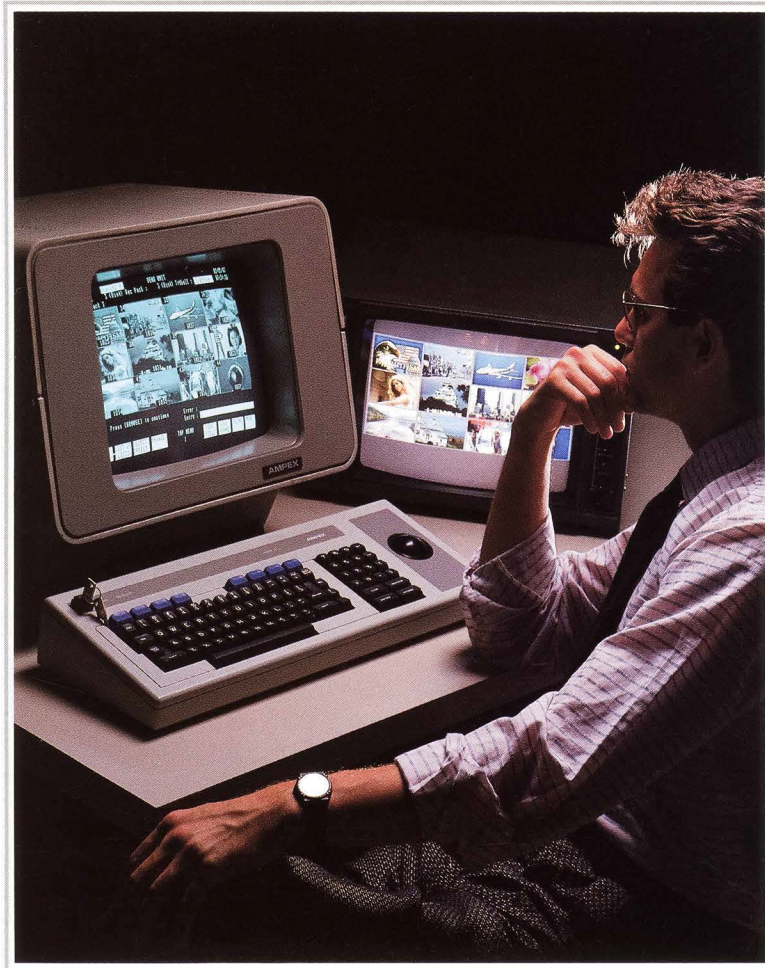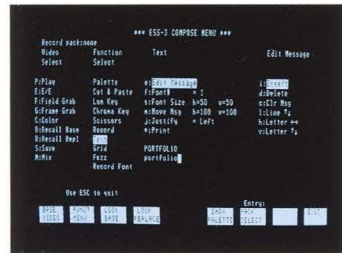# ESS GRAPHIC COMPOSITION AND IMAGE STORAGE SYSTEM



# AMPEX

# ESS DELIVERS GRAPHICS, KEYING, STILL-STORAGE AND MUCH MORE FROM A COMPLETE LINE OF SYSTEMS THAT FIT EVERY NEED AND BUDGET



**A menu monitor gives you full control over all picture parameters.**

Obviously, ANY AMPEX ESS™ system is much more than just a still-store, and hence the name "Graphic Composition and Image Storage System." For example, the ESS-3 and the ESS-5G will provide all the graphics and still-store capabilities that most facilities will ever need, and at the same time eliminate the need for multiple pieces of equipment and the attendant costs of purchasing, servicing, and operator training that several different systems require.

Over-the-shoulder inserts (with no need for an ADO™ or other special effects system) will add a major market look to every newscast, while the ability to make timely, and correct, graphics presentations will take the pressure off the news director and his staff. And the ESS system performs many operations a paste-up

artist once only *wished* he could do. The artist can reduce an image, or distort it by reducing its X or Y dimensions independently. Image edges with or without a border can be feathered for a vignette effect, or the overall image can be made slightly transparent so the artwork below shows through. Selective defocus allows an artist to soften elements within an image, focusing attention on a key personality or object in his composition. And border width, border color, edge softness, opacity and defocus are all fully controllable. The system also provides an internal grid generator with size and shape that's user definable. It's a great composition tool for positioning elements —or can be employed as a design element itself.

**Ampex Engineering Excellence Assures You of the Highest Quality Video, No Matter What ESS System You Choose**

All ESS systems are designed to provide the highest quality video images available for television. Based on 13.5MHz, 4:2:2 coding throughout the system, ESS digitizes video frames as component-coded signals and stores them in industry-standard SMD disk drives of several configurations. These range from light-

weight drives with convenient removable disk packs to 825 Mbyte fixed drives, each capable of storing 1000 NTSC or 850 PAL still images. An optional optical disk storage device is also available for archival storage.

The architecture of the system gives it great flexibility. Its ability to interface with other video equipment allows you to re-configure your facility to meet new demands. Any ESS system is pack-compatible with any other ESS system or with the AVA™ 3 Video Art System.

Most importantly, the

ESS system is easy to learn and easy to use. All functions, including storage, recall and compositions are controlled via a standard typewriter-style keyboard that features eight menu-based soft keys. An optional remote station even provides its own display, so you won't need a menu monitor at remote locations.

So whether you're in broadcast, cable, post-production, video graphics, film-to-tape transfer, or corporate graphics, just select the system that's right for you:

*If you need a fast and secure way to store and recall*

*still images, the ESS-5S will do a superlative job and keep you within your budget limits, too.*

*If you also need composition capabilities to add exciting touches to your graphics for news, presentation slides, art cards, or client-winning conceptuals, the ESS-5G is perfect for you.*

*And if you need all this, plus up to ten stations that allow users to simultaneously and independently store and recall, the ESS-3 is the system you'll want to look at.*

In short, no matter what industry you work in, and regardless of the size of your facility or the complexity of your work, you can find creative and affordable solutions to your graphic creation and still-storage requirements with the Ampex ESS Series.



**An optional removable disk provides storage media that is interchangeable between ESS-3, ESS-5 and the AVA-3 Ampex video art system.**
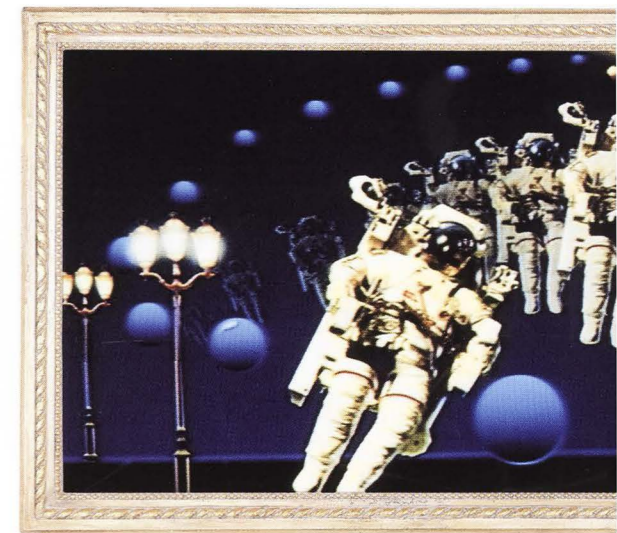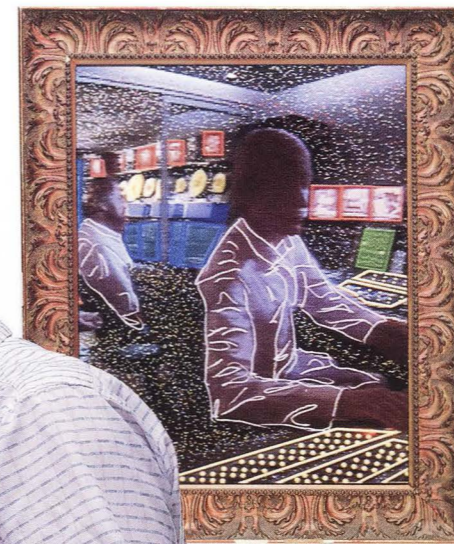


**Artwork courtesy of VTR Ltd., London; Crawford Post Productions, Atlanta; WHAS-TV, Louisville; Yale Video, Anaheim, and KSTP-TV, St. Paul.**

# YOU PROVIDE THE CREATIVITY; THE ESS SERIES PROVIDES THE POWER AND FLEXIBILITY



Record and playback functions can be controlled from the Remote Access Station —and a bright fluorescent display is built-in.

Video graphics usually require a fast turn-around in the art department. If you're stuck with a slow moving, hard to operate system (and have to wait in line to get on it), you've got two choices: produce artwork that's not up to your standards, or miss a deadline. Ampex has a solution for your problems.

### Hi-Tech but Artist-Friendly

The Ampex ESS systems provide hi-tech tools that don't take an engineering degree to operate. They are specifically designed to increase an artist's productivity. They store, recall and compose effortlessly and efficiently, and do it in ways that simplify your job, not complicate it. For example, the system allows the user to preview the live video and grab either a frame or a field and store it away. If a *field* is grabbed, the system will automatically interpolate to provide a frame-quality image with no flicker.

If you've spent any time locating and editing stills, you know how important an accurate description is. Every still needs a title that will help you find it once it's been stored. Just the words "track meet" won't work if there are several stills from the same event in your library. To solve this, the system provides up to 40 characters of description, along with a 30-character category designation. And you can search for stills by category, description, or key words within the description. You can also search by still number, by pack number, and by date. On the menu screen, "recall-by-cursor" allows fast retrieval, without having to enter the title.

The unique ESS multi-image browse feature lets you display 12 images simultaneously on your monitor (a 1/16 size picture is stored for rapid scan-search). Random images can be assembled into a list and viewed in this small picture format, or your entire on-line catalog can be reviewed, 12 images at a time. This combination of multi-image viewing and cursor recall makes editing and building playlists quick and easy.

The system will even drive a printer, providing a hard-copy of your lists, as well as any other information appearing on the menu monitor.

The optional Remote Access Station (RAS) is designed to play your preassembled list of images. A group of eight keys controls the various playback functions. Two outputs are provided; one for

ESS-5T systems enhance color correction in film-to-tape transfer applications.
(Photo courtesy The Post Group)

preview and the other for on-air. If, on the other hand, you'd like to feed two cross-points on your switcher, the RAS can control two channels independently. Interrupting a playlist for a last-minute edit insert, delete or change is also possible from the RAS. The system can also be configured so you can record images from the RAS.

### Creative Power

Two ESS system models provide extensive graphic art production capabilities. Operator interface is via the Composition Access Station (CAS) and menu-monitor. This full keyboard features eight menu-based soft keys that make art production faster and easier. The menu displays the functions available and prompts the user with single letter or symbol commands. Graphic parameters *(size, position, border width, hue, opacity, etc.)* are given numerical values so artwork procedures can be repeated precisely.

Independent control of hue, saturation and luminance means you can create virtually any color in the spectrum. Frequently used colors for borders, mattes, drop shadows, and key fills can be stored and recalled quickly from an on-screen palette. Colors can also be chosen directly from the image for an exact match, or for modification and/or re-creation.

To produce composite graphics, a video-image, or any portion of it — can be "cut" from one frame and "pasted" or keyed into

another. A symmetrical area can be quickly defined and cut using one of the geometric "masks" provided. The artist can use a circle, diamond or rectangle (each with variable control of the X and Y axis) for an unlimited variety of geometric outlines.

For cutting out irregular shapes, the system operates in a unique "scissors" mode. The signal from a copystand camera is used here as the cutting information (or key signal) between two stills.

Internal chrominance and linear luminance keyers are built in. Stored images of logos or other line art can be used with the luminance keyer as a tool to create graphics. And the chroma keyer can be used to key out any color in a background still so the foreground art can "show through."

And because all work is done in the digital domain, it's all first generation quality. The multiple-generation image degradation common to graphics systems dependent on outboard switchers and other external equipment is non-existent.

Four keyboard-selectable input ports are available: two CCIR-601 ports, plus one RGB and one composite analog port.
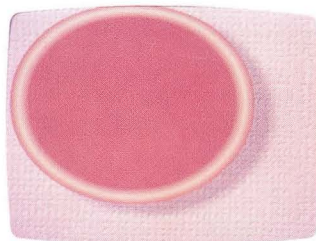
Up to four output ports are also available, each with CCIR-601, RGB and composite analog capability.



A texture stat is loaded into the ESS from a camera stand.
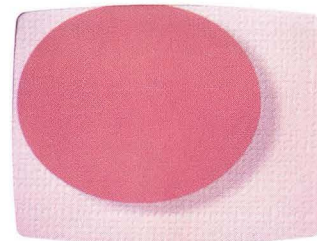


Using a luminance key, the texture is colored and embossed; the first layer of the picture frame and shadow is pasted into place.



2nd and 3rd layer of the frame are added, using soft edges.



The lighthouse is grabbed from the camera stand, moved into position and reduced in size, and then pasted into the frame. The colored border is likewise pasted into place.



Using scissors mode, the leaves are grabbed from the camera stand and inserted over lighthouse; the low opacity shadow behind the leaves was added using a luminance key.



Titling, either from the internal character generator or an art card, is keyed into place and enhanced using cut-and-paste techniques. The shadow behind the title is blurred to create increased depth of field.



The completed graphic is cut-and-pasted into a full-screen frame built from the same texture as the background.



Using an effect while in playlist, the entire framed graphic is reduced in size with a key signal of the same proportion. Dissolves and wipes can take place within the reduced area.

# OVER THE SHOULDER STILLS ARE EASY WITH ESS™ AND YOU CAN EVEN GENERATE YOUR OWN TEXT



**ESS-3/ESS-5G**
TIMES BOLD
LUBALIN GRAPH
HELVETICA
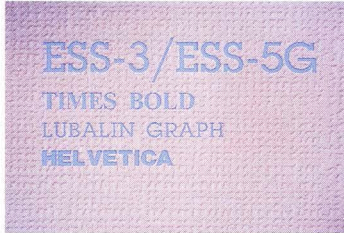
**Once fonts are scanned in, the artist can size, condense, extend, color, border, drop shadow, or even key video into them.**



**An optional optical disk storage device provides high-capacity, reliable archival storage for your valuable still images, video art and documents.**

HAVE YOU EVER KNOWN a character generator to be available when you needed it? And if one was it, of course, didn't have the typeface you wanted. Right?

**Now You Can Generate Your Own Characters**
The ESS system solves this problem by providing an anti-aliased text generation capability right within the system. It allows for the scan-in of custom fonts and symbols. Not only can you select your own typefaces, you can also size, condense, extend, color, border, drop shadow, and even key video into them. And since the individual characters are stored as video, not as data, no time-consuming font "cleaning-up" is required on the curves and diagonals.

**Over The Shoulder Stills are Easy with ESS**
What's so unique about ESS over-the-shoulder stills? The ESS system does them *without* a digital video effects unit. You can call up a still, compress it to size, then position it with, or without, a border to down-steam key into live video.

To further enhance your presentation, you can program your own cuts, wipes, and dissolves, right within the system. The system will even memorize up to 10 combinations (25 in the ESS-5 Series) of size, position, border and transition parameters so the stills in your playlists can be presented with the right combination of effects — at the touch of a single button.

The ESS Graphic Com-

position and Image Storage Systems: the ESS-3 Series; and the ESS-5 Series. They deliver graphics, keying and still-storage with superb video quality. What's more, the range of ESS systems lets you choose exactly the right one for your application, and your budget. And Ampex stands behind every one with worldwide customer support, training and service. Contact your nearest Ampex dealer or sales engineer for a demonstration.

**ESS will let you call up a still for the news, compress it, position it, and key it into live video with a few keystrokes, minimizing the equipment needed to get graphics on the air.**

# ESS-3

# GRAPHIC COMPOSITION AND STORAGE SYSTEM

The ESS ™-3 is an electronic image store/recall and graphics compose system designed for multiple-users who require simultaneous access to the system's image management, storage and compose functions. Its storage is expandable to 25000 NTSC video or 21250 PAL video images.

The system is used as a production and storage center for images required by television news, weather and graphics departments, as well as for the formulation of art cards and conceptual materials in large post-production facilities. Its *compose mode* offers the user a 10 color palette (with up to 16,000 colors), cut and paste, luma and chroma keying, scissors, text, grid, fuzz, and font-record.

The ESS-3 system's flexible user-station configuration (1 to 10 users) makes it ideal for large facilities where users desire to access the system from several different remote locations. System access by all ten users can be independent and virtually simultaneous.

A comprehensive *on-line cataloging* function which allows the user to store and recall images by ID number, alpha title, category and date is provided, as well as a *list management* system that allows lists to be viewed as text or represented by 1/16 size pictures.

Storage media for the ESS-3 varies, depending upon facility needs. For smaller capacity applications, the system uses a CDC 9710 removable drive capable of storing 100 NTSC or 80 PAL images per disk pack. Also available are the 340 Mbyte drive capable of storing 400 NTSC or 350 PAL images, and the 825 Mbyte drive capable of storing 1000 NTSC and 850 PAL. Each ESS-3 signal system can be expanded to access a combination of up to five of any of the above mentioned disk drives for a total of 25 disk drives. ESS-3 is pack-compatible with ESS-5 and ESS-5G, and with the Ampex AVA-3 Video Art system.

## Features

### COMPOSITION
- [ ] Internal palette for mattes, borders, key fills, character colors, etc.

- ☐ Chroma and linear luminance keyers
- ☐ Cut and paste with rectangle, circle, oval, or diamond shapes
- ☐ Scissors mode for cutting irregular shapes
- ☐ Variable compression and positioning
- ☐ Character generator with scan-in fonts
- ☐ Hard and soft edges for borders and image overlays
- ☐ Variable opacity of colors and image overlays
- ☐ Selective defocus
- ☐ Internal grid generator

## STORAGE/RECALL
- ☐ Frame grab or field grab with frame interpolation
- ☐ Cuts, and programmable dissolves and wipes
- ☐ Variable compression and positioning with key signal output
- ☐ On-line cataloging and search with ID #, category, and description
- ☐ On-line list building
- ☐ List editing in text or small-picture mode
- ☐ Browse stills 12 at a time

## ARCHITECTURE
- ☐ 4:2:2, 13.5 MHz component coding
- ☐ Composite input and composite and RGB outputs
- ☐ Up to 10 simultaneous users (with multiple signal systems)
- ☐ Fixed or removable media storage expandable to 25 disk drives
- ☐ Modular "framestore-on-a-board" design

### Accessories/Options/Media
- ☐ CDC 9710 removable cartridge drive
- ☐ CDC 9710 disk pack
- ☐ CDC 9710-340 fixed disk drive (340 Mbytes)
- ☐ CDC 9771 fixed disk drive (825 Mbytes)
- ☐ Size reducer/positioner
- ☐ Switcher/keyer
- ☐ Additional frame stores
- ☐ Additional outputs
- ☐ Remote Access Station (RAS)
- ☐ Composition Access Station (CAS)

## Specifications

| Power | 50/60 Hz AC, 90–130V or 180–260V |
|---|---|
| Video | 525/60 NTSC or 625/50 PAL |

**Inputs**

| Composite | IV p-p ± 3dB @ 75 ohms |
|---|---|
| Reference | Color black or composite video loop |

**Outputs (per channel)**

| Composite (2 each) | 1.0V p-p @ 75 ohms |
|---|---|
| RGB (1 connector each for R, G and B) | 0.7V p-p @ 75 ohms |
| Sync | 4.0V p-p @ 75 ohms |

**Signal Performance**

| Differential Phase | ≤1.0° |
|---|---|
| Differential Gain | ≤1.0% |
| Chroma Delay | ≤ ± 10 nS |
| K Factor (2T) | ≤1.0% |
| Frequency Response | 0 to 5.0 MHz ± 5dB |

**Image Storage**

| Image Size | NTSC = 786 Kbytes | PAL = 939 Kbytes |
|---|---|---|
| Access Time | | ≤0.8 sec |
| Drive Capacities | 525 | 625 |
| CDC RSD 80 | 101 images | 84 images |
| CDC FSD 160 | 207 images | 173 images |
| CDC FSD 340 | 433 images | 362 images |
| CDC FSD 515 | 609 images | 509 images |
| CDC FSD 800 | 1003 images | 839 images |

Specifications subject to change without notice or obligation.

▶ **ESS-3 Graphic Composition and Storage system block diagram**



Disk Drives

Video Outputs

Signal Systems

Central Controller

Video Input

Composition Access Station

Remote Access Station
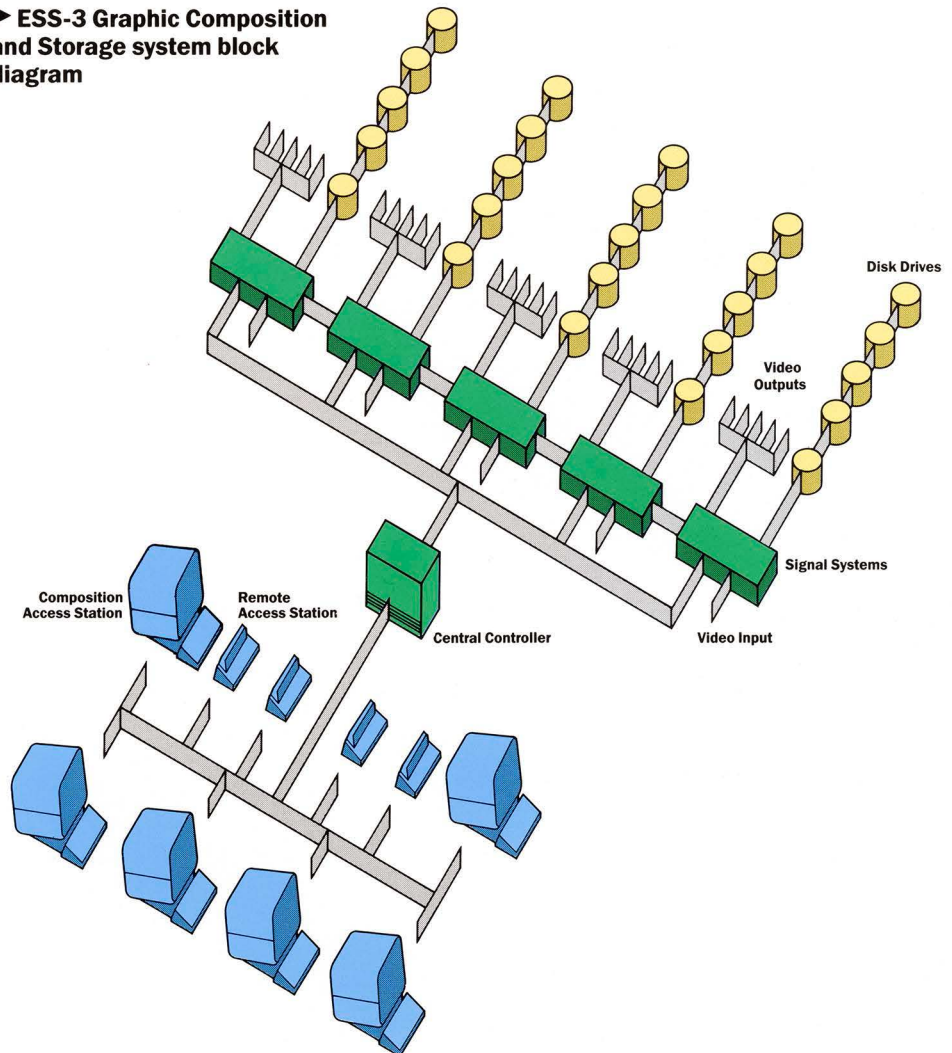
# ESS™ 5 Series GRAPHIC STORAGE, COMPOSITION AND RECALL SYSTEMS

## General

ESS-5 Series sytems are available in a variety of configurations to meet different needs and applications. Some features are common to all systems, while others are application-specific.

## Descriptions

The ESS-5S system is a low-cost, single channel, single user graphic storage and recall system for television news departments, post-production houses, or corporate video facilities with limited budgets. However, the ESS-5S can be upgraded to either ESS-5 or ESS-5G configuration.

The ESS-5 system is a single-user, *dual* channel system that can be upgraded to ESS-5G configuration.

In graphics composition applications, the single-user, dual-channel ESS-5G system can be used as a production workstation and storage center for images utilized by television news, weather and graph-ics departments. Post-production and corporate facilities also find it idea for conceptualizing, composing and storing video art images.

Storage media for all systems include a built-in 160 Mbyte Winchester disk drive capable of storing 200 NTSC or 160 PAL images. The SMD (storage module drive) standard drive controller is also capable of supporting four additional outboard drives to increase on-line storage capacity. Options include an internal tape streamer for backup, or optical disk drive for archiving.

## Networking

Although all ESS-5 Series products are basically single-user systems, a networking option allows two to five systems within a facility to access each other's libraries and exchange images. Networking allows high-speed access to any storage module attached to the system.

## Common Features

- [ ] 13.5 MHz 4:2:2 component sampling is maintained throughout for high-quality pictures
- [ ] Composite input
- [ ] Composite and RGB outputs
- [ ] Browse 12 stills at a time, 1/16 size pictures
- [ ] 1/16 size picture browse for building of play list in search mode
- [ ] List editing in text or small picture mode
- [ ] On-line cataloging functions by ID#, category, date and description
- [ ] Frame grab or field grab with frame interpolation
- [ ] Set-up of video parameters from keyboard
- [ ] System diagnostics via keyboard
- [ ] Compose access station (CAS)
- [ ] 160 megabyte internal disk drive
- [ ] Expandable with up to four outboard SMD disk drives, fixed or removeable media storage
- [ ] Printer port

## Accessories/Options/Media

*All Systems*

☐ Digital upgrade (CCIR-601/RGB)

☐ Graphics composition package (size reducer included)

☐ Backup tape streamer

☐ Remote access station (RAS)

☐ Standards conversion kits

☐ Optical disk storage (WORM)

☐ Variety of external Winchester drives available, ranging in size from 80 Mbyte removeable to 740 Mbyte fixed

*ESS-5S Only*

☐ Size reducer/positioner

☐ Switcher/keyer

☐ Additional output

☐ Composition access station

☐ Font pack, RSD 80 (NTSC or PAL)

☐ Font pack, tape streamer (NTSC or PAL)

☐ Analog component/digital I/O (required for Superblack output)

## Composition (ESS-5G)

☐ 10-color internal palette with choice of 16 million colors for mattes, borders, key fills, character colors, etc.

☐ Chroma and linear luminance keyer

☐ Cut and Paste with rectangles, circles, ovals or diamond shapes

☐ Scissors mode for cutting irregular shapes

☐ Variable compression and positioning

☐ Character generator with font scan-in capability

☐ Hard and soft edges for borders and image overlays

☐ Selective defocus

☐ Internal grid generator

## Specifications

| Power | 50/60 Hz AC, 90 – 130V or 180 – 260V |
|---|---|
| Video | 525/60 NTSC or 625/50 PAL |
| Inputs | |
| Composite | IVp-p ± 3dB @ 75 ohms |
| Reference | Color black or composite video loop |
| Outputs (per channel) | |
| Composite (2 each) | 1.0V p-p @ 75 ohms |
| RGB (1 connector each for R, G, and B) | 0.7V p-p @ 75 ohms |
| Sync | 4.0V p-p @ 75 ohms |

| Signal Performance | |
|---|---|
| Differential Phase | ≤2.0° |
| Differential Gain | ≤2.0% |
| Chroma Delay | ≤ ± 10 nS |
| K Factor (2T) | ≤ 1.0% |
| Frequency Response | 0 to 5.9 MHz ± 5dB |

Specifications subject to change without notice or obligation.

▶ **ESS-5 Graphic Storage and Recall system block diagram**

# ESS-5T

## GRAPHIC STORAGE AND RECALL SYSTEM FOR TELECINE APPLICATIONS

### General

The ESS™ 5T is a single-user, electronic image store and recall system designed espcially for film-to-tape transfer operations. However, it can fulfill the needs of any facility where the cost-effective cataloging and managing of large numbers of video images is important.

The ESS-5T system offers dual-standard (525- or 625-line) operation; changing from one standard to another is as simple as pressing a single key. One- and two-channel configurations are available.

Storage media include a built-in 160 Mbyte Winchester disk drive capable of storing 200 NTSC or 160 PAL images. The SMD (storage module drive) standard drive controller is also capable of supporting four additional outboard drives to increase on-line storage capacity. Options include an internal tape streamer for backup, or optical disk drive for archiving.

A comprehensive *on-line cataloging* function which allows the user to store and recall images by ID number, alpha title, category and date is provided. There is also a *list management* system that allows lists to be viewed as text or represented by 1/16 size pictures.

The ESS-5T system is pack-compatible with the ESS-5, ESS-5G and ESS-3 still store systems, and the AVA™ 3 video art system.

### Features

- [ ] 13.5 MHz 4:2:2 component sampling is maintained throughout for high-quality pictures
- [ ] RGB or CCIR-601 inputs
- [ ] RGB or CCIR-601 outputs
- [ ] Browse 12 stills at a time, 1/16 size pictures
- [ ] 1/16 size picture browse for building of play list in search mode
- [ ] Frame grab or field grab with frame interpolation
- [ ] Set-up of video parameters from keyboard
- [ ] System diagnostics via keyboard
- [ ] Compose Access Station (CAS)
- [ ] 160 Mbyte internal disk drive
- [ ] Expandable with up to four outboard SMD disk drives, fixed or removable media storage
- [ ] Printer port

## Accessories/Options/Media

- ☐ Graphics composition package (Size Reducer included)
- ☐ Backup streamer tape
- ☐ Remote Access Station (RAS)
- ☐ Optical disk backup
- ☐ Off-line library

## Specifications

Video
  Inputs
    Composite (NTSC, PAL) — 1.0 Vp-p ± 3 dB @ 75 ohms
    Component (RGB or YPrPb selectable) — 0.7 Vp-p ± 3 dB @ 75 ohms
    Digital (CCIR-601), two ports selectable
    Reference — Color black or composite video loop
  Outputs (per channel)
    Composite (NTSC, PAL; two each) — 1.0 Vp-p @ 75 ohms
    Component (RGB or YPrPb selectable) — 0.7 Vp-p @ 75 ohms
    Digital (CCIR-601)
    Sync — 4.0 Vp-p @ 75 ohms

Signal Performance (System Throughput)

| Parameter | Composite | RGB* | YPrPb* |
|---|---|---|---|
| Differential phase | 2 | — | — |
| Differential gain | 2% | — | — |
| Chroma delay | ± 10 nsec | — | — |
| K-factor | 2% | 2% | 2% |
| Frequency response | 0-5 MHz ± 0.5 dB | same | same |
| S/N (p-p to RMS) | 54 dB | 54 dB | 54 dB |

*Specifications for each channel are the same.

Specifications subject to change without notice or obligation.

### ▶ ESS-5T Graphic Storage and Recall system block diagram



Video Outputs
Disk Drives
Signal System
Video Input
User Station
Or
Remote Access Station

## AMPEX

# ESS-5T

## GRAPHIC STORAGE AND RECALL SYSTEM FOR TELECINE APPLICATIONS

**General**

The ESS™ 5T is a single-user, electronic image store and recall system designed espcially for film-to-tape transfer operations. However, it can fulfill the needs of any facility where the cost-effective cataloging and managing of large numbers of video images is important.

The ESS-5T system offers dual-standard (525- or 625-line) operation; changing from one standard to another is as simple as pressing a single key. One- and two-channel configurations are available.

Storage media include a built-in 160 Mbyte Winchester disk drive capable of storing 200 NTSC or 160 PAL images. The SMD (storage module drive) standard drive controller is also capable of supporting four additional outboard drives to increase on-line storage capacity. Options include an internal tape streamer for backup, or optical disk drive for archiving.

A comprehensive *on-line cataloging* function which allows the user to store and recall images by ID number, alpha title, category and date is provided. There is also a *list management* system that allows lists to be viewed as text or represented by 1/16 size pictures.

The ESS-5T system is pack-compatible with the ESS-5, ESS-5G and ESS-3 still store systems, and the AVA™ 3 video art system.

**Features**

- ☐ 13.5 MHz 4:2:2 component sampling is maintained throughout for high-quality pictures
- ☐ RGB or CCIR-601 inputs
- ☐ RGB or CCIR-601 outputs
- ☐ Browse 12 stills at a time, 1/16 size pictures
- ☐ 1/16 size picture browse for building of play list in search mode
- ☐ Frame grab or field grab with frame interpolation
- ☐ Set-up of video parameters from keyboard
- ☐ System diagnostics via keyboard
- ☐ Compose Access Station (CAS)
- ☐ 160 Mbyte internal disk drive
- ☐ Expandable with up to four outboard SMD disk drives, fixed or removable media storage
- ☐ Printer port

## Accessories/Options/Media

☐ Graphics composition package (Size Reducer included)
☐ Backup streamer tape
☐ Remote Access Station (RAS)
☐ Optical disk backup
☐ Off-line library

## Specifications

Video
  Inputs

| | |
|---|---|
| Composite (NTSC, PAL) | 1.0 Vp-p ± 3 dB @ 75 ohms |
| Component (RGB or YPrPb selectable) | 0.7 Vp-p ± 3 dB @ 75 ohms |
| Digital (CCIR-601), two ports selectable | |
| Reference | Color black or composite video loop |

  Outputs (per channel)

| | |
|---|---|
| Composite (NTSC, PAL; two each) | 1.0 Vp-p @ 75 ohms |
| Component (RGB or YPrPb selectable) | 0.7 Vp-p @ 75 ohms |
| Digital (CCIR-601) | |
| Sync | 4.0 Vp-p @ 75 ohms |

Signal Performance (System Throughput)

| Parameter | Composite | RGB* | YPrPb* |
|---|---|---|---|
| Differential phase | 2 | — | — |
| Differential gain | 2% | — | — |
| Chroma delay | ± 10 nsec | — | — |
| K-factor | 2% | 2% | 2% |
| Frequency response | 0-5 MHz ± 0.5 dB | same | same |
| S/N (p-p to RMS) | 54 dB | 54 dB | 54 dB |

*Specifications for each channel are the same.

Specifications subject to change without notice or obligation.

### ► ESS-5T Graphic Storage and Recall system block diagram



Disk Drives

Video Outputs

Signal System

Video Input

User Station

Or

Remote Access Station

**AMPEX**

# ESS-5G

## GRAPHIC STORAGE AND STORAGE SYSTEM

ESS™-5G is a single-user, electronic image store/recall and graphics compose system. It is designed to be used as a production workstation and storage center for images utilized by television news, weather and graphics departments, as well as for the formulation of art cards and conceptual materials in post-production facilities. The ESS-5G system's compact size, optional removable disk media, and streamer tape make it ideal for broadcasters, post-production houses, or corporate video facilities.

Storage media includes a built-in 160 Mbyte Winchester disk drive capable of storing 200 NTSC or 160 PAL images. The SMD standard drive controller is also capable of supporting four additional outboard drives to increase on-line storage capacity. An optional internal tape streamer for hard disk back-up is available.

A comprehensive *on-line cataloging* function which allows the user to store and recall images by ID number, alpha title, category and date is provided, as well as a *list management* system that allows lists to be viewed as text or represented by 1/16 size pictures.

The ESS-5G system's *compose mode* offers the user a 10 color palette with a choice of 16 million colors, cut and paste, luma and chroma keying, scissors, text, grid, defocus, and font-record (text generation).

The ESS-5G system is pack-compatible with ESS-5 and ESS-3 systems, and with the Ampex AVA-3 Video Art system.

### Features

- ☐ 13.5 MHz 4:2:2 component sampling is maintained throughout for high quality pictures
- ☐ Composite input
- ☐ Composite and RGB outputs
- ☐ Modular "framestore-on-a-board" design
- ☐ Browse 12 stills at a time, 1/16 size pictures
- ☐ 1/16 size picture browse for building of play list in search mode
- ☐ List editing in text or small picture mode

- ☐ On line cataloging functions by ID#, category, date and description
- ☐ Frame grab or field grab with frame interpolation
- ☐ Preview/Program or dual channel operation
- ☐ Programmable cuts, wipes, and dissolves
- ☐ Set-up of video parameters from keyboard
- ☐ System diagnostics via keyboard
- ☐ Menu monitor
- ☐ Compose Access Station
- ☐ 160 Mbyte internal disk drive
- ☐ Expandable with up to 4 outboard SMD disk drives, fixed or removable media storage
- ☐ Printer port

## Composition

- ☐ Internal palette for mattes, borders, key fills, character colors, etc.
- ☐ Chroma and linear luminance keyer
- ☐ Cut and Paste with rectangles, circles, ovals, or diamond shapes
- ☐ Scissors mode for cutting irregular shapes
- ☐ Variable compression and positioning
- ☐ Character generator with font scan-in capability
- ☐ Hard and soft edges for borders and image overlays
- ☐ Selective defocus
- ☐ Internal grid generator

## Accessories/Options Media

- ☐ Graphics composition package (Size Reducer included)
- ☐ Backup tape streamer
- ☐ Remote Access Station (RAS)
- ☐ Standards conversion kits
- ☐ CDC 9710 removable cartridge drive (80 Mbytes)
- ☐ CDC 9710 disk pack
- ☐ CDC 9715 fixed disk drive (340 Mbytes)
- ☐ CDC 9771 fixed disk drive (825 Mbytes)

## Specifications

| | |
|---|---|
| Power | 50/60 Hz AC, 90 – 130V or 180 – 260V |
| Video | 525/60 NTSC or 625/50 PAL |
| Inputs | |
| Composite | IVp-p ± 3dB @ 75 ohms |
| Reference | Color black or composite video loop |
| Outputs (per channel) | |
| Composite (2 each) | 1.0V p-p @ 75 ohms |
| RGB (1 connector each for R, G, and B) | 0.7V p-p @ 75 ohms |
| Sync | 4.0V p-p @ 75 ohms |

| Signal Performance | |
|---|---|
| Differential Phase | ≤ 2.0° |
| Differential Gain | ≤ 2.0% |
| Chroma Delay | ≤ ± 10 nS |
| K Factor (2T) | ≤ 1.0% |
| Frequency Response | 0 to 5.9 MHz ± 5dB |

| Image Storage | | |
|---|---|---|
| Image Size | NTSC = 786 kbytes | PAL = 939 kbytes |
| Access Time | | ≤ 0.8 sec |
| Drive Capacities | 525 | 625 |
| CDC RSD80 | 101 images | 84 images |
| CDC FSD160 | 207 images | 173 images |
| CDC FSD 340 | 433 images | 362 images |
| CDC FSD 515 | 609 images | 509 images |
| CDC FSD 800 | 1003 images | 839 images |

Specifications subject to change without notice or obligation.

▶ **ESS-5G Graphic Composition and Image Storage system block diagram**



Disk Drives

Video Outputs

Signal System

Video Input

Composition Access Station

Remote Access Station

# ESS-5S

# GRAPHIC STORAGE AND RECALL SYSTEM
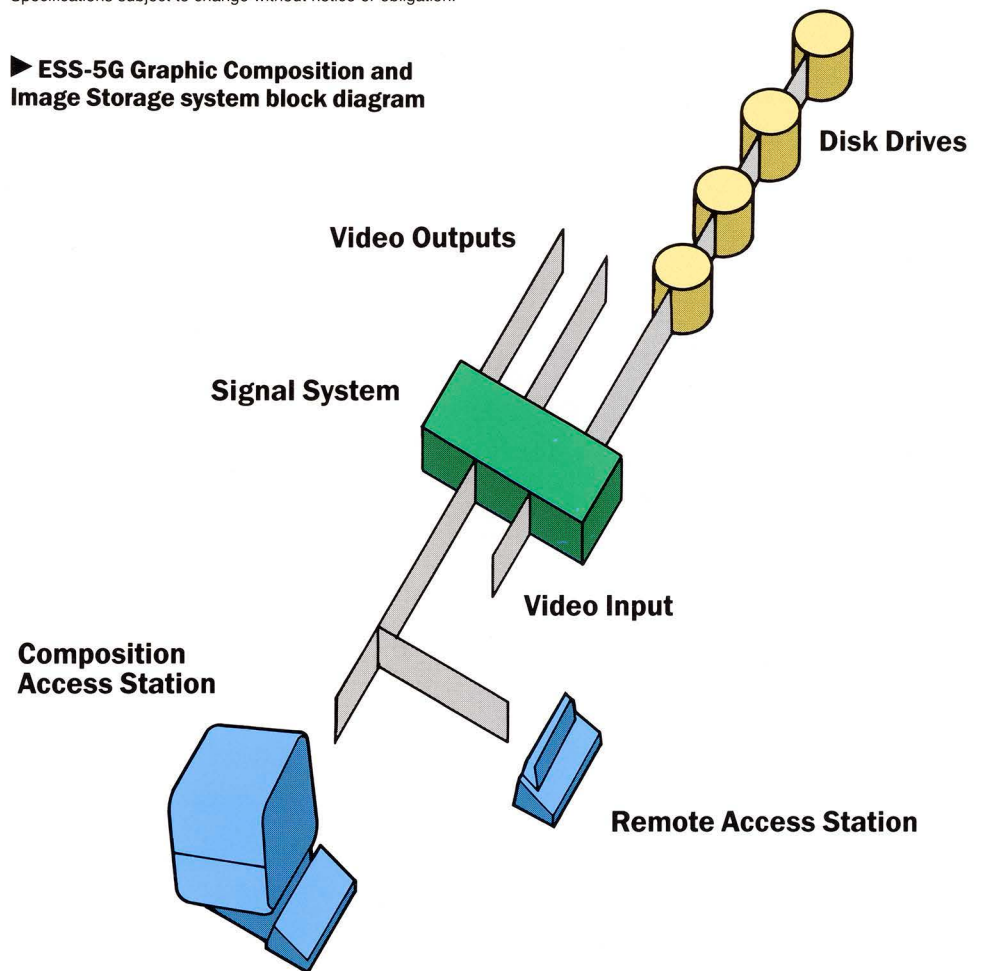
ESS™ 5S is a low cost, single channel, single-user, electronic image store and recall system designed especially for television news departments. However, it can fulfill the needs of any facility where the cost-effective cataloging and managing of large numbers of video images is important. The ESS-5S system's compact size, optional removable disk media and streamer tape make it ideal for broadcasters, post-production houses, or corporate video facilities.

Storage media includes a built-in 160 Mbyte Winchester disk drive capable of storing 200 NTSC or 160 PAL images. The SMD standard drive controller is also capable of supporting four additional outboard drives to increase on-line storage capacity. An optional internal tape streamer for hard disk back-up is available.

A comprehensive *on-line cataloging* function which allows the user to store and recall images by ID number, alpha title, category and date is provided, as well as a *list management* system that allows lists to be viewed as text or represented by 1/16 size pictures.

The ESS-5S system is pack-compatible with ESS-5/5G, ESS-3, and with the Ampex AVA-3 Video Art system. The system is upgradeable to ESS-5 or ESS-5G configuration.

## Features

- [ ] 13.5 MHz 4:2:2 component sampling is maintained throughout for high quality pictures
- [ ] Composite input
- [ ] Composite and RGB outputs
- [ ] Modular "framestore-on-a-board" design
- [ ] Browse 12 stills at a time, 1/16 size pictures

- [ ] 1/16 size picture browse for building of play list in search mode
- [ ] List editing in text or small picture mode
- [ ] Frame grab or field grab with frame interpolation
- [ ] Set-up of video parameters from keyboard
- [ ] System diagnostics via keyboard
- [ ] Compose Access Station (CAS)
- [ ] 160 Mbyte internal disk drive
- [ ] Expandable with up to 4 outboard SMD disk drives, fixed or removable media storage
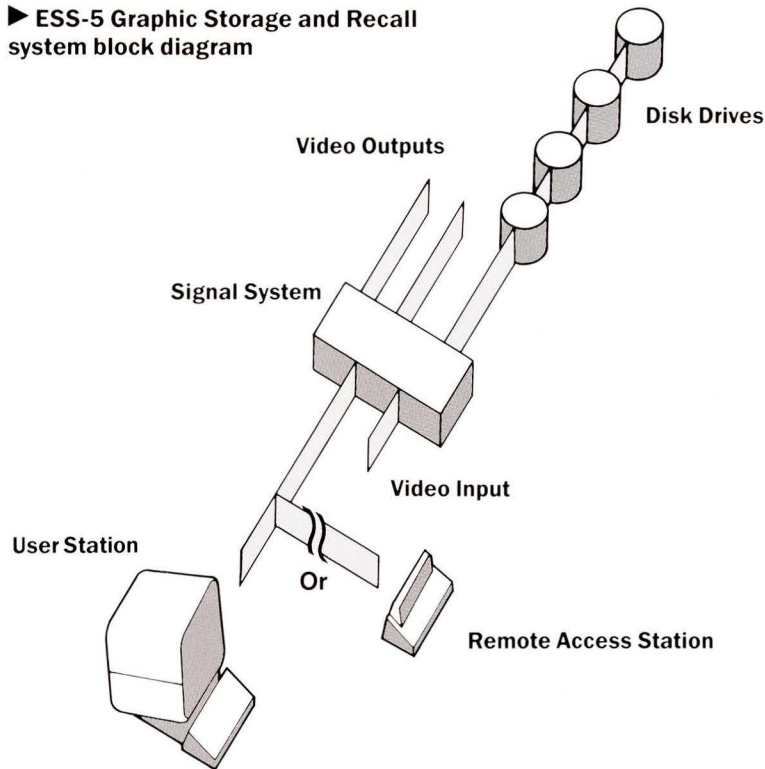- [ ] Printer Port
- [ ] Auto Sequencing; List-N-List

## Accessories/Options/Media

- [ ] Graphics composition package
- [ ] Backup streamer tape
- [ ] Remote Access Station (RAS)
- [ ] Standards conversion kits
- [ ] CDC 9710 removable cartridge drive (80 Mbytes)
- [ ] CDC 9710 disk pack
- [ ] CDC 9715 fixed disk drive (340 Mbytes)
- [ ] CDC 9771 fixed disk drive (825 Mbytes)
- [ ] Size Reducer/Positioner
- [ ] Switcher/Keyer
- [ ] Additional Output
- [ ] Additional Framestore
- [ ] Composition Access Station
- [ ] Font Pack, RSD 80 (NTSC or PAL)
- [ ] Font Pack, Tape Streamer (NTSC or PAL)
- [ ] Analog Component/Digital I/O (Required for Superblack output)

## Specifications

| Power | 50/60 Hz AC, 90 – 130V or 180 – 260V |
|---|---|
| Video | 525/60 NTSC or 625/50 PAL |
| Inputs | |
| Composite | IVp-p $\pm$ 3dB @ 75 ohms |
| Reference | Color black or composite video loop |
| Outputs (per channel) | |
| Composite (2 each) | 1.0V p-p @ 75 ohms |
| RGB (1 connector each for R, G, and B) | 0.7V p-p @ 75 ohms |
| Sync | 4.0V p-p @ 75 ohms |

| Signal Performance | |
|---|---|
| Differential Phase | $\leq 2.0°$ |
| Differential Gain | $\leq 2.0\%$ |
| Chroma Delay | $\leq \pm 10$ nS |
| K Factor (2T) | $\leq 1.0\%$ |
| Frequency Response | 0 to 5.9 MHz $\pm$ 5dB |

| Image Storage | | |
|---|---|---|
| Image Size | NTSC = 786 kbytes | PAL = 939 kbytes |
| Access Time | | $\leq 0.8$ sec |
| Drive Capacities | 525 | 625 |
| CDC RSD80 | 101 images | 84 images |
| CDC FSD160 | 207 images | 173 images |
| CDC FSD 340 | 433 images | 362 images |
| CDC FSD 515 | 609 images | 509 images |
| CDC FSD 800 | 1003 images | 839 images |

Specifications subject to change without notice or obligation.

▶ **ESS-5 Graphic Storage and Recall system block diagram**

Disk Drives

Video Outputs

Signal System

Video Input

User Station

Or

Remote Access Station

## AMPEX

# OPTICAL DISK STORAGE DEVICE

### General

The Ampex Optical Disk Storage Device provides reliable archival storage for video images created on a number of graphics products and systems. It is particularly useful for off-line storage of video art, slide images and documents that may be needed in the future.
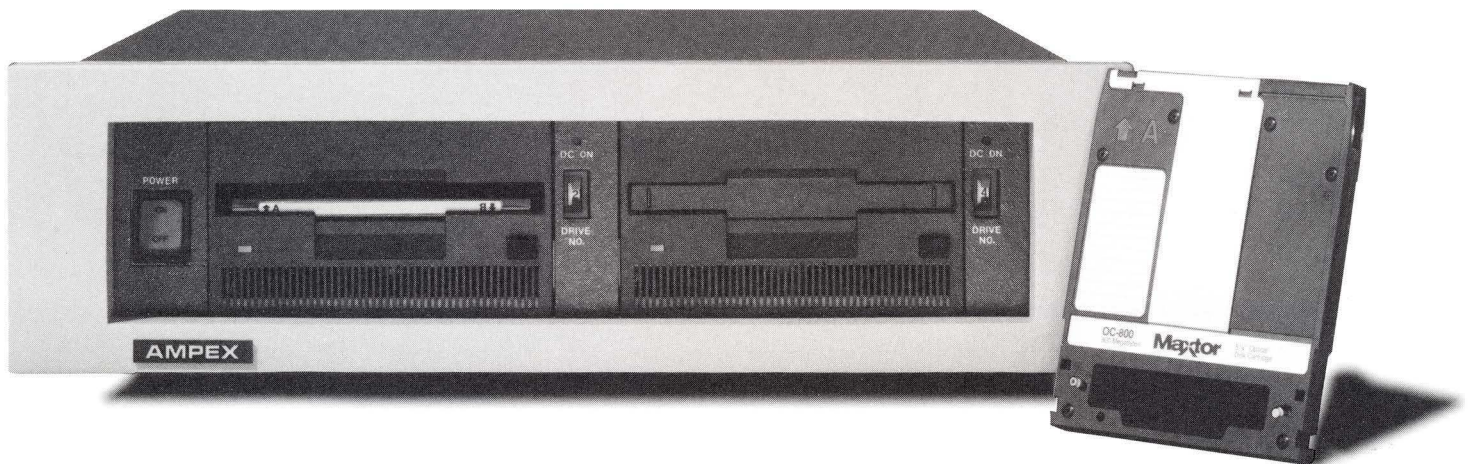


### Media

The optical disk storage system uses dual-sided 5¼-inch optical disks with a capacity of 800 megabytes of digitized information. Each image is recorded on disk in component digital format for optimum quality. Stored images require different amounts of storage capacity depending on their content, but in general over 800 images can be stored on a single disk. Proper cataloging of each disk allows rapid retrieval of images. Archival life of the media is over ten years.

Removeable 5¼-inch disks are protected by a durable plastic cover, and can be stored under any reasonable conditions of temperature and humidity.

### Disk Drives

In the Ampex optical disk system, the drive uses a constant linear velocity (CLV) recording method for superior data storage capacity. Large-scale integration (LSI) circuitry is used to provide maximum functionality and reliability at minimum cost. A low-power, solid-state laser coupled with the dry film, write-once media ensures reliability of the recorded data.

Both dual-drive and single-drive units are available. Depending on the controlling system that the optical disk unit will be used with, there may be restrictions as to which type may be used. Your Ampex sales engineer can provide further information.

## Key Features

☐ Uses front loading, removable, double-sided write-once media offering 800 megabytes of formatted user storage capacity.

☐ Constant Linear Velocity (CLV) recording method offers superior data capacity.

☐ Low-power solid state laser, coupled with dye-film write-once media, insures reliable operation.

☐ Extended LSI circuitry offers maximum function and reliability for minimum cost.

☐ Media release controlled from software.

## Specifications

### DRIVE PERFORMANCE SPECIFICATIONS

| | |
|---|---|
| Capacity formatted | 800 Mbytes (2048 Byte sectors/400 Mbytes per side) |
| Maximum SCSI bus transfer rate | 1.25 Mbytes/sec |
| Seek *time, msec. | |
|    Average | 108 |
|    Track to track | 4 |
|    Maximum | 324 |

### DRIVE FUNCTIONAL SPECIFICATIONS

| | |
|---|---|
| Rotational speed | 334-668 rps |
| Average latency | 60.0 |
| Recording density | 30,200 bpi |
| Track density | 15,900 tpi |
| Recording method | Spiral track, constant linear velocity |

### PHYSICAL SPECIFICATIONS

| | |
|---|---|
| Ambient temperature | 10°-45°C (41°-113°F) |
| Relative humidity | 8% to 80% with a maximum gradient of 10% per hour, non-condensing |
| Heat dissipation | 30 Watts (Maximum) |

### RELIABILITY SPECIFICATION

| | |
|---|---|
| MTBF | 30,000 POH, Typical duty cycle |
| PM | Not required |
| MTTR | 30 minutes |
| Component design life | Over 5 years |
| Media archival life | Over 10 years |

### MEDIA CARTRIDGE SPECIFICATION

| | |
|---|---|
| Disk size | 5.12 in. (130.0mm) |
| Sensitive Layer material | Dye-film, spin coated |
| Disk Structure | Air sandwich |
| Archival life | > 10 years |
| Write method | Thermal ablation (write once) |

Specifications subject to change without notice or obligation.

## AMPEX

# TEN GOOD REASONS TO BUY AN ESS SYSTEM

**1 — Quality**
4:2:2 digital processing and image storage provides superb picture quality regardless of the number of layers.

**2 — Human Interface**
Menu-driven system with soft keys and trackball operation increases operator efficiency. Uncomplicated menus allow artist to concentrate on creativity.

**3 — Flexibility**
Composite and/or component analog, and component digital inputs and outputs support numerous types of equipment.

**4 — Functionality**
Keyboard control of setup parameters, I/O ports and tape or disk storage systems.

**5 — On-line Cataloging**
Build your playlist and search for stills by alpha title, still number, category, date, or multi-picture mode.

**6 — Adaptability**
Single and dual-channel systems available for one to ten users.

**7 — System integration**
Images are pack-compatible with the AVA-3 video art system.

**8 — Upgradeability**
Single-channel, single user ESS-5S system can be upgraded to two-channel ESS-5; or ESS-5G with graphics compose capability; or ESS-5T for telecine applications. ESS-3 systems can be expanded for additional users (up to ten) and additional storage capacity.
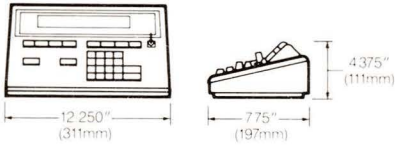
**9 — After-sale Support**
Ampex provides manuals, operator and maintenance training, field service, factory spares, and technical support for all systems.
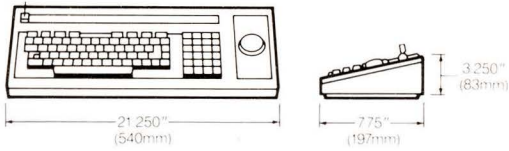
**10 — Return on Investment**
Choice of configurations provides the exact system you need; ease of operation enhances revenue-generating potential; upgradeability protects your investment by extending useful life.
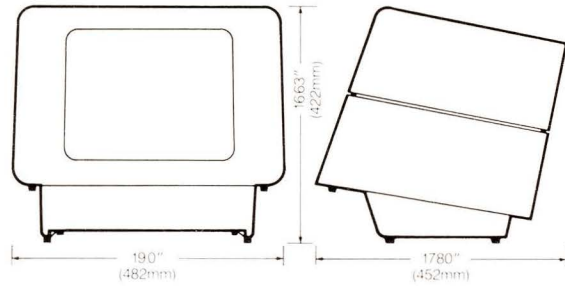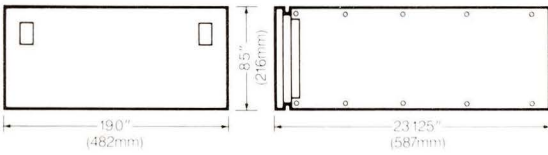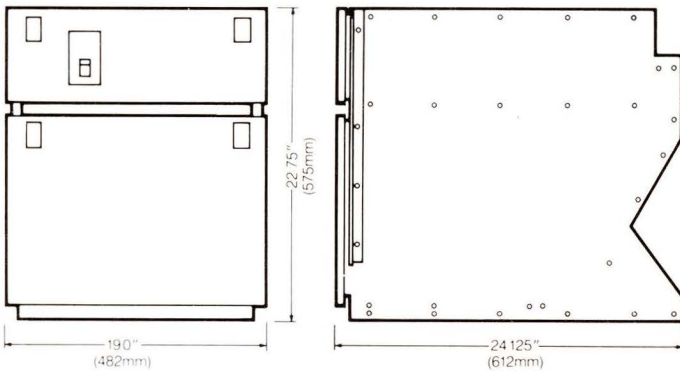
## Remote Access Station



12.250" (311mm) · 4.375" (111mm) · 7.75" (197mm)

## Composition Access Station



21.250" (540mm) · 3.250" (83mm) · 7.75" (197mm)

## Menu Monitor



16.63" (422mm) · 19.0" (482mm) · 17.80" (452mm)

## Central Controller



8.5" (216mm) · 19.0" (482mm) · 23.125" (587mm)

## Signal System



22.75" (575mm) · 19.0" (482mm) · 24.125" (612mm)

## CDC 9715 Disk Drive



30.64" (780mm) · 1.25" (32mm) · 1.0" (25mm) · 10.2" (260mm) · .06" (1.5mm)

## CDC 9771 825 MB Drive



10.3" (262mm) · 18.9" (480mm) · 32.1" (815mm)

---

---

# AMPEX

# ESS-3

## THE STILL STORE SYSTEM
## WITH AN EMPHASIS ON
## IMAGINATIVE PRODUCTION



**AMPEX**

# THE ESS-3 STILL STORE: NO SINGLE PIECE OF EQUIPMENT COULD HAVE MORE IMPACT ON YOUR LOOK.

**Everyone knows a still store will solve all the problems you've ever had storing and retrieving 35mm slide graphics. But that's only part of the story of the new ESS-3.**

I t takes a unique graphics look to stand out in today's world of high powered news production and the ESS-3 gives you the creative tools to do it—faster, easier,

and with the signal quality you get only from Ampex.

The ESS-3 also combines the benefits of multiple user capability, modular architecture and expandable storage to bring you a still store system that will grow as your needs do.

In creating artwork, the ESS-3 has versatile features you won't find anywhere else. You can cut, paste, compose and layer pieces of still video endlessly with no loss of video fidelity. You can even scan in your *own* typefaces, then resize, compress, color and drop shadow to achieve your own original look.

The cataloging system in the ESS-3 lets you identify your stills much more accurately than other systems, while the multi-image browse feature makes retrieval and editing effortless.

On its own, the ESS-3 does just about anything an artist or a TD would ever want. Its ability to interface with other equipment, however, is a feature engineers will appreciate. The ESS-3 will interface with other Ampex products of course, but it is also designed to integrate easily into systems using other manufacturers' equipment.

So if you're looking for a way to liven up your on-air look, with graphics production that's fast and fun, read on. The ESS-3 was designed for you.

**System Architecture and Control: The basic fundamentals that define a better still store.**

B asically speaking, the ESS-3 digitizes freeze-frames as component coded signals: Y, R-Y, and B-Y. Based on 13.5 MHz 4-2-2 component coding, the ESS-3 provides both unparalleled image fidelity, and a format that's become the recognized international standard for digital video products.

Once digitized, the still is stored on one of two types of standard SMD disk drives. For smaller capacity applications, the ESS-3 uses a CDC 9710 removable drive capable of storing 100 NTSC or 80 PAL stills per disk pack. With the Ampex 825 fixed media drive the ESS-3 will store up to 1000 NTSC or 850 PAL stills. And with the addition of a drive multiplexer, each ESS-3 signal system can be expanded to access a combination of up to 5 of either type of disk drives.

ESS-3's modular design allows you to start with a small system and expand it as your needs grow. Cost-effective "framestore-on-a-board" design makes upgrading system capability easy. Each signal system is designed to accommodate up to 6 frame-stores and 5 outputs. If more outputs are required, up to 5 ESS-3 signal systems can be networked as shown in the

**The Composition Access Station's keyboard features eight menu based softkeys that make art production a breeze. The CAS is shown here with the Central Controller, Signal System and optional monitor.**

The ESS-3 can store up to 1000 stills on the Ampex 825 fixed media drive—or up to 100 stills on the CDC 9710 removable disk pack.
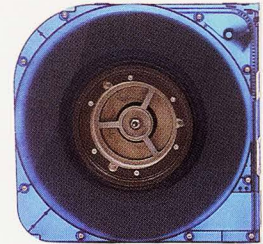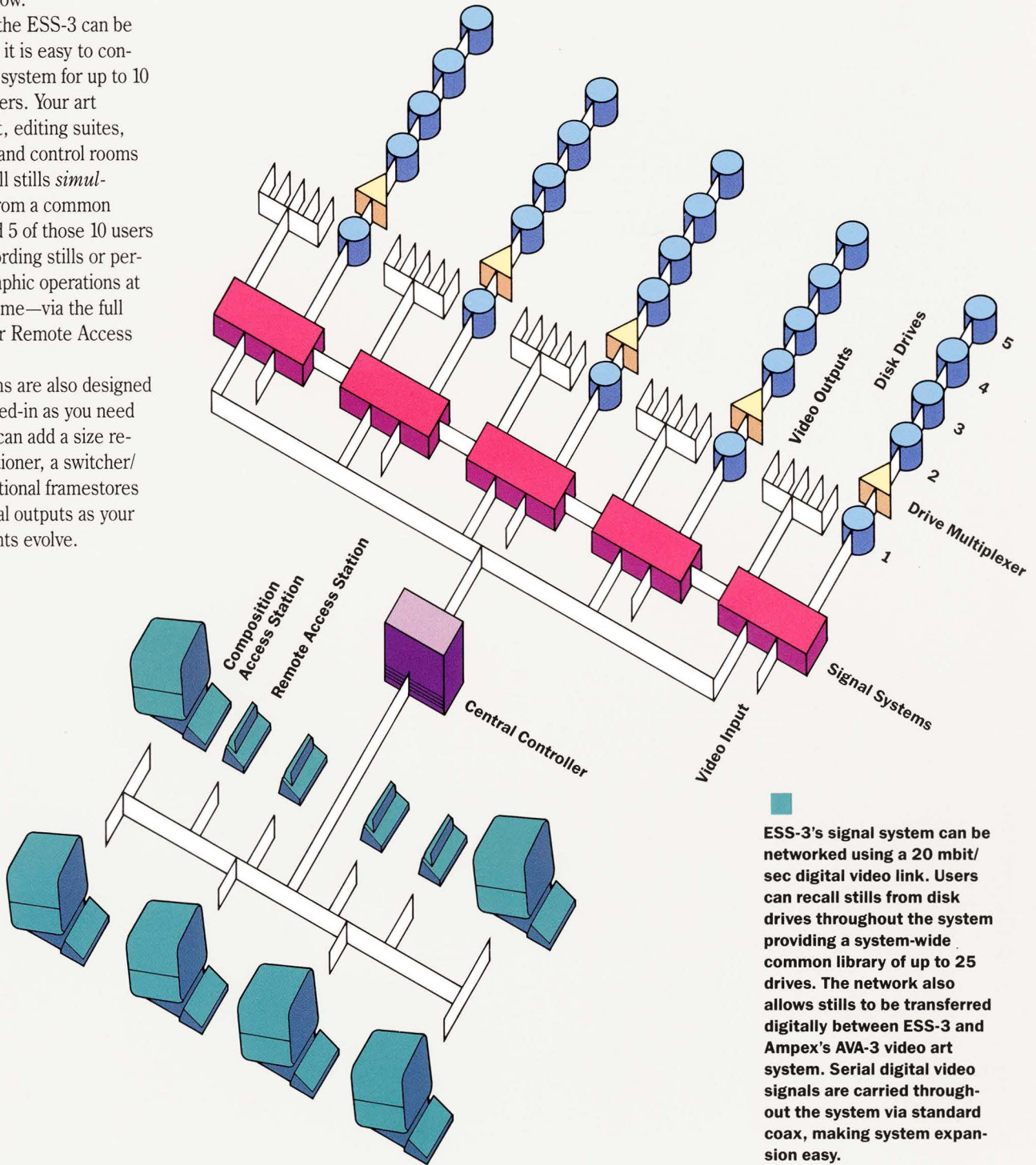
diagram below.

Since the ESS-3 can be networked, it is easy to configure your system for up to 10 multiple-users. Your art department, editing suites, newsroom and control rooms can all recall stills *simultaneously* from a common library. And 5 of those 10 users can be recording stills or performing graphic operations at the same time—via the full keyboard or Remote Access Station.

Options are also designed to be plugged-in as you need them. You can add a size reducer/positioner, a switcher/keyer, additional framestores or additional outputs as your requirements evolve.

Video Outputs

Disk Drives

5

4

3

2

Drive Multiplexer

1

Signal Systems

Composition Access Station

Remote Access Station

Central Controller

Video Input

ESS-3's signal system can be networked using a 20 mbit/sec digital video link. Users can recall stills from disk drives throughout the system providing a system-wide common library of up to 25 drives. The network also allows stills to be transferred digitally between ESS-3 and Ampex's AVA-3 video art system. Serial digital video signals are carried throughout the system via standard coax, making system expansion easy.

# IF PROVIDING ARTWORK AT HYPERSPEED IS ONE OF YOUR RESPONSIBILITIES YOU'LL LOVE THE CREATIVE POWER OF THE ESS-3.



You can review random stills or your entire library 12 at a time with the unique multi-image browse feature.

## Artist Friendly Storage and Retrieval

The ESS-3 is one technological tool that doesn't take an engineering degree to operate. It was designed to help an artist, not confuse him. So it stores and retrieves stills effortlessly and efficiently.

The system allows the user to preview live video and grab either a frame or a field and store it away. If a field is grabbed, ESS-3 will interpolate to provide a frame-quality still with no flicker.

If you've spent any time locating and editing stills, you know how important an accurate description is. Every still needs a title that will help you find it once it's been

stored. "Olympics" won't cut it if there are stills from several different events in your library.

The ESS-3 provides for up to 40 characters of description, along with a 30 character category designation. You can search for stills by category, description or key words within the description. On the menu screen recall by cursor allows fast retrieval, without having to enter the title.

The ESS-3's unique multi-image browse feature lets you display 12 stills simultaneously on your monitor. Random stills can be assembled into a list and viewed in this small picture format, or your entire on-line catalog can be reviewed, 12 images at a time. This combination of multi-image viewing and cur-

sor recall makes editing and building playlists quick and easy. The ESS-3 will even drive a printer, providing a hard copy of your lists.

The ESS-3's Remote Access Station is designed to play your preassembled list of stills. A group of eight keys controls the various playback functions. Two outputs are provided: one for preview and the other for on-air. If you'd like to feed two crosspoints on your switcher, the RAS can control 2 channels independently. Interrupting a playlist for a last minute edit is also possible on the RAS; a bright fluorescent display is built-in so you won't need a menu monitor. The system can also be configured to enable you to record stills from the Remote Access Station.

Video graphics, especially for news presentation, usually require fast turnaround in the art deparment. If you're stuck with a slow moving, hard to operate system—and have to wait in line to get on it—you've got two choices: produce artwork that's not up to your standards, or miss a broadcast.

On the ESS-3, the graphic processes are designed to be fast and effortless. This leaves you time to concentrate on what's really important, the creative.

Graphic art production is done on the Composition Access Station (CAS). This full keyboard features eight menu based softkeys that make art production a breeze. The monitor displays the functions that
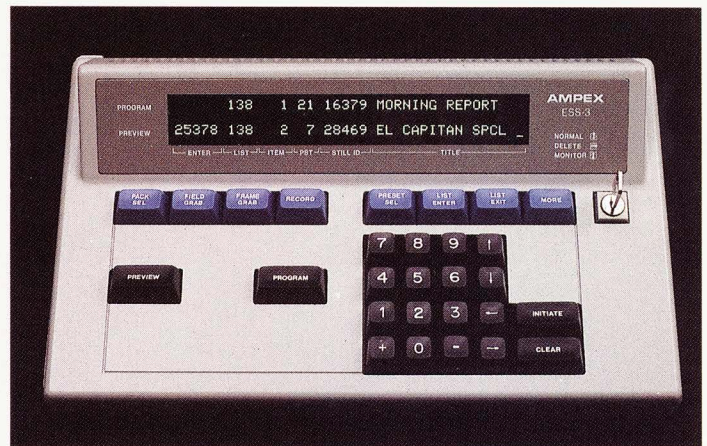


Various record and playback functions can be controlled from the Remote Access Station— and a bright fluorescent display is built-in, so you won't need a menu monitor.

can be selected and prompts the user with single letter or symbol commands. Graphic parameters *(size, position, border width, hue, opacity, etc.)* are given numerical values so artwork procedures can be repeated precisely, time after time.

Independent control of hue, saturation and luminance means you can create virtually any color in the spectrum. Frequently used colors for borders, mattes, drop shadows, and key fills can be stored and recalled quickly from an on-screen palette.

To produce composite graphics, a video image—or any portion of an it—can be "cut" from one frame and "pasted" or keyed onto another. A symmetrical area can be quickly defined and cut using one of the geometric "masks" provided. The artist can use a circle, diamond or rectangle, each with variable control of the X and Y axis for an unlimited variety of oval and geometric outlines.

For cutting out irregular shapes, the ESS-3 operates in a unique "scissors" mode. The signal from a copy-stand camera is used here as the cutting information, or key signal, between two stills.

ESS-3 also has internal luminance and chrominance keyers built in. Stills (i.e. stored images of logos or other line art) can be used with the luminance keyer as a tool to create graphics. And the chroma keyer can be used to key out any color in a foreground still so the background art can "show through".

Because all the work on an ESS-3 is done in the digital domain, it's all "first generation" quality. There is never the multiple generation image degradation common to graphics systems dependent on outboard switchers and other external equipment.

The ESS-3 performs many operations a paste-up artist only dreams about — and all in full color. On an ESS-3, the artist can reduce an image, or distort it by reducing its X or Y dimensions independently. Image edges with or without a border can be feathered for a vignette effect, or the overall image can be made slightly transparent so the artwork below shows through. Selective defocus allows an artist to soften elements within an image, focusing attention on a key personality or object in his composition. And border width, border color, edge softness, opacity and defocus are all fully controllable.

The ESS-3 also provides an internal grid generator with size and shape that's user definable. It's a great composition tool for positioning elements — or can be employed as a design element itself.
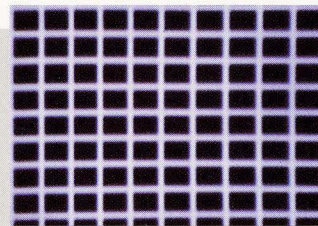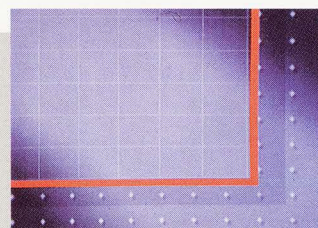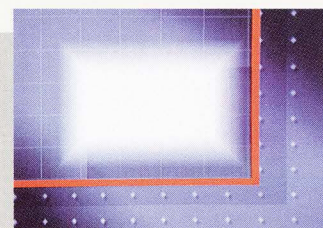


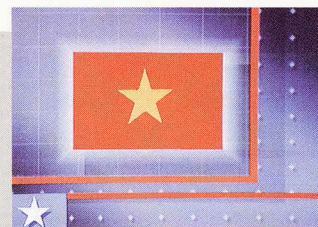**First a grid is generated on the system, and then it's defocused.**



**Used as a key signal, the grid is luminance keyed with a drop shadow onto a gradated background.**



**Through a series of three cut and paste operations black and red mattes and another grid are generated.**



**Through cut and paste a soft-edged panel is added in white from the palette.**



**The flag and red lines are cut and pasted from palette colors. The yellow star is chroma keyed, the white star luma keyed with drop shadow.**
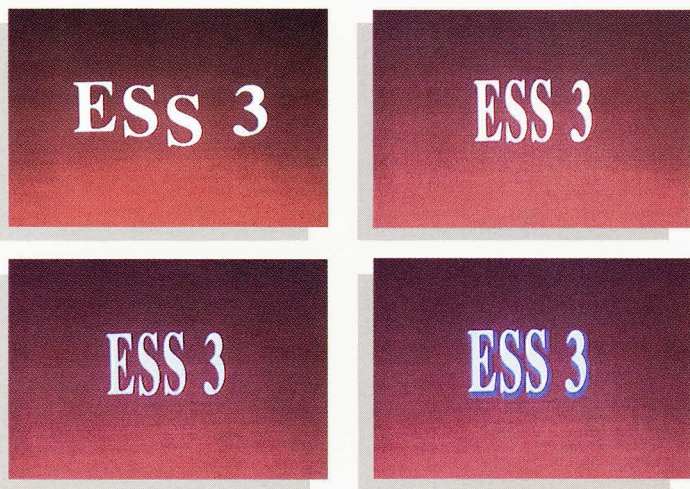


**The map is luma keyed with drop shadow.**



**The soldier is added using the ESS-3's "Scissors Mode."**



**The title is from a font that is scanned-in, then colored, outlined and drop shadowed by the system.**

News graphics courtesy of Cathy Galvin, Art Director, WHAS TV, Inc. Louisville, KY.

# OVER-THE-SHOULDER STILLS? EASY WITH ESS-3

So what's so unique about over-shoulder stills? The ESS-3 does them *without* a video effects unit. You can call up a still, compress it to size, then position it with a border to downstream key into live video—with no additional equipment.

To further enhance your presentation, you can program your own cuts, wipes, and dissolves, right within the system. The ESS-3 will even memorize up to 10 combinations of size, position, border and transition parameters so the stills in your playlists can be presented with the right combination of effects—at the touch of a single button.

If limited art production and 35mm slides are cramping your style, take a look at the new ESS-3. For more information on the ESS-3 still store system, contact your nearest Ampex sales office. It could be the best news your news has ever seen.

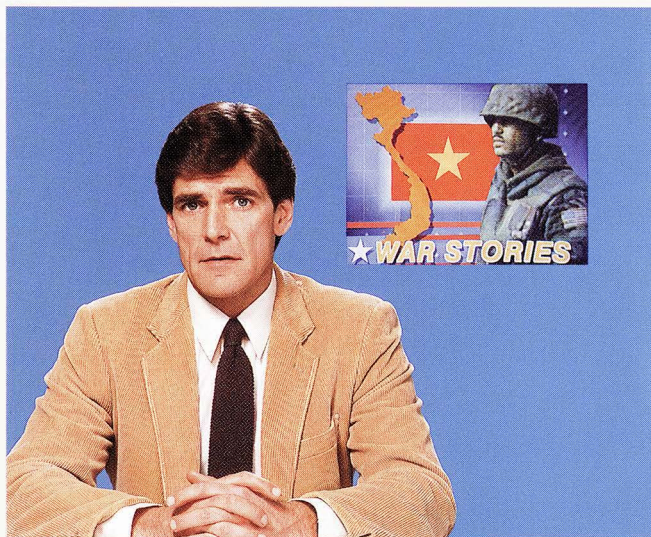# THE CHARACTER GENERATOR THAT LETS YOU GENERATE YOUR OWN CHARACTERS

Oftentimes a character generator is not accessible when you need to title a graphic. Even if one is, the typeface that you want may not be available. ESS-3 solved this problem by providing an anti-aliased quality character generator right within the system. It allows for the scan-in of custom fonts and symbols. Not only can the artist choose his own typefaces, he can size, condense, extend, color, border, drop shadow and even key video into them. And since the individual characters are stored as video, not data, no time-consuming font "clean-up" is required on the curves and diagonals.

With the ESS-3 you can call up a still, compress it, then position and key it into live video—with no additional equipment.

# FEATURE SUMMARY AND SPECIFICATIONS

### Composition

Internal palette for mattes, borders, key fills, character colors, etc.
Luminance and chroma keyers
Cut and paste with rectangle, circle, oval, or diamond shapes
Scissors mode for cutting irregular shapes
Variable compression and positioning
Character generator with scan-in fonts
Hard and soft edges for borders and image overlays
Variable opacity of colors and image overlays
Selective defocus
Internal grid generator

### Storage/Recall

Frame grab or field grab w/frame interpolation
Programmable cuts, dissolves and wipes
Variable compression and positioning w/ key signal output
On-line cataloging and search with ID#, category, and description
On-line list building
List editing in text or small-picture mode
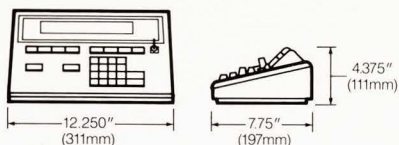Browse stills 12 at a time

### Architecture

4-2-2, 13.5MHz component coding
Composite and RGB inputs and outputs
Up to 10 simultaneous users
Fixed or removable media storage expandable to 25 disk drives
Modular "framestore-on-a-board" design
Digital video transfer between signal systems
Digital video transfer to AVA-3 art system
Pack interchangeability with AVA-3 art system
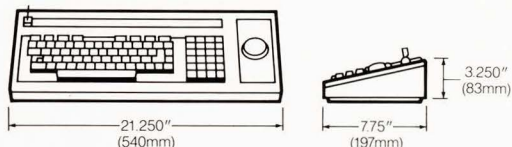
### Specifications

| | |
|---|---|
| Power | 50/60 Hz AC, 90–130V or 180–260V |
| Video | 525/60 NTSC or 625/50 PAL |
|    Input | Composite Video 1V p-p ±3dB @ 75 ohm |
|    Reference | Color black or composite video loop thru |
|    Outputs | 2 per channel |
| | 1V p-p ±3dB @ 75 ohm composite |
| | 0.7V p-p @ 75 ohm RGB |
|    Syn Output | 4V p-p @ 75 ohm |
| Signal Performance | |
|    Bandwidth Luminance | ±0.5dB to 5MHz, –1dB @ 5.3MHz |
|    Chroma | ±0.5dB to 1.4MHz, –1dB @ 1.7MHz |
|    Differential Phase | 1.0° |
|    Differential Gain | 1% |
| Storage | 0.8 Mbyte NTSC, 0.96 Mbyte PAL per frame |
| Access Time | 0.8 sec any full size still |
| Chroma Delay | 5ns |
| K Factor (2T) | |
|    Pulse to Bar | 1% |
|    Transient Response | 1% |
|    Bar K Factor | 1% |
| Frequency Response | 0–4.8MHz: ±0.25dB |
| | (–3.0dB or more @ 5.7 MHz) |

Specifications subject to change without notice or obligation.

### Remote Access Station



12.250" (311mm) · 7.75" (197mm) · 4.375" (111mm)

### Composition Access Station



21.250" (540mm) · 7.75" (197mm) · 3.250" (83mm)

### Menu Monitor



16.63" (422mm) · 19.0" (482mm) · 17.80" (452mm)

### Central Controller



8.5" (216mm) · 19.0" (482mm) · 23.125" (587mm)

### Signal System



22.75" (575mm) · 19.0" (482mm) · 24.125" (612mm)

### CDC 9710 Disk Drive



1.25" (32mm) · 30.64" (780mm) · 1.0" (25mm) · 10.2" (260mm) · .06" (1.5mm)
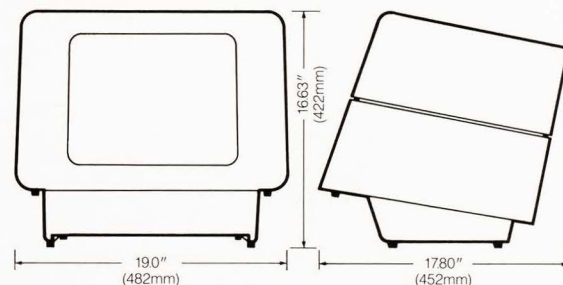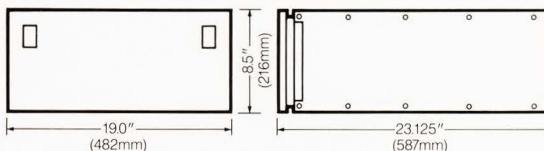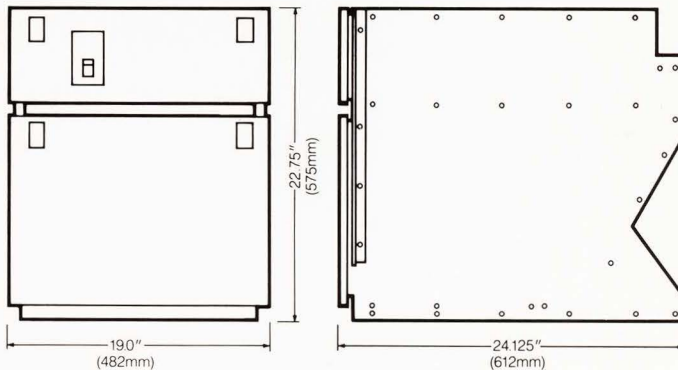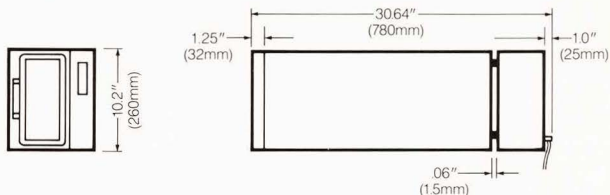
### Ampex 825 Winchester Drive



10.4" (264mm) · 18.8" (477.23mm) · 28" (710.7mm)
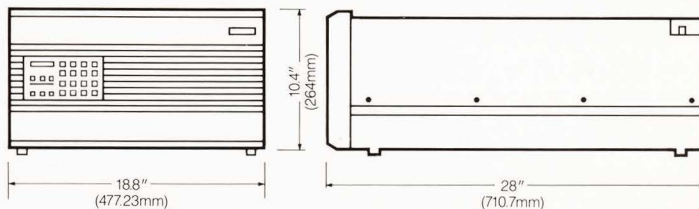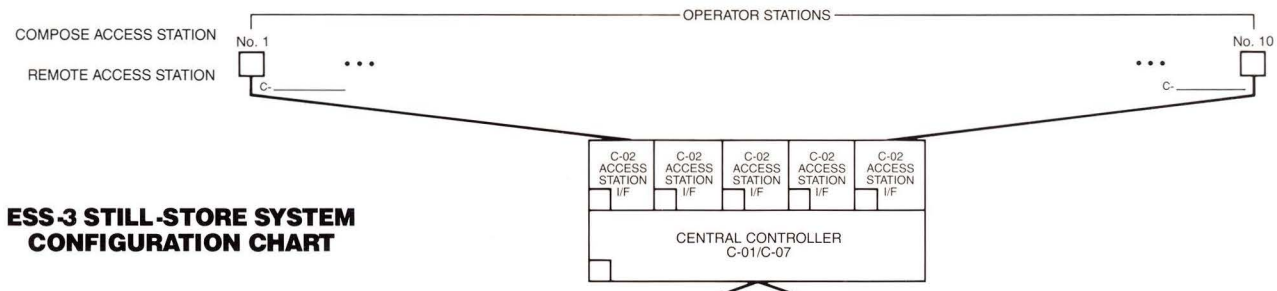
# ESS-3 STILL-STORE SYSTEM CONFIGURATION CHART

OPERATOR STATIONS

COMPOSE ACCESS STATION  No. 1 ... No. 10

REMOTE ACCESS STATION  C- ...  C-

C-02 ACCESS STATION I/F | C-02 ACCESS STATION I/F | C-02 ACCESS STATION I/F | C-02 ACCESS STATION I/F | C-02 ACCESS STATION I/F

CENTRAL CONTROLLER C-01/C-07

VIDEO INPUT

SIGNAL SYSTEM 1

VIDEO INPUT

SIGNAL SYSTEM 5

20 MEGABIT/SEC DIGITAL VIDEO LINKS FOR NETWORKING

DRIVE 1

DRIVE 2

DRIVE 5

DRIVE 1

DRIVE 2

DRIVE 5

**SIGNAL SYSTEM A-10/A-11**

B-03 FRAMESTORE CONTROLLER

B-03 FRAMESTORE CONTROLLER

B-10 AUXILIARY POWER SUPPLY

B-04 SIZE/REDUCER

D- DRIVE 1

D- DRIVE 2

D- DRIVE 3

D- DRIVE 4

D- DRIVE 5

VIDEO INPUT

B-06 FRAMESTORE 1A

B-06 FRAMESTORE 1B

B-06 FRAMESTORE 2A

B-06 FRAMESTORE 2B

B-06 FRAMESTORE 2C

B-06 FRAMESTORE 2D

B-05 SWITCHER/KEYER 1

B-05 SWITCHER/KEYER 2

B-01 OUTPUT A

B-01 OUTPUT B

B-01 OUTPUT C

B-01 OUTPUT D

B-01 OUTPUT E

B-09 OUTPUT CONNECTOR KIT

COMPOSITE  R G B  KEY OUT  COMPOSITE  R G B  COMPOSITE  R G B  KEY OUT  COMPOSITE  R G B  R G B  COMPOSITE

| | FRAMESTORES | | | | | | OUTPUTS | | | | | SWITCHER/KEYER | | SIZE/REDUCER | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1A | 1B | 2A | 2B | 2C | 2D | A | B | C | D | E | 1 | 2 | | | | |
| Record, Single Channel A Output | • | | | | | | • | | | | | | | | | | |
| Record, Single Channel A Output, Compose | • | • | | | | | • | | | | | | | • | | | |
| Single Channel B Output | | | • | | | | | • | | | | | | | | | |
| Single Channel C Output | | | | • | | | | | • | | | | | | | | |
| Single Channel D Output | | | | | • | | | | | • | | | | | | | |
| Single Channel E Output | | | | | | • | | | | | • | | | | | | |
| Dual Channel A/B Outputs | • | • | | | | | • | • | | | | | | | | | |
| Dual Channel B/C Outputs | | | • | • | | | • | • | | | | | | | | | |
| Dual Channel D/E Outputs | | | | | • | • | • | • | | | | | | | | | |
| Preview/Program A/B Outputs With Transitions | • | • | | | | | • | • | | | | • | | * | | | |
| Preview/Program B/C Outputs With Transitions | | | • | • | | | • | • | | | | • | | * | | | |
| Preview/Program D/E Outputs With Transitions | | | | | • | • | | | • | • | | | • | * | | | |

* Full screen transitions do not require size/reducer (B-04); Transitions between compressed/bordered stills requires size reducer (B-04).

# PROPOSAL GENERATOR WORKSHEET

Proposal No._____

| Code | Description | Item | Qty. | | |
|------|-------------|------|------|---|---|
| AA-01/AA-02 | 2 Channel, Single-User System (NTSC, PAL) | _____ | _____ | _____ | |
| AA-03/AA-04 | 2 Channel, Single-User System with Compose (NTSC, PAL) | _____ | _____ | _____ | |
| AA-05/AA-06 | 2 Channel, Single-User System with Compose and Transitions (NTSC, PAL) | _____ | _____ | _____ | |
| BB-01/BB-02 | 3 Channel, 2 User System with 1 Compose Station and One 2 Channel Recall Station with Transitions (NTSC, PAL) | _____ | _____ | _____ | |
| A-10, A-11 | Signal System (NTSC, PAL) | _____ | _____ | _____ | |
| B-01 | Video Output | _____ | _____ | _____ | |
| B-03 | Framestore Controller | _____ | _____ | _____ | |
| B-04 | Size Reducer/Positioner | _____ | _____ | _____ | |
| B-05 | Switcher/Keyer | _____ | _____ | _____ | |
| B-06 | Framestore | _____ | _____ | _____ | |
| B-09 | Rear Connector I/F Kit | _____ | _____ | _____ | |
| B-10 | Auxilary Power Supply Kit | _____ | _____ | _____ | |
| C-01, C-07 | Central Controller (NTSC, PAL) | _____ | _____ | _____ | |
| C-02 | Access Station I/F Assembly | _____ | _____ | _____ | |
| C-04 | Composition Access Station | _____ | _____ | _____ | |
| C-05 | Remote Access Station | _____ | _____ | _____ | |
| C-06 | 15″ Monochrome Monitor w/Housing | _____ | _____ | _____ | |
| D-08 | CDC-9710 RSD 80 Mbye 50/60 Drive (100 Stills NTSC, 80 Stills PAL) | _____ | _____ | _____ | |
| D-09 | RSD Data Pack for D-08 | _____ | _____ | _____ | |
| D-10 | CDC Rack Mount Kit for 2 FSD/RSD Disk Drives | _____ | _____ | _____ | |
| D-11 | Filter Kit (CDC) | _____ | _____ | _____ | |
| D-13 | CDC 9771 825 Mbyte Drive 60 Hz (1000 Stills NTSC) | _____ | _____ | _____ | |
| D-14 | CDC 9771 825 Mbyte Drive 50 Hz (500 Stills NTSC, 425 PAL) | _____ | _____ | _____ | |
| D-15 | CDC 9715 340 Mbyte Drive 50/60 Hz (500 Stills NTSC, 425 PAL) | _____ | _____ | _____ | |
| E-01 | A Level Spares Kit—NTSC | _____ | _____ | _____ | |
| E-04 | B Level Spares Kit—All Formats | _____ | _____ | _____ | |
| TM-ESS | Factory Maintenance Training on ESS | _____ | _____ | _____ | |
| TO-ESS | Factory Operations Training on ESS | _____ | _____ | _____ | |
| X-ESS | Installation Checkout upon notice | _____ | _____ | _____ | |
| _____ | _____ | _____ | _____ | _____ | |
| _____ | _____ | _____ | _____ | _____ | |

# ESS-3 STILL-STORE SYSTEM

## SUMMARY

### Architecture
☐ 4-2-2, 13.5 MHz component coding
☐ Up to 10 simultaneous users
☐ Fixed or removable media storage
☐ Expandable storage up to 25 disk drives
☐ Modular "framestore-on-a-board" design
☐ Digital video transfer between signal systems
☐ Digital video transfer to AVA-3 art system
☐ Pack interchangeability with AVA-3 art system
☐ Composite and RGB inputs and outputs

### Composite Capabilities
☐ Image compositing in the digital domain
☐ Internal palette for mattes, borders, key fills
☐ Linear luminance keyer
☐ Chroma keyer
☐ Cut and paste with rectangle, circle, oval or diamond shapes
☐ Scissors mode for cutting irregular shapes
☐ Variable compression
☐ Variable positioning
☐ Tilting capability with scan-in fonts
☐ Hard and soft edges for borders and image overlays
☐ Variable opacity of colors and image overlays
☐ Selective defocus
☐ Internal grid generator

### Storage/Recall
☐ Frame grab or field grab w/frame interpolation
☐ Programmable cuts, dissolves and wipes
☐ Variable compression and positioning
☐ On-line cataloging and search
☐ On-line list building
☐ List editing in text or reduced size picture mode
☐ Browse stills 12 at a time

**AMPEX**  Ampex Corporation, Audio-Video Systems Division

FOR INFORMATION ON AMPEX BROADCAST VIDEO PRODUCTS CONTACT THE VIDEO SALES MANAGER NEAREST YOU.