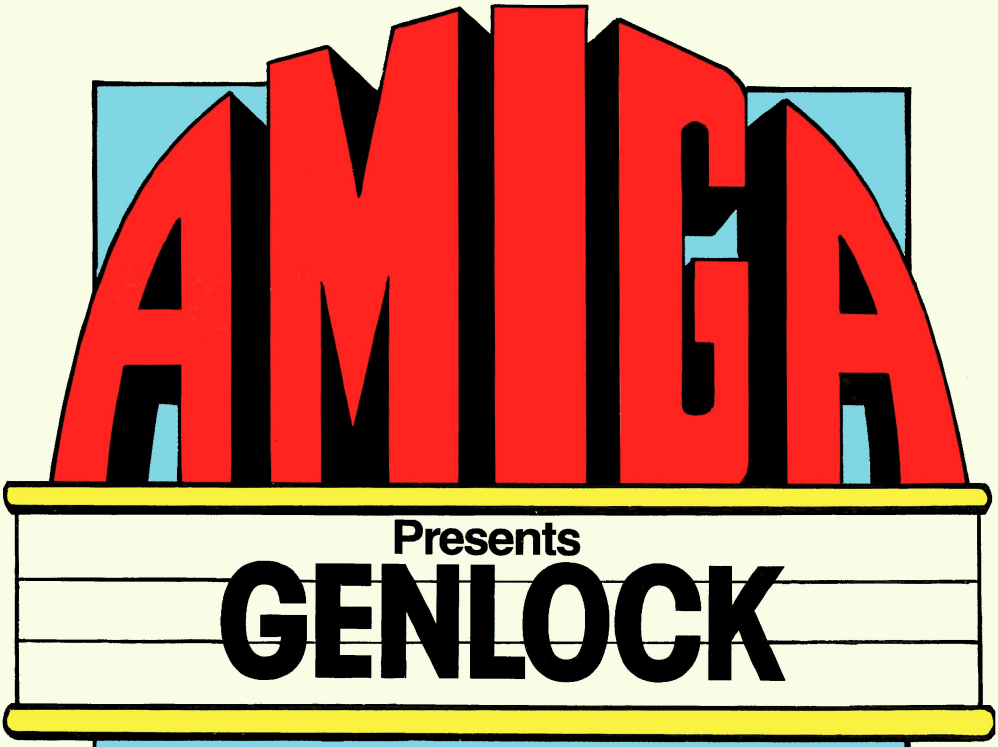
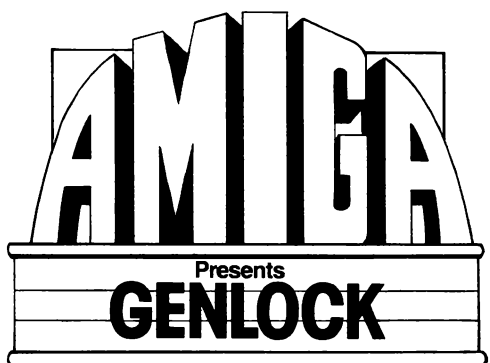


THE AMIGA 1300 GENLOCK™ USER'S GUIDE

AMIGA®



THE AMIGA 1300 GENLOCK USER'S GUIDE

USER'S GUIDE STATEMENT

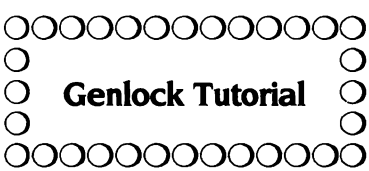
This equipment generates and uses radio frequency energy. If it is not properly installed and used in strict accordance with the manufacturer's instructions, this equipment may interfere with radio and television reception. This machine has been tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. If you suspect interference, you can test this equipment by turning the computer off and on. If you determine that there is interference with radio or television reception, try one or more of the following measures to correct it:

- reorient the receiving antenna.
- change the relative positions of the computer equipment and the receiver.
- plug the computer and this monitor into a different outlet so that the computer and the receiver are on different branch circuits.

If necessary, consult your Commodore dealer or an experienced radio/television technician for additional suggestions. You may also wish to consult the following booklet, which was prepared by the Federal Communications Commission: How to Identify and Resolve Radio-TV Interference Problems. This booklet is available from the U.S. Government Printing Office, Washington, D.C., 20402, Stock No. 004-000-00345-4.

THIS DEVICE MUST BE USED WITH SHIELDED CONNECTING CABLES IN ORDER TO PRESERVE ITS FCC CERTIFICATIONS ACCORDING TO PART 15, SUBPART J OF THE FCC RULES AND REGULATIONS. USE OF THIS DEVICE WITHOUT SUCH SHIELDED CABLES IS PROHIBITED.

CONTENTS



PART I: INTRODUCING GENLOCK

The Amiga 1300 Genlock was designed to combine video graphics and stereo sound from the Amiga with video and stereo from outside sources. The outside video sources could be a video camera, laser disk, another computer, TV tuner, VCR or simple synch only. The outside audio source might be a stereo, tape recorder, compact disk player, even a microphone run through an amplifier. Using these outside sources along with your Amiga, you can create special effects and presentations for either composite video or RGB monitors.

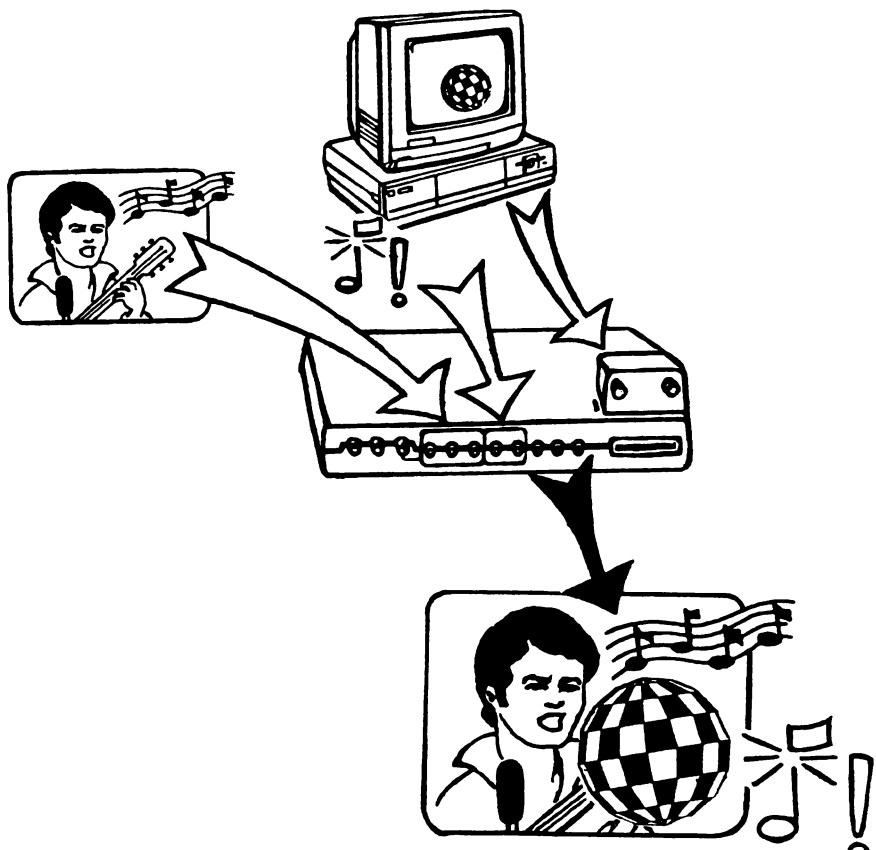
You can use Genlock to create elaborate home movies, video business presentations, video greeting cards, music videos, training or instructional presentations, watch stock quotations as you do word processing, etc., etc. Genlock lets you use the Amiga graphics and sound to perform sophisticated editing and special effects, such as captions and credits, animation combined with live action, computer-generated sound effects; all you need is the imagination to dream up different applications and effects, and Genlock can help you make it happen.

You can use almost any software that runs on the Amiga in creating your A1300 Genlock presentations. If the software program uses color 0 as a background color, it can be overlaid onto an external output.

The explanation of what Genlock does is as follows (with the necessary English translations in parentheses):

Genlock takes the output **(picture)** from a non-Amiga source **(TV tuner, VCR, laserdisk, another computer)** and overlays the Amiga output **(puts the picture from the Amiga on top of it)** to produce a single combined output **(to create one video picture),** which can be transmitted to another outside device **(monitor, television, or a VCR for later playback).** The same process is used to combine an outside stereo source with the Amiga stereo sound, with a single stereo output resulting.

This diagram illustrates the Genlock overlaying process.



The logic behind the combination of the video from the Amiga and that of the outside source is based upon the color set of the Amiga. The Amiga uses color registers 0-31 in low resolution mode and color registers 0-15 in high resolution mode. The color 0 is designated as the background color. Basically, Genlock takes color 0, the background color, and makes it transparent. When the Amiga output is

laid over that of the non-Amiga source, only the foreground colors 1-15 (or 1-31) appear. The picture from the non-Amiga source appears instead of the background color, everywhere that color 0 would have appeared on the Amiga monitor screen.

The three-position switch on the top of the Genlock unit can help you see exactly how this works, once you have it correctly hooked up. So now, time to roll up your sleeves and tackle the task of connecting Genlock and the other components.

Connecting the A1300 Genlock

This section of the manual shows you how to attach your Genlock device to your Amiga computer. It also shows the connections you need to use your Genlock with a video cassette recorder as an input device and an output device.

Figure 1 shows you the back of your 1300 Genlock device. In addition to the connectors for the audio and video cables, it has three control knobs, a three-position switch, and an RGB MONITOR connector. There is also an RGB connector that plugs into the RGB port on the Amiga computer.

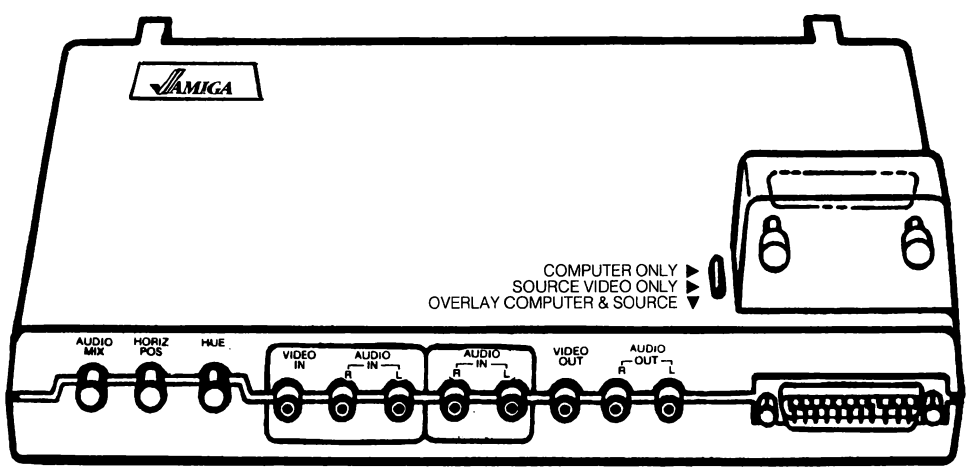


Figure 1. Rear Panel of the Genlock Peripheral Device

The three-position mode switch on top of the Genlock allows you to specify the output on the monitor screen: COMPUTER ONLY, when you want to display just the computer graphics or use the Amiga in the usual way; SOURCE VIDEO ONLY, when you want to display just the external video source; or OVERLAY COMPUTER AND SOURCE, when you want to display your Amiga graphics over the source input. When the external video is turned off, only the Amiga video appears, regardless of the switch setting.

The cables you received with your monitor, VCR and similar equipment, as well as standard RF (radio frequency) cables, can be used to attach the video and audio ports of the Genlock device to the Amiga computer and to an external source device such as a video cassette recorder (VCR). Video cables should be reasonably short in length and have a 75-ohm impedance for best performance. The cable that's included with Genlock is a stereo cable, to connect audio from the Amiga to Genlock.

Attaching the Genlock Peripheral Device

Make sure your Amiga computer and all other peripheral devices are turned off.

Turn the Amiga computer so that the back is facing you. Slide the Genlock unit in the opening under the computer. Push the Genlock box against the computer, aligning the 23-pin RGB connector on the Genlock tower with the Amiga RGB connector. Two locating tabs on the rear of the Genlock match up with slots in the bottom of the Amiga for further support. Turn the two set screws until the RGB connector is firmly attached. See Figure 2.

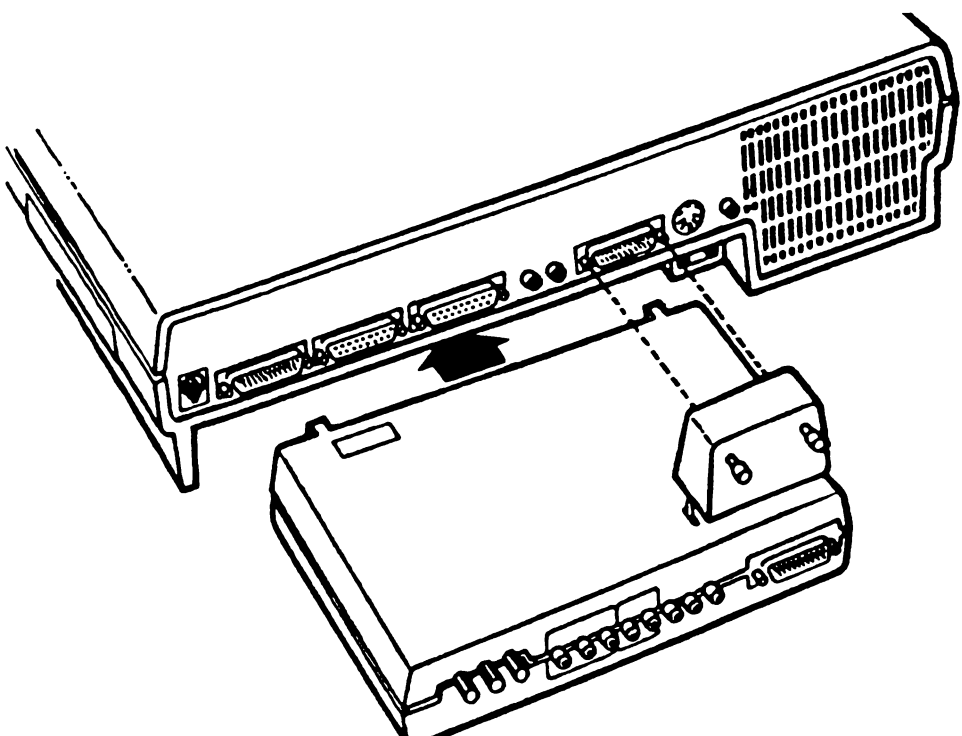


Figure 2. Attaching the Genlock

Connecting the Video Cables to the Amiga

Use the following steps and the illustration in Figure 3 to attach the RGB connectors.

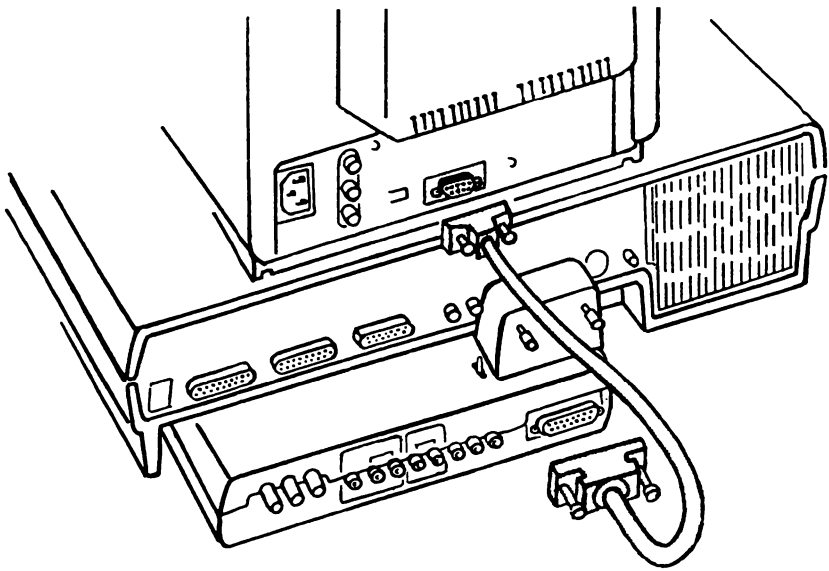


Figure 3. Attaching the Video Cables

1. Attach the 23-pin end of the monitor's RGB video cable to the MONITOR (RGB) connector on the Genlock peripheral device.

2. Turn the two screws on this RGB connector clockwise until the connector is firmly seated.

3. Attach the remaining end of this RGB video cable to the RBG INPUT on the Amiga monitor.

Attaching the Audio Cables to the Amiga

Use the illustration shown in Figure 4 and the following instructions to attach the audio cable (included with the A1300 Genlock) from the left and right audio connectors on your Amiga computer to the Audio In-Amiga connectors on the Genlock unit.

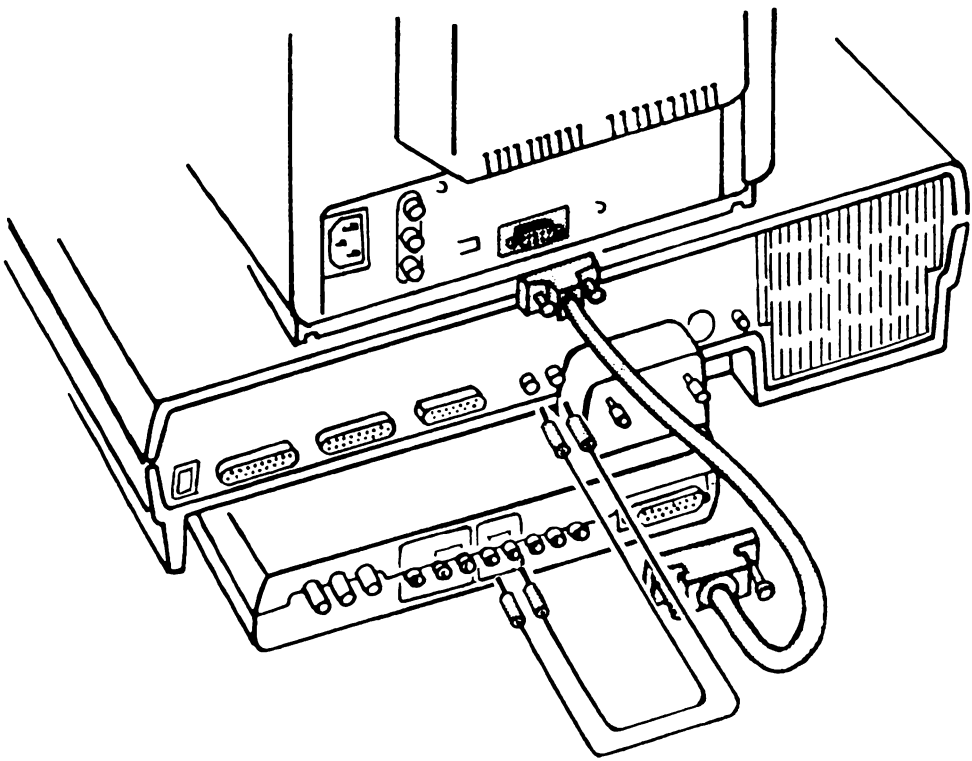


Figure 4. Attaching the Audio Cables

1. Connect one end of an audio cable to the AUDIO IN (L)-AMIGA connector on your Genlock device.

2. Connect the other end of this cable to the LEFT SPEAKER connector on your Amiga computer.

3. Connect one end of a second audio cable into the AUDIO IN (R)-AMIGA connector on the Genlock device.

4. Connect the other end into the RIGHT SPEAKER connector on your Amiga computer.

Your Genlock peripheral device is now attached to your Amiga computer.

Attaching External Devices to Genlock

This section explains how to attach a Video Cassette Recorder (VCR) as an input device. You can use the same connections to attach a video camera, a laser disk, studio synch or another computer to use as input.

Attaching an External Source as an Input Device

You have three input ports on your Genlock that you have not yet used: VIDEO IN, AUDIO IN (L), and AUDIO IN (R) for the SOURCE. This section explains how you attach these to an external video source. Refer to the diagram shown in Figure 5. The instructions for the cable attachments are given for an external source device that has stereo audio.

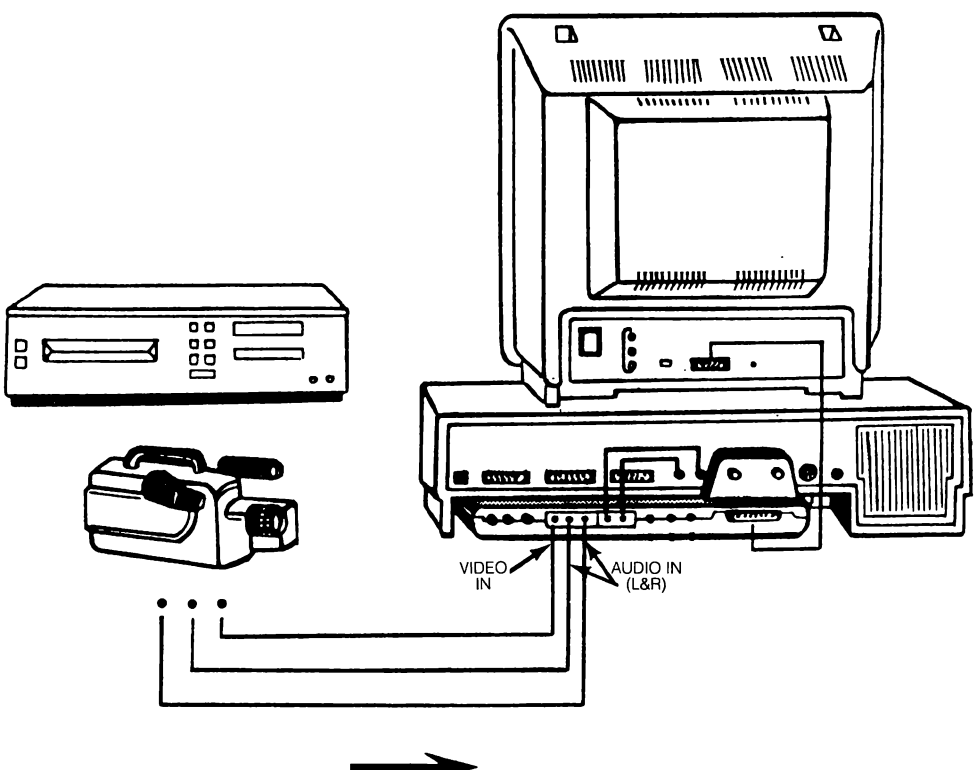


Figure 5. Connecting Cables to Input Device

Attaching the Video Cable

1. Connect one end of a video cable to the VIDEO IN port on your Genlock peripheral device.

2. Connect the other end of this cable to the external VIDEO OUT port of your external source video equipment.

Attaching the Audio Cables

If your external audio source is set up for monaural, you must purchase a Y-cable for your audio output connectors.

1. Connect one end of an audio cable to the AUDIO IN (L)-SOURCE port on the Genlock peripheral device.

2. Connect the other end of this cable to the AUDIO OUT (L) port of your source video equipment.

3. Connect one end of another audio cable to the AUDIO IN (R)-SOURCE port on the Genlock peripheral device.

4. Connect the other end of this cable to the AUDIO OUT (R) port of your source video equipment.

You can now use your external video equipment with your Amiga computer. To display only the video from your external video equipment, you must move the three-position switch to the SOURCE VIDEO ONLY position.

When you are ready to add your computer graphics, you must change the three-position switch to the OVERLAY COMPUTER & SOURCE position.

When your Amiga computer is powered off, a relay automatically connects the external audio and video inputs directly to the audio and video outputs, allowing normal use of these components.

Attaching Output to a VCR

The Genlock peripheral device provides both an RGB output at the MONITOR connector and a composite video output at the VIDEO OUT connector. This allows you to record the mixed (overlay) images on an external device, such as a VCR. Use the diagram shown in Figure 6 and the following instructions to attach a VCR to your Amiga system so that you can record and play back your combined computer graphics and composite source video output.

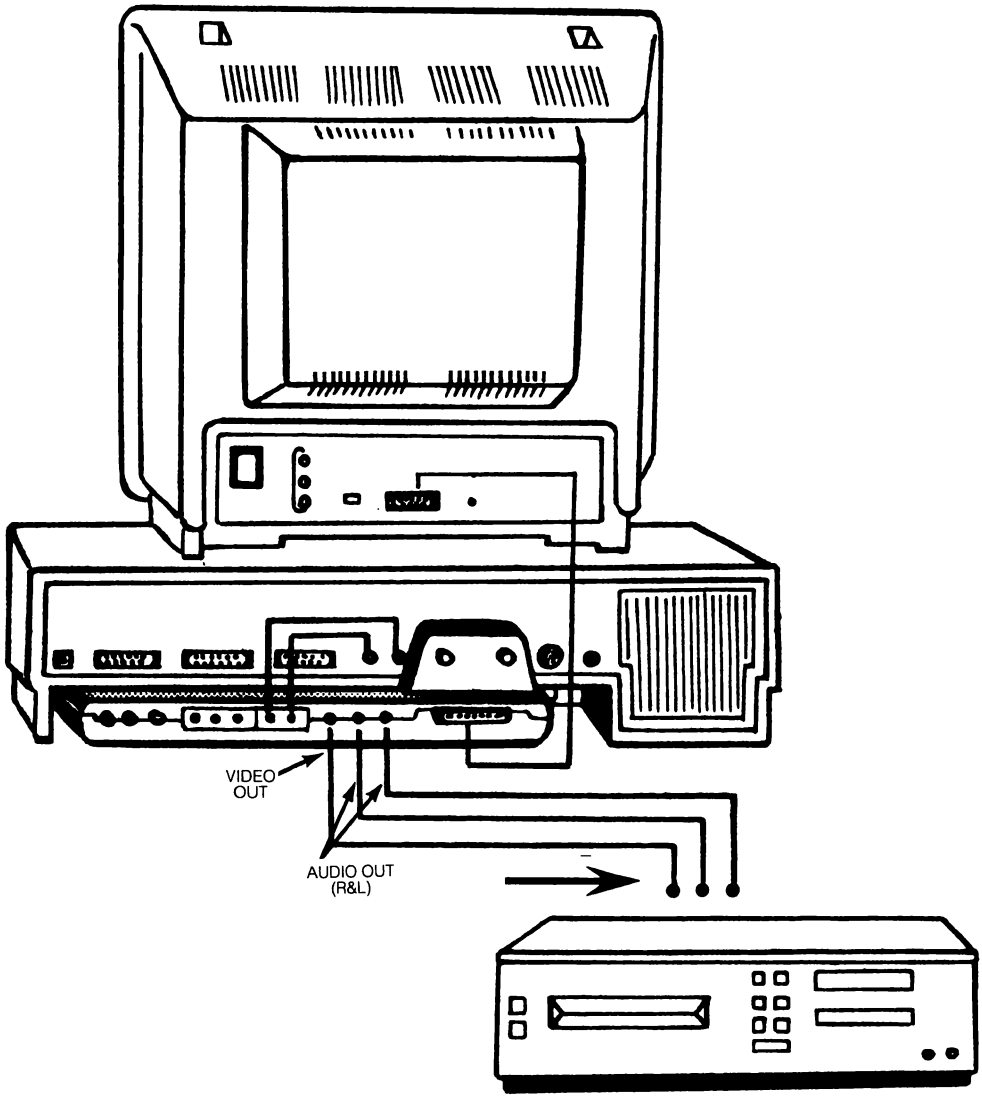


Figure 6. Cabling Video for External Output Device

1. Connect one end of a video cable to the VIDEO OUT port of your Genlock device.
2. Connect the other end to the VIDEO IN port of your external output device.

Attaching Audio Cables to External Device

Note that these instructions are given for a stereo external device.

1. Connect one end of an audio cable to the AUDIO OUT (L) port on your Genlock device.

2. Connect the other end of the cable to the AUDIO IN (L) port on your external device.

3. Connect one end of a second audio cable to the AUDIO OUT (R) port on your Genlock device.

4. Connect the other end of this cable to the AUDIO IN (R) port on your external device.

5. Make sure the three-position switch on the Genlock device is in the OVERLAY COMPUTER & SOURCE position.

You are now ready to display your combined computer graphics and composite video on your television or monitor.

Using the Genlock Controls

There are three knobs on the back panel of the Genlock device: the **AUDIO MIX, HORIZONTAL POSITION,** and **HUE.** These knobs control the external source input.

AUDIO MIX

Allows you to adjust the relative loudness of the two different audio sources (external source and computer audio) for the audio output of the Genlock.

HORIZONTAL POSITION

Controls the relative horizontal position of the computer graphics on the video screen. You can also adjust the relative horizontal (and vertical) position of the computer's display by using the Amiga Preferences tool.

When the Amiga graphics are overlayed with the video from an external source, the graphics appear five scan lines lower than without the Genlock connected. When creating Amiga graphics which will be combined with external video, the image should be positioned five lines higher on the screen (by using preferences for screen positioning).

HUE

Controls the color hue of your external source. This adjustment should be made with the RGB monitor.

Using the Three-Position Mode Switch

The mode switch can be used in an editing function. Connect a composite video monitor to the composite video output of the Amiga computer. Then keep the mode switch in the SOURCE VIDEO ONLY position. The switch can then be set to the OVERLAY COMPUTER & SOURCE position to key in the computer overlay image. This lets you edit out the extraneous computer images.

Using Genlock with an External RGB Encoder

For studio or video production use with a commercial quality encoder, the Genlock unit allows the Amiga graphics to be overlaid onto studio video. The black level studio synch source should be connected to the SOURCE VIDEO IN port, and the RGB output of the MONITOR (RGB) port should be fed to the studio RGB encoder.

Now, let's use the TitleCraft software to see if everything's connected properly.

PART II: TITLECRAFT SOFTWARE

The software diskette that comes with your Genlock hardware is called **TitleCraft.** TitleCraft allows you to scroll text and titles over the screen, at varying speeds, in different fonts, styles and colors. The TitleCraft diskette also includes several animated demos that can be used in Genlock presentations, as well as a demonstration text file that is automatically loaded into the TitleCraft program.

You can use TitleCraft to scroll titles, credits or blocks of text (entire text files, actually) up the screen. This is only one type of screen edit you might want to use with Genlock, but it is a good place to start, to begin to examine the potential of the A1300 Genlock and software.

To load TitleCraft:

1. Be sure that your Amiga is plugged in and that the keyboard, mouse, monitor and Genlock are properly connected.

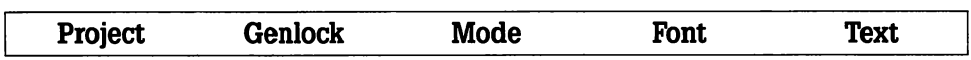
2. If the computer is not already on, turn on the monitor and then the computer power switch. Insert your Kickstart disk into the disk drive. With the Genlock unit connected, you won't see a display on the monitor until Kickstart is loaded and the computer uses the external synch signals from Genlock.

3. Insert the TitleCraft program disk into the drive with the label toward the front, facing up. (The TitleCraft disk includes its own copy of Workbench.)

4. When the TitleCraft disk icon appears, open it by double-clicking the left Selection button with the pointer pointing to the disk.

5. When the TitleCraft icon appears in the window, open it by double-clicking the Selection button. TitleCraft then loads and the menu bar appears.

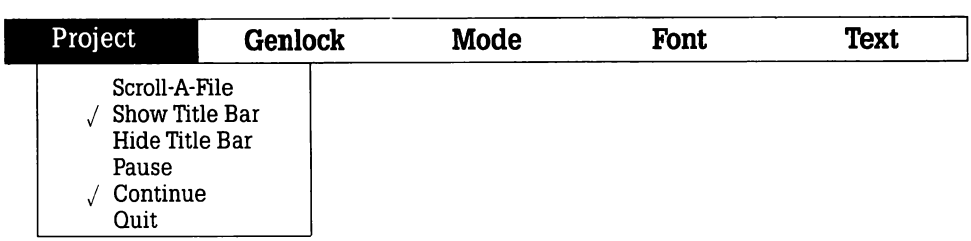
The Menu Bar



All TitleCraft commands are issued by using the right selector button of the mouse at the menu bar. Hold down the right mouse button to see each menu category, and release the button at a pop-out option to make your selection. A check mark (✓) appears next to the option you select. The TitleCraft screen activity pauses when the right mouse button is held down.

The headings on the menu bar include: PROJECT, GENLOCK, MODE, FONT and TEXT.

The PROJECT Menu Commands



Scroll-A-File—Selects a file to scroll on the screen and initiate scrolling. When you select this option, you are given a requester asking for the name of the text file you wish to scroll. Type the file name and click on OK, or press CANCEL to abort the scroll.

The name of the file you give MUST be a text file; you can utilize text files created on the Notepad or other editors or word processors. There are documents on this disk (that you can see in the TitleCraft window) to use as sample files to examine how this command works.

Show Title Bar—Makes the screen title bar visible (including program version title and depth gadget).

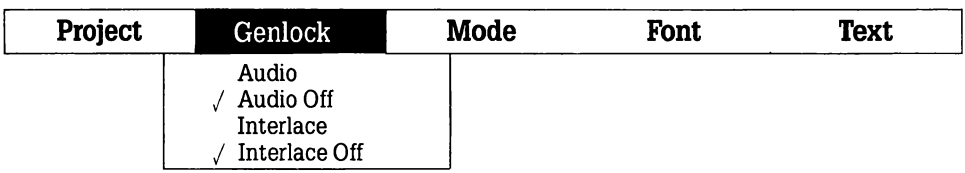
Hide Title Bar—Stops display of screen title bar. Press the right mouse button to see the Menu Bar.

Pause—Halts scrolling of text (while leaving the text visible).

Continue—Resumes scrolling of text.

Quit—Exit TitleCraft program.

The GENLOCK Menu Commands



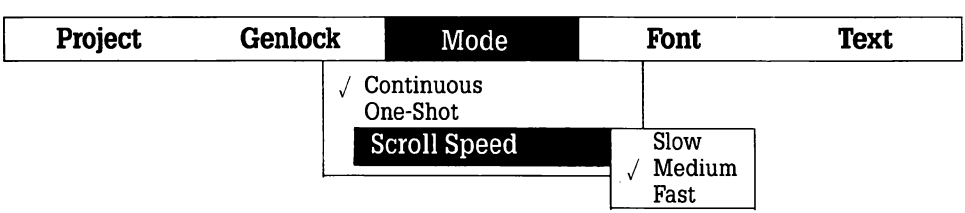
Audio—Turns external source audio on.

Audio Off—Turns external source audio off.

Interlace—Turns on 400-line vertical display mode (known as 'Interlace').

Interlace Off—Turns interlace mode off, returning the vertical display to normal (200 lines).

The MODE Menu Commands

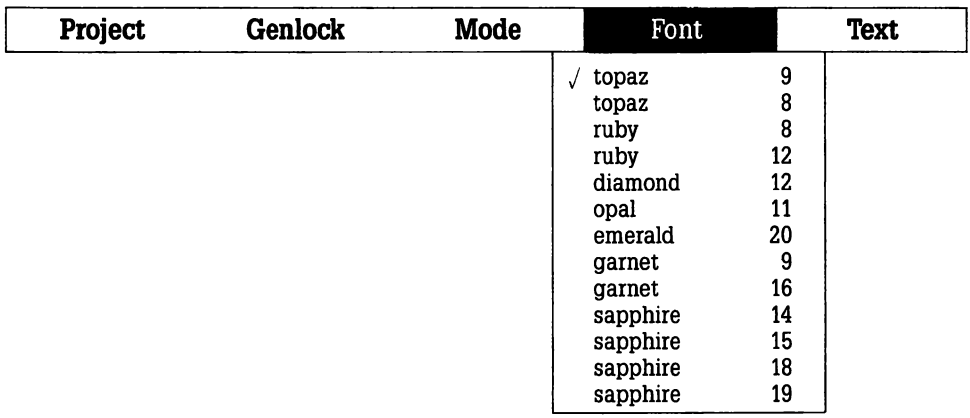


Continuous—Text continually scrolls on the screen; once the entire body of text completes its scroll, it scrolls again from the beginning. This loop is repeated indefinitely, until you quit the program or change the mode command to One-Shot scrolling.

One-Shot—Text scrolls over the screen one time.

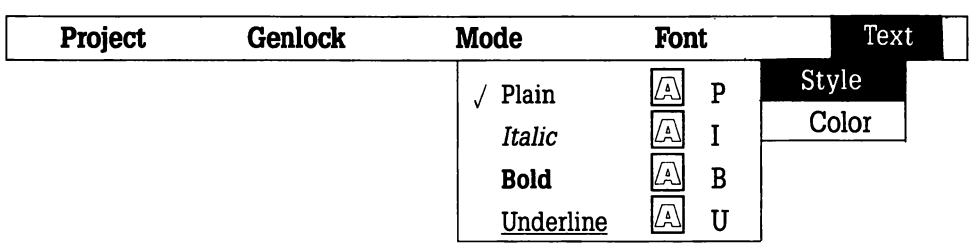
Scroll Speed—Sets the speed at which the text scrolls, either **Slow, Medium** or **Fast.**

The FONT Menu Commands



These set the size and type of font that the text appears in. Experiment with the different fonts to see what each looks like. Different fonts space the text differently when it appears on the screen. You can select different fonts to change the type while the text is being scrolled.

The TEXT Menu Commands



Style—Allows you to select a specific style for the title display, i.e. Plain (Normal), Italic, Bold or Underline.

Color—Is used to set the four colors for the Amiga. Color 0 is "transparent", (meaning that all other video output on the screen appears over it). Colors 1, 2 and 3 can be chosen for the color of the scrolling text. The colors are assigned through Preferences. When you change the colors using Preferences, the new color values you set are automatically used when you return to TitleCraft.

You can scroll a line of each color by setting **Cycle Scroll.** The color of each line of the scrolling text alternates between color 1, 2 and 3. Select **Cycle Scroll Off** to go back to just one color for your text.

Experimenting With TitleCraft

TitleCraft includes a demonstration file that you can use to see how the different menu options affect the titles scrolling on the screen. To run this demo, doubleclick the TitleCraft icon (the document) at the Genlock Demo window. The TitleText file and TitleCraft automatically load, and the text begins scrolling almost immediately. Time to try out some of the menu commands. . .

Hold down the right mouse button as you scan the title bar, to see what the default settings are. Notice as you do that, the scrolling pauses while the mouse button is held down.

Try changing the scrolling speed to see how fast or slow the text can be made to scroll, or pause the text. Change the colors, and see how each different font style and size makes the text look. Try making the text italic or boldface, or underlined, or all three. Notice that only the text that is being scrolled onto the screen after you select a new option is changed; text already on the screen is not affected by new settings. Play around with the many titling options you can use with TitleCraft. After you're familiar with the TitleCraft options, you are ready to load and scroll your own text files.

Use the Quit option from the Project Menu to return to the Workbench screen.

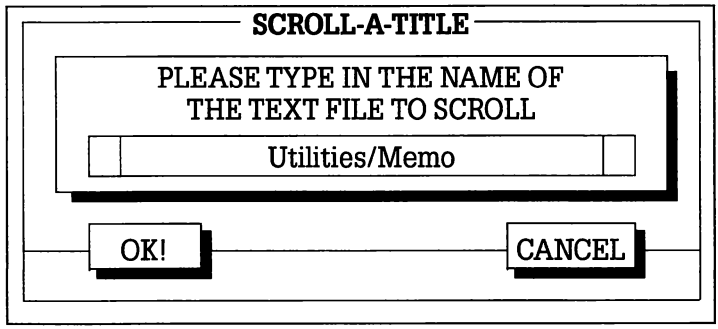
Loading Text Files

The Utilities drawer contains Notepad, which is used to create brief text files. This is extremely useful for TitleCraft, since you can enter any message or caption, and scroll it without the hassle of changing disks.

Doubleclick on Utilities (from the Genlock Demo window), then doubleclick again on Notepad. When Notepad appears, type any message you wish to scroll.

Select **Save** from the Notepad project menu. Click in the name box, type in a name and press **Return.** Click **OK** with the pointer, and the text file is saved under the name you assigned. Exit Notepad and load TitleCraft (doubleclicking the TitleCraft icon in the Genlock Demo window). When TitleCraft appears, you can set the scrolling options now, or wait until you call up the text. If you don't change the settings, the default values are assumed.

Select **Scroll-A-File** from the Project menu. Notice there is already a default name, GenlockText, in the box. Click in the Name box with your pointer, and use the Delete key to remove the name. Then type in **Utilities** (to tell your Amiga where to look for the file, identifying the path), and a slash (/), followed by the name of your notepad file. Let's say you named your file "Memo"; the command you enter in the name box would read:



Press the **Return** key, and then click **OK!** with your pointer. Your file should now be loaded and begin scrolling. As the text scrolls, you can change the options as you like. The next time you load Notepad, enlarge the Notepad window, and you'll see a document icon for the text you saved. The text is saved in the Utilities drawer unless you move it to another drawer or discard it in the Trash Can. More information on using the Notepad and other utilities can be found in the Intro to Amiga manual.

Genlock Demos

The TitleCraft disk also contains several demos, mostly different animations. These can be combined through Genlock with an outside source to create some interesting effects.

Here is a list of some of the demo effects included on your TitleCraft diskette, and a brief description of each:

Animations Drawer: Robonocity, Amiga, Boing.NB, Fields, Boxes, Lines, Dots

Robonocity—Cartoon-like futuristic robots, performing an animated sequence of everyday robot streetlife

Amiga—A 3-D Amiga nameplate, swirling and rotating

Boing.NB—The famous red and white checked bouncing Amiga ball, complete with stereo sound

Fields—Three interlocking primary color fields (red, blue and yellow) twist and turn, creating areas of different secondary colors (purple, orange, green and black) where they overlap. This screen can be pulled down, or removed by clicking in the upper right, just to the left of the corner.

Boxes—The same as the demo on your Workbench disk, a superfast random generation of boxes in the four preferences colors; when used with Genlock, the background color (color 0), is transparent.

Lines—Produces a similar effect to boxes, using continually-swirling lines which create an on-going series of patterns.

Dots—The same as the demo on your Workbench disk, dots are generated on the screen in the four preference color to fill the entire screen. With Genlock, dots in the color 0 will be transparent.

Graphics Drawer: Chart

Chart—A "static" visual screen, an example of a bar graph you can use in a Genlock business presentation. With an animator, you can design a similar bar graph, and have the bars expand or shrink, according to predictions or actual sales, etc.

Also included are some test patterns that may help you verify the correct operation of Genlock.

Using a Graphic Demo from the TitleCraft Window

Doubleclick on the Animations drawer, then on the **Boing.NB** icon in the window. When the pointer returns, it changes to a single black pixel. At this point, move it to the top of the Workbench screen and pull the screen down (by holding the left mouse button on the bar and moving the mouse toward you). The Amiga ball is suspended motionless; press the left mouse button, and the Amiga ball begins caroming away on the screen you just revealed.

The background of this screen is gray; it serves as color 0. When you overlay this Amiga screen on another output, the gray is what is replaced; the ball keeps spinning and bouncing over whatever the non-Amiga source is sending through Genlock. This could be a videocamera shot of your bedroom, your boardroom, a tennis court, the court of the Boston Garden or traffic court. Notice that the Amiga-generated sound (the thunderous echo each time the ball bounces) continues while overlaid. You can add your own music or additional sound through the audio input.

The other demos on the TitleCraft disk (Lines, Dots, Robonocity, etc.) can be used in the same fashion. Some of them require pulling down the Workbench screen (like Boing.NB, as described above), while others (like Lines or Dots) appear as windows on the Workbench screen, and must be enlarged to fill the screen.

Some of the demo effects do not have visible 'Quit' boxes, and you may have to click the mouse button around the upper left corner to cancel the screen.

PART III: GENLOCK TUTORIAL

INTRODUCTION

The scenes, effects, and images that you can create with Genlock are limited only by your imagination. This tutorial will make suggestions for specific effects using Genlock and some of the programs and demos on your Genlock Demo disk, but is by no means a full exploration of Genlock's capabilities. The best way to get a complete idea of what you can do with Genlock is to try and do it. Experiment, manipulate, edit, enjoy yourself.

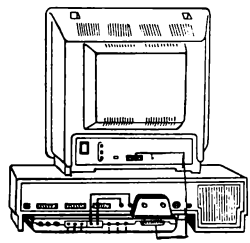
Tutorial Example

The Task

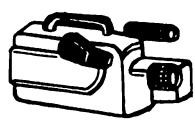
Since the TitleCraft disk contains many Amiga and Genlock related animations, an appropriate task for Genlock is a short sales video promoting the Amiga 1300 Genlock. At our disposal on the Genlock demo disk, there is a titling program (which contains a text file describing Genlock), an animated swirling Amiga logo, and a sales chart comparing Amiga to other computers.

The Tools

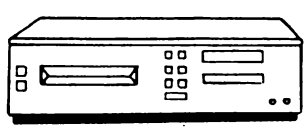
An Amiga system with Genlock



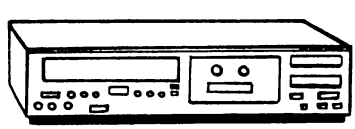
One videocamera (for video and audio input)



One VCR (for recording output)



One stereo receiver (for audio input)

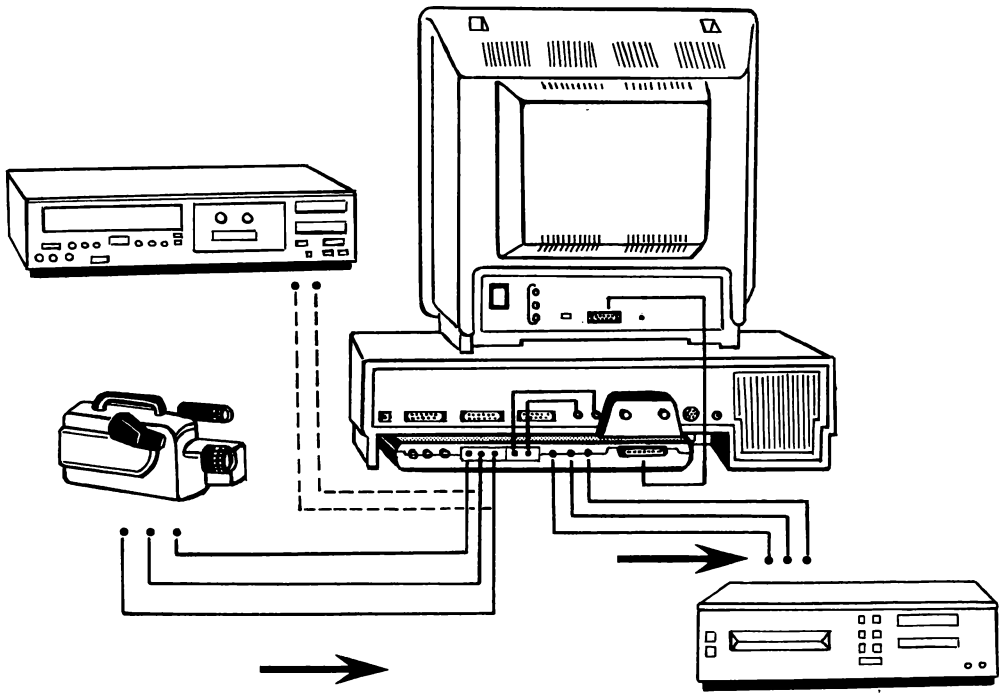


AND

The Genlock Demo disk

If you follow this tutorial, you'll find that some parts of this production require a second person to operate the camera or appear in front of it while you work the camera.

The Set-Up



This diagram shows one possible equipment configuration for creating this type of program, with the appropriate connections, cables, etc. The inputs to the Genlock are a videocamera and a stereo. The combined output (both audio and video) goes from Genlock to a VCR. Of course, you can substitute other peripherals for these pieces of equipment in your own Genlock system. For further information about setting up your system, refer to Part I of this manual and the user's guides for the Amiga and other pieces of equipment.

Beginning Steps

Install the Genlock device on the back of the Amiga

Set up and connect all the components of the system: connect the camera to the VIDEO INPUT and AUDIO INPUT (L or R) on the Genlock and the stereo receiver to AUDIO INPUT (L or R), and the audio and video outputs to a VCR.

Connect everything before turning on the power.

Make sure the three-position switch is set to COMPUTER ONLY.
Turn on Amiga and load Kickstart and TitleCraft.

Load the particular Amiga software you'll be using (with switch set to COMPUTER ONLY). Do whatever is necessary to create effects you'll need; it helps if before starting to put together your Genlock production, you write and save any captions, text, designs or animations you'll use in your production. Things will go more smoothly if you have everything ready when it's time to record. Don't forget to take into account the five line drop of the Amiga output when the three-position switch is set to OVERLAY COMPUTER & SOURCE in designing your Amiga graphics.

The Production

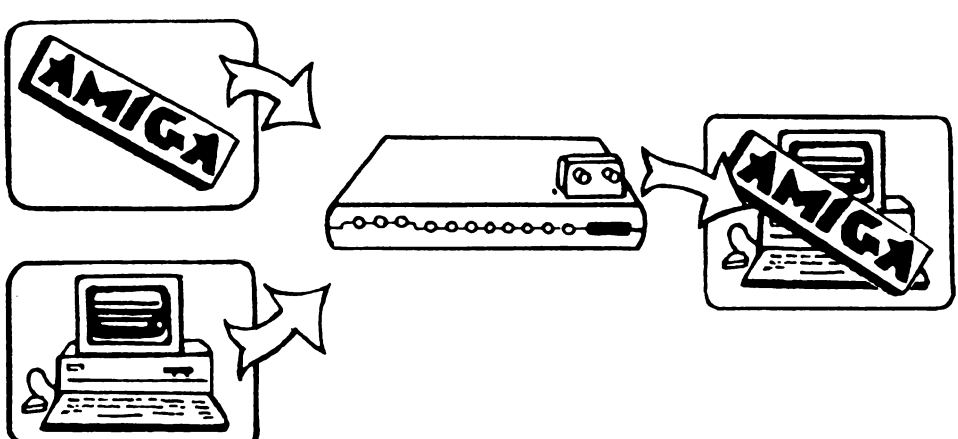
Scene 1: Opening Shot

Set the three-position switch to COMPUTER ONLY.
From the Genlock Demo disk, doubleclick on the Animations drawer and select the 'Amiga' icon.

Set the three-position switch to SOURCE VIDEO ONLY.
With the camera, focus on the Amiga computer, keyboard and monitor screen, to provide a background for the logo.

Cue up the stereo, with the theme music. Perhaps Richard Wagner's 'Ride of the Valkyries' would be appropriate.

Just before starting the music, start recording with the VCR. After just a second or two, flip the three-position switch to OVERLAY COMPUTER & SOURCE, and the Amiga logo will appear dramatically in front of the computer. Announce into the videocam microphone an introductory message.



Fade the music by turning down the volume (while still recording with the VCR), then turn off the VCR.

Click in upper left corner to get rid of Amiga logo.

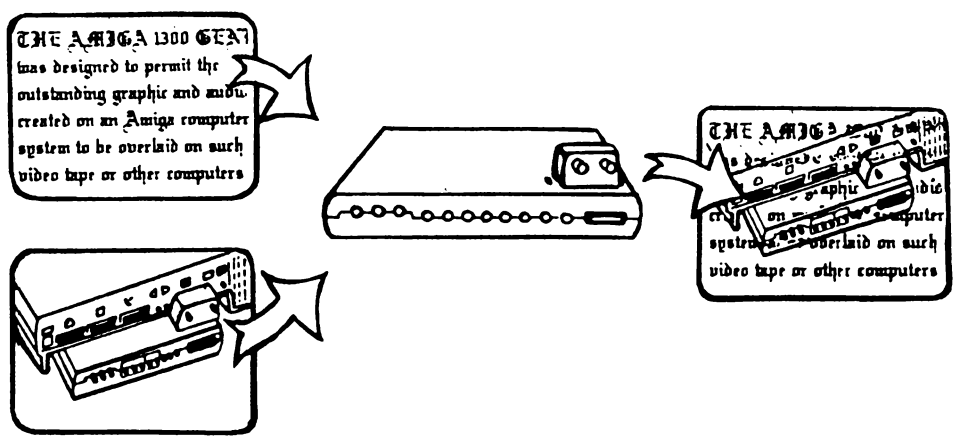
Scene 2: Genlock 'TitleText' Scroll

Set the three-position switch to COMPUTER ONLY. Load the 'TitleText' demo from Genlock Demos window. The TitleCraft program is loaded and text describing Genlock is automatically scrolled on the monitor screen. From the menu bar, select the type font, style and color you want to use, as well as the scroll speed you feel would be most effective. For this text, to give the audience time enough to digest the material, it's probably best to use the medium scroll speed. Select one-shot rather than continuous scrolling.

Set up the demo so the text is paused, ready to be scrolled. Before scrolling the text, remember to hide the menu bar.

For the background music, you should select something upbeat, along the lines of Rossini's William Tell Overture.

Focus the camera on the connected Genlock device.



Set the three-position switch to OVERLAY COMPUTER & SOURCE; start recording with the VCR as you select continue from the TitleCraft project menu to start the scrolling and cue up the music simultaneously. Pan the camera back and forth over the Genlock device. Record until the text has completely scrolled, and there is a logical break in the music to fade out.

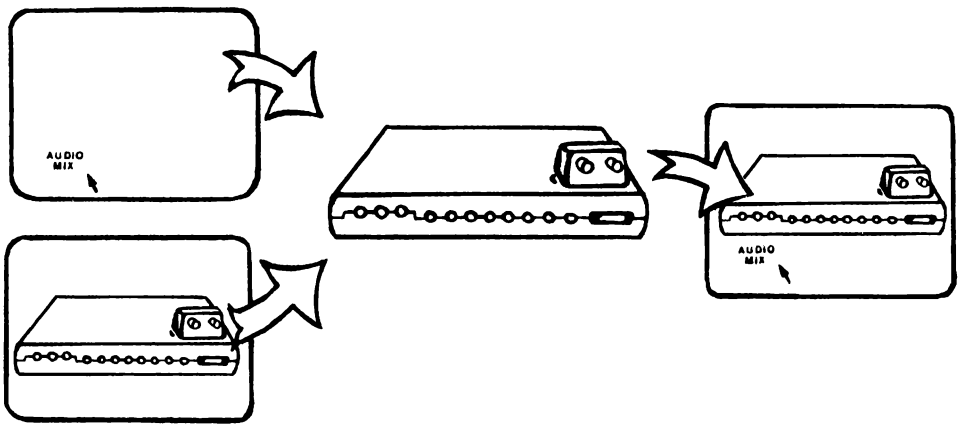
Scene 3: Camera on Genlock ports and controls

Using Notepad or a word processor, prepare files with captions which will serve as call-outs for each control and connector on the Genlock device. These include: the pixel switch, audio in, video in, audio out, video out, horizontal position, hue and audio mix.

Use the videocam audio for a spontaneous "live" description of each control or connector, or change the audio input from the stereo attached to the receiver to a cassette tape of you explaining each control if you think you'll have trouble winging it.

Load one caption and display it on the screen, record with the VCR as you go through the explanation of that particular Genlock control.

Use the pointer to identify the proper control or opening as you give the explanation for it.

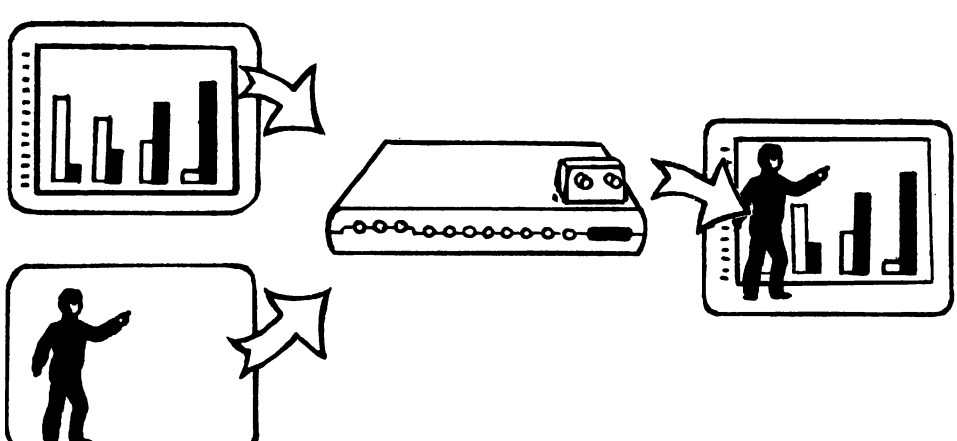


When finished, stop recording with the VCR, and change to the next caption. Repeat this with each opening and control on the Genlock.

Scene 4: Chart with Amiga sales

Also on the Genlock Demo disk is a bar graph presenting fictitious Amiga sales. This isn't based on official sales figures, but is for demonstration purposes, so we'll use it in our demonstration.

Doubleclick on Chart from the Graphics drawer on the Genlock Demo disk. Note the relative screen positions of each of the four pairs of bars, one for each sales quarter.



With the three-position switch set to OVERLAY, get ready to do a standup analysis of the sales figures. Mark four places on the floor, corresponding to where each quarter's pair of bars appears on the screen. Record yourself at each mark, pointing out (visually and verbally) the comparative sales levels, and moving to next mark to review the next pair. When you and the bar graph are Genlocked together, the effect will make it appear as though you are strolling through the graph, going from bar to bar.

Scene 5: Closing scene

Repeat Scene 1, recording with the camera backing away from the Amiga and blurring focus while the swirling Amiga logo is on the screen. This time use different music, Also Sprach Zarathustra (the theme music from 2001: Space Odyssey). Close it out with a final comment in a deep voice, saying something like "This has been a Genlock presentation."

Short Takes and Outtakes

Sports Analyst (Combining another computer's output with the Amiga's)

Set the three-position switch to COMPUTER ONLY. Load a graphics program like GraphicCraft™ on the Amiga.

Connect a Commodore 64® or Commodore 128™ computer to video input and audio input, as pictured:

Set the three-position switch to SOURCE VIDEO ONLY. Insert the Commodore International Soccer™ cartridge into the expansion port in the back of the C64 or C128, and turn the computer on. Follow the game instructions, or let the computer play an exhibition against itself.

Connect a microphone via a stereo receiver to the audio input on the Genlock device.

Set the three-position switch to OVERLAY COMPUTER & SOURCE.

Using the VCR set up to receive the Genlock output, record the picture of the soccer game as you draw arrows tracking and analyzing the movements of players and emphasizing things like flow of play and ball movement, etc. During your analysis, you'll have to stop recording and halt play (by pausing the game) every now and then to clear the screen.

The audio will feature the sounds from the soccer game and your own voice-over explaining the nuances of the play.

For the final touch, every now and then, throw your arms in the air like John Madden, and hope someone from a major network sees this videotape of your analysis and needs a color analyst for upcoming soccer games.

Home Travelogue

So you weren't able to videotape your last vacation, and the kids, spoiled by today's music videos, refuse to even consider looking at your photos. What's a tourist to do?

Design a new Amiga pointer to be a boat, car, train or jet. Move the new "mode of transportation" pointer over a map depicting the vacation areas, interspersed with videocam or digitized views of photos, with TitleCraft captions explaining each scene, with appropriate local background music or verbal explanation as the external audio.

Connect a stereo receiver to audio input, to play cassette tape, record or compact disk player music through the Genlock to be recorded by a VCR on output.

Home Subtitler

It's easy to overcome the language barrier in video with Genlock. You can use the overlay capabilities to run translations of dialogue as subtitles for movies, music or presentations of any kind. Now, you can do video subtitling yourself, armed with Genlock, a word processing program and maybe a French/English dictionary! Translate the dialogue, line by line. Type each line in on the bottom of the screen and display it on the screen as it is said in the video.

Quickies

Robonocity—Use this animated sequence from the Animations drawer of the Genlock demo disk as a foreground, and record in your own background from an external source. You can have the robots strolling in your bedroom, through your board, or on the Boardwalk.

U.F.O.—Move a video camera to pan over an area, through the sky, while immobile flashing object remains centered on the screen, to create the illusion of flight.

PART IV: TECHNICAL SPECIFICATIONS

The Amiga 1300 Genlock Theory of Operations

When Genlock is attached to the Amiga computer, the computer's system clock comes from the 28 Mhz VCO (Voltage Controlled Oscillator) in the Genlock, and during Kickstart the computer is configured into an external synch mode. The Genlock extracts the vertical and horizontal synch information of the incoming video and resets the vertical and horizontal beam counters in the Amiga logic so the computer video is synchronized to the external video.

The Genlock unit also allows the video overlay of the computer graphics over the external video. The incoming composite video is decoded into RGB components, and the computer RBG output is keyed in with the external RGB. The combined RGB goes to an RGB output and to the color encoder which then goes to composite video out.

The major system blocks of the Genlock devices are:

- External video synch separator
- Horizontal and vertical synch separator
- Field identification circuit

- Horizontal and vertical reset generation circuit
- Phase locked loop circuit
- External video color decoder and computer RGB overlay circuit
- Color encoder
- Audio mixer circuit

If the external synch is missing, the synch detector circuit switches over to the computer synch.

The field identification circuit is configured to detect odd fields and is connected to the vertical logic so that the reset is sent out to the computer on odd fields for interlaced display format.

The phase locked loop circuit consists of the VCO, horizontal beam counter, phase comparator circuit (which consists of a ramp generator circuit, strobe circuit and sample-and-hold), and feedback amplifier. The VCO is divided down to produce the horizontal synch frequency and produces a ramp signal on every line. The ramp is repeated at the horizontal line rate of the computer. Then, a strobe signal is generated at the external video horizontal line rate and is used to sample a voltage on the ramp signal. The sampled voltage is then compared to a reference voltage, and the error voltage is filtered and goes to the VCO.

Once the PLL synchronizes the computer synch with the external synch, the external video is decoded by the color decoder, TDA3301. This is a standard color decoder with the additional feature of RGB overlay capability. The decoded RGB of external video is pixel switched with the computer RGB, and the combined output goes to the color encoder and RGB output. The RGB output provides a 700 mV signal to a 75 ohm load. Associated with the color decoder is the sand castle generator, which determines the horizontal blank interval and the color burst gate.

The color encoder takes the RGB output of the color decoder RGB overlay circuit and converts it to the NTSC composite signal. The signal is buffered to drive a 75 ohm load.

The audio mixer circuit consists of the mixer pots and output amplifiers. The computer audio is always connected to the amplifier, but the external source audio can be switched in and out under software control.

Amiga 1300 Genlock Technical Specifications

Power requirements

+12 V dc, 250 mA
−5 V dc, 50 mA
+5 V dc, 350 mA

Operational environment

Temperature: 5°C to 40°C (41°F to 104°F)

Storage Temperature
− 15°C to 70°C (5°F to 158°F)

Dimensions
10″ × 6½″ × 3″ (L × W × H)

Weight
2 lb. 5 oz.

Supplied accessory
Stereo audio cable

External Controls

1. Audio mix	Rear
2. Horizontal position (fine)	Rear
3. Hue (source video)	Rear
4. Three-position mode switch (Computer, source, overlay)	Top

Internal Controls (factory adjustment only)
1. 28.63635 MHz oscillator
2. 3.579545 MHz oscillator
3. Horizontal position (coarse)

Connectors
1. Female 23-pin "D" type connector (to the computer)
   Pin 1: 28 MHz clock output
   Pin 2: External clock enable output
   Pin 3: Red video input
   Pin 4: Green video input
   Pin 5: Blue video input
   Pin 6: No connection
   Pin 7: No connection
   Pin 8: No connection
   Pin 9: No connection
   Pin 10: Composite synch input
   Pin 11: Horizontal reset output
   Pin 12: Vertical reset output
   Pin 13: Digitial ground
   Pin 14: Pixel switch input
   Pin 15: 3.58 MHz clock input
   Pin 16: Signal ground
   Pin 17: Signal ground
   Pin 18: Signal ground
   Pin 19: Signal ground
   Pin 20: Signal ground
   Pin 21: − 5 Vdc input
   Pin 22: + 12 Vdc input
   Pin 23: + 5 Vdc input

2. Male 23-pin "D" type connector (on rear)
   Pin 1: No connection
   Pin 2: No connection
   Pin 3: Red video input
   Pin 4: Green video input
   Pin 5: Blue video input
   Pin 6: No connection
   Pin 7: No connection
   Pin 8: No connection
   Pin 9: No connection
   Pin 10: Composite synch output
   Pin 11: Not used
   Pin 12: Not used
   Pin 13: No connection
   Pin 14: No connection
   Pin 15: No connection
   Pin 16: Signal ground
   Pin 17: Signal ground
   Pin 18: Signal ground
   Pin 19: Signal ground
   Pin 20: Signal ground
   Pin 21: No connection
   Pin 22: No connection
   Pin 23: No connection

3. Phono jacks (on rear)
   Source video input
   Source R-audio input
   Source L-audio input
   Computer R-audio input
   Computer L-audio input
   Video output
   R-audio output
   L-audio output

VIDEO CHARACTERISTICS

1. Band width
   Composite video: 4.2 MHz at −3dB
   Analog RGB : 9 MHz at −3 dB
2. Synchronization frequency
   Horizontal: 15.75 KHz
   Vertical : 60 Hz

AUDIO CHARACTERISTICS

1. Frequency range : 100 Hz to 10 KHz (−6dB)

Input/Output Specification

1.	28 MHz clock	TTL level
2.	Analog RGB inputs	0.7 Vp-p, Zi = 75 ohm
3.	Composite synch	TTL level, active low
4.	Horizontal reset	TTL level, active low
5.	Vertical reset	TTL level, active low
6.	Pixel switch	TTL level, active high
7.	3.58 MHz clock	TTL level
8.	Analog RGB outputs	0.7 Vp-p, Zo = 75 ohm
9.	Composite synch	TTL level, active low
10.	Video input	1 Vp-p, Zi = 75 ohm
11.	Audio inputs	Zi = 10 Kohm
12.	Video output	1 Vp-p, Zo = 75 ohm
13.	Audio outputs	Zo = 600 ohm

Design and specifications are subject to change without notice.

The end.

A1300

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