

cybergraphics

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WRITTEN BY		October 17, 2022	

REVISION HISTORY

NUMBER	DATE	DESCRIPTION	NAME

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Chapter 1

cybergraphics

1.1 cybergraphics.guide

CyBERgraphics WB emulation

The attempt to standardize the intuition emulation for gfx boards

Version 40.45

(C) Copyright 1994-1995 by Thomas Sontowski & Frank Mariak

SHAREWARE

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1.2 cybergraphics.guide

CyBERgraphics WB emulation

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registered version

Introduction	What's CyBERgraphics ?
Min. requirements	Minimal sytem requirements
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1.3 cybergraphics.guide/M1_INTRD

Introduction

The cybergraphics system was designed to define an independant graphics standard for graphics boards. We also wanted to continue our development of workbench emulations. We could include all our knowledge of about 3 years of gfx board software development (wb-emulation of visiona, domino, picasso and now the cybervision64).

cybergraphics is based on hardware dependant monitor drivers and hardware independant libraries. This has some advantages: Bug fixes in the workbench emulation or speed optimizations is of benefit for ALL gfx boards that are supported by the cybergraphics system. There is no third like XpERT or Village-Tronic inbetween developers and users. That guarantees bug fixes and continued development of the software in the future.

cybergraphics allows using of 15/16/24 screens independant of the used color model. You are able to use the cybergraphics.library functions to modify this screens. Using graphics.library functions is currently not possible but this may change in one of the next releases.

cybergraphics will also be the standard workbench emulation for the soon coming (April 95) Cybervision64 by Advanced Systems&Software. (of course including drivers for diverse graphics programs, screen promoters and much

more).

Right now (29.3.95) there are drivers for Maxon Cinema, Real 3D, ADPro, AmaxIV, PhotoWorx, Emplant, ImageFX and Photogenics available.

There is also a picture viewer called CyberView which can be found on AmiNet.

FEATURES

- o stable Workbench emulation;
- o dragable screens
- o no chipmem required for screen display
- o modular design, it is possible to use multiple (and different) gfx boards at one time
- o cybergraphics based vilintuisup.library. As long as there exist not much cybergraphics 15/16/24 bit applications the old picassoII drivers may be used. (but: use it at your own risk)
- o uses cirrus blitter for plane to chunky conversion

1.4 cybergraphics.guide/M1_REQUI

Minimum requirements to run cybergraphics

- o One of the following boards
 - Domino
 - Picasso II in linear mode (! not segmented !)
 - Piccolo Z2/Z3 (no SD64!!)
 - GVP Spectrum
 - RetinaZ3
 - CyberVision64
- o Kickstart 3.x
- o 68020 or higher
- o 2 MB of fast memory

Please avoid it to contact us to do new drivers (e.g. Retina Z2, Piccolo SD64, Merlin and so on). We know that this boards exist. But we do not develop software main time, so we can not provide drivers for any boards right now.

As soon as there are new drivers available, we will release them.

That certain driver don't exist right now, has a simple reason. Main reason is, that we don't have certain hardware documentation or that we have no time to develop a new driver. There is also the problem that we do not own certain graphics boards.

To guarantee problem-free working of the new intuition emulation, you have to remove the old VillageTronic or EGS emulation. This is mainly done by the installation script but in some cases you have to do it by yourself.

Remove tools like PatchDT to avoid conflicts.

1.5 cybergraphics.guide/M1_INSTL

Installation

The installation is done by the Commodore Installer. So the only thing you have to do is double-click the icon with the name CyberGfx_Install in the drawer cybershare. In the registered release you find this Installscrip in the rootpath.

If you have any problems while installing cybergraphics, please feel free contact Robert Reiswig (rcr@netcom.com). He has done the installer script.

1.6 cybergraphics.guide/M1_LIMIT

Restrictions

Without a personalized version of cybergraphics emulation you can not use all features of it. The limitations are as follows:

* In the Shareware release there are no custom modes available. Only 9 fixed resolution modes are defined whereas 8 resolutions are 8 bit (usable by Workbench) and one resolution may be used by the cybergraphics custom drivers (32768 colours). In the registered version there are no limitations of this kind of course. You may define higher colordepth and refresh frequencies.

The resolutions are defined as follows:

- 320x240 pixels in 58Hz, 37,35kHz
- 640x480 pixels in 70Hz, 37,03kHz
- 800x600 pixels in 58Hz, 36,42kHz
- 1024x768 pixels in 74Hz/Interlace, 30,26kHz
- 1120x832 pixels in 62Hz/Interlace, 27,46kHz
- 1152x900 pixels in 51Hz/Interlace, 26,57kHz
- 1280x1024 pixels in 43Hz/Interlace, 24.16kHz
- 1600x1200 pixels in 29Hz/Interlace, 18.32kHz

as well as one mode in 32768 colours:

- 320x240 pixels in 58Hz, 37,35kHz

JUST TO SAY IT TWICE: MUCH HIGHER FREQUENCIES ARE POSSIBLE WITH THIS DRIVER THIS IS ONLY A LIMITATION TO AVOID THAT NOBODY PAYS THE SHAREWARE FEE SO THAT WE CAN NOT CONTINUE OUR WORK

* The Domino driver only supports a 1024x768 interlace resolution in the shareware package.

* In the shareware package there are drivers for Maxon Cinema 4D,

Real3D, Photogenics, PhotoWorx and ImageFX ... more to come

* If you are registered we grant support if you have any problems or questions by email and/or snail. We can't do this for any person who has problems with the unregistered release !

We apply on your insight for these restrictions. How to get a personalized version can be read in Registration.

1.7 cybergraphics.guide/M1_REGIS

Register

As you may have noticed, cybergraphics is a shareware product. Nearly all functionality is available for testing without paying any money. If you think cybergraphics is worth the amount of 50,- DM or \$35,-, fill out the orderform and send it to one of us.

To get registered for cybergraphics, please print the file OrderForm on your printer (if no printer is available, write off this text), fill up this form and send it to the given address. We will endeavour to act upon your registration within two weeks after we get the register form and the sharefee. In most cases it will be done faster. Prospectively the registered driver will be shipped by (snail)mail.

1.8 cybergraphics.guide/M1_UPDAT

Updates

When you become a registered user, you will get the latest registered release of cybergraphics including a personalized graphics board driver.

The first update of the graphics board driver is for free, any forthcoming update will cost DM 5 (US\$ 5 outside EU) just to pay our posting&packaging costs. email updates will be charge free.

This offer is valid for registered users only of course.

1.9 CyBERgfx_E.guide/M1_RIGHT

Legal Stuff

Liability

Distribution

Trademarks

Copyright

1.10 cybergraphics.guide/Liability

Liability

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDER AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

1.11 cybergraphics/Distribution

Distribution

=====

It is allowed to distribute cybergraphics on any data medium and to make it available on bulletin boards or other network compounds if the following directory structure will be kept:

```

devs (dir)
  monitors (dir)
    Domino                Domino.info
    Picasso               Picasso.info
    Piccolo               Piccolo.info
    RetinaZ3              RetinaZ3.info
    Spectrum              Spectrum.info
  monitors.info
libs (dir)
  cybergraphics.library   cyberintuition.library
  cyberlayers.library     vilintuisup.library
devdocs (dir)

```

```

autodoc (dir)
  colormodels.doc                colormodels.doc.info
  cybergraphics                  cybergraphics.doc
  cybergraphics.doc.info         cybergraphics.info
examples (dir)
  cybersavegio.c                 cybersavegio.c.info
  Real3DLibMain.c               Real3DLibMain.c.info
fd (dir)
  cybergraphics_lib.fd
include (dir)
  inline (dir)
  clib (dir)
    cybergraphics_protos.h
  cybergraphics (dir)
    cybergraphics.h              cybergraphics.h.info
    cybergraphics.i              cybergraphics.i.info
    cyberinline.h
  pragmas (dir)
    cybergraphics_pragmas.h
mod (dir)
  CyberGraphics.mod              CyberIntrf.readme
autodoc.info                     examples.info
fd.info                          include.info
mod.info
drivers (dir)
  adpro (dir)
    CyBERgraphics
  cinema4d (dir)
    cinemaausgabe.library
  photogenics (dir)
    CyBERgraphics.gio
  photoworx (dir)
    cyber.viewer
  real3d (dir)
    cybergfx_r3d.library
  imagefx (dir)
    CyberGraphics.000           CyberGraphics.000.info
    CyberGraphics.030           CyberGraphics.030.info
modes (dir)
  Monitor-15khz                  Monitor-31khz
  Monitor-35khz                  Monitor-38khz
  Monitor-48khz                  Monitor-57khz
  Monitor-64khz
Bestellformular                  Bestellformular.info
CyBERgfx_D.guide                 CyBERgfx_D.guide.info
CyBERgfx_E.guide                 CyBERgfx_E.guide.info
CyberGfx_Install                 CyberGfx_Install.info
devdocs.info                     devs.info
drivers.info                      libs.info
Orderform                       Orderform.info
Versions                          Versions.info

```

It is of course allowed to distribute these files in a packed archive file. It is also allowed to levy copy charges for the distribution on floppy disks or CD-ROMs, as long as it has stated clearly for the user that he has not payed for the share fee, hereby.

It is not allowed to copy, distribute or generate registered versions.

1.12 cybergraphics module

Adpro saver

This is a Saver module for Art Department Pro from Elastic Reality. This one was only tested with Version 2.5 of Adpro and maybe has problems with earlier versions.

Maxon Cinema4D module

There is not much to say about that one. This module will be installed by the installer script in the libs: directory and is called cinemaausgabe.library.

How the module works can be found in the Maxon Cinema manual. This module even works with the new Cinema4d version 2.0.

ImageFX Render Modul

This module has been developed by Uwe Roehm. Now follows the description:

This is a render module for ImageFX and the CyberGraphics RTG system. It supports rendering of ImageFX' main buffer in a Hi- or TrueColor CyberGraphics screen or even a window on ImageFX' panel screen (see installation for more details). Bigger images can be scrolled with mouse or the cursor keys. If enough memory is available the render screens allow autoscrolling.

Installation

There're two versions of the render module, one compiled for any CPU (ending .000) and one compiled for MC68030 and higher (ending .030).

Copy both into the directory: ImageFX:Modules/Render/
Now you can choose the CyberGraphics render module via the "Render..." button in the preferences window of ImageFX.

If you want to be able to render in a window on the ImageFX panel screen, you must start ImageFX in its workbench-mode on a CyberGraphics Hi- or TrueColor screen. A "normal" 256 color screen isn't enough! Due to the current limitations of Workbench's screenmode and the configuration of ImageFX you have to do some steps:

1. Open a PublicScreen in a 15, 16 or 24Bit CyberGraphics mode.
There're some PublicScreen manager available which help a lot.
2. Set the tooltypes WORKBENCH and PUBSCREEN=<name of new screen> in the icon of ImageFX.
3. Start ImageFX and switch to your new PublicScreen.
4. Now you should be able to select the "Render in window on panel screen" button in the GUI of the CyberGraphics render module. You can change the position and dimensions of this render window and save them with the preferences of ImageFX.

GUI

The GUI of the CyberGraphics render module consists of the following buttons:

- Module : Choose another render module
- Output Format : Choose where to render the image. You can "Render in new CyberGraphics screen" or even "Render in window on panel screen". For the later you must use ImageFX itself on a Hi- or TrueColor CyberGraphics screen (see installation for details).
- Display Mode : If you choosed rendering in a new CyberGraphics screen you can select any CyberGraphics 15, 16 or 24 bit screenmode with this cycle gadget. The render module will automatically pre-select the best mode for the current image.
- Render : Start rendering in screen/window.
(Shortcut: r)
- Close : Closes own render screen/window
(Shortcut: c)

Scrolling

Images which are bigger than the actual render screen/window can be scrolled with the cursor keys. Without further qualifiers they scroll one pixel, with SHIFT 10 pixels and with CONTROL the whole window/screen size. In render screens you can also scroll with the mouse - if enough memory is available the screen will be opened as an autoscroll screen.

Preferences

The render module saves the position and dimensions of the render window, and also the selected output format (screen or window) with ImageFX' preferences.

Photogenics Saver

This saver makes it possible to view photogenics projects on a 15/16/24 bit screen.

PhotoWorx Display Treiber

This driver has been developed by the PhotoWorx author himself and should have no incompatibility problems.

Real3D external screen module

This module is an external render module for Real3D. Please choose external screen/Settings in the Project menu to select cybergfx_r3d.library as output library. If you select external screen/Open then, a cybergraphics 15/16/24 bit screen will be opened. By using Set modes you can choose the render screen resolution.

1.13 cybergraphics.guide/Trademarks

Trademarks

Workbench (TM), Intuition(TM) and Amiga (TM) are registered trademarks of Commodore Amiga Inc., West Chester, USA.

1.14 cybergraphics.guide/Copyright

Copyright

The Cybergraphics system, the accompanying files and the manual is

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1.15 cybergraphics.guide/M1_BUGRP

Known bugs:

- o some Picasso II gfx boards produce read or bliterrors in high resolutions or high refresh frequencies. In this case you have to select a smaller refresh rate in PicassoMode.
- o In 24 bit Mode you can see three mousepointers on the screen. This is a hardware bug and is fixed as soon as possible

1.16 cybergraphics.guide/M1_FUTUR

What will be done in the future

Planned features for forthcoming versions of cybergraphics whereas order is no sign of priority:

- * application to adjust the monitor parameters
- * support for other gfx boards than Picasso&Piccolo&Spectrum
&Domino

1.17 cybergraphics.guide/M1_HISTO

Versions

cybergraphics Revision V40.45

- minor fixes
- sprite resolution is now changeable in 15/16/24 bit, too

cyberintuition Revision V40.20

- made some changes in the pubscreen locking stuff to avoid some problems with wb resolution change in 15/16/24 bit

cybergfx_r3d.library V40.2 (Real3D CyBERgraphics display driver)

- minor modifications (only DIPF_IS_WB modes are shown)

Picasso/Piccolo/Spectrum/Domino V1.19

- added support for 16bit temp patt blit
- driver library is now made resident correctly (no mungwall hit at startup anymore)

RetinaZ3 V1.1

- first public release (has no blitter and 24 bit support currently)

cybergraphics Revision V40.44 (made available only to registered owners)

- added additional code to allow screenmode testing (screenmode tool still not finished yet)
- fixed enforcer hits in bob funcs

vilintuisup Revision 2.34

- minor changes

cybergraphics Revision V40.43

- fixed some problems with screen dragging that occurred since early 40.43 releases
- diverse changes in the view stuff
- xor'ed pattern blits work now correctly on extended screens
- hopefully fixed the "cybergraphics does not work on my system anymore" problem ...
- added blitter version of BltPattern for 15/16/24 bit (only works on CVision up to now)
- fixed bug in AreaFillFuncs on 15/16/24 extended rastports
- fixed a bug in the color functions on extended viewports

vilintuisup Revision 2.33

- some bugs fixed

cybergraphics Revision 40.42

- cache optimized some special planar->chunky->rgb blits to speed up blitting on 68030 systems when 15/16 bit screens are opened
- now screen swap stuff uses MOVE16 on 68040 machines

cyberintuition Revision V40.19

- fixed some problems when OpenWorkbench() was used on extended screens
-

cyberlayers Revision V40.5

- fixed a bug in 8 bit smart refresh window refreshing (hopefully fixes all problems that occurred in the 40.41 AMInet release)
- tried to optimize smart refresh window resizing

Maxon Cinema4D cinemaausgabe.library Revision V1.1

- fixed a bug in the saver (red and blue color values were exchanged when an IFF picture was saved).

cybergraphics Revision 40.41

- displaying alerts now works again. The monitor switch was not toggled in V40.40
- IconMasks now work perfectly on extended bitmaps too
- changed the allocbitmap stuff a bit. Now picture datatypes should work on extended displays too.
- all extended bitmaps are now correctly aligned
- some changes in the sprite stuff
- added blitter support for extended display BltTemplate (currently only cvision is supported)
- GREY8 & CLUT8 RECTFMTs did only sizex-1 rectangle writes. now fixed
- tried to optimize some code in Write/Fill/ScalePixelFormat
- TDNestCnt state was not restored correctly when no memory could be allocated for screen conversion.
- fixed bug in conjunction with interleaved bitmaps
- fixed a bug in ScalePixelFormat
- added a missing mem alloc failed check in 15 bit bitmap allocation routines
- very bad system crashes when being low on memory and opening screens then should be a thing of the past now.
- Blitting should be more low memory tolerant now (Chunky2Planar blits failed in previous versions if not enough chip memory could be allocated)
- fixed a rounding problem in the rgb15 color models

cybergraphics Revision V40.40

- mouse colors should be set correctly now, even on less than 32 colour screens
 - added ScalePixelFormat function
 - fixed a bug in GetCyberIDAttr & GetCyberMapAttr
 - added clipping for InvertPixelFormat
fixed layer offset bugs in WritePixelFormat
 - added ReadPixelFormat for extended screens (via FindColor)
 - diverse changes in the extended screen support stuff
 - CYBRMREQ_MaxDepth is now set to 32 by default
 - fixed a bug in GetCyberMapAttr when an amiga bitmap was supplied
 - added CopyCyberMap function to allow faster image transfers
 - did some optimizations in the chunky to rgb code parts
 - dim_MaxRasterHeight was set to dim_MaxRasterWidth. This is fixed now.
-

- fixed a bug in the Draw 15/16 bit function. FgPen & BgPen was not set correctly
- fixed diverse bugs in MovePixelArray and added minimal clipping support

cybergraphics Revision V40.36

- graphics' WritePixelArray8 also works on extended bitmaps now
- cybergraphics' WritePixelArray works in a layered environment now too
- fixed some problems with normal chunky bitmaps in GetCyberMapAttr
- complement text mode works now correctly
- cybergraphics library can not be opened without a driver installed anymore
- fixed memory loss problems in FreeModeList & FreeBitmap
- fixed memory loss problem with extended (15/16/24) bitmaps
- added WriteChunkyPixels patch
- fixed a clipping bug in the drawing routine
- fixed further bugs in ReadPixelArray
- added PIXFMT_RGBA32
- added minimal clipping support for Read & WritePixelArray
- fixed a cycle eating bug in the sub task. Signaling was not handled correctly

cybergraphics Revision V40.29

- added CPUP2C environment variable
- HIRESCRSR environment variable is supported now
- internal speedups
- fixed titlebar problem in 15/16/24 bit
- fixed another small masking bug with cirrus-boards
- added blitter support for (Move & InvertPixelArray).
- fixed a minor bug in ReadRGBPixel & ReadPixelArray
- fixed bugs in extended bitmap support routines
- Fixed bugs in Fill & InvertPixelArray
- fixed bugs in MovePixelArray

cybergraphics Revision V40.23

- first official release

1.18 cybergraphics.guide/M1_THANX

Thanks

The following people/firms we have to thank a lot. Maybe without some of them cybergraphics would not exist:

- Advanced Systems&Software for developing a "state of the art" graphics board which was decisive for the development of CyBERgraphics.

- Ralf Schmidt for hints with intuition und graphics
- Olaf Barthel for hints and testing the first versions as well as developing a driver for his PhotoCD application PhotoWorx and the vilintuisup library replacement
- Andreas Goiczky for beta testing cybergraphics on his Piccolo Z3 graphics board
- Matthias Scheler for testing the first versions as well as developing CyberView and CyberWindow
- Bernd Münchgesang for hardware support
- Kenneth Dyke for nice talks on IRC
- Robert Reiswig for creating the installer scripts
- Uwe Roehm für creating the ImageFX Render module

1.19 cybergraphics.guide/M1_AUTOR

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Installer script by Robert Reiswig
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1.20 cybergraphics.guide/M1_ENVIR

the following environment-vars are known by the cybergraphics-lib :

- o cybergraphics/CPUP2C

By setting this variable, the planar-to-chunky conversion will be done by the CPU (in contrast to the blitter-conversion) Therefore the ugly-looking "planar" blitting-effects are gone, but the software-conversion is slower.
The cpu-conversion can be activated by:

```
setenv cybergraphics/CPUP2C="1"
```

(this creates the file env:cybergraphics/CPUP2C
-> you have to copy this file to envarc:cybergraphics/ if
you want the variable permanently to be set)

o cybergraphics/HIRESCRSR

By setting this variable, the Lores-Sprites on non-AA-machines become Hires-sprites (they are no longer doubled by the cybergraphics-Software). This variable is identical to the tooltype HIRESsprite of older Picasso-monitor files. Hires-sprites can be activated by:

```
setenv cybergraphics/HIRESCRSR="1"
```

(this creates the file env:cybergraphics/HIRESCRSR
-> you have to copy this file to envarc:cybergraphics/ if
you want the variable permanently to be set)

1.21 cybergraphics.guide/M1_MONIT

Until the program for creating cybergraphics-monitordefinitions exists, you have to use the provided monitor-files. All cybergraphics-monitorfiles use the same data-format, the monitor-definitions are therefore exchangeable.

- o Domino : There is no definitionfile for the Domino graphics board. By using setenv cybergraphics/dominomonitor you can change the maximum horizontal frequency. You may choose 31,50 or 57.
- o Picasso II : The monitorfile loads the definition-file specified by the environment-variable PICASSOMONITOR from ENV:cybergraphics/Picasso/ (should be installed correctly by the install-script) If no valid definitionfile could be loaded, you can specify a default-resolution in a requester. You can convert the old mode-files created by PicassoMode with the program CvtMode. (the files in devs:village/#? are converted and saved in envarc:cybergraphics/Picasso/)
- o Piccolo: The monitorfile loads the definition-file specified by the environment-variable PICCOLOMONITOR from ENV:cybergraphics/Piccolo/ (should be installed correctly by the install-script) If no valid definitionfile could be loaded, you can specify a default-resolution in a requester.

- o CyberVision64 : The monitorfile loads the definition-file specified by the environment-variable CYBERVISION from ENV:cybergraphics/Cybervision/ (should be installed correctly by the install-script) If no valid definitionfile could be loaded, you can specify a default-resolution in a requester.

 - o RetinaZ3: The monitorfile loads the definition-file specified by the environment-variable RETINAZ3MONITOR from ENV:cybergraphics/RetinaZ3/ (should be installed correctly by the install-script) If no valid definitionfile could be loaded, you can specify a default-resolution in a requester.
-