



WILD VISION

Wild Vision Chroma-Genlock

for Archimedes, A5000 and A3000

User Guide

Wild Vision,
15 Witney Way, Boldon Business Park,
Boldon Colliery, Tyne & Wear NE35 9PE
England.

Tel: 091 519 1455
Fax: 091 519 1929

Wild Vision Chroma-Genlock

for Archimedes, A5000 and A3000

User Guide

Issue 4.1
October 1993

Published by

Wild Vision Ltd.
15 Witney Way
Boldon Business Park
Boldon Colliery
Tyne and Wear
NE35 9PE

Acknowledgements

Wild Vision would like to thank Paul Reuvers of X-Ample Technology by, and Computer Concepts Ltd. for their assistance in the development of the Chroma-Genlock package

© Wild Vision 1992

All rights reserved. No part of this manual nor the computer programs or hardware product to which it relates may be reproduced or transmitted in any form whatsoever or by any means electronic, mechanical or otherwise without the prior written consent of Wild Vision Ltd.

Whilst Wild Vision have endeavoured to ensure that this hardware will perform correctly no responsibility is accepted by Wild Vision relating to this hardware. As we have no control over the use made of the hardware no warranty is given or should be implied as to the suitability of the hardware described in this manual for any particular application. No liability can be accepted for any consequential loss or damage, however caused, arising as a result of the use of this hardware.

© 1990 X-Ample Technology by, P.O. Box 77, 5340 AB Oss, Netherlands

© 1993 Computer Concepts Ltd

!OVERLAY
!SIDESHOW
ACORN
A3000
ARCHIMEDES
A5000



Trademarks of Acorn Computers Ltd.

N.B.

The issue of this documentation is liable to change. It is essential that customers return the registration card supplied with this product if they wish to be kept informed of changes.

Contents of package

Please check that you have been supplied with the following:-

Chroma-Genlock board

RGB input cable (CG3[A3000/A3010/A3020/A4000] only)

15-pin adapters (CG5 {A5000} only)

!Overlay disc

!SideShow disc

!SideShow Instructions

Registration card (please return it!)

Contents

1.	Introduction	4
	The Wild Vision Chroma-Genlock Package	
	How it works	
	Video signals	
2.	Getting started	6
	Configuration	
	Using the Chroma-Genlock	
	!Overlay	
3.	Installation of the Wild Vision Chroma-Genlock	9
	Fig. 2 Chroma-Genlock link and connector positions	9
	Fig. 3 Fitting the Chroma-Genlock (Archimedes 300 series)	10
	Fig. 4 Fitting the Chroma-Genlock (Archimedes 400 series)	11
	Fig. 5 Fitting the Chroma-Genlock (Archimedes 540 series)	12
	Fig. 6 Fitting the Chroma-Genlock (A5000)	13
	Fig. 7 Chroma-Genlock link positions (A3000)	14
	Fig. 8 Fitting the Chroma-Genlock (A3000)	15
	Fig. 9 Fitting the Chroma-Genlock (A3010/A3020).....	16
4.	Troubleshooting	18
	Module recognition	
	Configuration	
	Colour output	
	Picture quality	
	Colour Bleeding	
	256-Colour modes	
5.	Technical information	21
	Local and Remote modes of operation	
6.	Tutorial (Arc and A3000 versions)	22
	A5000 version	24
	Using !SideShow	26
	Recording to video.....	27
7.	Index	28
Appendix 1	Recommended software for use with Wild Vision genlock and overlay cards	

Introduction

The Wild Vision Chroma-Genlock is a complete genlock and overlay system for the A3000, A5000 and Archimedes computers. It enables the video output of the computer to be superimposed, in full colour, on a PAL video signal from an external source. Any graphics, text or captions which can be generated by a computer can thus be overlaid onto video pictures from cameras, camcorders, VCRs or Video Disc players. The !Overlay software supplied by Wild Vision may be used to control the overlay facility, or it can be handled from within alternative software packages such as Clares Titler.

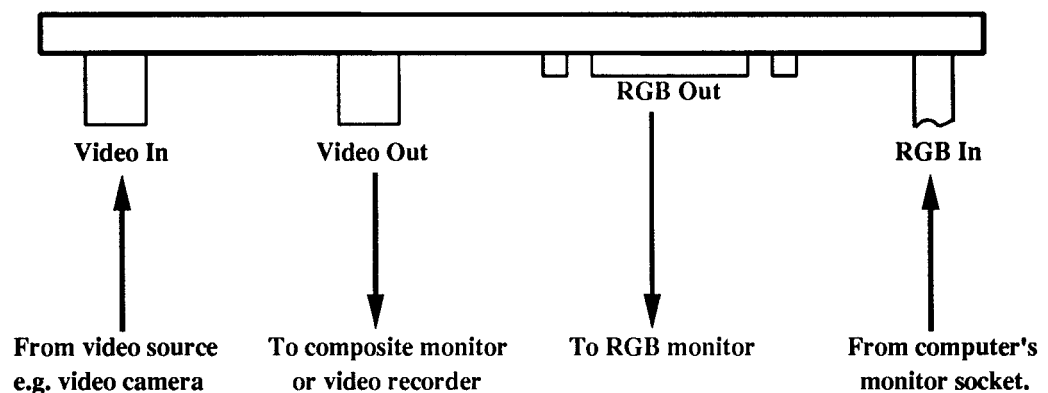
The Chroma-Genlock package

The Wild Vision Chroma-Genlock is a standard-width expansion card which is easily fitted inside the computer following the installation instructions given in the Installation chapter of this manual. The package also includes !Overlay for controlling the status of palette overlay and interlace (see page 7) and !SideShow, for displaying, sequencing and overlaying screens of text.

The card has four input/output connectors: Video in, Video out, RGB in from the computer and RGB out. A small jumper lead connects the computer's normal RGB monitor output to the Chroma-Genlock RGB input, and the video from the external source is connected to the video input. The video output is then connected to a PAL colour monitor or, if desired, a video recorder. (see Fig 1) The RGB output can be connected to a standard RGB monitor which displays only the normal computer image and not the combined image from the computer and video source.

If you have access to both a composite video monitor and a standard RGB monitor then this is the preferred method of working. The RGB monitor enables you to work on the RISC OS desktop as normal and the composite monitor shows you what is coming out of the genlock and what will be recorded if you send the signal to a VCR.

Figure 1



Another possible setup is to have an RGB monitor connected to the 'RGB out' and the 'Video out' connected to a VCR. You can then connect a television to the normal RF out socket of the VCR and view the output from the Chroma-Genlock card in this way. Some VCRs will even allow you to view the recorded signal whilst you are recording.

How it works

There are three stages to the genlock and overlay process:

- a) The computer's video output is synchronised (**genlocked**) to an external PAL video signal
- b) The RGB output from the computer is encoded to a PAL composite video signal
- c) The PAL encoded computer output is overlaid onto the external PAL video signal

In other words, the monitor connected to the Video out port of the Wild Vision Chroma-Genlock displays the video image from the external video source, to which the computer's output is synchronised. The normal computer output, such as text or images, in a PAL encoded version, is superimposed. The resulting combined visual can then be recorded and viewed as with any standard video recording.

Acceptable video signals

The Wild Vision Chroma-Genlock will synchronise the Archimedes, A3000 or A5000 to any PAL 50hz video signal. The composite video output from most domestic video recorders is suitable for use with the Wild Vision Chroma-Genlock, which will normally have no difficulty synchronising unless the signal is of poor quality. There may be occasional disturbances due to tape dropout and excessive timebase errors. If the video recorder has pause or cue and review facilities, these can be used, but vertical jitter of the picture, and considerable disturbances around noise bars should be expected while these are in operation unless your equipment is of a high standard.

Getting started

Once the Wild Vision Chroma-Genlock Expansion Card has been installed according to the instructions contained in the Installation chapter of this manual, the following external connections should be made:

- a) RGB output from the computer is connected, using the lead provided, to the RGB input of the Chroma-Genlock card;
- b) The video output from the Chroma-Genlock is connected to a PAL colour monitor with composite input, or to a VCR as previously described;
- c) If you also have a standard RGB monitor you can connect the RGB output from the Chroma-Genlock to an external monitor (for A5000 see later).

Upon switching on the computer and monitor, the computer's output should appear on the monitor(s).

On the PAL monitor, white text will be seen to have 'rainbow' effects on the edges. This indicates that the PAL Coder is functioning correctly. Any colour graphics should be displayed in colour.

If a PAL colour video signal is now connected to the Video input on the ChromaGenlock, the computer should synchronise its video signal to this signal. A slight disturbance of the picture will occur while this synchronisation takes place.

!Overlay should now be run. Any vertical jitter should be cured by accessing the menu of !Overlay (see page 7) and clicking on Interlace. With the *superimpose* option set to *off*, the video signal should be seen on the PAL monitor. If *superimpose* is switched *on*, the desktop should still be visible on the PAL monitor as described above.

Configuration

To ensure correct operation of the Wild Vision Chroma-Genlock, the computer power up status should be configured as follows:

```
Monitortype 0
Sync 1
TV 0,0
```

This is a standard configuration for a 'normal' monitor with interlace turned on.

Using the Wild Vision Chroma-Genlock

The Chroma-Genlock is designed to overlay whatever graphics the A3000, A5000 or Archimedes can produce onto a video signal. The choice of graphics and the way they are produced is left entirely up to the user. The !SideShow

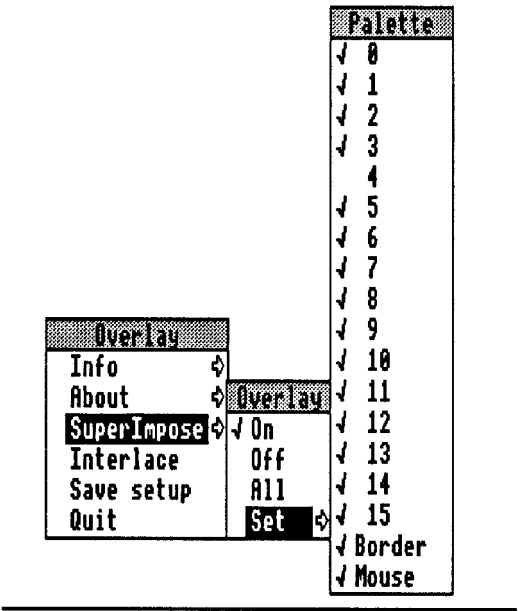
package supplied with the Chroma-Genlock is intended to provide a basic title presentation facility. Full details of how to use !SideShow are given in the accompanying leaflet.

To achieve a wider variety of effects for captions and graphic overlay, a number of software packages are now available (enquire for details or see Appendix 1) .

Note: genlocking is not possible in high resolution multi sync modes. The normal modes to use are 12 and 15. Some software provides additional wide-screen or overscan modes, such as modes 35, 36, 51, 67.

!Overlay

!Overlay is a software utility which provides overlay and interlace control from the RISC OS desktop. To access the menu shown below, click on the menu (middle) button with the pointer over the !Overlay icon on the icon bar.



Interlace

Toggles on and off the interlace status of the computer. It may be necessary to click on this option after connection of a video signal into the genlock card.

Superimpose

Leads to sub-menus which give full control of the overlay features. There is full control for each palette entry in the VIDC (including border and mouse). Clicking on each number will switch overlay on and off for the corresponding palette colour. Remember, using the adjust button to click instead of select will keep the window open on screen after clicking.

Save setup Saves the preferred settings to disc for subsequent use.

!Overlay can be used for a variety of situations where alternative software is not being used for colour mapping, i.e. where it is the desktop to be overlaid. In particular, it would be useful for overlaying a window, in which real-time information is running on a white background, onto a video image.

Some packages, including !SideShow, require the palette settings to be set from !Overlay and will obey these. Thus, in 16-colour modes, by selecting "7" as transparent (unticked) from !Overlay, the colour black will be transparent in software packages which do not alter the desktop palette.

It is an unfortunate and sometimes confusing fact of life that the 16 palette registers which are so easy to relate to in 16-colour modes do not automatically correspond to the same colours in 256-colour modes. You will notice that choosing the default desktop background colour as transparent in mode 12 (i.e. !Overlay entry number "4") and then changing to a 256-colour mode renders the background visible again. The same occurs when manually altering the colour as is permitted in 16-colour modes.

Because of this complication it is best, at least when first using the genlock, to stick to 16-colour modes where possible. Otherwise, it may become a case of 'trial and error' to locate which palette register entry in !Overlay corresponds to which desktop colour.

This complication of palettes also means that some packages which generate their own palette may not respond as expected to using !Overlay. For example, some games may well use 16-colour modes, but upon being run may load their own palette. Each colour used will still correspond to a VIDC palette entry as listed in !Overlay, but it may not be the expected one!

Installation

The Chroma-Genlock is easily installed in any A3000, A5000 or Archimedes fitted with an expansion card backplane (all machines except A300 and A410). If the computer does not have a backplane one can be obtained from most Acorn dealers. A3000 users should refer to page 15 as the card and fitting is different.

If you are in any doubt about your ability to install this expansion card it is suggested that you contact your local Acorn service agent who should be able to install it for a small fee.

Disconnect the computer from the mains and remove all peripherals from it

Remove the top from the computer; see your user guide for details of how to do this. Remove a single blanking panel from the rear of the computer making sure that this position corresponds with a spare socket on the backplane. If a backplane is not fitted, then this should be done before proceeding further.

Refer to the relevant page in this section for details of connecting the card to your machine.

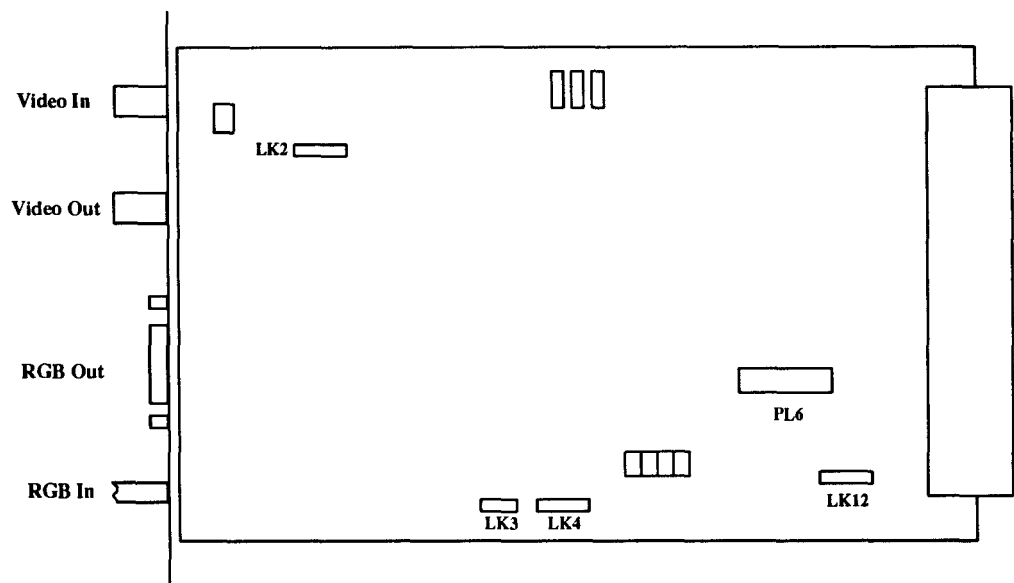


Figure 2 **Wild Vision Chroma-Genlock Link and Connector Locations (Archimedes and A5000 versions)**

Fitting Instructions for 300 series

Find pin header PL3A on the computer's circuit board (see Fig 3). Remove the two links from pins 1 to 4 and replace with Connector 1 (2 black wires + 1 violet wire) from the Chroma-Genlock. The white spot on the connector should point West, as shown in the diagram.

The remaining cable (Connector 2) must be fitted to pins 9 to 12 of PL3B. Ensure that the shorting link LK4 (see Fig. 2 on page 8) **on the Chroma-Genlock** is positioned on the centre pin only.

Note: Certain issues of the 300 series did not have pins 7 to 14 of PL3B fitted. In these circumstances it is advised that these pins are fitted by a qualified Acorn service agent*

The multiway socket on the free end of the connecting lead should be plugged into the plug labelled PL6 on the Chroma-Genlock. The genlock card should be pushed firmly into the expansion slot in the backplane, and its external panel screwed into place. The lid of the computer can now be replaced.

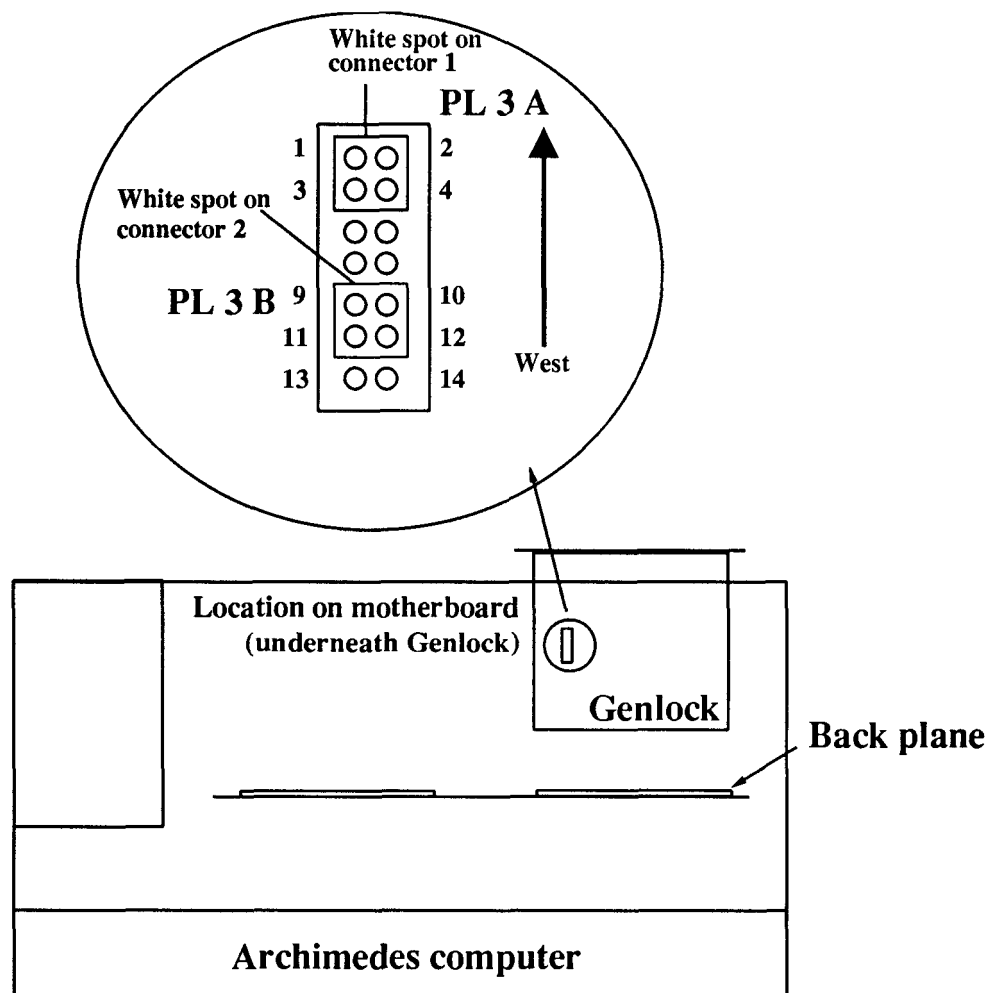


Figure 3 Archimedes 300 series fitting diagram

Fitting Instructions for 400 series

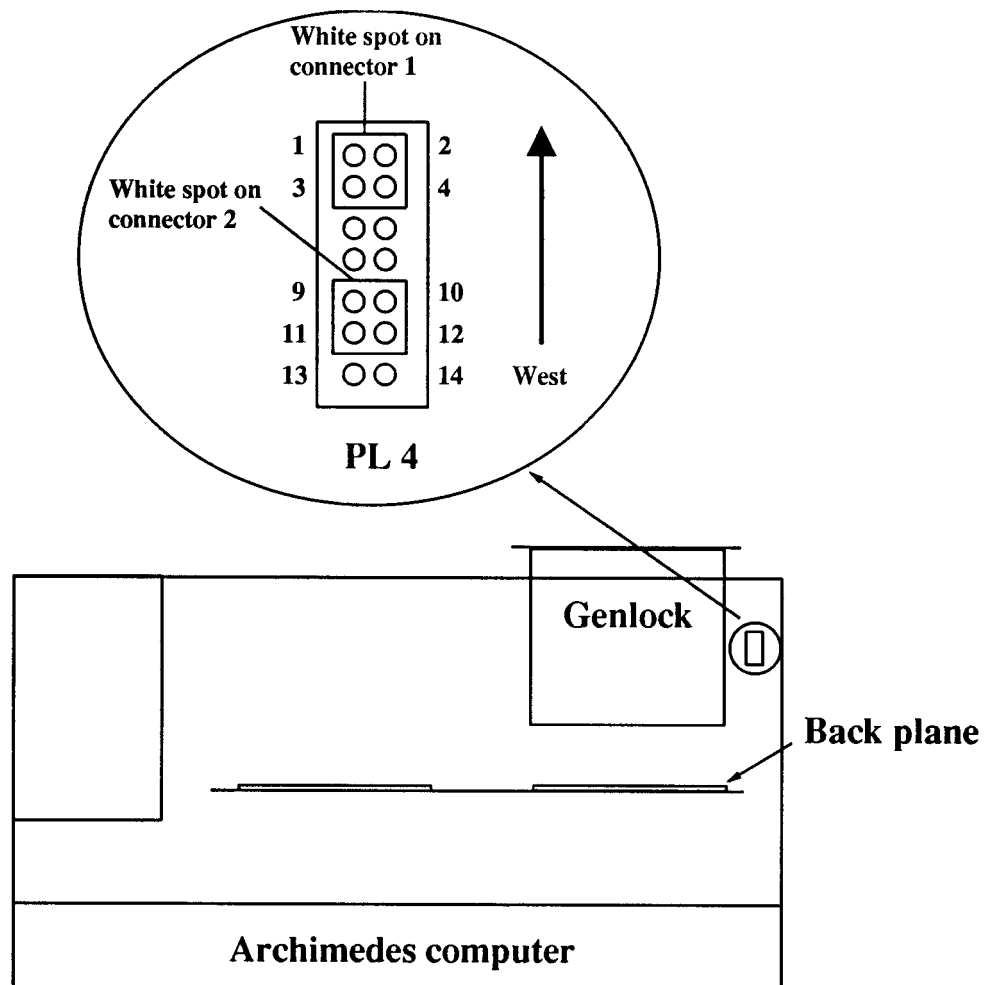
Find pin header PL 4 on the computer's circuit board (see Fig 4). Remove the two links from pins 1 to 4 and replace with Connector 1 (2 black wires + 1 violet wire) from the Chroma-Genlock. The white spot on the connector should point West, as shown in the diagram.

The remaining cable (Connector 2) must be fitted to pins 9 to 12 of PL 4. Ensure that the shorting link LK4 (see Fig. 2 on page 9) on the Chroma-Genlock is positioned on the centre pin only.

Note: Certain issues of the 400 series did not have pins 7 to 14 of PL 4 fitted. In these circumstances it is advised that these pins are fitted by a qualified Acorn service agent.

The multiway socket on the free end of the connecting lead should be plugged into the plug labelled PL6 on the Chroma-Genlock. The genlock card should be pushed firmly into the expansion slot in the backplane and the external panel screwed into place. The lid of the computer can now be replaced.

Figure 4 **Archimedes 400 series fitting diagram**



Fitting Instructions for A540 series

Find pin header LK 15 on the computer's circuit board (see Fig 5). Remove the two links from pins 1 to 4 and replace with Connector 1 (2 black wires + 1 violet wire) from the Chroma-Genlock. The white spot on the connector should point North, as shown in the diagram.

The remaining cable (Connector 2) must be fitted to pins 11 to 14 of LK 15. Ensure that the shorting link LK4 (see Fig. 2 on page 8) on the Chroma-Genlock is positioned on the centre pin only.

The multiway socket on the free end of the connecting lead should be plugged into the plug labelled PL6 on the Chroma-Genlock. The genlock card should be pushed firmly into the expansion slot in the backplane, and its external panel screwed into place. The lid of the computer can now be replaced.

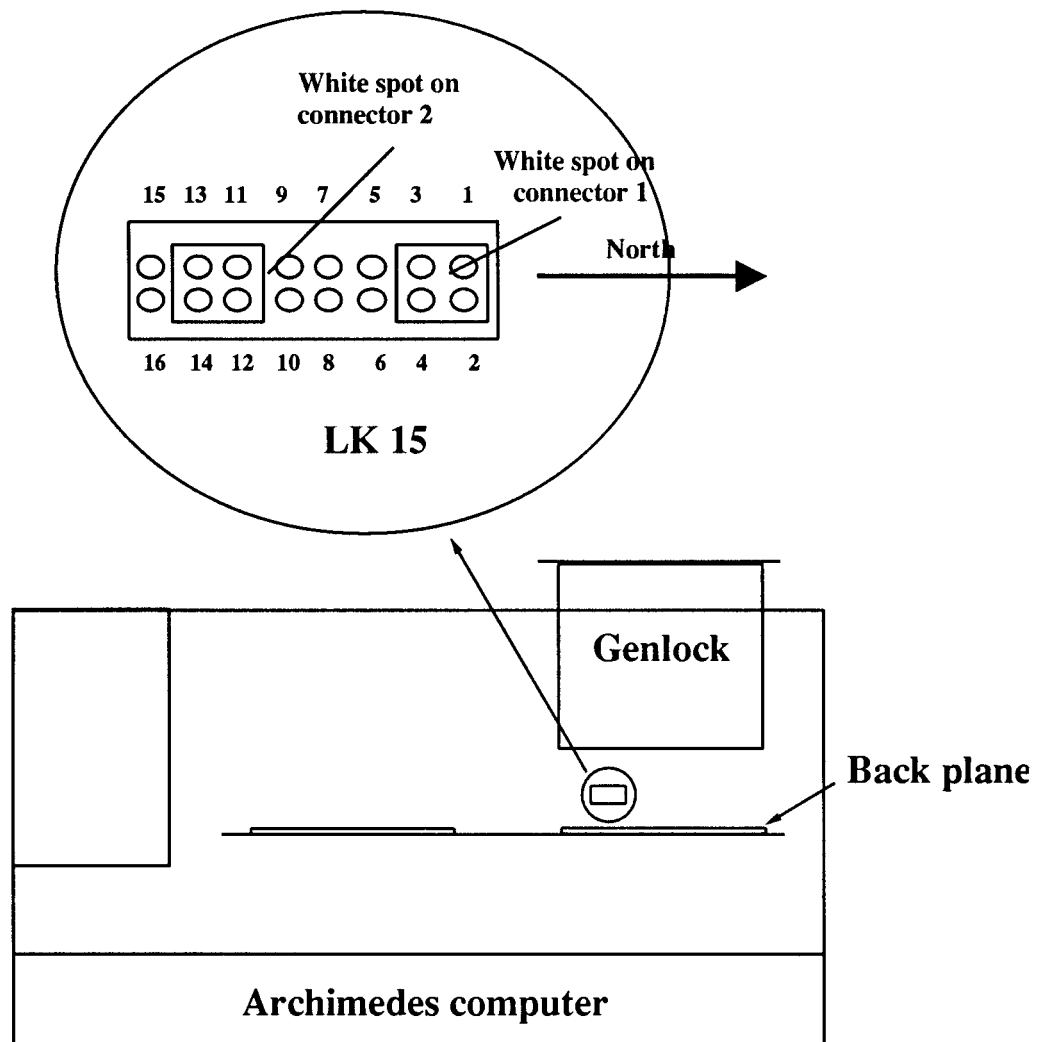


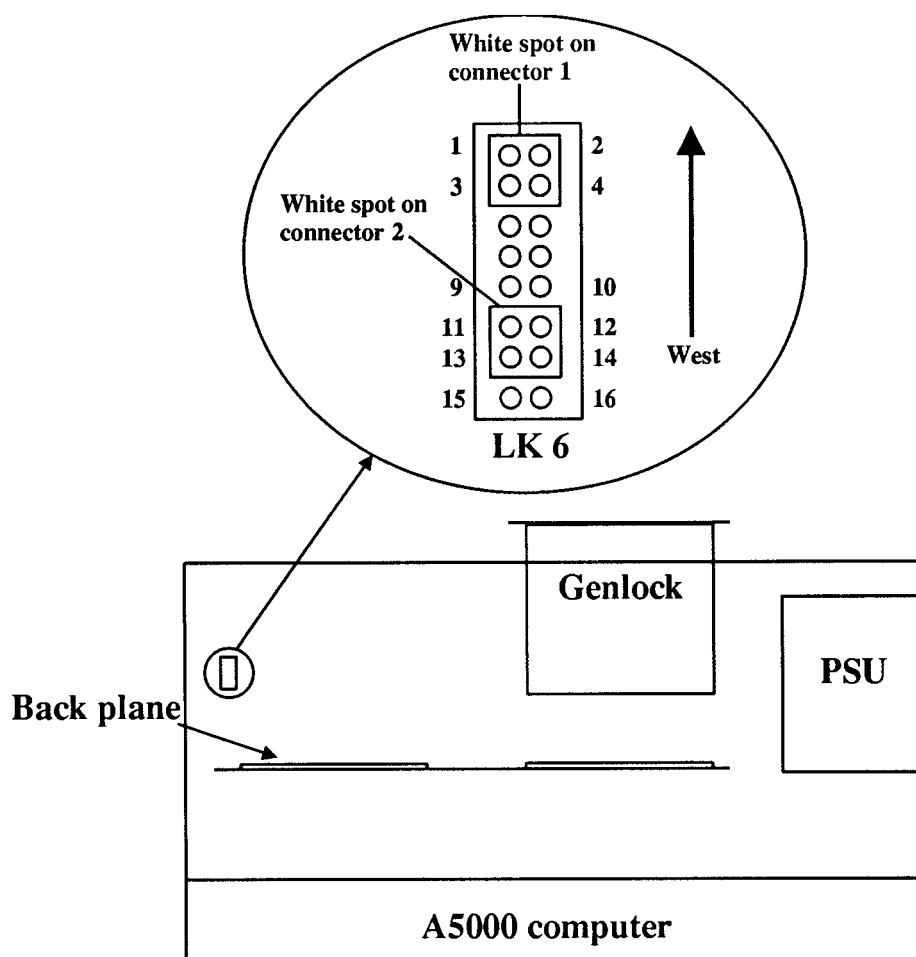
Figure 5 **Archimedes 540 series fitting diagram**

Fitting Instructions for A5000 series

The A5000 uses a different monitor connection to all other previous computers in the Acorn range. The Chroma-Genlock card is fitted with a plug to connect into a standard 9 pin D type connector. On the A5000 this connector is replaced by a 15 way D type High Density connector and so an adaptor is required (supplied). This allows you to connect the genlock correctly.

Note: To use the ACORN monitor supplied with the A5000 you will need to use the second adapter supplied with the CGS. Alternatively, use a standard RGB monitor*

Figure 6 **A5000 fitting diagram**

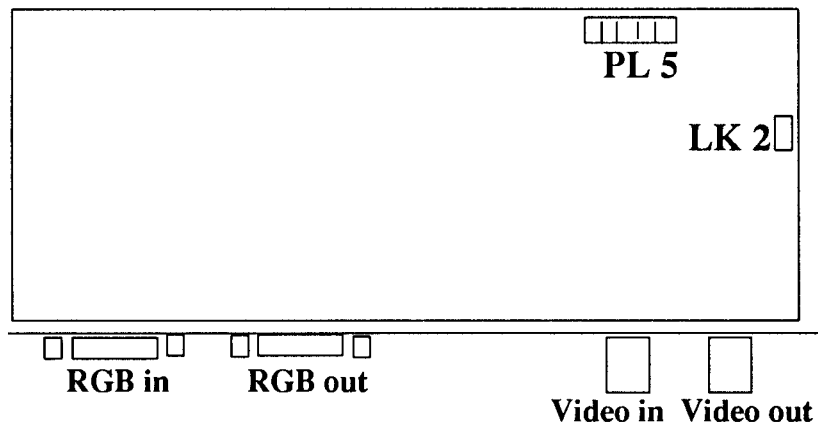


To fit the Chroma-Genlock to your A5000 locate LK 6 as shown above. Remove the two links from pins 1 to 4 and replace with Connector 1 (2 black wires and 1 violet wire) from the genlock - making sure that the white spot is facing West. Connector 2 (blue wire) must be fitted to pins 11 to 14 on LK 6 with the white polarity spot facing West as indicated above. Ensure that the shorting link LK 4 on the Chroma-Genlock card is positioned on the centre pin only.

Fitting instructions for A3000 computers

The Chroma-Genlock for the A3000 is an internal module and is thus fitted differently from the other computers in the range. If you do not feel competent about fitting this card please contact an Acorn Service Centre to do it for you.

Figure 7 **Chroma-Genlock link positions (A3000 version)**



1. Disconnect the computer from the mains and remove the top cover - this is held in place by 3 screws.
2. Remove the internal upgrade blanking panel from the rear of the computer.
3. Remove the two links from the pin headers on LK28 and LK29 [LK28 and LK29 are located on the computer's motherboard (see Figure 8) under the rear right edge of the keyboard (viewed from the front)]. It is recommended that these are placed on the spare links of the six way header for replacement should the Chroma-Genlock be removed in the future.

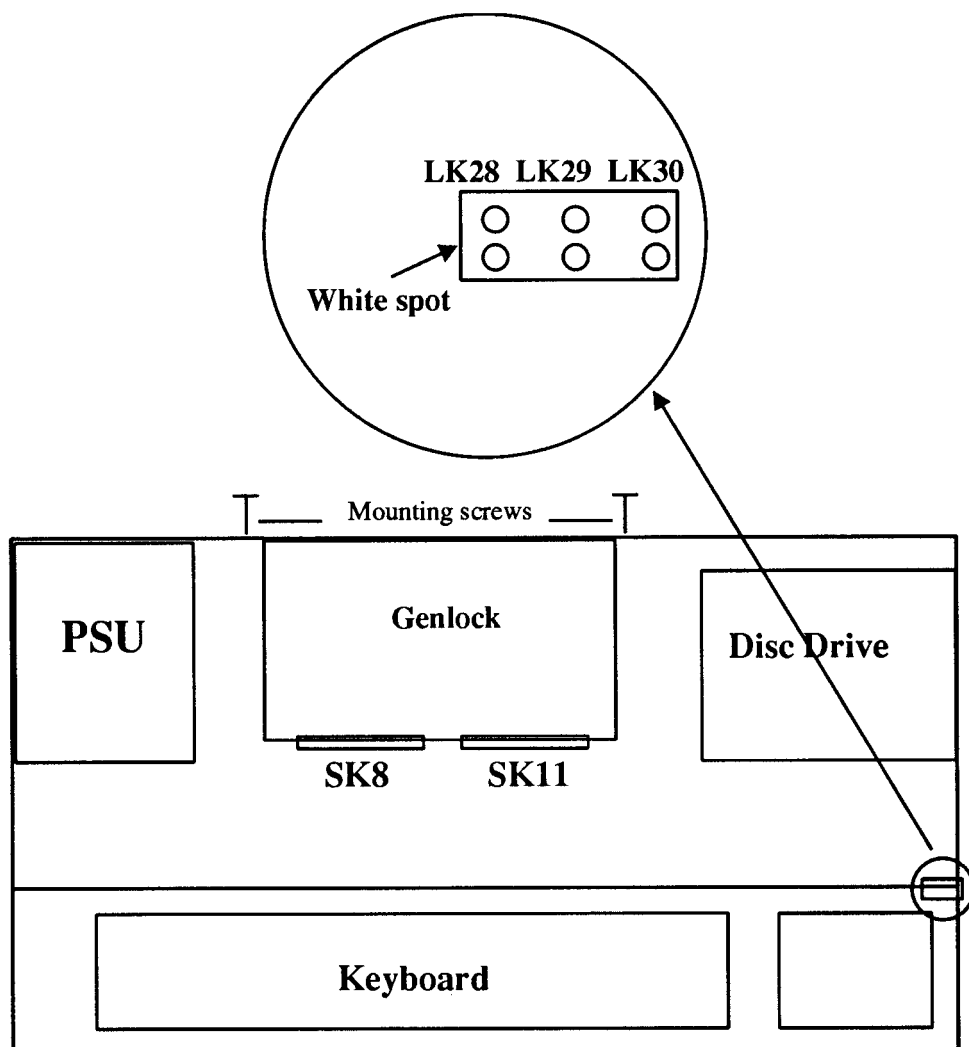
On early A3000s prior to serial number 600 the headers were not fitted on these links. If this is the case you will have to get an Acorn Service Centre to fit the pins.

4. The 4 way connector and attached cable should now be plugged onto the headers from which the links were removed. The white polarity dot must face into the computer so that it is at the LK28 end of the header (see Figure 7).
5. The blue wire from the Chroma-Genlock should be connected to LK31 on the A3000 motherboard. This is located underneath the keyboard on the right hand side looking from the front. Not all A3000s have this connector fitted; if you have an A3000 serial no. prior to 1017661, contact Wild Vision.
6. Remove the shorting link from LK2 on the Chroma-Genlock and position it on the centre pin only of the set of three.
7. The Chroma-Genlock should now be plugged into the internal upgrade sockets SK8 and SK11. Looking from the front, two sets of three pins fit into SK8. These should fit into the holes at the extreme left and right of SK8. One set of three

pins should fit into the extreme right hand end of SK11.

8. The metal panel of the Chroma-Genlock should be screwed into the rear panel using the screws which held the blanking panel in place.
9. The lid of the computer should now be replaced.

Figure 8 **A3000 fitting diagram**



10. The RGB jumper cable (9-pin D-type connectors each end) should now be attached between the computer's "analogue RGB" output and the RGB input socket on the CG3.

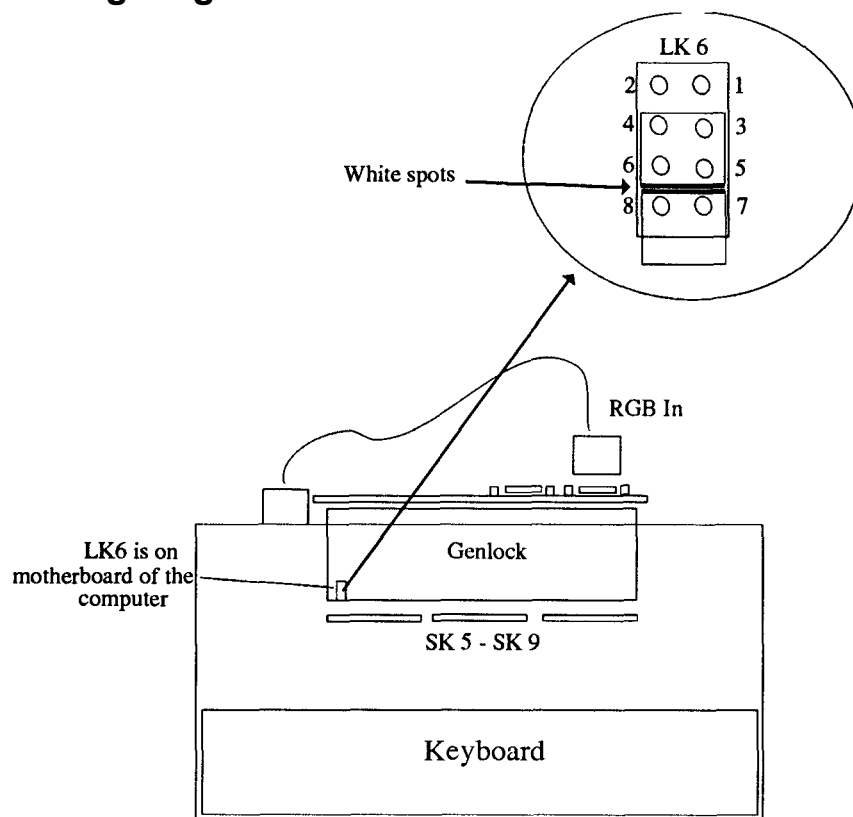
Fitting Instructions for A3010/A3020 Computers

The Chroma-Genlock for the A3010/A3020 is essentially the same unit as supplied for the A3000, but it has different connection requirements. If you do not feel competent about fitting this card please contact an Acorn Service Centre to do it for you.

For the link positions on the genlock card, please refer to figure 7 on page 14.

1. Disconnect the computer from the mains and remove the top cover. This is held in place by 3 screws along the underside of the keyboard and by catches along the back of the machine.
2. Remove the internal upgrade blanking panels from the rear of the computer by sliding upwards.
3. Locate the genlock connector LK6 on the motherboard of the computer (refer to figure 9 below) and remove the two shorting links at pin headers 3/4 and 5/6. Put these in a safe place in case you wish to remove the genlock at a later stage, when they will need to be repositioned on pins 3 to 6. You may wish to keep them with the rear blanking panels which you have just removed.
4. Push the 4 way connector attached to the black and violet wires (Connector 1) onto pins 3 to 6, with the white face oriented towards the front of the computer (i.e. at the pins 5 & 6 end as shown in Fig. 9).

Figure 9. **A3010 fitting diagram**



5. The connector with the blue wire from the genlock should be positioned on pins 7 and 8 with the white face pointing backwards towards connector 1. In effect the two white dots are facing each other, and the blue wire should be making its connection with pin 8.
 6. Remove the shorting link from LK2 on the genlock board and position it on the centre of the three pins only.
 7. The CG3 should now be plugged into the internal upgrade sockets SK5-9. Make sure that all the pins from the expansion card are correctly located in the sockets.
- You may now replace the lid of the computer and screw it back into place.
- 8.
 9. The RGB jumper lead supplied with the CG3 should be connected to the video out (15 pin D-type) from the computer and to the RGB in socket of the genlock card.

Troubleshooting

Upon installation and power up, the new user of the Wild Vision Chroma-Genlock may come across technical hitches which appear to be faults. These perceived problems are usually rectified quite easily, or indeed are standard features of the product. The following section attempts to explain in advance some of the more common queries put by new users of the Chroma-Genlock.

Podule Recognition

It is normal to check that expansion cards are recognised by the computer, and therefore correctly plugged into the backplane, by going to the command line and typing

```
*Podules
```

In the case of the genlock board, its presence will not be acknowledged by the computer in this way. This is because no identifying header has been provided as the board has no ROM. If for any reason your genlock card is not correctly registered in the expansion slot, then your machine will fail to boot up properly due to the lack of timing signal.

Correct Configuration Status

Problems involving the genlock facility, such as a jittering of the image, or in the case of a multiscan monitor, loss of screen altogether, may be due to incorrect computer configuration status. The correct status is described in this manual under 'Getting started'. To view the current configuration status of your computer, access the command line by pressing <F12> and type Status. To alter the status type:

```
*Configure
```

followed by the setting you wish to change and the correct value, e.g.

```
*Configure MonitorType 0 <Return>
```

N.B. It is possible with most multisync monitors to configure as MonitorType 1 or 4 and use the genlock card in "standard modes" (12,15, 35, 36 etc). However this is not advised as the monitor may not position modes correctly on screen.

Acceptable video signals

The incoming (external) video signal must be a PAL standard one. As explained in the introduction to this manual, while the Chroma-Genlock may function with a non-standard signal, such as those provided by security-type cameras, its operation is not guaranteed.

Colour Output

When used with the Archimedes the colour output is available from the RGB socket of the Chroma-Genlock and this can only be viewed on a standard RGB monitor. In addition the signal from the Video out socket of the Chroma-Genlock will display the computer output when connected to a colour composite monitor. The monochrome video output from the Archimedes, if available, may still be used independently if required.

To ensure colour video output from the genlock card, it is important to ensure that the incoming video signal is also in colour. If no colour burst is detected, then a colour killer operates on the genlock card to output only greys.

Picture Quality

Users who are used to using high resolution RGB monitors with the Archimedes should be aware that the picture quality obtainable when using the PAL system will never be as good as that which can be displayed using an RGB monitor. This is because of the limitations imposed by the PAL encoding and decoding process rather than by the quality of the equipment used. In particular normal computer-generated text may become difficult to read in 80-column modes especially if it is multi-coloured. For normal text, forty-column sized characters or larger should be used. With special character fonts and graphics, higher resolution modes should still be used to get the sharpest possible picture, however very fine detail and small lettering should be avoided.

Colour Bleeding

When recording to video, some users may find that their computer graphics lose definition, or in some cases 'bleed' quite markedly. This will occur when the palette colours used for the graphics are the high intensity ones - red in particular. This effect is an unfortunate by-process of PAL encoding, and does not imply a defect in the Chroma-Genlock.

The problem can be avoided by using colours that are lower in saturation, such as blue, yellow and white, or indeed by defining your own palette, with colours that are not too highly saturated. Keeping the intensity below 75% should help.

256-Colour Modes

Although in certain modes the Archimedes can display 256 colours, the video controller chip in current Archimedes computers has only 16 main 'hardware' colour registers. Therefore in mode 15, etc., each register in turn controls 16 colours at once. This has the effect that when making one palette colour transparent, whether by using !Overlay, !Titter, other software or the VDU 19 command, then in practice 16 colours become transparent to the video signal. The result is that part of 256-colour sprites may appear transparent when they

were not intended to. This may be avoided to some extent by careful sprite editing and colour choice.

More information is given about this aspect of overlay management in the section entitled !Overlay (page 7).

Technical information

The Wild Vision Chroma-Genlock allows overlays to be produced on video by a process of keying the PAL coded video output from the A5000 or Archimedes onto the signal from the external video source. This is done by providing a keying signal to operate a high speed electronic switch which selects the video output from the computer for the duration of the overlay. The keying signal is programmable for each of the colours which can be displayed by the computer, with the result that the user has full control over which overlays are produced.

Local and Remote Modes of Operation

The Chroma-Genlock has two inherent modes of operation known as 'local' and 'remote'. With no external video signal connected the unit operates in local mode, but when an external video signal is present at the input it automatically switches to remote mode.

In remote mode the computer's video output and the Chroma-Genlock PAL encoder are both locked to the incoming video signal which therefore provides the timing reference for the whole system. The Chroma-Genlock output is essentially the same as that at the input, with overlays added as appropriate. The sync pulses and colour burst in the input video come from the external source.

In local mode all the timings for the system are derived from two crystal-controlled oscillators in the Chroma-Genlock. One provides the pixel clock for the A5000 or Archimedes VIDC and the other produces the colour subcarrier for the PAL encoder. The output from the Chroma-Genlock is then a PAL encoded version of the computer's RGB output. The programming of the supremacy bit has no effect in local mode.

The PAL standard is adversely affected in two ways when in local mode. The main compromise to the standard is that the colour subcarrier is not related to the video-line frequency, with the result that 'dot crawl' and 'rainbow effects' can occur, particularly if eighty-column text is displayed. Another problem is that the colour burst is not blanked during the vertical flyback period, which may cause some slight interference on screen.

Tutorial Part One: Arc/A3000

In this tutorial you will be shown how to connect up your Chroma-Genlock in order to test that the supremacy bit is operational and that overlay is occurring. You will also be shown how to create a simple page in !Draw, overlay it on video with !SideShow and record the combined output to a VCR.

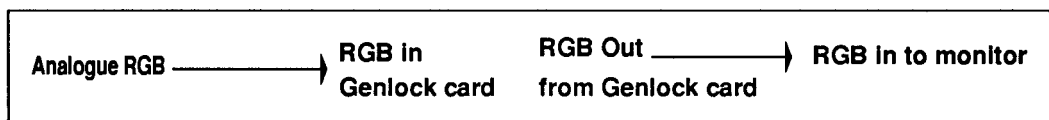
It is important that this user guide is read through thoroughly before attempting the tutorial. We have assumed that the Chroma-Genlock is installed in your computer according to the instructions contained in this guide.

You will need:

- RGB monitor
- RGB cable to monitor
- PAL monitor or TV connected through VCR
- BNC-Phono video cable or BNC-BNC/BNC-SCART depending on your VCR input connection
- VCR
- Composite video source, such as Camcorder, VCR or Canon Ion Camera
- !Overlay Disc and !SideShow Disc or backups

1. Connecting up

Looking at the rear of your computer you will see a cable emerging from the panel of the Chroma Genlock with a 9-pin D-Type connector at the end. This is the RGB in connector and should be pushed firmly onto the "Analogue RGB" socket of the computer. Fasten with the in-built screws. The RGB cable from the computer to the monitor should be detached from the computer and fastened instead to the RGB out socket on the genlock panel.



Now connect a cable with a BNC connector to the video out point of the genlock card. Take the cable, which should have a suitable connection such as a phono connector at the other end, to a PAL display monitor. This socket will be labelled something like "CVBS" or "Video in".

Switch on your computer and monitors. The desktop will appear on at least one monitor. The other may be blank*. As soon as a live incoming video signal is connected to the BNC "video in" point on the genlock card, your desktop will disappear on the video monitor, showing only your video signal.

2. Supremacy!

By connecting the blue supremacy connector wire internally in your computer and positioning the shorting link at LK4 or LK2 on the genlock card as instructed, you have enabled free choice of which of the sixteen palette registers are overlaid and which are transparent. To see this in action, load the !Overlay application and click menu over the icon on the iconbar. See page 7 for a representation of the menus and sub-menus referred to here. If your RGB display has started to jitter, you can stop this by clicking on *Interlace*. By sliding the pointer across *Superimpose*, you will see the options "On", "Off", "All" or "Set". By clicking on "All", you will see the desktop reappear on your video monitor. "Off" removes it again.

By sliding again across the "Set" option, a further submenu is reached giving a column with the numbers 0 to 15, Border and Mouse. If you now click on one or more of these numbers (use the *adjust* button to stop the menu from disappearing each time), you will see how different parts of the desktop appear or disappear according to whether the corresponding palette number for that colour is ticked or not. Clicking on "border" and "mouse" affects these parts of the desktop in their turn.

If you should find that making selections within !Overlay has no effect on your video display, you should check the position of the shorting link at LK4/LK2 on your genlock card. This should be turned round so that it is positioned on the centre pin only. Also check that the connector with the blue wire is correctly plugged on (refer to this guide under the relevant section for your computer).

Note It is possible to use the genlock card purely for PAL encoding without having !Overlay or any other genlock-related software loaded, for instance to record computer-generated sequences to video that are unaffected by !Overlay and which do not require combining with video. An example of this might be the desire to record to video the playing of a computer game or a tutorial.

To achieve this, you will need to set the shorting link at LK4 or LK2 (A3000) on your genlock card to sit on two pins of the three. This overlays the whole computer image onto video. If you do not have an incoming video signal present, the version on the video monitor will have "rainbow effects" running up and down white text. This indicates that the PAL encoding aspect of the genlock card is functioning. Don't worry about this effect; it only occurs when no incoming video signal is present to provide a sync. As soon as an external video signal is connected, even if it is a blank tape or TV channel running into the genlock card (via VCR), the PAL-encoded image will steady itself.

For details on how to use Draw and !SideShow to generate titles, skip to page 26.

Tutorial Part Two: A5000

The following is a description of how to connect up your genlock card once installed in an A5000.

It is important that this user guide is read through thoroughly before attempting the tutorial. We have assumed that the Chroma-Genlock is installed in your computer according to the instructions contained in this guide.

Once connected as described in this section, the Tutorial for the Archimedes and A3000 version, commencing on page 18, can be followed from section two.

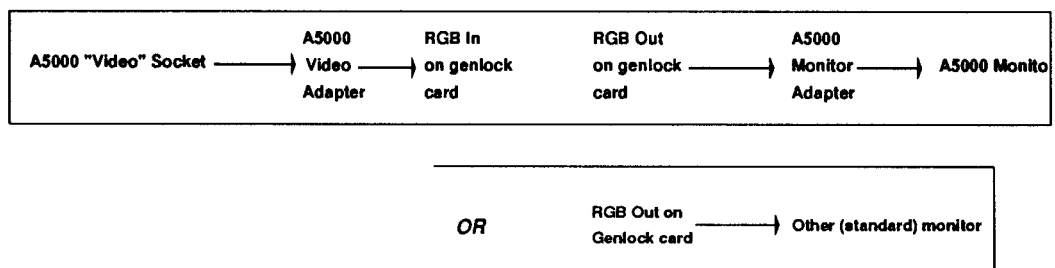
You will need:

- RGB monitor
- RGB cable to monitor
- A5000 Video adaptor
- A5000 Monitor adapter (if using A5000 Monitor) - PAL monitor or TV connected through VCR
- BNC-Phono video cable or BNC-BNC/BNC-SCART depending on your VCR input connection
- VCR
- Composite video source, such as camcorder, VCR, Canon Ion camera
- !Overlay Disc and !SideShow Disc or backups

1. Connecting up

Do not switch on your computer and monitor yet. Disconnect the cable which leads from the socket on the A5000 marked "VIDEO" to the monitor. Looking at the rear of your computer you will see a cable emerging from the panel of the Chroma Genlock with a 9-pin D-Type connector at the end. This is the RGB In connector and should be attached to the female end of the A5000 video adaptor (the unit with the blue spot). This in turn should be pushed firmly onto the VIDEO socket. Secure with the in-built screws.

The RGB Out socket is for connection to the monitor and if using the A5000 monitor, should have the male end of the A5000 monitor adapter (yellow dot) plugged in and screwed into place. The monitor lead which was previously disconnected from "VIDEO" goes into this.



The video out BNC connection is for displaying the PAL-encoded video output from your genlock card on a suitable PAL monitor or for connection to a VCR. If you now switch on the computer you should power up in desktop with the normal screen displayed on your RGB monitor and the video screen blank (or with desktop showing in PAL-encoded form)

Connecting a composite video signal from camera, VCR or other source should switch the display on the video monitor to the video display. At this stage your RGB output may start to jitter. This is corrected by changing the interlace setting. You can do this very simply on the A5000 by clicking on the Apps icon, loading **Configure . . . Screen . . .** and clicking on **Interlace**. Use the adjust button as this retains the options on screen, and it is sometimes necessary to try a couple of times before the interlace is corrected. Another way to switch interlace on and off is to load !Overlay as described in section two of part one of this tutorial.

Overlaying parts of your screen onto the video signal

2. Proceed as for Archimedes and A3000, as previously described.

Using !SideShow

Using !Draw to generate a screen

!SideShow acts as a medium for taking drawfiles and making them display at full screen size, so that the normal desktop clutter isn't included in your overlay screen. It is recommended that before designing an overlay screen you create a directory into which your screens will be saved.

First, load *!Draw* from your *Apps* directory and open a page. Using the rectangle tool, draw an outline that is roughly screen-shaped. You may now use this outline to position text and graphics as if the rectangle were the edges of the screen.

With the text tool selected, choose a font style from the available outline fonts and a text size and colour. A paler colour is usually preferable. Remember to click with *adjust* in order to retain menus on screen. Now write some text centrally within the box you previously created. You are not limited to using text. !Draw has the advantage of allowing drawn objects and sprites to be included in your screen as well.

Select the rectangle shape and make its line colour "none". Clicking on "Select All" and "Group" will make the text and box into a single object, which should now be saved either as a file or as the selection alone.

Altering the !SideShow parameters

For more information on the !SideShow application see the accompanying leaflet.

Running !SideShow will open a dialogue box on screen with various options for selection or boxes for writing in. Dragging your saved drawfile over the "drop zone" and releasing loads your 'screen' into !SideShow, but it will not be displayed until you click on "Run!" Do not do this just yet. First, choose the screen display mode (35 or 36 in RISC OS 3 are wide screen "standard" modes) and write this in the box. Select "Scale to screen" and click on the menu button over "Redraw background". This brings up a grid of colours the same as the desktop palette. Click on a colour which is different from your text colour. It is usually a good idea to work against a black background as black is rarely the colour chosen for text.

Now click on "Run!" to see your screen. The text will be positioned where you chose within the rectangle shape, with the edges of the screen forming the edges of the rectangle.

Overlaying the text onto the video picture

At this stage your video monitor may still be displaying the complete screen, exactly as it appears on the RGB monitor. To see the text appear by itself over

the incoming video picture, use !Overlay. Simply select the palette entry corresponding to your background colour. In the case of black, this is normally number "7". The background area on the video monitor should now be transparent, allowing your video image to be seen in the background.

Sequences of screens

These may be displayed by dropping a directory of drawfiles into !SideShow. The drawfiles will then appear in alphabetical order. They will be displayed according to a timed interval if a figure is written into the "Interval: Sec" box. Otherwise, the screens may be triggered to appear according to a key press if this box is left blank.

"Blanking" puts a blank screen between each of the title screens, so that they don't follow immediately after each other. This is likely to be the usual way that you will work. Screen blanking obeys the setting in "Interval", and will therefore respond to a key press if no figure or "0" is set.

"Looping" sets the sequence of title and blanking screens to repeat in a continuous loop until interrupted by pressing "Escape". This facility is useful for "rolling demo" applications.

Drawfiles from other applications

!SideShow accepts drawfiles from any source. Your display screen may therefore originate from any number of RISC OS applications, including Artworks or even Scan Light Plus.

Recording to video

This is quite simply a question of having the video output from the genlock card connected to a VCR instead of a video display monitor. It should still be possible to view the video image by connecting the VCR to a television in the normal way. Note that the input on the VCR to be used is *not* the aerial socket, intended for modulated TV signals, but rather an auxiliary input socket likely to be marked "AUX", "EXT" or "VIDEO IN" or similar. It is likely to be a BNC or phono socket.

Recording may then be carried out by pressing the appropriate buttons on the VCR in the usual way and executing your overlay!

Index

!Draw 22-23, 26
!Overlay 4, 6-8, 19-20, 22-26
!Projector Appendix I
!SideShow 4, 6-8, 22-24, 26-27
!Titler 19, 30
"Interval: Sec" box 27
"Redraw background" 26
"rolling demo" applications 27
"Scale to screen" 26
**Configure* 18
**Podules* 18
16-colour modes 8
256-colour modes 8, 19

A

A 3000 5-6, 9, 14
A 3010/A 3020 16
A 5000 5-6, 9, 13, 21, 24
Acceptable video signals 5, 18
adaptor 6, 13, 24
aerial socket 27
Archimedes 300 series 10
Archimedes 400 series 11
Archimedes 540 series 12
Artworks 27

B

backplane 9-12, 18
blanking between screens 27
blanking panel 9
BNC connector 22
border 7, 23

C

Cable News Appendix I
Canon Ion Camera 22
captions 7
Chroma-Genlock package 4
Clares Titler 4
Colour Bleeding 19
colour burst 19, 21
colour killer 19
colour mapping 8
Colour Output 19
colour subcarrier 21
composite 22, 24-25
composite monitor 4, 19
composite video 4-5
Configuration 6
Configuration Status 18
Connector 1 10-13, 16
Connector 2 10-13
cue and review 5

D

desktop palette 8
Digit Appendix I
dot crawl 21
drawfiles 26
drop zone 26

E

encoding 5, 19, 21, 23, 25
Euclid Appendix I
expansion card 4, 6, 9, 18
expansion slut 10-12, 18
external connections 6

G

games 8
genlock and overlay process 5, 7
graphic overlay 70

I

Image Animator Appendix
input connection 22, 24
input/output connectors 4
Installation 9
interlace 4, 6-7, 23, 25

J

jitter 18, 23, 25
jumper lead 4

K

keying signal 21

L

link 14, 16
Link and Connector Locations 9, 14
links 10-12
LK 15 12
LK 4 13
LK 6 13
LK2 14, 17, 23
LK28 14
LK29 14
LK31 14
LK4 10-12, 23
LK6 16
Local and Remote Modes of Operation 21
Looping 27

M	
<i>mode</i>	7, 18, 26, 30
<i>Mogul</i>	Appendix I
<i>monitor</i>	4, 6, 22, 24-25
<i>Monitortype</i>	6, 18
<i>monochrome video output</i>	19
<i>mouse</i>	7, 23
<i>multi sync modes</i>	7
<i>multisync monitors</i>	18
<i>multiway socket</i>	10-12

N	
<i>noise bars</i>	5

O	
<i>outline fonts</i>	30
<i>overlaying</i>	5, 21
<i>overscan modes</i>	7

P	
<i>PAL</i>	4-6, 18-19 , 21-25
<i>palette</i>	8, 26
<i>palette entry / palette register</i>	7-8, 23
<i>pause</i>	5
<i>Picture Quality</i>	19
<i>pixel clock</i>	21
<i>PL 4</i>	11
<i>PL3 A</i>	10
<i>PL3B</i>	10
<i>PL6</i>	10-12
<i>Podule Recognition</i>	18
<i>polarity spot</i>	13
<i>power up status</i>	6

R	
<i>rainbow effects</i>	21, 23
<i>RGB in</i>	4, 6
<i>RGB monitor</i>	4-6, 13 , 19, 22, 24, 26
<i>RGB output</i>	4, 6, 21, 25
<i>RISC OS desktop</i>	7
<i>ROM</i>	18

S	
<i>saturation</i>	19
<i>Save setup</i>	8
<i>ScanLight Plus</i>	27
<i>Sequences</i>	27
<i>sequencing</i>	4
<i>shorting link</i>	10, 16, 23
<i>SK11</i>	14
<i>SK5 -9</i>	17
<i>SK8</i>	14
<i>Splice</i>	Appendix I
<i>sprites</i>	26
<i>status</i>	4
<i>superimpose</i>	6-7, 23

<i>supremacy bit</i>	21-22, 31
<i>Sync</i>	6
<i>sync pulses</i>	21
<i>synchronisation</i>	6

T	
<i>tape dropout</i>	5
<i>television</i>	5, 27
<i>timebase errors</i>	5
<i>timing signal</i>	18
<i>Troubleshooting</i>	18
<i>TV</i>	6
<i>Tween</i>	Appendix I

V	
<i>VCR</i>	4-6, 22-25, 27
<i>VDU 19</i>	19
<i>vertical flyback period</i>	21
<i>vertical jitter</i>	5-6
<i>VIDC</i>	7-8, 21
<i>Video input</i>	4, 6
<i>video monitor</i>	22-23, 26
<i>video output</i>	4, 6, 19, 21, 25

W	
<i>white spot</i>	10-14

X	
<i>XAT Video Utilities Package</i>	Appendix I

Appendix I

Recommended Software

!Titler

This package by Clares Micro Supplies has been specially designed for creating sequences of display screens, whether for creating stand-alone presentations or for overlaying onto video. Individual screens are created in *Titler*, and then combined with other screens, animation sequences, audio samples and so on in the accompanying *Sequencer* application.

Screens can include text, drawfiles, sprites and even Render Bender and Euclid Animations. *Sequencer* allows the screens to be presented in any order, using effects like scroll, unroll, fade, curtain, cut and so on. Sequences may be time-controlled or triggered using the mouse or keyboard.

Titler uses the outline fonts of the computer, so they may be displayed in any point size. A mixture of pre-set and user-defined colours is available for text and background, with selectable anti-aliasing and colour intensity control.

While simple to use, *Titler* is a very sophisticated package, and will satisfy most video titling requirements to a high standard.

A demonstration disc and full descriptive leaflet are available upon request.

Price at March 1993: £127.23 + VAT

This product is a Wild Vision stock item

XAT Video Utilities Package

This is a RISC OS compliant software package which provides a range of useful video utilities. It supports full-screen video modes and video overlay, and in fact is the source for the !Overlay application supplied with your Chroma-Genlock card.

The package includes the following features: a real-time clock for overlaying on video; a VTR leader clock for counting down to video sequences; colour bars; a full standard test screen; a wide variety of alternative screen patterns, plus an option for the user's own; !Titleroll, an application for creating vertically or horizontally scrolling text from edit files; wide screen modes.

Price at March 1993: £79.00 + VAT

This product is a Wild Vision stock item

Recommended software, cont. . .

The Ace Computing Suite Tween, Mogul, Euclid, Splice etc.

This suite of software programmes from Ace Computing centres around the creation of animated sequences from drawfiles. It is also possible to convert sprites for making cartoon sequences, and to add ray-tracing effects to 3-D motion.

The above software is not WV stock and must therefore be ordered from Oak Solutions, Suite 25, Robin Enterprise Centre, Leeds Road, Idle, West Yorks., BD10 9TE Tel: 0274 620423

Image Animator

A freehand drawing and animation utility from Iota Software, *Image Animator* may be run using the !Projector application and has a full-screen mode with genlock (supremacy bit control) options.

More details from Iota Software, The St. John's Innovation Centre, Cowley Road, Cambridge CB4 4WS Tel: 0223 421542

Digit

The *Digit* range of software is for image analysis based on live genlocked video on the Acorn microcomputers. Functions include linear distance measurement, field measurements and object measurements. Data files of measurements may be printed, edited and combined or manipulated by formulae. Data analysis is by frequency distribution histograms with mean and standard deviation. There is full control over plotting parameters, and graphics may be printed out.

Contact Kathy Brown at Wild Vision for a descriptive leaflet.

Cable News Professional

The stylish presentation package by the same author as XAT Video Utilities, and merchandised in this country by Liguinity. Full overlay mapping control is now implemented, so that it can be used to create professional-looking titles and display effects.

Contact Liguinity, Wood Farm, Linstead Magna, Halesworth, Suffolk, IP19 ODU Tel: 098685 476

