CyberGraphX4

COLLABORATORS			
	TITLE : CyberGraphX4		
ACTION	*NAME*	*DATE*	*SIGNATURE*
WRITTEN BY		January 23, 2025	

REVISION HISTORY			
NUMBER	DATE	DESCRIPTION	NAME

Contents

Chapter 1

CyberGraphX4

1.1   CyberGraphX4.guide

CyberGraphX4 graphics extension for AMIGA Computer Release 4.2

(C) Copyright 1996-2000 by Vision Factory Development

Developed by Vision Factory Development

Introduction - What's CyberGraphX4 ?   Min. requirements - Minimal system requirements Installation - Installation of Cyber-GraphX Updates ? - Where to get updates Legal stuff - Copyright, Trademarks Environment-Vars - changeable environment variables Tooltypes - changeable tooltypes for drivers Tools - Useful tools CGXMode - The screen mode editor

1.2   CyberGraphX4.guide/NODE_INTRODUCTION

Introduction

The CyberGraphX 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 5 years of graphics board software development (wb-emulation of Visiona, Domino, PicassoII, CyberVision64, CyberVision64/3D and now the CyberVisionPPC). CyberGraphX 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 CyberGraphX system. CyberGraphX 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.

CyberGraphX is also the standard graphics extension of all graphics boards by phase5 digital products. (of course including drivers for diverse graphics programs, screen promoters and much more).

FEATURES

o stable Workbench emulation; o dragable screens for graphics cards that can support it o no chipmem required for screen display o modular design, it is possible to use multiple (and different) gfx boards at one time

1.3   CyberGraphX4.guide/NODE_REQUIREMENTS

Minimum requirements to run CyberGraphX4

o One of the following boards - Picasso II(+) in linear mode (! not segmented !) - Picasso IV - Piccolo Z2/Z3 or Piccolo SD64 - GVP Spectrum - RetinaZ3 - Wildfire Inferno - CyberVision64 - CyberVision64/3D - CyberVisionPPC oder BlizzardVisionPPC - DraCo Altais - Pixel64 - RainbowIII - A2410 (*)

o Kickstart 3.x o 68020 or higher o 4 MB of fast memory

To guarantee work of CyberGraphX4 graphics extension , you have to remove the old VillageTronic, EGS emulation, or Picasso96 software. This is basically up to yourself. Only if you run CyberGraphX V2 before, there is an uninstall script provided on this CD.

Remove tools like PatchDT or IPrefs2Fast to avoid conflicts.

(*) Partly Copyright 1995 Ignatios Souvatzis. All rights reserved. Permission of distribution with the CGraphX system and necessary modifications granted to Frank Mariak

1.4 CyberGraphX4.guide/NODE_INSTALLATION

Installation

The installation is done by the AMIGA Installer. So the only thing you have to do is double-click the icon with the name CGFXV4_Install if you install CyberGraphX4 for the first time or CGXV4_Update if you want to upgrade from a previous V3 installation.

1.5 CyberGraphX4.guide/NODE_UPDATES

Updates

New versions of CyberGraphX4 will be made available through electronic networks.

1.6 CyberGraphX4.guide/NODE_RIGHTS

Legal stuff

Disclaimer Copyright - CyberGraphX4 (C) 1996-2000 Vision Factory Development Trademarks

1.7 CyberGraphX4.guide/NODE_RIGHTS_DISCLAIMER

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 PUR-POSE. 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 COR-RECTION.

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.

1.8   CyberGraphX4.guide/NODE_RIGHTS_COPYRIGHT

Copyright

The CyberGraphX4 system, the accompanying files and the manual is Copyright (C) 1994-2000 Vision Factory Development. All Rights reserved.

1.9   CyberGraphX4.guide/NODE_RIGHTS_TRADEMARKS

Trademarks

Workbench (TM), Intutition(TM), Commodore(TM) and Amiga (TM) are registered trademarks of their respective owners

1.10   CyberGraphX4.guide/NODE_ENVVAR

Environment variables

The following environment variables are known by CyberGraphX4 :

ALERTEMU CPUP2C FORCECHUNKY HIDE15BIT HIRESCRSR KEEPAMIGAVIDEO NOPASSTHROUGH PLANES2FAST SAVEMEM SUPERGELS SUPERLAYERS USESEMAPHORES WBPATSPEEDUP

1.11   CyberGraphX4.guide/NODE_ENVVAR_ALERTEMU

cybergraphx/ALERTEMU

By setting this variable, DisplayAlert(), (The Screens you get when the machine crashes.) will be placed on an cybergraphx screen.

setenv cybergraphx/ALERTEMU="1"

This value is only read one at startup time, it can't be changed "online".

1.12   CyberGraphX4.guide/NODE_ENVVAR_CPUP2C

cybergraphx/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 cybergraphx/CPUP2C="1"

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

1.13   CyberGraphX4.guide/NODE_ENVVAR_FORCECHUNKY

cybergraphx/FORCECHUNKY

Environment variable to disable/enable graphics/AllocBitmap() BMF_MINPLANES flag compatibility kludge (was required by applications like old picture/animation.datatype which relied on AllocBitmap() returning planar bitmaps even when a friend bitmap was passed). This switch defaults to on (=0).

setenv cybergraphx/FORCECHUNKY="1"

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

This value is only read one at startup time, it can't be changed "online".

1.14   CyberGraphX4.guide/NODE_ENVVAR_HIDE15BIT

cybergraphx/HIDE15BIT

By setting this variable, you can switch off 15bit modes to reduce screenmode list length. The Modes are still available but hidden. This can be done by:

setenv cybergraphx/HIDE15BIT="1"

This value is only read one at startup time, it can't be changed "online".

1.15   CyberGraphX4.guide/NODE_ENVVAR_HIRESCRSR

cybergraphx/HIRESCRSR

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

setenv cybergraphx/HIRESCRSR="1"

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

1.16   CyberGraphX4.guide/NODE_ENVVAR_KEEPAMIGAVIDEO

cybergraphx/KEEPAMIGAVIDEO

If this option is disabled, everytime a CyberGraphX display becomes frontscreen, Amiga display DMA is switched off in order to increase chipmem access speed. You can avoid this by enabling this option.

setenv cybergraphx/KEEPAMIGAVIDEO="1"

This value is only read one at startup time, it can't be changed "online".

1.17   CyberGraphX4.guide/NODE_ENVVAR_NOPASSTHROUGH

cybergraphx/NOPASSTHROUGH

THIS IS A MASTER SWITCH. If this option is enabled, the monitor switch on every CyberGraphX supported board is deactivated. This option is required for multi monitor systems. It is disabled by default. If NOPASSTHROUGH=0 (No) then the tooltype PASSTHROUGH can be used. If NOPASSTHROUGH=1 (Yes) then the tooltype PASSTHROUGH is not used!

setenv cybergraphx/NOPASSTHROUGH="1"

This value can be changed online.

1.18   CyberGraphX4.guide/NODE_ENVVAR_PLANES2FAST

cybergraphx/PLANES2FAST

With this option on, non displayable planar bitmaps are allocated in fast memory. This options speeds up handling of planar bitmaps but could lead to problems with amiga graphics which insist on planar graphics placed in chip memory. Take care when using this option.

setenv cybergraphx/PLANES2FAST="1"

This value is only read one at startup time, it can't be changed "online".

1.19   CyberGraphX4.guide/NODE_ENVVAR_SAVEMEM

cybergraphx/SAVEMEM

CyberGraphX will reduce memory consumption in less or equal 16 colour modes, CyberGraphX keeps a planar representation of the screen bitmap in fast memory and a chunky representation in video memory.

setenv cybergraphx/SAVEMEM="1"

This value is only read one at startup time, it can't be changed "online".

1.20   CyberGraphX4.guide/NODE_ENVVAR_SUPERGELS

cybergraphx/SUPERGELS

This env can activate a replacement for the original CyberGraphX GELs system. GELs = Graphic ELementS, this includes things like blitter objects and effects the speed of things like moving icons or opus drag and drop stuff. It will also give you superimposed dragging in hi/truecolor! It is disabled by default (=0).

setenv cybergraphx/SUPERGELS="1"

This value is only read one at startup time, it can't be changed "online".

1.21   CyberGraphX4.guide/NODE_ENVVAR_SUPERLAYERS

cybergraphx/SUPERLAYERS

This env can activate a new, fast layers replacement. Will speed layers up a lot, especially when using many windows.

setenv cybergraphx/SUPERLAYERS="1"

This value is only read one at startup time, it can't be changed "online".

1.22   CyberGraphX4.guide/NODE_ENVVAR_USESEMAPHORES

cybergraphx/USESEMAPHORES

Enabling of this env activates use of semaphores to avoid disabling of multitasking under certain conditions. Enabling this option might lead to lockups under certain conditions but overall is more system friendly.

setenv cybergraphX/USERSEMAPHORES="1"

This value is only read one at startup time, it can't be changed "online".

1.23 CyberGraphX4.guide/NODE_ENVVAR_WBPATSPEEDUP

cybergraphx/WBPATSPEEDUP

Enabling this variable activates a patch that should speed standard wb pattern backfills. Since it could interfere with some hacks widely spread, it is disabled by default. It can be enabled by setting env:cybergraphx/WBPATSPEEDUP to 1.

setenv cybergraphX/WBPATSPEEDUP="1"

This value is only read one at startup time, it can't be changed "online".

1.24 CyberGraphX4.guide/NODE_TTYPES

Driver Tooltypes

The following driver tooltypes are supported by CyberGraphX4 drivers:

ADVANCEDCLK BITMAPCACHE BLACKBORDER BOOTLOGO DRAGGING MULTIMEDIAMEM PACKED24 PASSTHROUGH SCROLLMASK USEROXXLER

1.25 CyberGraphX4.guide/NODE_TTYPES_ADVANCEDCLK

Tooltype ADVANCEDCLK (CV64 and CV64/3D only)

Allows 'overclocking' of the CV64/CV3D cards, when used with CGXModeV4 Default is 'ADVANCEDCLK=No'.

1.26 CyberGraphX4.guide/NODE_TTYPES_BITMAPCACHE

Tooltype BITMAPCACHE

Setting 'BITMAPCACHE=YES' will cause Caching of bitmaps that allows faster window sizing/moving for smart refresh windows.

1.27 CyberGraphX4.guide/NODE_TTYPES_BLACKBORDER

Tooltype BLACKBORDER (RetinaZ3 only)

By setting 'BLACKBORDER=YES' will cause the border around the screen to be black. The Retina BLT Z3 always uses color0 by default where other cards always use black. Default is 'BLACKBORDER=NO'.

1.28 CyberGraphX4.guide/NODE_TTYPES_BOOTLOGO

Tooltype BOOTLOGO

Setting this to 'NO' will cause the CyberGraphX Bootlogo not to be shown at boot time for this card.

1.29 CyberGraphX4.guide/NODE_TTYPES_DRAGGING

Tooltype DRAGGING

This makes it is possible to keep multiple screens in video memory allowing for very fast screen swaps. The trade off is that you will loose screen dragging. Do you wish to have dragable screens like normal amiga screens do ? Defaults to 'YES'. Not supported by all cards, though (e.g. CVisionPPC)

1.30   CyberGraphX4.guide/NODE_TTYPES_MULTIMEDIAMEM

Tooltype MULTIMEDIAMEM (CV3D only)

If MULTIMEDIAMEM=YES CGX will reserve 1MB on the CV64/3D for 3D Textures & Video Overlay options. If 'NO', CV64/3D will then act like a card that does not have these options, like PicassoII. You will get the full 4MB for screens with a Z3 machine (Z2 gets 3.5MB). MULTIMEDIAMEM defaults to YES (where 3MB can be used for screens).

1.31   CyberGraphX4.guide/NODE_TTYPES_PACKED24

Tooltype PACKED24 (CVPPC/BVPPC and CVision3D >= V4.2 only)

By setting tooltype PACKED24 to 'YES' packed pixel mode for 24bit resolutions is enabled. This allows higher refresh rates and requires less memory. As a drawback, some accelerated graphics operations and cpu rendering slows down (only CVPPC/B-VPPC).

1.32   CyberGraphX4.guide/NODE_TTYPES_PASSTHROUGH

Tooltype PASSTHROUGH

If this option is disabled (='NO'), the monitor switch on the selected CyberGraphX card is deactivated. This option is required for multi monitor systems."

1.33   CyberGraphX4.guide/NODE_TTYPES_SCROLLMASK

Tooltype SCROLLMASK

Enables masking when scrolling/moving rectangles with a mask in 256 colour modes. Setting this to 'NO' will speed up scrolling of text in a shell but might cause text crsr refresh problems with programs such as CED V2/V3 (not V4).

1.34   CyberGraphX4.guide/NODE_TTYPES_USEROXXLER

Tooltype USEROXXLER (CV64 only)

With the default of 'USEROXXLER=YES' the driver uses the special planar2chunky hardware on the CV64 to convert planar to chunky, _both_ for fast memory and video memory destinations.

1.35   CyberGraphX4.guide/NODE_TOOLS

showcgxconfig CyberGraphX Commodity CGXMode Modeeditor

1.36   CyberGraphX4.guide/NODE_TOOLS_SHOWCGXCFG

showcgxconfig

With this tool you can see which graphics device drivers are currently active for CyberGraphX4. The output is similar to that of showconfig which comes with the standard Amiga workbench. It does not have a GUI, it's a simple shell tool.

1.37 CyberGraphX4.guide/NODE_TOOLS_CYBERGRAPHX_MAIN

CyberGraphX Commodity

Use the CyberGraphX commodity to change the settings of CyberGraphX4. When started, it can stay in the background and the gui can be activated with the preferred popup key.

Environment-Vars - changeable environment variables Tooltypes - changeable tooltypes for drivers

1.38 CyberGraphX4.guide/NODE_TOOLS_CYBERGRAPHX_SAVE

Save

Saves the current environment variable settings _and_ driver tooltypes to be available for next reboot.

1.39 CyberGraphX4.guide/NODE_TOOLS_CYBERGRAPHX_USE

Use

Uses the current environment variable settings. Driver tooltypes are not changed! To use environment variable settings after the next reboot you need to save settings. The CyberGraphX Commodity stays active and can be activated again with the preferred popup key.

1.40 CyberGraphX4.guide/NODE_TOOLS_CYBERGRAPHX_QUIT

Quit

Quits the CyberGraphX commodity. Settings are not saved.

1.41 CyberGraphX4.guide/NODE_CGXMODE_MAIN

OVERVIEW

You should read this documentation carefully, so that you have a good understanding on how CGXMode works, what number it wants and how it reacts with your monitor. It does not get to heavy into tecnobabble as most all the other monitor pages do and it is geared around CGXMode and the terms it uses vs what your monitor manual might use.

Main Window - Pick your Card, (make/delete/edit) Screen mode and Monitor config file

Monitor Specification - Enter all of your monitors settings

Edit Mode - Edit the details of a specific screen mode

Edit Mode Real Time - Edit a specific screen mode in "real time"

Tooltypes - CGXMode Tooltypes

Errors - Error messages from CGXMode

1.42 CyberGraphX4.guide/NODE_CGXMODE_MAINWND

CGXMode main window

In this window you can select your graphics card and (make/delete/edit) display modes and monitor config files.

Gadgets

Board List Edit Spec Modelist New Edit \/ /\ Clone Delete Quit Save Cancel

1.43   CyberGraphX4.guide/NODE_CGXMODE_MAINWND_BOARDLIST

Board List

This is a list of the currently available graphic card(s) that you can use with CGXMode. The active board is selected.

1.44   CyberGraphX4.guide/NODE_CGXMODE_MAINWND_BOARDINFO

Board Info

If you press this button, you get information on the selected graphics board.

1.45   CyberGraphX4.guide/NODE_CGXMODE_MAINWND_MONSPEC

Monitor Specification

This is the name of the config file that CGXMode will use and save changes to.

o E.g. if you have selected a PicassoII card , CGXMode will look for ENV:CyberGraphX/PicassoIIMonitor. It will then read the config file that is set in ENV:CyberGraphX/PicassoIIMonitor. ENV:CyberGraphX/{board}Monitor, where {board} is the basename of the graphics card.

o First Time Usage If you are using CGXMode for the first time you NEED to find the MAX KHZ value your monitor will support. Once you do this you can use the built in DEFAULT values by using the pulldown menus (Settings) and selecting the value your monitor supports. Once you do this you will see a bunch of default screenmodes that you can customize for your personal taste and monitor.

o First Time Usage - EDIT BUTTON: Pressing this will allow you to enter your monitor values. This will let you set the all the MIN and MAX values for your make and model. You need to do this first before you start editing screenmodes. See the Monitor Specification section for more.

1.46   CyberGraphX4.guide/NODE_CGXMODE_MAINWND_MONEDIT

Edit

Pressing this will allow you to enter your monitor values. This will let you set the all the MIN and MAX values for your make and model. You need to do this first before you start editing screenmodes. See the Monitor Specification section for more.

1.47   CyberGraphX4.guide/NODE_CGXMODE_MAINWND_MODELIST

Mode List

This shows all of the available modes that are available for this config file. The little box to the right shows the current selected mode information. It shows Resolution, Max Colors, and Horz and Vert values.

1.48   CyberGraphX4.guide/NODE_CGXMODE_MAINWND_MODEINFO

Mode Info

This little box shows the current selected mode information. It shows Resolution, Max Colors, and Horz and Vert values.

1.49 CyberGraphX4.guide/NODE_CGXMODE_MAINWND_MODENEW

New

This will make a new entry at the bottom of the screenmode listview. You then can select it, and then edit it. NOTE: If you are going to make a brand new mode then you can use the NEW button and then use Edit to config the mode for your monitor.

1.50 CyberGraphX4.guide/NODE_CGXMODE_MAINWND_MODEEDIT

Edit

You can select a screenmode in the listview then hit edit to goto the edit window for that mode. See the Edit Mode section.

1.51 CyberGraphX4.guide/NODE_CGXMODE_MAINWND_MODEDOWN

Move down

When you have a screen mode selected in the listview you can use the {down arrow} key to move down the list to the next screenmode. You also can use the "\" key.

1.52 CyberGraphX4.guide/NODE_CGXMODE_MAINWND_MODEUP

Move up

When you have a screen mode selected in the listview you can use the {up arrow} key to move up the list to the next screenmode. You also can use the "/" key.

1.53 CyberGraphX4.guide/NODE_CGXMODE_MAINWND_MODECLONE

Clone

This will take the current selected screen mode and make a copy of it and place the new mode at the bottom of the listview. NOTE: If you want to make a new mode that is very close to a mode that you are already using use CLONE. Example: You want to make a 640x400 mode... just select the 640x480 mode from the screenmode listview and hit CLONE.. then you can edit the new mode to the specs you want.

1.54 CyberGraphX4.guide/NODE_CGXMODE_MAINWND_MODEDEL

Delete

This will take the current selected screenmode and delete it from the modes that are available. It will remove it from the listview. If you save & quit it will be gone.

1.55 CyberGraphX4.guide/NODE_CGXMODE_MAINWND_QUIT

Quit

This button quits CGXMode, settings are not saved.

1.56   CyberGraphX4.guide/NODE_CGXMODE_MAINWND_SAVE

Save

This button saves the current setting for the specified card.

1.57   CyberGraphX4.guide/NODE_CGXMODE_MAINWND_CANCEL

Cancel

This button quits CGXMode, previously saved settings are not used. Old settings are restored.

1.58   CyberGraphX4.guide/NODE_CGXMODE_EDITWND

Edit Mode Window

To use the Edit Mode window and get the most out of it would be best to understand some of the terms that are used. The problem is that many times there are 4 or 5 different terms that could mean the same thing. This makes it hard to take your monitors information and move it into what CGXMode wants. Below are some terms. These terms seem to be used alot for different monitor mfgs and seems to be a good middle ground to match upto CGXMode's terms.

A: Front Porch (Pulse Offset) B: Sync Period (Pulse Length) C: Back Porch D: Blanking Period E: Display Period (Resolution) A+B+C: (Sync Length)

You should check to see if ADVANCED tooltype is there before you start editing screenmodes if you wish CGXMode to not check for overdriving your monitor! See the Tooltype section.

Gadgets

Hidden Type Scanmode Pixelclock Default mode list Horizontal Resolution Horizontal Sync Length Horizontal Pulse Offset Horizontal Pulse Length Horizontal Sync Polarity Vertical Resolution Vertical Sync Length Vertical Pulse Offset Vertical Pulse Length Vertical Sync Polarity Ok Test Cancel

1.59   CyberGraphX4.guide/NODE_CGXMODE_EDITWND_REAL

TestMode edit window

When you click on the Test button from the Edit Mode window it opens a screen with a test pattern screen with the settings that are in the Edit Mode window and then puts the Edit Mode window on top of the test pattern screen. Doing this allows you to see the direct relationship between the numbers that you input and change to how it will effect editing the screen. The only difference from the normal Edit Mode window and Test-Edit Mode window is that the Hidden, Type, ScanMode, PixelClock and Resolution can not be changed and are ghosted out.

As with the normal Edit Mode window you can enter the number in directly or by using the up and down gads. With the Test-Edit Mode you can also use keyboard shortcuts to quickly edit the screen mode values.

Gadgets

Hidden Type Scanmode Pixelclock Default mode list Horizontal Resolution Horizontal Sync Length Horizontal Pulse Offset Horizontal Pulse Length Horizontal Sync Polarity Vertical Resolution Vertical Sync Length Vertical Pulse Offset Vertical Pulse Length Vertical Sync Polarity Ok Test Cancel

1.60   CyberGraphX4.guide/NODE_CGXMODE_EDITWND_REAL_KEYS

TestMode edit window keyboard shortcuts

Here is a overview table for the available keyboard shortcuts on the testmode screen:

ESC Will exit the Test-Edit Mode and restore the values if you had changed any while editing on the test pattern screen

RETURN Will accept the values you have edited and take you back to the Edit Mode window and update the new number there

i Will inverse all the colors on the test pattern screen, ie black to white etc...

x Will set the pixelclock [Hz] to it's real value

+ Increases the pixelclock in steps of 10000Hz

- Decreases the pixelclock in steps of 10000Hz

[UP-ARROW] This is used for centering the screen by moving the screen up. This key edits the Vertical Pulse Offset (It adds milliseconds (ms) to the current value).

[DOWN-ARROW] This is used for centering the screen by moving the screen down. This key edits the Vertical Pulse Offset (It subtracts milliseconds (ms) from the current value).

[LEFT-ARROW] This is used for centering the screen by moving the screen left. This key edits the Horizontal Pulse Offset (It adds microseconds (μs) to the current value).

[RIGHT-ARROW] This is used for centering the screen by moving the screen right. This key edits the Horizontal Pulse Offset (It subtracts microseconds (μs) from the current value).

[SHIFT]+[UP-ARROW] This is used for making the vertical height (tallness) of the screen bigger. This key edits the Vertical Sync Lenght (It subtracts milliseconds (ms) from the current value).

[SHIFT]+[DOWN-ARROW] This is used for making the vertical height (tallness) of the screen smaller. This key edits the Vertical Sync Lenght (It adds milliseconds (ms) to the current value).

[SHIFT]+[LEFT-ARROW] This is used for making the horizontal width (wideness) of the screen bigger. This key edits the Horizontal Sync Lenght (It subtracts milliseconds (ms) from the current value).

[SHIFT]+[RIGHT-ARROW] This is used for making the horizontal width (wideness) of the screen smaller. This key edits the Horizontal Sync Lenght (It adds milliseconds (ms) to the current value).

1.61   CyberGraphX4.guide/NODE_CGXMODE_EDITWND_NAME

Name

This is the name of the mode that you will be editing. It has the color depth in Bits and the horizontal and vertical resolution in the screen name.

1.62   CyberGraphX4.guide/NODE_CGXMODE_EDITWND_HIDDEN

Hidden

If this is selected for this screen mode then that mode will be hidden in the display database. You may make a few test modes and not want them to clutter up the scren mode list in Prefs/ScreenMode or any other program that uses the display database for its screen. This will work for any screen mode.

1.63   CyberGraphX4.guide/NODE_CGXMODE_EDITWND_TYPE

Type

This is the number of bit planes that will be used for this screen mode. Your options are: 8Bit (256 Colors), 16Bit (65.536 Colors) and 24Bit (16,777,216 Colors). You can not edit 15bit screen modes. What CGX does is copy the 16Bit modes and makes entries in the display database with the same number of 15bit modes with the same specs. What is different is a different pixel layout. 15Bit has 5 5 5 (5bits Red, 5Bits Green, 5Bits Blue). 16Bit has 5 6 5 (5bits Red, 6Bits Green, 5Bits Blue). Both modes use 2bytes/pixel, 15bit has one bit unused.

1.64   CyberGraphX4.guide/NODE_CGXMODE_EDITWND_SCANMODE

Scanmode

You can select the display scanmode with this. There are 3 possible choices:

Normal - Every scanline is displayed, one after another.

Interlace - Every other scanline is displayed this allowing for a larger resolution screen to be displayed. The first pass lines 1-3-5-7-9-etc are displayed, the next pass line 2-4-6-8-10-ect are displayed. This generates flicker when updating between odd and even fields.

Doublescan - Draws every line 2 times. It will draw line 1 then draw line 1 again.. then move on to line 2 and draw that 2 times and then line 3 etc.. If you want to use doublescan with a mode that has a horizontal refresh frequency of 35khz in normal scan mode, your monitors needs to support 70khz. It is only used for small vertical resolutions like 320x200 or 640x200.

1.65   CyberGraphX4.guide/NODE_CGXMODE_EDITWND_CLOCK

Pixel Clock

This is the total number of pixels that can be displayed in one second. Value is in Hz ie. 85000000 [Hz] -> 85 million pixels / second. Also sometimes called dotclock. If this number to high you will get a bad or no display. The value you enter here is limited by the bandwidth of the graphics card and the mode type that is selected. For most cards maximum graphics card bandwidth varies depending on the depth. You can use the + and - keys to increase/decrease frequency in 10000Hz steps.

1.66   CyberGraphX4.guide/NODE_CGXMODE_EDITWND_HRES

Horizontal Resolution

This is the horizontal resolution for this screen mode. The value is in dots. Make this bigger will give a wider screen. Less will get a skinner screen.

1.67   CyberGraphX4.guide/NODE_CGXMODE_EDITWND_HSYNC

Horizontal Sync Length

Horizontal Sync Length (Blanking Period) = Pulse Offset(Front Porch) + Pulse Length(Sync Pulse) + (Back Porch). The Sync Length (Blanking Period) is the total time that the monitor needs to move the beam from the end of one line and to the start of the next. This includes the Front/Back Porches that surround the actual Sync Pulse that tells the monitor to move the beam to the next frame. Sync Length is use to change the size of the viewing area. When the Sync Length is made smaller the Horizontal size of the display is increased. This is because you are making the borders smaller making more room for more viewable screen area. Reducing the sync length, increases horizontal refresh rate and that is limited by the monitor. Just the opposite happens when you make the Sync Length larger. You make the borders bigger thus leaving less room for viewable display area. That is why monitors with low horizontal refresh rates often are not that flexible when it comes to border sizes. The number is in μs (microseconds)

1.68   CyberGraphX4.guide/NODE_CGXMODE_EDITWND_HOFF

Horizontal Pulse Offset

Pulse Offset(Front Porch) is the window in time just before the the monitor gets the Sync Pulse to tell it to move the beam to the next scan line. This can be used to to center the screen. When you change the pulse offset you are moving the starting horizontal position of the border, thus moving the viewable area with it. Increasing the Pulse Offset μs will move the screen to the left. Decreasing the μs will move the screen to the right.

1.69   CyberGraphX4.guide/NODE_CGXMODE_EDITWND_HPULSE

Horizontal Pulse Length

Pulse Length(Sync Pulse) is the actual pulse that tells the monitor to move the beam to the next scan line. Pulse length specifies the duration of the pulse in μs. You can't modify anything really by increasing or decreasing the Pulse Length it just needs to be over the minimum that the monitor can handle. If you change the value alot the monitor probably needs to resync and the scren may move in unpredictable ways. Its not real good for "editing" a mode.

1.70   CyberGraphX4.guide/NODE_CGXMODE_EDITWND_HFREQ

Horizontal Frequency [kHz]

This is the final horizontal frequency in Kilohertz that will be used for that screen mode.

1.71   CyberGraphX4.guide/NODE_CGXMODE_EDITWND_VRES

Vertical Resolution

This is the vertical resolution for this screen mode. The value is in lines. Make this bigger will give a taller screen. Less will get a shorter screen.

1.72   CyberGraphX4.guide/NODE_CGXMODE_EDITWND_VSYNC

Vertical Sync Length

Vertical Sync Length (Blanking Period) = Pulse Offset(Front Porch) + Pulse Length(Sync Pulse) + (Back Porch). The Sync Length (Blanking Period) is the total time that the monitor needs to move the beam from the bottom of the screen to the top of the screen. This includes the Front/Back Porches that surround the actual Sync Pulse that tells the monitor to move the beam to the next line. Sync Length is use to change the size of the viewing area. When the Sync Length is made smaller the vertical size of the display is increased. This is becase you are making the borders smaller making more room for more viewable screen area. Reducing the sync length, increases vertical refresh rate and that is limited by the monitor. Just the opposite happens when you make the Sync Length larger. You make the borders bigger thus leaving less room for viewable display area. The number is in ms (milliseconds).

1.73   CyberGraphX4.guide/NODE_CGXMODE_EDITWND_VOFF

Vertical Pulse Offset

Pulse Offset(Front Porch) is the window in time just before the the monitor gets the Sync Pulse to tell it to move the beam from the top of the screen from the bottom. This can be used to to center the screen. When you change the pulse offset you are moving the starting vertical position of the border, thus moving the viewable area with it. Increasing the Pulse Offset ms will move the screen up. Decreasing the ms will move the screen down.

1.74   CyberGraphX4.guide/NODE_CGXMODE_EDITWND_VPULSE

Vertical Pulse Length

Pulse Length(Sync Pulse) is the actual pulse that tells the monitor to move the beam to the next scan line. Pulse length specifies the duration of the pulse in ms. You can't modify anything really by increasing or decreasing the Pulse Length it just needs to be over the minimum that the monitor can handle. If you change the value alot the monitor probably needs to resync and the scren may move in unpredictable ways. Its not real good for "editing" a mode.

1.75   CyberGraphX4.guide/NODE_CGXMODE_EDITWND_VFREQ

Vertical Frequency [Hz]

This is the final vertical frequency in Hertz that will be used for that screen mode.

1.76   CyberGraphX4.guide/NODE_CGXMODE_EDITWND_HSPOL

Horizontal Sync Polarity

Specifies the polarity of the actual sync pulse.

Negative - Sync Pulse is negative

Positive - Sync Pulse is positive

1.77   CyberGraphX4.guide/NODE_CGXMODE_EDITWND_VSPOL

Vertical Sync Polarity

Specifies the polarity of the actual sync pulse.

Negative - Sync Pulse is negative

Positive - Sync Pulse is positive

1.78   CyberGraphX4.guide/NODE_CGXMODE_EDITWND_LOGORES

1.79   CyberGraphX4.guide/NODE_CGXMODE_EDITWND_DEFLIST

Default mode list

With this Listview, you can select a predefined resolution setting quickly.

1.80   CyberGraphX4.guide/NODE_CGXMODE_EDITWND_OK

Ok

Accepts all values and returns to the Main config window

1.81   CyberGraphX4.guide/NODE_CGXMODE_EDITWND_TEST

Test

This takes you to the Real time Edit Mode screen so you can see the screen change as you edit the numbers in "real time"

1.82 CyberGraphX4.guide/NODE_CGXMODE_EDITWND_CANCEL

Cancel

Cancels and does not save the values if they were changed and returns to the Main config window

1.83 CyberGraphX4.guide/NODE_CGXMODE_MONWND

Monitor Specification

This is where you can tell CGXMode the display specifications for your monitor. The manual for your monitor should have most of these numbers in the back. If it does not then you should contact the MFG of your monitor (or check their web site) to get the correct numbers. The more numbers you can feed into the Monitor Specification settings the more you can get out of your monitor with CGX. If you plug a few numbers in and guess others it _will_ be a pain to edit screen modes and you will not get the results you need or want. MAKE SURE you input the correct numbers, if you guess and you are wrong you might damage your monitor: You will see this everytime you edit your monitors specification:

In this window you can enter all of your monitors display specifications

Gadgets

Defaults Monitor name Monitor Bandwidth Min. Horizontal Frequency Max. Horizontal Frequency Min Time Horizontal Sync Min Pulse Horizontal Sync Min. Vertical Frequency Max. Vertical Frequency Min Time Vertical Sync Min Pulse Vertical Sync Use Cancel

1.84 CyberGraphX4.guide/NODE_CGXMODE_MONWND_MONLIST

Defaults

This listview offers various default monitor settings sorted by manufacturer. You can quickly browse through the list by entering the first letter of the manufacturer on keyboard. If you press return, the active entry is taken as new monitor setting.

1.85 CyberGraphX4.guide/NODE_CGXMODE_MONWND_NAME

Name

This is the file name for this monitors config file that is stored in sys:prefs/presets/monitors.

1.86 CyberGraphX4.guide/NODE_CGXMODE_MONWND_BANDWIDTH

Bandwidth [MHz]

This is the maximum dots per second that your monitor can do. This is sometimes called dot clock or driving clock frequency. This is measured in Megahertz (MHz). This is the number of signal periods per seconds. 1 time per second = 1 Hz. 1kHz = 1000Hz (One thousand Hz), 1MHz=1000000Hz (One million Hz). If you set the bandwidth to high then the display may become fuzzy or blurry.

1.87 CyberGraphX4.guide/NODE_CGXMODE_MONWND_HFREQMIN

Minimum Horizontal Frequency [kHz]

This is the minimum number of times that your monitor can write a horizontal scan line (left to right) in a second. This is one of the number you must enter correctly and should not guess! Underdriving your monitor could damage it. Older and 'cheaper' monitors do not have any protection against this. Some newer and 'better' monitors have protection against underdriving.. but you should never count on that. It is best to use the correct number for your monitor! This number is measured in Kilohertz (kHz).

1.88   CyberGraphX4.guide/NODE_CGXMODE_MONWND_HFREQMAX

Maximum Horizontal Frequency [kHz}

This is the maximum number of times that your monitor can write a horizontal scan line (left to right) in a second. Overdriving your monitor could damage it. Older and 'cheaper' monitors do not have any protection against this. Some newer and 'better' monitors have protection against overdriving.. but you should never count on that. It is best to use the correct number for your monitor! This number is measured in Kilohertz (kHz).

1.89   CyberGraphX4.guide/NODE_CGXMODE_MONWND_HSYNCMINTIME

Minimum Time Horizontal Synchronization [μs]

This is the minimum time for the horizintal Blanking Period (Sync Length) that the monitor can handle. The horizontal Blanking period (Sync Length) is how long it takes the monitor to move the beam from the end of one scan line to the next and start 'drawing' again on the next scan line. Some monitors have a minimum limit on how short this time may be. The number is in Microseconds (not Dot(s)). If your monitor's manual only has numbers for Dot(s) for Vertical Synchronization use this formula to convert it:

μs = (1 / (Vertical Resolution in seconds + blanking period)) * Line(s) * 1000000

1.90   CyberGraphX4.guide/NODE_CGXMODE_MONWND_HSYNCMINPULSE

Minimum Pulse time Horizontal Synchronization [μs]

This is the minimum time for the Pulse Length (Sync Period). This is the minimum time window that the monitor can be triggered to move the beam to the next line. If its too small the monitor can't detect the Pulse to move the beam to the next scan line. If your monitor's manual only has numbers for Line(s) for Vertical Synchronization use this formula to convert it:

μs = (1 / (Vertical Resolution in seconds + blanking period)) * Line(s) * 1000000

1.91   CyberGraphX4.guide/NODE_CGXMODE_MONWND_VFREQMIN

Minimum Vertical Frequency [Hz]

This is the minimum number of times that your monitor can write vertical lines (top to bottom).in a second. This is one of the number you must enter correctly and should not guess! Underdriving your monitor could damage it. Older and 'cheaper' monitors do not have any protection against this. Some newer and 'better' monitors have protection against underdriving.. but you should never count on that. It is best to use the correct number for your monitor! This number is measured in Hertz (Hz).

1.92   CyberGraphX4.guide/NODE_CGXMODE_MONWND_VFREQMAX

Maximum Vertical Frequency [Hz]

This is the maximum number of times that your monitor can write vertical lines (top to bottom) in a second. Overclocking your monitor could damage it. Older and 'cheaper' monitors do not have any protection against this. Some newer and 'better' monitors have protection against underclocking.. but you should never count on that. It is best to use the correct number for your monitor! This number is measured in Hertz (Hz).

1.93　CyberGraphX4.guide/NODE_CGXMODE_MONWND_VFREQMINTIME

Minimum Time Vertical Synchronization [ms]

This the minimum time for the vertical Blanking Period (Sync Length) that the monitor can handle. The vertical Blanking period (Sync Length) is how long it takes the monitor to move the beam from the bottom of the screen to the top of the screen and start 'drawing' again. Some monitors have a minimum limit on how short this time may be. The number is in Milliseconds (not Line(s)). If your monitor's manual only has numbers for Line(s) for Vertical Synchronization use this formula to convert it:

ms = (1 / (Vertical Resolution in seconds + blanking period)) * Line(s) * 1000

1.94　CyberGraphX4.guide/NODE_CGXMODE_MONWND_VFREQMINPULSE

Minimum Pulse Time Vertical Synchronization [ms]

This is the minimum time for the Pulse Length (Sync Period). This is the minimum time window that the monitor can be triggered to move the beam from the bottom of the screen to the top. If its too small the monitor can't detect the Pulse to move the beam to the top of the screen. If your monitor's manual only has numbers for Line(s) for Vertical Synchronization use this formula to convert it:

ms = (1 / (Vertical Resolution in seconds + blanking period)) * Line(s) * 1000

1.95　CyberGraphX4.guide/NODE_CGXMODE_MONWND_USE

Use

Use the current monitor specification setting

1.96　CyberGraphX4.guide/NODE_CGXMODE_MONWND_CANCEL

Cancel

Cancel monitor specification and restore previous monitor specification

1.97　CyberGraphX4.guide/NODE_CGXMODE_TOOLTYPES

CGXMode Tooltypes

ADVANCED

If the ADVANCED tooltype is there then CGXMode will NOT do 'the math', thus it will not do safety check on the numbers you input and if you overdriver your monitor (enter a number that is to high or to low) you could damage your monitor. Overdriving or underdriving your monitor could damage it. Older and 'cheaper' monitors do not have any protection against this. Some newer and 'better' monitors have protection against overdriving or underdriving.. but you should never count on that. If you do not understand what all the numbers you are editing for a screen in CGXMode do and how they related to the MAX and MIN for your monitor you should NOT USE the ADVANCED Mode.

If the ADVANCED tooltype is 'off' (ie not there or setup like '(ADVANCED)') then CGXMode will not be in the in ADVANCED mode. This means that CGXMode will do the math so that when you edit a screen it will not allow you to overdrive or push your monitor specs out side of the monitors range. This is more or less a safety check. You should check to see if ADVANCED tooltype is there before you start editing screenmodes if you wish CGXMode to check for overdriving your monitor!

1.98   CyberGraphX4.guide/NODE_CGXMODE_ERRORS

CGXMode Error Messages

Below is a list of errors you might get from CGXMode:

Can't update testmode definition You might have the wrong cgx library and monitor driver combination. Your libs/monitordirver/cgxmode are not current and you should try to update to the latest of everything.

Can't open test screen Can't open test screen happened with old cgxmode's when you wanted to modify a card displaymode although the driver was not installed. Also if you are low on fast memory with the old CGXMode you also might get this error. The new cgxmode versions use a new interface to update the test mode config. You should try to update to the latest CGX and latest CGXMode.