

EGSTV

COLLABORATORS

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Chapter 1

EGSTV

1.1 Index

Welcome to EGS-TV (V2.9d)

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Disclaimer

Copyright and Distribution

What is EGS-TV? (EGS-TV is (c) by Helmut Hoffmann 1994)

What is VLab? (VLab is (c) by MS MacroSystem Computer GmbH)

What is EGS? (EGS is (c) by VIONA-Development)

EGS-TV-Professional

Why would I want to use EGS-TV?

Features of the Demo version

Additional features of the full version

Important things to run EGS-TV

Installing EGS-TV

Important information for the use of EGS-TV

The fontsensitive user interface of EGS-TV

>>> Using EGS-TV <<<

How should I register to get the full version?

What do I get when I register?

Getting updates and upgrades of EGS-TV

About the author

Hard- and Software used while developing EGS-TV

Special Thanks

Version history

1.2 Disclaimer

EGS-TV
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I tried my best to make this program error-free. It has been checked with enforcer and mungwall and works without problems on my configuration. Nevertheless, as there are so many possible configurations of Amigas, EGS-Systems, VLab-Versions, I can not guarantee that this software will work on your configuration. Especially the complex EGS-System does not have the desired stability in some situations. In cases where I found problems with EGS, I tried to workaround them, or explained them in this document.

This software (program and documentation) is provided "as is" and comes with no warranty, either expressed or implied. The author is in no way responsible for any damage or loss that may occur due to direct or indirect usage of this software. You use this software entirely at your own risk.

1.3 Copyright and Distribution

EGS-TV software (program and documentation) is copyright by

Helmut Hoffmann
Rubensstrasse 4
D-41063 Mönchengladbach

Germany

The demo version of EGS-TV may be freely distributed and used as long as the following conditions are met:

- 1) All files have to be kept together
- 2) No file may be modified or crunched/packed.

The only official way to distribute EGS-TV demo packed is the original egstv.lha or egstv.lzh-archive.

EGS-TV may not be disassembled or analysed. The limitations integrated in the demo version may under no circumstance be removed or bypassed.

- 3) Distributors may only charge for the duplication process (including media) and not for the software. These charges may not exceed the following limits:
 - a) EGS-TV demo on a PD-disk: 8\$ (US-dollar) including postage&packing (in Germany: 12DM)
 - b) EGS-TV demo on a PD-CD-ROM: 50\$ (US-dollar) including postage&packing (in Germany: 75DM)
 - c) EGS-TV demo on a BBS/Mailbox/ftp-site or other electronically callable system: Maximum charge 4\$ (US-dollar) (in Germany: 6DM) for downloading

Anyway, it must be made explicitly clear to the buyer, that he does not pay for the program (demo) itself but only for the duplication service.

- 4) It is not allowed to distribute EGS-TV with any commercial product without a written permission by me. One exception is the distribution of the demo version with products, not exceeding the above price limits (e.g. a cover-disk magazine for 8\$ or less).

If you want to distribute EGS-TV demo with your commercial product (hardware or software) write to me for details.

If you want your software product to be capable of working directly with EGS-TV you can also contact me (address as above).

- 5) The registered version may not be redistributed. It may only run on one machine per registration. It is allowed to make a backup copy of the original disk.

You can currently contact me by EMail:

hhoff@pool.informatik.rwth-aachen.de

Please note that in the summer months I will only come to my EMail-account very irregularly. If you want to register or have suggestions and don't get answer by EMail, please mail them by ordinary mails to my address above.

1.4 What is EGS-TV?

EGS-TV is a software project which supports the VLab-Framegrabbers (made by Macrosystem) in your preferred EGS-Environment on screens of up to 24Bit-Color-depth.

It should work on any EGS-Graphics-Card (and even without, if you have EGS6.0 or later installed on your native Amiga) and with at least the classical VLab, the Y/C-VLab, the classical parallelport VLab and the Y/C-parallelport VLab.

It does not just replace the original software, but it offers totally new possibilities and flexibility (e.g. realtime Blue-Screen-Keying, video editing system, animation generation ...).

1.5 What is VLab?

VLab is a realtime framegrabber made by Macrosystem which is capable of grabbing a frame from your running Video-Source (TV-Tuner, Videotape, VideoCamcorder, ...) in full Color.

Different version of VLab exist:

- * The classical VLab which has two standard Video-Inputs
- * A parallel port version of the classical VLab
- * The Super-VLab which has an additional Y/C-Input for better quality when

connected to a modern Super-VHS-Recorder or Hi8-Camcorder

- * A parallel port version of the Super-VLab
- * The VLab-Motion which is a very recent product and is capable of digitizing full sequences in one pass by hardware JPeg-compression

EGS-TV currently supports the basic features found in the classical and Super-VLab as well as the parallel port versions. Unfortunatley the VLab motion can currently not be used with EGS-TV.

1.6 What is EGS?

EGS is the quasi standard for Hi- & True-Color graphics on the Amiga computer. It is supported by different graphics cards and can display graphics on any supported screentype in a compatible way. Besides that, it offers a flexible user interface, which is much easier to program than the Amiga-Userinterface.

Some popular graphic boards which are delivered with EGS:

- * Piccolo
- * Rainbow
- * EGS-Spectrum
- * EGS-110

Some graphic boards for which EGS is available separately:

- * EGS for all Amigas (no graphic board necessary!)
- * Retina
- * Picasso
- * Merlin
- * Impact Vision

EGS-TV does not depend on special graphics hardware. It should run in conjunction with all graphic cards (or even without) which support EGS. Only the speed and the available screen resolutions and colors might differ.

EGS is currently ported to some other graphics cards, so the number of EGS-users will hopefully increase in the future.

1.7 EGS-TV-Professional

EGS-TV-Professional
=====

In September 1994 the range of products will be extended in the upper end with a new program called EGS-TV-Professional. The classical EGS-TV can still be registered at the old price. The professional version costs slightly more. You can certainly order an Upgrade from EGS-TV to the professional version at a very low price. The development of the classical EGS-TV will continue as part of the new professional version, so that updates are still possible. Only some features will

not be available in the classical EGS-TV.

For the professional version at least the following extensions are planned:

- * Direct harddisk recording with all features, which are already offered by EGS-TV for RAM-sequences.
- * Precise timing control for sequence recording (RAM and harddisk).
- * JPEG as file format for pictures and to export sequences.

1.8 Why would I want to use EGS-TV?

If you have an EGS-graphics-card and a VLab-Framegrabber you will have noticed that the process of grabbing frames is somewhat frustrating with the original VLab-Software. Besides the problems promoting the Amiga-Screens opened by VLab might give you, you can only monitor your video-inputs in 16 greyscales and have to transform grabbed frames in a time consuming process to the somewhat limited Amiga-Graphics to watch it in color. Especially on non-AGA-Amigas with OS2.04 only upto 16 (or 32) Colors could be used on a promoted VLab-Screen or alternatively a LoRes-HAM-Picture as original Amiga-Screen.

If you want to see high quality Colors you have to export the picture (which takes again a lot of time), then change screens and import the picture in a picture viewer or graphics program.

With EGS-TV (in the registered version) the same process would look totally different:

- 1) You can monitor your running Video-Sources in greyscales, 16000 or 64000 colors in a reasonable size of upto 360*310.
 - 2) The control of EGS-TV is done with a comfortable EGS-Userinterface. Many Gadgets have keyboard equivalents for fast access, the area which you want to grab can be selected by mouse (so that you see what you get) or numerically and so on.
 - 3) You can grab multiple frames (number limited only by your memory) and watch them all in different preview windows. This enables you to compare different grabs immediately and decide which is the best to keep. The preview-windows can be drawn in full size or LoRes and different color modes exist.
 - 4) You can Deinterlace full frames with different modes and parameters and can try different parameters on a frame with the Undo-Feature to get the best Deinterlace.
 - 5) The sometimes strong colors which VLab outputs can be reduced automatically in a flexible way on the running monitor and preview windows to find the best color intensity. This does not slow down monitoring or previews!
 - 6) The registered version of EGS-TV can be run on the same 24-Bit screen as your favorite EGS-Graphics-program. Depending on the program you use you will be able to transfer a grabbed frame directly to this program. Ideally you might even forget that two different programs are running because the whole process looks so well integrated ...
-

This feature certainly needs some minimal control features of your favorite graphics program which must be documented. I hope many developers cooperate with me to make EGS-TV work comfortable with a lot of EGS-Graphics-Software.

- 7) For editing video sequences comfortable Desk-Top-Video functions are available with sequence recording, editing, single frame editing, animation playback, chroma keying function, ...
- 8) A Realtime Blue-Screen-System with configurable chroma color and quasi concurrent usage of several VLab inputs offers amazing new possibilities.

1.9 Features of EGS-TV Demo

The demo version has currently the following features:

- * Monitor window in upto 64000 colors in size 360*310 (PAL) or 360*260 (NTSC) with surprisingly fast update rates.
 - * Unlimited number of preview windows in greyscale or color for multiple grabs of halfframes, HiRes-halfframes and fullframes. The big grabs can be viewed in fullsize-previewwindows or downscaled to LoRes. This allows you to grab multiple frames and compare them to decide, which is the best to use.
 - * Unlimited number of sequence windows with unlimited number of frames in any sequence (currently limited only by memory). Every sequence has it's own preview window, where the current frame is shown or the sequence can be played as animation forwards and backwards. You can delete or regrab single frames and move through the sequence frame by frame forward and backward. Editing functions as insert, assemble or overwrite recording (including combining a new foreground into an existing sequence) can be used. For the professional version hard disk recording is planned.
 - * Flexible Blue-Screen-System with realtime Chroma Keying by using quasi two VLab inputs concurrently. Chroma color (or range) can be configured freely. Blue-Screen is usable for monitor, single grabs and even sequences. Even existing sequences can be used as background for blue screen grabbing.
 - * Color intensity can be changed for monitor (realtime recoloring), previews and final pictures. More options will probably be integrated, if enough users register.
 - * Flexible Deinterlace-function with differnt modes and strengths. This includes an Undo-Feature to try different paramters on a fullframe picture.
 - * Grab-Area can be selected by mouse or numerically.
 - * Demo runs on it's own screen in size of the EGS-Default screen with 24Bit (if possible) or with the color depth of your Default screen.
 - * supports PAL and NTSC Video-Sources
 - * supports upto 6 Video-Inputs (which may be distributed over two VLab-Boards)
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- * supports TimeBaseCorrection (Videotaperecoder-Mode)
- * English and german version of EGS-TV
- * Documentation in amiga-guide format

The registered version has important enhancements.

1.10 Features of the full version

Besides all the features of the demo version the full version will have the following abilities:

- * run on any EGS-Screen or the EGS-Default-Screen. Even EGS-Screens of other applications can be "visited" by EGS-TV.
- * save grabs in different file formats (currently IFF-ILBM24 compressed and uncompressed, PPM (P5 and P6), QRT, Targa, DEEP and YUV (incl. Y-format for greyscale grabs))
- * transfer grabs to the clipboard
- * saving and loading of complete video sequences in a special EGS-TV YUV-like file format
- * automatic exporting of all frames of a sequence in one of the above file formats as single picture files
- * saving and loading of settings with all important VLab-parameters and EGS-TV parameters to adapt to different video sources and to be used as starting configuration
- * transfer grabs to some other EGS-Software:
 - Fast direct transfer to PicoPainter.
 - Direct transfer with ARexx control to TVPaint and EGS-ImageFX.
 - ARexx controlled transfer is configurable. The user can define 9 transfer functions for himself, which are integrated in the transfer menu on program start.
 - This should make it possible to transfer pictures from EGS-TV to any professional graphics package. If your favorite graphics package does not have an ARexx-port, send a letter to the manufacturer of that package stating your wishes.

1.11 Important things to run EGS-TV

- 1) EGS-TV needs a lot of memory to run, as it needs 24 color Bits per pixel to convert pictures internally. To run the demo version, 1.5 free MByte of Fast-RAM should be enough. If you want to run the full version (especially together with another graphics program or to use sequence recording) you will need more memory.

- 2) EGS-TV needs at least version 2.04 of the Amiga Operating System.
- 3) EGS-TV needs EGS-System 6.0 or higher installed correctly.
- 4) EGS-TV needs at least vlab.library version 6, better version 7 or newer. If you use vlab.library version 6, you can not use a VLab at the parallel port and some functions might have less functionality. For the Y/C Parallel port VLab you might even need version 8. Ask your dealer or Macro-system to get the latest library-version.

As the original VLab-Software does not use the library it might be that this is not installed in your system although you are using VLab. Be sure to install the vlab.library in your libs: directory.

Please note that even in vlab-library version 8 the filter functions do not work. I have implemented the filter-function gadgets in EGS-TV and they call the corresponding functions in VLab-library but upto version 8 theese will do nothing. I hope that later versions of vlab.library will have this bug corrected.

- 5) EGS-TV runs fastest on 24-Bit screens (at least on my configuration). In the demo version, the EGS-Default-Screen is cloned and opened with a depth of 24 Bit automatically if possible. Otherwise the original depth will be tried.

If you want to have many preview windows open, be sure not to switch on the EGS-Feature "Force Simple To Smart" for the screen depths (24Bit) you intend to use. This will save a lot of memory and will probably speed up the monitor. As on the other hand screen updates of fullframes which are to be deinterlaced can become real slow this way, there is an option in the menu of the control window, which allows you to select the refresh mode separately for half frames (incl. HiRes) and full frames. This is set by default to SmartRefresh for full frames. You can switch this off, if you want to save some memory. All grabbed frames are only stored as YUV-Pictures in EGS-TV and are recalculated for every refresh (this saves a lot of memory).

1.12 Installing EGS-TV

Installing the demo version

Installing the full (registered) version

Important notes:

- 1) vlab.library

In addition to EGS-TV you might need to install vlab.library (for minimum version see important notes), if you did not install this with VLab, because the original VLab software does not need this library. Type

version vlab.library

in a shell-window to check if you have this library installed and if it has at least the required version.

If you don't have the right version installed, please copy the library from your original VLab disk into the `libs:-directory`. If you don't have a proper version of this library, please ask your dealer or Macrosystem.

2) Trouble on program start

If you have trouble running EGS-TV, please retry to run it from a shell (with at least 25000 Bytes of stack). If the program returns immediatly with no message from the shell window it means:

- 1) Not enough memory to load EGS-TV
- or 2) `dos.library 37` or later can not be opened.

Otherwise you will get a message in the shell, that another library, EGS-Screen or Window can not be opened. If the basic things can be opened, you might still get a requester on the EGS-Screen, that some library, a font or a message port can not be opened or VLab is not of the correct type.

Please make sure to have all the required libraries installed. If you think that EGS-TV reports a missing object without reason, please check if there is enough free memory left. Missing memory can prevent the allocation of any object or library and lead to such reports.

1.13 Installing the demo version

There is no installation required. You can run EGS-TV Demo by simply typing EGSTV in a shell (please make sure that the stack has at least 25000 bytes) or by double clicking on the EGSTV-Icon.

The demo version starts on a cloned EGS-Default screen with 24Bit color depth if possible. Otherwise the screen will open in the depth of the default screen.

If you want to use another screen depth (e.g. 16Bit) without changing the EGS-Default-Depth, you can do this by creating a file `"egstv.config"`. You can specify the desired screen depth in the first two columns of the first line in this text file. You have to specify this as a two digit number.

All other possibilities of this file are limited to the registered version (although the defined menu entrys in this file will appear in the transfer menu even in the demo version).

1.14 Installing the full (registered) version

Even here no installation is required. You can start EGS-TV directly from disk or copy the EGS-TV drawer to your harddrive. But probably you want to adapt EGS-TV to your personal needs first, which can be done by different configuration processes.

Important Note!
=====

All configuration files and the egstv.library (which makes EGS-TV a full version) can remain in the program directory. But please follow my advice: If you have installed an automatic compressing file system (packer) on your harddrive partition, you should remove egstv.library from this directory and place it in your (hopefully) uncompressed libs:-directory on your system partition. This has to be done because some packing file systems have big trouble when reading packed libraries!

The egstv.library is your personal key to the full version. This may not be distributed or used on more than one computer simultaneously. It can even not be used more than one time simultaneously on one computer. This would make no sense, because the vlab.library does not support multiple settings for different processes. Several running EGS-TVs on one computer would disturb each other with their parameters.

1.15 Configuring the registered version

There exist two different types of configuring methods for EGS-TV:

On the one hand there is the file "egstv.config", which influences the starting screenmode as well as the configurable ARexx transfer menu entries. This file has to be created/edited with a text editor. If this file is missing, the full version of EGS-TV just starts with the same screen mode as the demo version would do.

On the other hand there are setting files (xxx.cnf), which you can create from EGS-TV with "Save setting". If you save such a setting file with the name "default.cnf", it will be loaded on the next program start automatically and all your current settings will then be used.

1.16 Important Notes:

- 1) Synchronisation problems: If your system suddenly seems to be frozen
- 2) Problems while using EGS-TV concurrently with other programs

1.17 Synchronisation problems

If your system looks sometimes totally frozen when using EGS-TV (nothing can be controlled any more, even the mouse pointer might be stuck), there is the big probability that you have a synchronisation problem with VLab. This happens often if you have an unsteady video signal source (e.g. Video tape recorder) and your TimeBaseCorrection is not activated. Even television signals can be unsteady, esp. if the broadcast station switches the signal. Even with TBC switched on, this problem can occur. This is not an EGS-TV

error but a hardware (or vlab.library) problem.

You can normally easily escape from this situation by switching to another video source. If you had a tape running while this happend, stop the tape. If you have a TV-Channel selected, change to another channel. This gives VLab the chance to synchronize and release the system.

1.18 Problems with other programs

Unfortunately the usage of several programs can lead to unexpected complications, which can not be tracked easily to one of this programs. I have tested EGS-TV with such programs, which I have access to (the support of commercial developers could be much better; I can esp. not test any programs which are not usable on the Piccolo).

I have found a severe bug in the EGS system of the Piccolo while using several programs. This bug seems to occur only on Piccolo and Rainbow graphic boards.

The error happens often in the following situation:

- 1) There is at least one Amiga screen open
- 2) There are at least two EGS screens open on the graphics card
- 3) One of the EGS screens is closed in such a way, that the Amiga screen appears on top after closing.

I could detect with the "mungwall"-tool, that in this constellation a longword is overwritten in foreign memory. This can have very different consequences (e.g. crashes). I reported this bug to the manufacturer and hope that it is removed soon.

But as my experience lets me fear that this bug will remain valid for a long time and esp. EGS-TV users want to use several EGS programs, I created a little tool called "HHsEGSPatch". This avoids the erroneous situations as far as I know. If you want to use this patch, please read the separate documentation for this patch.

This patch even works around another bug, which leads to memory loss when windows with certain gadgets are opened. I integrated this function into EGS-TV internally but with this patch you can avoid this memory loss with all programs, which makes this patch program useful even for owners of thoose graphics boards which might not have the first problem.

1.19 The fontsensitive user interface of EGS-TV

EGS-TV has a fontsensitive user interface, which means that the fonts which are used in windows and buttons of EGS-TV can be selected with the EGS font preferences program "eFonts". You can change the size

and appearance of the EGS-TV control windows by selecting several fonts. The EGS system distinguishes between 3 usage classes:

1) The Screen-Text-Font

This is used by EGS-TV only for the EGS-TV screen title bar.

2) The Window-Text-Font

This is used by EGS-TV for title bars, menus and user interface buttons in windows. The size of this font has great influence on the size of the control windows.

3) The System-Text-Font

This is used by EGS-TV for all editable gadgets (e.g. number gadgets). The size of this font has influence on the control windows sizes too. This font must not be proportional. You should select a font size similar to the window font, so that the user interface appears well balanced.

Examples:

For 800x600 screens I recommend the following fonts:

for 1) Helvetica 15
for 2) Helvetica 13
for 3) Courier 15

For 640x480 screens I recommend the following fonts:

for 1) Helvetica 13
for 2) Helvetica 11
for 3) Courier 13

You can find these fonts on all original workbenches. You can certainly choose other fonts (and sizes), if you like.

1.20 Using EGS-TV

Using EGS-TV

=====

Starting EGS-TV

Opening the control window

Using the monitor

Setting VLab-Parameters

Color control

Grabbing frames

Grabbing, editing and saving/exporting sequences

Loading sequences

Setting Grab-Parameters

Deinterlacing
Saving pictures (only for registered users)
Transferring pictures to other programs (only for registered users)

The Blue-Screen-System (Chroma Keying)

EGS-TV Info-Requesters

Selecting a screenmode (only for registered users)
Loading/Saving Settings (only for registered users)

How to exit EGS-TV

1.21 Starting EGS-TV

1) Demo version

Using EGS-TV is very easy. After you have started the demo version (from workbench or from a shell with at least 25000 bytes stack) you will see the monitor window immediatly starting with input 1 on a 24-Bit screen which is cloning the EGS-Default-Screen. If the program fails to start, please check the important requirements and the information for installation. If the default screen can not be opened with 24Bit, the original depth will be used.

Please make sure that your EGS-Default-Screen is capable of running 24 Bit because running EGS-TV on lower color depths decreases speed significantly (at least on my configuration) due to the EGS dithering.

If there is no video signal on the active VLab-Input, a message will appear instead of the picture.

Depending on the version of EGS-TV and your Video-System you have to switch to the correct Video-Norm (NTSC in USA, PAL in most other countries).

All controls are grouped in the control window. You can open this control window by pressing the right mouse button in the activated monitor window. Instead of opening a menu the control window will appear. This can be closed if you don't need it any more.

2) Full (registered) version

This can be started the same way as the demo version, but you can create configuration files to change the starting behaviour of EGS-TV. There are two different configuration methods.

1.22 The Control Window

Many global control features of EGS-TV are grouped in the control window. If this is not open, you can open it by pressing the right mouse button in the active monitor window. One of these windows will always be open.

If you close both the control and the monitor window, EGS-TV will quit.

You can close the control window with it's close gadget. Please note that all Preview-Windows will be closed, if the control window is closed. To prevent sequence windows from unintended closing you can select a security requester in the control menu to appear before closing sequences.

Many of the gadgets in the control window have keyboard shortcuts, which are underlined.

In the menu of the control window you can configure many settings and open Info-Requesters.

Some special functions (as the Blue-Screen-System and Sequence-Recording) have their own control window. Such windows can be opened with buttons in the main control window. All these windows can be opened simultaneously and used independent of each other.

1.23 EGS-TV Monitor

The monitor window of EGS-TV currently always works in LoRes (upto 360*310 in PAL-Mode) or VeryLoRes (upto 180*155 in PAL-Mode); unfortunately the vlab.library does not support a real monitor feature so that I had to simulate this by normal grabs using my own optimized color conversion routines. A real monitor function with hardware scaling in the library would speed up the monitor function significantly (as can be seen in the original VLab software).

The different monitor modes can be changed in the control window.

The size of the monitor window can be selected directly through the Min/Max-Gadgets in the title bar of the monitor window, similar to the HiRes and full frame preview windows. The size is also saved in the "default.cnf".

You can currently use the following color modes:

- 1) Greyscales (theoretical 256, but I think that VLab generates less)
- 2) Quick color (about 16000 colors)
- 3) High color (about 64000 colors)

The color modes are compatible with the original VLab color conversion methods but use my own fast algorithms for reduced colors. If you don't like the strong colors of VLab, you can change the color strength to something less than 100%. This will effect the monitor as well as all preview windows (new grabs or updated windows). Once selected, a lower color strength will not effect the speed of monitoring or grabbing, as it is integrated in my algorithms.

Please note that all monitor modes run fastest on 24 Bit screens (at least on my configuration. EGS loses a lot of time when trying to dither images on lower screen depths.

There are three monitor states:

- 1) Off (Monitor window closed; this is only possible if the control window
-

- is open)
- 2) Hold (Monitor is showing a picture and updates it only when you click on it, part of the window has to be refreshed or you change any option)
 - 3) Running (Monitor is permanently grabbing new pictures; this might decrease the speed performance of other applications or let the mouse movement appear a bit unsmooth on 24 Bit screens with a software mouse)

1.24 Setting VLab-Parameters

The VLab-Parameters are accessed through the `vlab.library`. This should be compatible to all vlab hardware types. All the control gadgets can be found in the control window.

Setting the Video-Norm
Time Base correction for Video Tape Recorders

VLab-Input channel

Selecting the monitor/grab-area

VLab filter functions

1.25 Setting the Video-Norm

This is the most important switch. It is located in the top right area. If it is pressed, the PAL-mode is active (for european users). If it is not pressed, the NTSC-mode is active (for USA). If the wrong mode is selected, there will be no colors and the picture will be distorted. This mode has influence on the maximum height of the picture (310 for PAL, 260 for NTSC, both measured for a halfframe).

While the NTSC-mode is selected, the hue-color-correction-value can be changed in the gadget to the left of the switch. The default value is 0, the maximum value is 255. On PAL-mode this gadget is disabled, as it has no influence in this mode.

1.26 Time Base Correction for Video tape recorders

When you try to monitor (or grab from) an input channel with a running Video tape, you often get problems with unsteady synchronisation from the VTR. This results in distorted pictures. Select the Time Base Correction with the Video-Gadget to solve this problems; you should then get stable pictures from your VTR.

1.27 Input Channels

EGS-TV currently supports 6 input channels. These may be distributed over several VLab boards. The Channels which are not available can not be selected (gadgets are blocked).

If you select an input channel with no valid video signal, your monitor window will only display a message. If you try to grab from such an input, a requester will appear.

1.28 Selecting the monitor/grab-area

On default there is a typical TV-Area defined. This can be reselected by the default button.

To watch the full signal (including overscan and blanks) press the Full Size button.

Pressing the "Select" button allows you to select a smaller area on the monitor with the mouse. Go to the top left position in the monitor window and press and hold the left mouse button. Then move it to the lower right position and release the button. The mouse pointer will change during this process. If possible, the new area is selected. To cancel this area selection at any time, press the right mouse button.

The actual offsets and sizes can be seen and changed numerically directly below the action buttons. Please note that increasing the offsets may require to decrease the size first, if otherwise the area would be partially off the maximum area.

All coordinates in these gadgets are measured for LoRes pictures. HiRes-pictures have twice the wide, full frames additionally have twice the height.

1.29 VLab filter functions

Important note:

The VLab hardware has some integrated filters to reduce noise and to improve sharpness. Unfortunately the version 8 of vlab.library has a documented bug, which makes it ignore all filter settings. This does not effect the original VLab-software as it does not use the library. All other applications, which have to use the library, can't access these features.

I have provided all the filter gadgets in the hope that a new version of the library will appear and solve the problems. If you change any of these gadgets, the correct library-function will be called. If you already have a newer version of the library, these functions might work.

Sharpness filter:

The top filter gadget lets you select the strength of the sharpness filter. This also effects the noise filter. You have to turn on the sharpness filter to turn the noise filter on.

The middle gadget lets you select the frequency of the filter. The lower this frequency is, the stronger will be the effect of sharpening details, but fine details may be lost. Higher frequencies allow more details to pass the filter.

Noise filter:

This only works in conjunction with the sharpness filter. You can select different strength to reduce noise. This might filter out small details of the picture too, so use it with care.

1.30 Color control

The VLab hardware produces very strong colors. You will often like to reduce this colors. To make this as easy as possible, I have integrated two color control gadgets in the control window.

The left one allows numerical input of the color strength (0%-100%), the right one is a slider gadget with the same range.

The color strength you select effects the monitor window as well as all previews which are opened or refreshed after your change the strength (in quick or high color mode). The speed of the EGS-TV monitor and previews is not reduced; only changing the strength or the color mode will take a short time.

If enough users register EGS-TV I will probably implement further control features...

In NTSC-Mode there is another color control possible with the Hue-gadget next to the PAL-Gadget. This is a VLab hardware feature and is not usable in PAL-Mode.

1.31 Grabbing frames

This is a main feature of EGS-TV. While you could use EGS-TV to just monitor a video input (maybe if your TV is broken), you normally want to grab frames (or sequences) and use them in some way.

Unlike the original VLab-Software, EGS-TV allows you to grab an unlimited number of frames (limited only by your memory). Every grabbed frame will appear in it's own window. You can change the appearance of this preview windows. Many functions for editing and saving are available as menu entries in a menu local to the preview window.

The left three grab buttons create a new window and grab a frame as LoRes, HiRes or fullframe (HiRes Interlaced). The Regrab-Gadget allows you to grab a new frame for the last opened preview window (in the same grab

size). This is useful if you find that a grabbed frame is not worth keeping and has the same effect as closing the preview window and then grabbing a new frame again.

You can close any of the preview windows with it's close button. If you want to grab a new frame into any of the open preview windows, you can activate it and select the ReGrab-Feature from it's menu.

If you want to get rid of all of your preview windows, you can select the Close All-Button. Closing the control window has the same effect (but make sure that the monitor window is open, otherwise EGS-TV will quit).

In the title bars of the preview windows you can find information about the size, the grabmode (LoRes, HiRes, fullframe, color or greyscale), the color intensity and the deinterlace-status (fullframes only).

Grabs can be deinterlaced automatically or manually.

You can also transform a picture preview window into a sequence window.

1.32 Grabbing, editing and saving/exporting sequences

Desktop-Video with EGS-TV
=====

EGS-TV can maintain any number of video sequences in memory. In the classical EGS-TV version all frames are kept in memory. For the professional version harddisk recording is planned. Special timing controls to get precise frame rates are planned for the Professional version too.

Many extensions are still planned to improve EGS-TV.

Sequence functions are controlled with a special sequence control window, which can be opened with a button in the main control window.

The sequence control window
=====

In this window you can select the frame size for new sequences (half frames, HiRes half frames, full frames).

You can further specify the maximum number of frames which should be recorded (inserted/appended) or overwritten (combined) in one go here. If you specify 0 here, any number of frames is grabbed, until the memory is full or the end of the sequence is reached.

You can start the recording of a new sequence with the "Grab sequence" button. To reach high frame rates, the grabbed frames are not displayed immediately. No windows can be operated during the sequence grabbing. The sequence grabbing is finished, if there is no memory left, the maximum number of frames for recording is reached (on default 0 is selected, which means that there is no limit) or the Stop button in the sequence control window is pressed. All other buttons in this window are blocked during recording.

The usual grab parameters (area, grab mode color or greyscale, ...) are also valid for sequence recording.

Warning!

Should you run out of memory while grabbing, you should delete some frames or close some windows after that situation immediatly. Otherwise the memory is filled up so much, that the EGS system can come into severe trouble (because depending on your configuration it needs lots of memory even for moving windows etc.). EGS-TV itself tries to leave 300000 Bytes of memory unused, but if other programs run in parallel with EGS-TV, they could just allocate this security space.

There is also the possibility to transform a picture preview window into a sequence window with the "Picture->Sequence" menu entry.

You can have any number of sequences (with any number of frames) open at the same time. Every sequence has its own preview window. In the title bar you find the current and total numbers of frames. Every sequence window has its own sequence menu with the functions

- * First Frame
- * Previous Frame
- * Next Frame
- * Last Frame

to search manually through the sequence,

- * Delete Frame

to cut out the current frame,

- * Insert New Frames

to insert new frames after the current frame inside a sequence or after the end of the sequence (Insert- or Assemble-Edit),

- * Overwrite Frames
- * Combine new foreground signal into Frames

to overwrite some frames starting from the current frame in the sequence with new frames (Overwrite-Edit) or to combine a new foreground into the current sequence with the Blue-Screen-System,

- * Play Sequence
- * Play Reverse

to animate the sequence.

It is certainly possible, to play any number of sequences concurrently, additionally watch the running monitor and work with single frames at the same time...

This slows down the whole process a bit. I recommend to hold the monitor while playing sequences.

The "ReGrab"-function of the project menu allows to overwrite the current frame (in the old size). This has the same effect as the Overwrite function, when it is stopped immediately after one frame (or one frame is selected as maximum frame overwrite number).

The Overwrite and Inserting functions can be stopped with the stop button in the sequence control window. The Overwrite function ends automatically, if the last frame has been replaced.

The usual save functions can be used to save the current frame. A special sequence save function (which is located in the project menu of sequence preview windows) saves the whole sequence in an EGS-TV YUV-like sequence format. A separate player program for this format is planned for the future. You can use the sequence save function for a picture grab too. The picture is then automatically converted to a one-frame-sequence.

To export all pictures of a sequence as single picture files, export functions exist for each of the supported file formats. These functions show all frames one after the other and save them in the desired format. This procedure can take a long time. You can abort it with the stop button in the sequence control window, after the current frame has been saved. Exporting is useful if you want to use sequences in other programs (like animation packages), as these will probably not support the internal EGS-TV sequence format. Instead of a full filename, the export functions ask you for a base file name. This must not contain a % character. This base is normally extended automatically in the form .0001 and so on for the current frame number. You can change this numbering format by providing a %-control-sequence in the base name. To get the standard format, you could use .%04ld as end of your base name. The number 4 specifies the number of digits to be used, while the leading 0 marks, that leading 0s should be generated. The other characters (%ld) must not be changed, otherwise unexpected results may occur!

A load function is available in the project menu of the main control window.

The sequence menu functions of the preview windows can also be activated with the Video Tape Recorder-like buttons in the sequence control window. These are used to control the last activated sequence window, if there are several sequence windows. If no sequence window is selected, these buttons are blocked.

1.33 Loading sequences

EGS-TV sequences can be saved in a special YUV-like file format. This format can be read again with EGS-TV.

The sequence load function is located in the global project menu of the main control window. While loading, the sequence control window appears. The load can be aborted by the stop button. The load function is aborted automatically if it runs out of memory or the file format is wrong. Frames which have already been loaded will be kept.

The sequence format is upward compatible to the future hard disk recording

format of the professional version.

1.34 Grabbing Parameters

You can grab frames in color or greyscale mode. A cycle gadget lets you select the desired mode.

The two cycle gadgets below the grabmode gadget allow you to change the appearance of the preview windows. You can select greyscale or different color modes. Frames which are grabbed in greyscale are certainly only showed in greyscales independent of the preview color mode.

Please note that preview windows appear in high color mode (instead of quick color) if the monitor is running in high color mode.

Changing the preview color mode effects all new grabs and preview windows which are redrawn. Please note that changing the color intensity also effects all grabs which are redrawn or grabbed after the change.

The bottom cycle gadget lets you select the initial preview window size. If you select full size, HiRes and fullframe grabs are shown in big windows. If you select small size, all grabs are shown in LoRes windows.

You can change the window size of HiRes and fullframe grabs at any time with the minimum and maximum gadgets in the title bar of the preview windows.

You can select different Deinterlace-Parameters and an automatic Deinterlacing for full frames.

The refresh mode can be choosen separately for full frame windows and half frame windows (incl. HiRes) with flags in the control menu. If you set such a flag, corresponding windows are opened with smart refresh, which means that their grabs don't have to be recalculated if invisible parts become visible. This speeds up esp. the refresh of windows with deinterlaced pictures, but it does need more memory if windows overlap. If you switch a flag off, the corresponding windows are opened as simple refresh windows (as long as you don't use the ForceSimpleToSmart-Option from EGS for your screen depth) and have to be recalculated from the YUV-Buffers on each refresh.

There is a Redraw-Entry in the preview windows menu to force redrawing (e.g. to use a new color intensity).

1.35 Deinterlacing images

When you grab fullframes (and view them in full size) you will often find unpleasant effects of moving objects. This is a result of the video technic which uses two interleaved half frames to produce a fullframe. This means that all even lines in a full image belong to another frame than the odd lines. The only way to get rid of this effect is reducing the resolution in areas of movement. This process is called deinterlacing.

Unlike the original VLab software, you can select different deinterlace modes in EGS-TV (Even, Odd or Mix) and different strength. In most cases you should use Even or Odd (depending on the half frame you want to keep in areas of movement) and the default strength (default button pushed down). But as an Undo-Feature is integrated, you can try different settings on your image.

The Mix-Mode mixes both halfframes in areas of movements; this is only useful in special situations of fast movement where you want to keep a motion-effect in your picture.

The strength of deinterlacing can be set between 20% and 100%, if the default button is not pushed down.

Changing any of these parameters does not effect images which are already grabbed. If you want to try new parameters on such an image, just select the Deinterlace-Entry in the menu of it's preview window (you don't need to select Undo first to remove a previous deinterlace).

Selecting Undo in the menu of a preview window cancels the deinterlacing effects. This also works with pictures which got deinterlaced automatically.

If you want to get all grabbed fullframes deinterlaced automatically, you can select the Auto-Gadget.

Please note that you have to watch the preview-window in full size to see the deinterlace effect.

1.36 Saving pictures (registered users only)

In the full version you can save pictures as file or to clipboard. You can also transfer them directly to other applications. Select the preview window of a picture to use any of these functions, which can be found in the preview windows menu bar.

Please note that the currently selected color intensity as well as the selected deinterlacemode of the picture are normally used before the picture is saved. An exception from this is the YUV-Format, where no color processing is done.

Currently the following file types can be created (the clipboard can only store IFF-ILBM-Pictures!):

1) IFF-ILBM24 (compressed and uncompressed)

This format is quite slow due to the necessary ChunkyToPlanar-conversion. The compression method is quite fast, but does not compress video pictures very good. You can turn on or off compression separately for saving files and for saving to clipboard. You find two corresponding flags in the menu of the control window.

2) PPM (P5 and P6) (this is an uncompressed format)

This format can be saved extremely fast due to it's RGB-structure. There is no saving-conversion necessary for EGS-TV (besides the YUV to RGB-Conversion, the color correction and the deinterlacing, which are necessary for any type of transfer except YUV). For greyscale pictures the P5 format is used optional. In this format only the Y-information is stored, so that files of greyscale pictures have only a third of the length. Because some programs don't support P5, there is a flag in the control menu to enforce the use of the RGB-P6 format even for greyscale pictures.

3) YUV (this is an uncompressed format)

This format produces shorter files because not every pixel has its own color information. It is very useful for greyscale grabs, as then only the Y-Format is produced (similar to PPM-P5). This format can also be saved very fast because no YUV-To-RGB-Conversion is necessary. This implies that no color correction is done when saving with this format (but deinterlacing will be applied).

Please note that some applications have trouble loading YUV pictures (some colors are decoded wrong) and that some applications can not even read YUV greyscale pictures (Y-Format). If you have trouble reading YUV pictures generated by EGS-TV with other programs, first try to load YUV pictures generated by the original VLab-software with these programs or try to load the pictures with the VLab-software, before you report an error to me.

4) QRT (this is an uncompressed format)

This format (which is used e.g. by the PD raytracer POV) can be saved nearly as fast as the PPM format.

5) Targa

This format can be saved fast too. Currently no compression is supported and the picture is saved in Top-Down-Mode.

6) DEEP

This format (which can also be generated by the original VLab software), is a fast IFF variant with RGB-Storage for the pixels. Currently no compression is used while saving.

7) internal EGS-TV sequence format

This format has been designed to save whole sequences. It can be used to save a picture, which is then converted to a one-frame sequence. An internal YUV-like representation is saved with this file format. It can be saved extremely fast. This format can also be loaded again by EGS-TV (the load function is located in the global control window's project menu).

For saving as file a standard EGS file requester will appear.

During saving the mouse pointer will change. While the working symbol (tooth wheels on default) is shown, EGS-TV is making it's internal

YUV/RGB-conversions, color correction or deinterlacing. While the disk-symbol is shown, the saving process is going on (including conversions necessary for the actual file format). This second period will be shortest with PPM format, while the first period will be shortest with YUV format.

The same file formats are also available in export functions, which can be used to save all frames of a sequence in the specific picture format.

1.37 EGS file requester

The standard EGS file requester is used for requesting any file in EGS-TV. The using of this requester should be explained in your EGS manuals.

Unfortunately this requester has bugs (at least in EGS version 6.2). If you activate a string gadget (e.g. for entering a file name), the functionality of all other gadgets is disturbed.

Clicking any of the bottom gadgets or clicking anywhere in a free region of the requester will finish the requester as if OK had been selected! This is worst when you press the CANCEL-Button, because you get the opposite effect of what you intended.

Unfortunately I can not change this behaviour, as it is internal to the file requester and has nothing to do with EGS-TV. I hope that this bug is corrected in future EGS versions.

1.38 Transferring pictures (registered users only)

In the full version you can transfer pictures automatically to other applications. Select the preview window of a picture to use any of these functions, which can be found in the transfer sub menu of the preview window.

Please note that the currently selected color intensity as well as the selected deinterlacemode of the picture are used before the picture is transferred.

Besides the predefined entries in the transfer menu you can add up to 9 custom defined entries. These entries must be specified with a text editor in the file "egstv.config". This gives you the possibility to contact any application with ARexx support.

If your favorite graphics package does not support ARexx, write a letter to the programmers/distributors of that package stating your wishes.

The majority of the predefined transfer functions currently works with ARexx too. This can change if programs have fast direct ports for picture transfers and I get the necessary information to use them. I am dependent on the support of the producers and users of other software products here!

For PicoPainter I could already implement a fast direct transfer method. The picture is copied directly from BitMap to BitMap; besides the necessary YUV-to-RGB-conversion (and sometimes DeInterlacing) practically no time (and no additional memory) is needed for the transfer. The direct transfer can be performed to a picture window or to the brush of PicoPainter (with these functions the old BigPainter-transfer became obsolete; you can use the PicoTransfer-Features for BigPainter too).

1.39 Configuring EGS-TV with egstv.config

You can create a text file with the name "egstv.config", which is automatically read on program start. This file is even read in the demo version, but only the color depth of the screen can be used there.

The file must be a standard ASCII file and can be created or edited with any text editor which uses \$0A (LineFeed) to mark the end of lines, which is the standard on the Amiga.

The exact format of this file has to be kept, otherwise it won't be understood properly by EGS-TV. All lines are read from the first column up to the end of line or to the first semicolon. Up to the first semicolon even spaces may not appear at the wrong position! After the semicolon you can add a comment of any length.

The whole file must be shorter than 10000 characters, otherwise it is not read.

1) Starting screen mode and color depth

The first line may contain a color depth and a screenmode which are to be used on program start. In the demo version only the color depth is read. The color depth must be specified in exactly two digits in the first two columns of the file. EGS supports at least the depth 01,02,03,04,08,16,24. Depending on your driver, additional depth may be available (e.g. 05 on Amiga driver) or missing.

The screenmode name must be written in exactly the same form as it appears in the screenmode requester (including spaces). At the end of the name the semicolon or end of line must follow immediately.

If the specified screen can not be opened on program start, the default screen is cloned with the desired color depth (24 Bit if no valid depth is given) or the default screen is used directly (only in the registered version), if the given depth is identical to that of the default screen.

To start EGS-TV on the default screen automatically, you should just specify the depth of the default screen in the first two columns (and no screen mode name).

2) Transfer menu definitions

If you use foreign programs with ARexx ports which are not (yet) integrated in EGS-TV, you can configure your own connection. You can define a maximum of 9 such transfer functions. For each function you have to use exactly 4 lines in the configuration file, starting from the second line (as the first is reserved for the screenmode),

There are two variants to use transfer functions. On the one hand you can send an ARexx command to an application, on the other hand you can invoke a whole ARexx script.

In any case the picture file which is created (even in Clipboard) will automatically be deleted after the transfer to save memory.

The 9 possible definition blocks must each have the following format:

1st line: Menu entry name with keyboard shortcut in first column.

Please don't use shortcut letters which are already used in one of the Preview menus. If you want to be sure, that your choice is not used in later EGS-TV versions, please use only the digits 1 to 9 as shortcuts. I have reserved these numbers for this purpose. If you don't want any shortcut for your entry, use a space in the first column.

The menu entry name may not be empty.

2nd line: File name with file type in first column.

If you don't specify a file here (empty line), the picture will be saved to clipboard. In the clipboard only IFF-ILBMs can be stored. If those are to be compressed can be selected with a flag in the control menu.

If you want to create a file explicitly, you can currently choose one of the following types:

- 0 = IFF-ILBM24 uncompressed
- 1 = IFF-ILBM24 compressed
- 2 = PPM
- 3 = YUV
- 4 = QRT
- 5 = Targa
- 6 = DEEP
- 7 = EGS-TV internal sequence format

More information about the different formats can be found in the chapter "Saving".

Compressing IFFs takes only a minimal amount of time but does not lead to good compression ratios.

If possible you should use PPM, QRT, Targa or DEEP, as these are much faster (no laborious Chunky/Planar conversion necessary).

Even loading will normally be much faster with your foreign application. If your external application does not support any of these formats, write a letter to the manufacturer stating your wishes...

Alternatively you could use the YUV format, which can be saved very fast too. But please note that no color correction is applied when saving with this format and that some foreign programs have problems with reading YUV (esp. with greyscale pictures).

3rd line: ARexx port name

Specify the name of your applications ARexx port here if you want to send a single command to it, or nothing (or REXX) if you want to start an ARexx script.

4th line: Command (with parameters) or script name

Specify here the command for the application (normally to load your named file or to load from clipboard) including the necessary parameters or the name of your script file.

To use a script file, this has to be located in the REXX:-path and might have the optional file name extension ".rex".

An example file is given between the lines:

```
-----
16PICOa:NEC 1024x768i; This is the starting screen mode (with 16Bit color depth)
1My custom transfer; Specify your menu entry name here with shortcut
2ram:egstv.ppm; Specify the file type and name here
PPaint; Specify the application port here
LOAD ram:egstv.export; Specify the ARexx command here
2My special script; Example to activate a scrip
; The picture is saved in the clipboard here
; The script start command is send to "REXX"
GoodScript; Your GoodScript should be located in the REXX:-path
-----
```

This GoodScript could for example send commands to several applications so that your picture would be transferred in one process to several programs.

You could also include commands to modify your picture in an intermediate step by another application.

Another idea would be to send commands to an application to load your picture as a brush...

1.40 The Blue-Screen-System (Chroma Keying)

Welcome in the world of the Blue Screen
=====

The blue screen system is a commonly used technic in the television production to partially mix pictures, with the goal, to add any

foreground (e.g. a news correspondent) to any background (e.g. a landscape video). Both video signals can be running Video sources. To decide, which parts of the foreground picture are to be replaced by the background, a color range has to be selected. For technical reasons a dark blue is normally selected as chroma color in professional studios, as this color must not appear in the desired foreground objects. In our example, the news correspondent must not wear a blue jacket, otherwise the background would shine through it... This is, where the blue screen system got it's name from.

Using the Blue Screen in EGS-TV

=====

In EGS-TV you can select any color as chroma keying color to adapt to your personal "studio" environment. You can also select the sensitivity of the chroma color, to decide how exact the color must match.

If you select a very small acceptable color range, you can keep the restrictions of the foreground picture very low, which is important, if the foreground objects should be very colorful. On the other hand, the background (e.g. blue wall) must then be very evenly colored and even the light should be very well, so that the background will not shine through partially.

Especially in private "studios" such a background can only be found very difficult; this is why you can also specify a very wide range of acceptable background color. With this even unbalanced illuminated and unsmooth backgrounds are accepted, but on the other hand similar colored spots in the foreground object can become to holes this way.

The blue-screen functions are grouped in a separate control window. This can be opened by pressing the Blue-Screen button in the main control window.

The following parameters can be selected in the Blue-Screen window:

- 1) Blue-Screen channel
- 2) Chroma Keying color parameters
- 3) Switching delay

The Blue-Screen window is closed automatically when the main control window is closed and can also be closed manually with it's own closing gadget at any time. Please note that the Blue-Screen function remains active even if the window is closed, as long as a blue screen channel is selected.

The blue screen function is used as well on the monitor window, as in all preview windows and sequences, which are grabbed after activation.

There is also the possibility, to use the blue screen function to combine a foreground into an already existing sequence. This function is activated in the sequence menu of a sequence window or with the "Combine" button in the sequence control window. For this function only one VLab input is needed; the blue screen channel should be deselected (Off position), the normal input selected in the main

window is used and the pictures are combined into the sequence. The chroma-keying color parameters of the Blue-Screen window are certainly used for this effect as well.

With this function you have the possibility, to grab fore- and back-ground pictures separately and avoid the switching problems of VLab.

If you want to use this function for a single picture, you can convert that to a sequence with only one frame with the menu entry "Picture->Sequence" in the menu of the preview window. Then you can combine a new foreground picture into that frame.

1.41 The Blue-Screen channel

The realtime Blue-Screen functions for the first time use the possibility, to grab from several video sources quasi concurrently on the VLab. With the input channel selector of the main control window you select the desired video source for the background (e.g. a video of a landscape). In the Blue-Screen window you find another channel selector. If this is in the Off-position, the realtime Blue-Screen functions are deactivated. To activate this effect you have to select a channel for the foreground video (normally your video camera) with this channel selector. The Blue-Screen effect needs two different video sources. If both channels are selected identically, the effect is not activated.

The selected grabbing area is used (as all other parameters) for both video sources. If one of the video sources is a VCR, you have to select the TimeBaseCorrection. The video signal of the Blue-Screen channel has to be a color signal. The background signal can also be a monochrome signal. In this case both signals are mixed to a greyscale picture.

1.42 Chroma Keying color parameters of the Blue Screen System

The Blue-Screen is configured to a typical blue background color with moderate acceptable color range on default. You can change this in many ways.

For all of the three RGB components you can select a sensitivity parameter between 0% and 100% numerically or with a slider. Important for the meaning of these values are the mode gadgets on the right of the sliders. If you choose "minimal" here, this means that the color component must have at least the selected brightness. Similair "maximal" specifies that the component may not have more than this brightness.

For perfect Blue-Screen-Backgrounds these settings would be flexible enough. You could e.g. select minimal 85% for blue and maximal 15% for red and green to accept a typical blue screen.

For uneven illuminated backgrounds (e.g. complex blue sceneries build with blue objects, which are used in studios for special

effects) relative color modes are usefull. You can specify for any of the components, that this may not be higher than a selected percentage of one of the other two components. You could e.g. specify that red may not be higher than 30% of blue to accept the color for chroma keying.

Changes in the sliders and mode gadgets are not immidietly used in the blue screen effect. To apply changes to the effect you have to press the button "New Chroma Keying parameters". The parameters are then transformed to an internal format, which then is used. The button is disabled, when the parameters are uptodate. After changing one of the parameters, the button is enabled again, so that you can see at any time, if the selected parameters are used.

1.43 Switching delay for the Blue-Screen

Unfortunately sometimes synchronisation problems appear, if video inputs are switched too fast on the VLab, depending on the configuration and the video signal quality, as two independent video signals are not synchronuous. The VLab hardware then needs a specific time, to adapt to the new signal, before a correct grab is possible. Unfortunately the right delay time can not be detected by software. You have to experiment a bit manually, to find the minimal needed switching delay times. You can select theese separately for the switching from the background to foreground signal and vice versa (in units of 1/50 second, which means half frames). The delay time for switching from background to foreground signal must normally be bigger as no internal calculations are made between grabbing. On the other change there is time needed for the RGB conversion, combining and displaying, which means that the delay time can be smaller.

If you select bigger delay times (maximal 50 frames per switching, totally 2 seconds), the frame rate will decrease drastically. The delay time can be used by other programs.

If the pictures jump up and down or stay in a wrong vertical position, the switching times are not selected high enough. Depending on the frame which is wrong (fore- or background), you have to increase the corresponding delay time.

1.44 EGS-TV Info-Requesters

The Info-Menu-Entry pops up the usual info requester. In the full version this includes your registration name and number, in the demo version you will find some information for registering.

The VLab-Info-Menu-Entry pops up a requester containing some hardware information which is read from your vlab.library. Please report the numbers shown there in bug reports regarding compatibility problems.

1.45 Selecting a screenmode (registered users only)

You can select a screenmode in the full version of EGS-TV with the screenmode gadget. Please note that all preview windows are closed (and their contents lost) during this process. You can select any screen (even native Amiga screens), if you have the right EGS driver. For speed reasons, you should prefer 24 Bit screens.

You can also select the default screen. This is the system conform way to run several applications on one EGS screen.

If you don't want to use the default screen or you have another EGS application, which can not use the default screen, you can try the Jump Screen gadget. Please note that this is not system conform. EGS-TV will visit other EGS-screens when you press this button. This might lead to unexpected behaviour. Use this option at your own risk and don't close the foreign screen before you have removed EGS-TV from it's screen! I had no problems with this function, as long as I obeyed to this rule.

The demo version can only be run on a cloned default screen with 24Bit color depth (or the user defined screen depth) or (if this is not possible) in the depth of the default screen. This is selected automatically on start of EGS-TV.

1.46 Loading/Saving settings (registered users only)

This is not implemented in the demo version.

The full version allows you to select a setting from different settings (for your different video sources/purposes) and to save the actual setting under any name. I recommend to use the file extension ".cnf" for your settings so that you don't lose track and get confused. The selection of the file name is done with the EGS file requester.

When loading a setting, all VLab hardware parameters and some corresponding EGS-TV settings are retrieved from the file. This includes for example:

- * the selected area
- * the input channel
- * the filter modi
- * the PAL/NTSC mode and the hue value
- * the color or greyscale grab mode
- * the time base correction mode
- * the color intensity
- * the deinterlace parameters
- * the Blue Screen channel
- * the Blue Screen chroma color parameters

A special position is held by the file "default.cnf". You can create this file exactly as all other setting files, but it is loaded on every program start automatically and some additional parameters are retrieved from this file then, e.g.:

- * the actual monitor mode
- * the status of the monitor window (only if the control window flag is set in the control menu)
- * the size of the monitor window (LoRes or VeryLoRes)
- * the preview color mode and size
- * the refresh modes for preview windows
- * the position of the monitor and control windows
- * the IFF-ILBM compression modes and other file format flags
- * the Blue Screen switching time parameters
- * the maximum number of frames to be recorded
- * the flag for security requesters on closing of sequence windows
- * the frame size for sequence recordings

If you want to get the control window opened automatically on program start you have to set the control window flag in the control menu and save this as your "default.cnf". In this case the monitor status will be kept.

The configuration files are implemented in an upward compatible way, so that you can use your old configurations in extended versions of EGS-TV in the future (unsaved parameters in the configuration file will then just not be changed on loading and a warning will be emitted).

1.47 How to exit EGS-TV

Although EGS-TV is a very nice program, there might come the moment where you want to exit it (especially as it needs lots of memory).

You can exit EGS-TV with the Quit-Button or by closing both the monitor and the control window (previews are closed automatically with the control window). A requester will warn you before EGS-TV is quit.

The third method to quit EGS-TV is to send a Ctrl-C-Signal to the task.

Please don't forget to close EGS-TV before another program if you are visiting the other programs screen (this is not necessary for the EGS-Default-Screen). Otherwise you might get massive problems.

1.48 How to register to get the full version

If you have currently only the demo version of EGS-TV and like it, please obtain the full version directly from me by registering. I have put a lot of effort in this software to make it as useful and bugfree as possible and implemented already many improvements which were inspired by users. Only a large base of registered users makes it possible for me to continue developing. Soon the new and improved EGS-TV-Professional will appear, which will then offer a high-end alternative to EGS-TV.

A registration form is included in the demo version, which you should print with 12CPI (select font ELITE in printer preferences)

and a left margin of 8 characters.

To register from outside of europe for the professional version, send 30\$ (US dollar) as cheque or in bank notes together with the registration form (which is part of this distribution) to the following address:

Helmut Hoffmann
Rubensstrasse 4

D-41063 Mönchengladbach

Germany

If you only need the classical version, you only need to pay 20\$ (US dollar).

Users from european countries other than germany can send money (cheque or bank notes) in one of the following currencies:

For the professional version: For the classical version:

- | | |
|-------------------------------|-------------------------------|
| 1) 40DM | 1) 25DM |
| 2) 40SFr (Swiss Franken) | 2) 30SFr (Swiss Franken) |
| 3) 50hfl (Dutch Gulden) | 3) 35hfl (Dutch Gulden) |
| 4) 300ÖS (Austrian Schilling) | 4) 200ÖS (Austrian Schilling) |
| 5) 20£ (British pound) | 5) 13£ (British pound) |

German users pay 40DM for the professional version or 25DM for the classical version by either transferring the money to my banc account or sending it as cheque or in bank notes like other european users.

When transferring to my account you have to send in your registration form by mail as well. Please write your name and address in the "Verwendungszweck"-field together with the word "EGS-TV".

My Banc Account:

KontoNr 5740147 (Helmut Hoffmann)
Stadtsparkasse Mönchengladbach BLZ 310 500 00

Please don't transfer money to my account from outside germany, as it would cost extremely high charges. I can not accept this.

My EMail-Address is (currently): hhoff@pool.informatik.rwth-aachen.de

Please note that in the summer months I will only come to my EMail-account very irregularly. If you want to register or have suggestions and don't get answer by EMail, please mail them by ordinary mails to my address above.

If you have any questions or suggestions regarding ESG-TV, please write by EMail if you want to get a quick answer (but see above) or send IRC (international reply coupons) with your letter.

If you want to use EGS-TV in a company/institute on several machines simultaneosly you have to register for several licences. You need to fill

only one registration form. State the number of registrations you want to get and pay for each licence. If you order at least 4 licences you only need to pay 75% per licence.

1.49 What do I get when I register?

After registering by sending the money and the registration form I will send you the latest full version on disk. Please allow some weeks to deliver. In most cases it won't take very long. You also get a printed reference chart as introduction and to overview the features.

You can contact me by EMail (or ordinary mail) to report bugs or suggest features you would like to see in later versions. A software-improvement form is supplied with this program for easy reports.

If the respond is great there will be further enhancements. I especially hope to increase the number of programs EGS-TV can cooperate with.

As registered user you can use later appearing public demo versions as full version. You get a key file, which may not be distributed. In some cases you might need a new key file, to be able to use all new features. In this case a special requester will inform you that you need a newer keyfile to use a feature. Please order an update disk in that case, if you need this feature.

Alternatively you can order Update-Disks at any time, if you prefer this way of getting newer versions.

For major expansions (as from EGS-TV to EGS-TV-Professional) you have to order an Upgrade from me, as then a new, expanded keyfile is needed. With an old keyfile you can also use the new versions, but some functions are then unusable.

1.50 How to get updates and upgrades?

From time to time there will appear new public versions of EGS-TV.

Registered users get a key file on their disk (the egstv.library) which makes it normally possible, to use new public versions as full versions. This keyfile may not be distributed. Sometimes a new keyfile is needed for technical reasons to use some new features. Please order an update disk in that case, if you need these features.

Because new demo versions might not appear everywhere regularly, you can order update disks. This should be done similar to the registration, but you only need to send the money (or cheque) for the update fee and your registration number. If you wish to get updates for specific versions of EGS-TV, you can state your wishes on your update order, otherwise you get the next update(s) with reasonable improvements.

The update fee from outside of Europe is currently 8US\$ for one

update and 14US\$ for two updates (from inside of europe send 10DM, 10SFr for one and 15DM, 20SFr for two updates).

Upgrades
=====

Upgrades are only necessary for large extensions, as from the classical EGS-TV to the Professional version.

If you order the Upgrade from EGS-TV to EGS-TV-Professional before october, 1st, 1994 you can get it for only 8US\$ (10DM inside of europe), if you ordered EGS-TV before August/20th/94. If you ordered EGS-TV after that time, the upgrade costs 12US\$ (15DM from inside of europe).

If you order the upgrade after september 1994, it costs 15US\$ (20DM from inside of europe).

1.51 About the author

I am currently a student of computer science at the
Rheinisch Westfälische Technische Hochschule Aachen
in germany.

I am using and programming Amiga computers since more than six years now.

I wrote this program to get better use of my VLab-frame-grabber, experience the limits of the EGS-environment and experiment with interesting algorithms as for the Blue Screen effect.

You can reach me by EMail via Internet while I study in Aachen:

hhoff@pool.informatik.rwth-aachen.de

There are some holiday periods in the year, when I don't come to my EMail-account for some weeks.

My postal address is

Helmut Hoffmann
Rubensstrasse 4

D-41063 Mönchengladbach

Germany

This is valid through all the year.

1.52 Hard- and Software used while developing EGS-TV

This program was written in 100% pure Assembler (using the german assembler O.M.A. 2.0). This is, why EGS-TV is so compact...

My development system is:

Amiga 3000/030/25MHz / 18 Megabytes RAM

OS version 3.1

EGS System 6.2

Classical VLab with vlab.library version 8.2

2MByte Piccolo graphics board (running in Zorro III-mode).

This program was tested with enforcer and mungwall running.

The reference card has been created with PageStream.

1.53 Special Thanks

I want to thank all persons who already registered during the development process of EGS-TV and had to wait a longer time for their full version and all persons who made suggestions for improvements.

I especially thank Alexander Pratsch for providing me with BigPainter, the successor of PicoPainter. I tested the ARexx transfer functions of EGS-TV with BigPainter.

I could not perform any further transfer tests as I did not get any support of other developers and many EGS programs (e.g. EGS-ImageFX and SpectraPaint) are not available for the Piccolo at all.

1.54 Version history

- * version 1.0a (german and english) 13.6.94
first PreReleaseDemo for selected interested persons
(documentation only in english)
 - * version 1.0b (english) 17.6.94
PreReleaseDemo for selected interested persons
 - * version 1.0n (english) 17.6.94
PreReleaseDemo for NTSC users
Introduction of the Hue gadget
 - * version 2.0 (english) 1.7.94
Strongly improved PreReleaseDemo for selected interested persons
Introduction of the grab functions with multiple preview windows,
color intensity choice, deinterlace function
Redesign of the user interface
-

- * version 2.1 (incl. 2.1d and 2.1n) (german and english) 6.7.94
 - first freely distributable demo version; has first been made public available on AmiNet and on orion.etsu.edu
 - Introduction of the control menu with refresh setting for full frames
 - Redesign of the documentation
 - Introduction of the german documentationFull version:
 - Introduction of the keyfile system with the "egstv.library"
 - Introduction of the screenmode requester

 - * version 2.2 (incl. 2.2d and 2.2n) (german and english) 11.7.94
 - second freely distributable demo version
 - Internal changes to workaround an EGS bug
 - Introduction of busy mousepointers for lengthy operationsFull version:
 - Introduction of the jump screen function

 - * Version 2.3 (german) 15.7.94
 - first version with all functions for registered users
 - Improvement of Deinterlace function esp. with greyscalesNew functions for full version:
 - Introduction of save functions (IFF24 and PPM format (P6))
 - Introduction of transfer functions
 - Introduction of egstv.config incl. user configurable transfer functions via ARexx
 - Introduction of the setting database and the default.cnf
 - Extension of the documentation

 - * Version 2.4 (german and english) 18.7.94
 - first english version with all functions for registered users
 - Introduction of the alternative, small monitor window size
 - Internal enhancements
 - Inclusion of HHsEGSPatch in the package to avoid EGS errorsFull version:
 - Default screen can now be selected for program start
 - Bug with greyscale monitor in default.cnf on program start fixed
 - Bug with input masks in control window on program start with default.cnf fixed

 - * Version 2.5 (german and english) 26.7.94
 - During the area selection with the mouse a flexible frame is now drawn
 - Refresh mode for halfframes (including HiRes) can now be selected too
 - Bug with unsure Menu-Flag-Set recognition removed
 - Unneccessary window refreshes are now better avoided
 - Shortcuts from control menu flags have been removed as they are only used very rarely and often flags could have been changed unintentionally when shortcuts were used with control window active instead of a preview window
 - Introduction of a "menu leave-out bar" for the control menuFull version:
 - Introduction of the YUV-Save-Format (incl. Y-Format)
 - Aspect ratio for NTSC pictures (11:13) is now saved correctly in IFF files
 - Aspect ratio for HiRes pictures is now saved correctly in IFF files
 - Pad byte is not counted any more in packed bitmap chunks of IFF files

 - * Version 2.6 (german and english) 27.7.94
 - Control window is now opened automatically, if not configured otherwise
-

Full version:

Introduction of the fast direct transfer to PicoPainter (as picture or brush)

* Version 2.7 (german and english) 2.8.94

First stage of the introduction of the ultimate Desktop Video for sequences in RAM

(can deal with unlimited number of sequences of unlimited length, only limited by memory...) with functions as Record, Delete, SingleStep forward and backward, Playback (forward and reverse), Delete Single Frame, Record Single Frame, ...

Introduction of a project menu in the control window

and replacement of the VLab-Info-Button by a VLab-Info menu entry

Reduction of regrab events in held (frozen) monitor window

Full version:

Introduction of the P5 file format for greyscale pics (PPM 8Bit)

As this format can not be read properly by all programs, there is the option to save greyscales alternatively as P6 (24Bit) like before

Introduction of the QRT file format (is also used with POV Raytracer)

Introduction of the Targa file format (currently uncompressed, TopDown)

Introduction of the DEEP file format

Change of the TVPaint-Transfer function to use the DEEP format

Save and transfer functions can be used for single frames of sequences

* Version 2.8 (german and english) 16.8.94

Introduction of the realtime Blue-Screen-System with freely configurable chroma color and possibility to use for monitoring, grabs and sequences.

Second stage of the introduction of the ultimate Desktop Video for sequences in RAM with new edit functions for inserting, appending or overwriting sequences in sequences. This can be combined with the Blue-Screen-System to combine new foregrounds into an existing sequence.

Comfortable control panel for sequences in VCR style.

Frame position after sequence grabbing is now the current position

New function to transform a picture window into a sequence window

Internal changes in memory handling

Introduction of a configurable security request to prevent sequence windows from being closed unintentionally.

* Version 2.9 (german) 27.8.94

Internal changes and adaptations

Full version (partially extensions of the keyfile):

Improvement of error handling for save functions

Introduction of a save function for complete sequences in a special YUV-like EGS-TV sequence format

Introduction of a load function for sequences in EGS-TV sequence format

* Version 2.9a (german and english) 30.8.94

Correction of a wrong menu entry in sequence windows (combine instead of overwrite)

Correction of insert and assemble recording, to avoid mixed greyscale and color parts in a sequence, which could lead to problems.

Full version:

Introduction of an export function for sequences, which saves all frames of a sequence automatically as single pictures in any file format.

* Version 2.9b (german and english) 31.8.94

Correction of sequence appending and inserting: if a maximum number of frames for recording had been selected, only one frame fewer was recorded.

- * Version 2.9c (german and english) 6.9.94
 - Internal changes.
 - Inclusion of EGSTVPlayer 1.0, a separate player program for egstv-sequences (first version only with greyscale viewing).
 - Professional-Version:
 - Some changes for JPeg saving and exporting.
 - * Version 2.9d (german and english) 8.9.94
 - Changes of terminology, esp. in the english version and in the documentation.
 - EGSTVPlayer 1.1 (now with color viewing)
-