3. S-Video connector: pin-out.

The following is the pin-out for the S-Video connector on the rea panel of the Eagle, provided for those users needing to make up their own connecting cables.
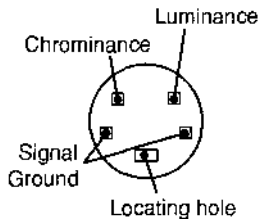
(Viewed from back panel with expansion card PCB held away)

4. Exploded movie format

As described in 7. *RCompress,* the first stage of the Acorn compression routines generates several files in a special directory. These files form the *exploded movie.*

The exploded movie directory contains these files:

Header

Contains 14 lines of text that form the Acorn Replay movie header: You can edit the second, third and fourth lines (title, copyright/date, and author). Do not edit any other line and do not add extra lines.

Images (optional)

Frames are stored as a series of sub-directories called *Images°, Images1,* and so on. Each sub-directory contains up to 74 frames.

If these files are absent, *Join* produces a soundtrack-only movie.

Info

A text file used by *!RCompress* to record the origin of the uncompressed movie.

Key (optional)

Similar to *Images,* this contains Key frames.

Log

This lists information on the compression of each frame in the exploded movie.

Sound/Samples/ADPCM (multiple files – optional) The base name is *Sound1* (for 8-hit logarithmic data); *Samples1* (for 16-bit linear data), or *ADPCM1* (for adpcm compressed data). (ADPCM files may be produced by other applications – it is not an option for Eagle movie grabs.)

!RCompress does not create these files. Instead, when it joins the movie, it reads the soundtrack from the original, uncompressed file.

If you add or delete soundtrack files, you may need to edit *Header:*

Sprite

Contains a single sprite. This is displayed by *!ARPlayer* and *!TakeTwo* as the title frame. You can edit or replace this sprite with a 256-colour sprite of the same dimensions to create custom titles.

Stopped (three files – optional)

If compression is suspended, these files record the suspension point. They allow compression to resume at the next frame.

Delete these files if you want to join the suspended movie rather than resume compression.

Any other files in this directory are ignored.

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