

GFXCARD

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Chapter 1

GFXCARD

1.1 Graphics Card Guide

Graphics Card Guide

by Peter J Hutchison Feb 99

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- CyberGraphX RTG Software
- Picasso 96 RTG Software
- EGS RTG Software
- Warp3D Graphics Software
- OpenGL/Mesa Software

1.2 A2410

Name: A2410 U.Lowell Tiga

Supplier: Commodore

Chip: Texas Instruments TMS34010

Memory: 2Mb + 1Mb Frame Buffer

Resolution: 1024 x 1024

Colour: 256 + 3 from 16m palette

Connection: Zorro II

CGFX Compatible: Yes (v2, v3)

P96 Compatible: No

EGS Compatible: Yes

Availability: Poor

Comments: No linear mapped memory access.

EGS Driver available on Aminet ([gfx/board/EGS2410v20b17.lha](http://www Aminet.org/gfx/board/EGS2410v20b17.lha))

1.3 Altais

Name: Altais

Supplier: MS MacroSystem Computer Gmbh

Chip: NCR 77C32BLT by Symbios

Memory: 1, 4Mb

Resolution:

Colour:

Connection: Draco Direct Bus

CGFX Compatible: Yes (v2, v3)

P96 Compatible: No

EGS Compatible: No

Availability: Q Good

Comments: Used in Amiga-Compatible DraCo system.
See

Retina 3
for Zorro version.

1.4 BlizzardVisionPPC

Name: BlizzardVisionPPC

Supplier: Phase 5 Gmbh

Chip: Texas Instruments TVP4020 (Permedia 2)
230Mhz RAMDAC

Memory: 8Mb SGRAM

Resolution: 1152 x 900 24 bit
1600 x 1200 16 bit

Colours: 16 million

Connection: A1200 BlizzardPPC local bus

CGFX Compatible: Yes

P96 Compatible: No

EGS Compatible: No

Price: 369 DM, 169 Euro

Availability: Very Good

Comments: Has 3D functions from its 3D Geometry Engine available via Warp3d. Can do upto 80 Mio 3D Pixels/sec or 1Mio. Polygons/sec. Amiga format rating 91%

1.5 CyberVision 64

Name: Cybervision 64

Supplier: Phase 5 Gmbh

Chip: S3 Trio64

Memory: 2,4,8 Mb

Resolution: 800 x 600 (256 colours)
1280 x 1024 (16m colours)

Colours: 16 million

Connection: Zorro III only

CGFX Compatible: Yes (v2, v3, v4)

P96 Compatible: Yes

EGS Compatible: No

Prive: 698 DEM (2Mb), 898 DEM (4Mb) (1995 prices)

Availability: Poor

Comments: MPEG or JPEG modules available.
Review available on Aminet (docs/rview/CyberVision64.txt).
Buster 11 recommended. Poor documentation.
Replaced by
CV 64/3D

1.6 CyberVision 64/3D

Name: Cybervision 64/3D

Supplier: Phase 5 Gmbh

Chip: S3 ViRGE (Video & Rendering Graphics Engine)

Memory: 4Mb

Resolution:

Colours:

Connection: Zorro 2 or 3

CGFX Compatible: Yes (v3, v4)

P96 Compatible: Yes (early alpha driver)

EGS Compatible: No

Availability: Poor

Comments: Includes 3D functions, MPEG decoder option, Switch/Scan doubler,

See CV64

Replaced by

CV PPC

1.7 CyberVisionPPC

Name: Cybervision PPC

Supplier: Phase 5 Gmbh
(<http://www.phase5.de>)

Chip: Texas Instruments TVP4020 (Permedia 2)
230Mhz RAMDAC

Memory: 8Mb SGRAM

Resolution: 1152 x 900 24 bit
1600 x 1200 16 bit

Colours: 16 million

Connection: Zorro 3

CGFX Compatible: Yes (v3, v4)

P96 Compatible: No

EGS Compatible: No

Price: 399 DM, 179 Euro

Availability: Very Good

Comments: See BVision

1.8 Domino

Name: Domino

Supplier: XPert Systems

Chip: Tseng Labs ET4000

Memory:

Resolution:

Colours:

Connection: Zorro II

CGFX Compatible: Yes (v2,v3)

P96 Compatible: Yes

EGS Compatible: No

Availability: Unknown

Comments: VGA card. Quite slow. No onboard blitter (uses CPU).
Mentioned in Retina review on Aminet.

1.9 Inferno

Name: Inferno

Supplier:

Chip: Cirrus Logic CL-GD5446

Memory:

Resolution:

Colours:

Connection: Zorro?

CGFX Compatible: Yes (v2,v3)

P96 Compatible: No

EGS Compatible: No

Availability: Unknown

Comments: Uses same chip as Picasso IV.

1.10 Merlin

Name: Merlin

Supplier: XPert Systems

Chip: Tseng Labs ET4000W32

Memory: 2Mb, 4Mb

Resolution: 680 x 576 24 bit
800 x 600 16 Bit

Colours: 16 million

Connection: Zorro II or III.

CGFX Compatible: No

P96 Compatible: Yes

EGS Compatible: No

Availability: Unknown

Comments: Uses similar chip as the Domino. Board is unfinished before release
requires fixes to solve them. FAQ available at http://member.aol.com/ingiedel/merl_faq.txt

1.11 Omnibus

Name: oMniBus

Supplier:

Chip: Tseng ET4000 (ET4000W32)

Memory:

Resolution:

Colours:

Connection: Zorro?

CGFX Compatible: No

P96 Compatible: Yes

EGS Compatible: No

Availability: Unknown

Comments:

1.12 OpalVision

Name: OpalVision

Supplier: Centaur Development
4451-B Redondo Beach Blvd.
Lawndale, CA 90260

Chip:

Memory:

Resolution:

Colours: 16 million

Connection: Video slot

CGFX Compatible: No

P96 Compatible: No

EGS Compatible: Yes (?)

Software: OpalPaint, Opal Presents!, Function key utility, Karate Game.

Price: £1000 (1992 prices)

Availability: Poor

Comments: Review available on Aminet (docs/rview/OpalVision.txt)
Utilities available on aminet (gfx/board, gfx/opal, dev/misc)

1.13 Picasso II

Name: Picasso II

Supplier: VillageTronic/Expert Services
7559 Mall Road
Florence, KY 40142
USA
(<http://www.villagetronic.com/amiga/>)

Chip: Cirrus Logic CL-GD5426 & CL-GD5428

Memory: 1 or 2Mb

Resolution: 1600 x 1200 (max)

Colours: 16 million

Connection: Zorro II

CGFX Compatible: Yes

P96 Compatible: Yes

EGS Compatilbe: No

Availability: Q. Good

Software: TV Paint Jr, MainActor, PicassoSwitch, StyxBlank
Pic Viewers, ChangeScreen

Price: \$550 (1Mb), \$600 (2Mb) (1994 prices)

Comments: Very popular board. Review available on aminet
(docs/rview/PicassoII_3.txt).
Requires at least WB 2.04 (WB3 recommended)

1.14 Picasso II+

Name: Picasso II+

Supplier: VillageTronic/Expert Services
7559 Mall Road
Florence, KY 40142
USA
(<http://www.villagetronic.com/amiga/>)

Chip: Cirrus Logic CL-GD5428

Memory:

Resolution: 1600 x 1200 (max)

Colours: 16 million

Connection: Zorro II

CGFX Compatible: Yes

P96 Compatible: Yes

EGS Compatilbe: No

Availability: Q. Good

Comments: Very popular board. Replaces
Picasso II
Requires at least WB 2.04 (WB3 recommended)

1.15 Picasso IV

Name: Picasso IV

Supplier: VillageTronic Marketing Gmbh
WellWeg 95
D-31157 Sarstedt
Germany
(<http://www.villagetronic.com/amiga/>)

Chip: Cirrus Logic CL-GD5446

Expansion options: Pablo II video encoder, MPEG-1 decoder, 3D module,
PowerPC module, 16-bit Sound module, TV-Tuner module,
Voodoo 1 module (NEW)

Memory: 4MB EDO RAM

Resolution: 1280 x 1024
Max bandwidth is 85MHz

Colours: 16 million

Connection: Zorro II or III

CGFX Compatible: Yes (v3,v4)

P96 Compatible: Yes

EGS Compatilbe: No

Availability: V. Good

Price: US \$439

Comments: Very popular board. Replaces
Picasso II+
Requires at least 68020, WB 3.x
Review available on Aminet (docs/rview/PicassoIV.txt)

1.16 Piccolo

Name: Piccolo

Supplier: Technologiezentrum Delemhorst
Am Wollager 8
D-27749 Delmenhorst
Germany

Chip: Cirrus Logic CL-GD5426

Memory: 1,2 or 4Mb

Resolution: 1280 x 1024

Colours: 16 million

Connection: Zorro II or III

CGFX Compatible: Yes

P96 Compatible: Yes

EGS Compatible: Yes

Software: PicoPainter, TV-Paint Jr

Price: DM 698 (1Mb), DM 848 (2Mb) (1994 prices)

Availability: Poor

Comments: Uses same chip as {"Picasso II" link CARD12}.
Review available on Aminet (docs/rview/Piccolo.txt)

1.17 Piccolo SD64

Name: Piccolo SD64

Supplier: Technologiezentrum Delemhorst
Am Wolllelager 8
D-27749 Delmenhorst
Germany

Chip: Cirrus Logic CL-GD5434

Memory: 2, 4Mb

Resolution: 320 x 200 to 1600 x 1280

Colours: 16 million

Connection: Zorro II or III

CGFX Compatible: Yes

P96 Compatible: Yes

EGS Compatible: Yes

Price:

Availability: Poor

Comments: Replaces older {"Piccolo" link CARD15}
Includes 64 bit blitter, hardware sprite, hardware scrolling,
double buffering, multiple screens, Expansion port.

1.18 Pixel 64

Name: Pixel 64

Supplier:Ateo-Concepts

Chip: Cirrus Logic CL GD5434

Memory: 2Mb

Resolution: 800 x 600 24 bit
1152 x 900 16 bit
1600 x 1280 8 bit

Colours: 16 million

Connection: Custom AteoBus on A1200.

CGFX Compatible: Yes (v3)

P96 Compatible: Yes

EGS Compatible: No

Availability: V Good

Comments: Made for towered A1200.

1.19 Retina Z3

Name: Retina Z3

Supplier: MacroSystem Computer Gmbh
Friedrich-Ebert-Strasse 85
5810 Witten
Germany

Chip: NCR 77C32BLT by Symbios

Memory: 1,2 or 4Mb

Resolution: Upto 1280 x 1024

Colours: 16 million

Connection: Zorro II/III

CGFX Compatible: Yes

P96 Compatible: Yes (alpha driver)

EGS Compatible: No

Software: VDPaint, RetinaScreenMode, RetinaEmu

Availability: Poor

Price: DM 798 (4Mb) (1993 prices)

Comments: Review available on Aminet (docs/rview/Retina.txt)

1.20 Spectrum 28/24

Name: Spectrum 28/24

Supplier: Great Valley Products Inc
637 Clark Ave
King of Prussia, PA 19406
USA

See <http://www.gvp-m.com/>

Chip: Cirrus Logic CL GD526 & CL GD5428

Memory: 1 or 2Mb

Resolution: 800 x 600 (24 bit)
1024 x 768 (16 bit)
1280 x 1024 (8 bit)
1600 x 1280 (4 bit)

Colours: 16 million

Connection: Zorro II/III

CGFX Compatible: Yes

P96 Compatible: Yes

EGS Compatible: Yes

Software: EGS Paint, EGS More, EGS Shell

Price: \$499 (1993 prices)

Availability: Good (GVP-M)

Comments: Includes hardware blitter, sprite pointer, video signal passthrough. Review available on Aminet (docs/rview/EGSSpectrum_2.txt).

1.21 ColorBurst

Name: Color Burst

Supplier: M.A.S.T.
1395 GReg Street

Suite 106
Sparks, NV 89431

Chip:

Memory: 1.5Mb

Resolution: NTSC: 320x200 to 384x480 (low res)
640x200 to 768x480 (hi res)

Colours: 16 million

Connection: Zorro II/III

CGFX Compatible: No

P96 Compatible: No

EGS Compatible: No

Software: CBPaint, Various Utils.

Availability: Unknown

Comments: PAL/NTSC versions. Requires at least 1Mb Chip RAM!
Review available on Aminet (docs/rview/Colorburst.txt)

1.22 Graffity

Name: Graffity

Supplier:

Chip: Cirrus Logic GD CL5428

Memory: 2Mb

Resolution: Upto 1280 x 960

Colours: 4 to 24 bit

Connection: Connects via Video port on A1200

CGFX Compatible: No

P96 Compatible: Yes

EGS Compatible: No

Availability: Q.Good

Comments: Not a graphics card as such but an expansion card the fits on the Video port on the back of the A1200 and connects to Monitor. Gives chunky modes to 1200.

1.23 Rainbow II

Name: Rainbow II

Supplier: Hertz Electronik

Chip: ADV7120 VideoDAC, 80MHz, 8-Bit

Memory: 1.5Mb VRam (2Mb max)

Resolution: PAL/NTSC at 15/31 kHz

Colours: 256?

Connection: Zorro II

CGFX Compatible: No

P96 Compatible: No

EGS Compatible: Unknown

Comments: Limited resolution, dumb frame buffer.

1.24 Rainbow III

Name: Rainbow III

Supplier: Ingenieurburo Helfrieich

Chip: Inmos G360/G364G-10S processor

Memory: 4Mb VRam

Resolution: 1600 x 1200

Colours: 1 to 24 bit (pseudo/gamma colour corrected)

Connection: Unknown

CGFX Compatible: No

P96 Compatible: No

EGS Compatible: Unknown

Comments:

1.25 Spectrum 110/24

Name: Spectrum 110/24

Supplier: Great Valley Products

Chip: Inmos G364 CLT RAMDAC

Memory: 4 or 8Mb VRAM

Resolution: 1600 x 1280

Colours: 256/True colour

Connection: Connects to local bus of GVP's combo
accelerator for A2000 or GForce 030/40 board.

CGFX Compatible: No

P96 Compatible: No

EGS Compatible: Unknown

1.26 CyberGraphics

CyberGraphics (CGFX) is a Retargetable Graphics system to redirect graphic output to the Monitor bypassing the Amiga's built in graphics mode (OCS/ECS/AGA) using Shared Libraries and support software.

CyberGraphics software is usually supplied with the Graphics Board or can be purchased seperately. The current version is now 4.

CyberGraphics supports a wide range of old and new graphics boards which include:

BlizzardVision, CyberVision 64,64/3D and PPC, Picasso II, II+ and IV, Piccolo (SD64), Inferno, Domino, A2410, Retina BLT Z3, Altais and the Spectrum 28/24.

CGFX V3/4 consists of the following libraries:

Name	Purpose
cgxsystem.library	Main library for cybergraphics functions. (Replaces cybergraphics, cyberlayers and cyberintuition libraries from v2)
cgxbootpic.library	Boot Picture library for CGFX. which holds the boot picture.
cgxvideo.library	For video overlay and other video functions (CV3D)
cgxmpeg.library	Used for Isis' MPEG program.
cybergl.library	Used for CyberGL (a subset of OpenGL) 3D functions.
cyberncg.library	Lets you use v43 datatypes on NON-CGX systems.
gtlayout.library	Layout library for CGXMode and CVMode
vilintuisup.library	Used to allow Picasso II programs to run under CGFX.

Also there are Monitor files for different cards to support various resolutions and screen depths and adds them to the monitor database for use by Workbench.

Further information about CyberGraphX, CyberGL and Graphics Boards (old and new) can be found at their web site at:
<http://www.vgr.com/cybergfx/>

1.27 Picasso 96

Picasso96 (P96) is a Retargetable Graphics system to redirect graphic output to the Monitor bypassing the Amiga's built in graphics mode (OCS/ECS/AGA) using Shared Libraries and support software.

Picasso96 software is usually supplied with the Graphics Board or can be obtained from Aminet or the main Picasso 96 website.

Picasso 96 supports a wide range of Graphics cards like CyberGraphX:

Cybervision 64 and 64/£D, Domino, Merlin, oMniBus, Picasso II, II+ and IV, Piccolo, Piccolo SD64, Pixel 64, Retina BLT Z3, Spectrum and UAEGFX (Amiga Emulator PC graphics board support).

Programs that support the Cybergraphics API or the vilintuisup.library will work with the Picasso 96 as well!

Picasso96 consists of the Picasso96API.library which supports the following features out of 26 possible functions:

- a) Hi and True Colour support.
- b) Open/Close P96 screens
- c) Get Information on a P96 board
- d) Picture-in-Picture (PIP) Support
- e) Display ID support
- f) RGB and Pen colour support

Developer information is also available for people to write programs for graphics cards and additional support for application programs.

For information is available from the Picasso web page at:
<http://www.villagetronic.com/amiga/p96/>

1.28 EGS RTG Software

EGS (or Enhanced Graphics System), is a retargetable truecolor window system for the Amiga. It was developed by VIONA Development to replace Intuition which has no true color support. (AmigaOS' Intuition and Graphics libraries were written specifically for the built in OCS/ECS/AGA chipsets in all Amigas).

EGS does require a lot of memory to run and has a few drivers for it and quite a number of application software and utilities support it. Check out Aminet for compatible programs.

EGS supports the following boards: GVP 110, IV24, Piccolo (SD64), Rainbow 2 and 3, Spectrum and Vision cards, A2410.

EGS consists of the of the following:

Library	Purpose
egs.library	Main EGS library
egsalphablitt.library	EGS Alpha Blitter library
egsblitt.library	EGS Blitter library
egsgadbox.library	EGS Gadtools library
egsgfx.library	EGS Graphics library
egsintui.library	EGS Intuition library
egslayers.library	EGS graphic layers library
egsrequest.library	EGS Requester library
egs_r3d.library	

Plus EGB gadget libraries, monitor drivers, classes, preference, config files and drivers for each individual board.

There are plenty of tools to use with EGS with the system files supplied and various Paint packages and picture or Anim viewers on Aminet.

EGS is no longer developed and does not support the latest graphics boards, that is now supported by CyberGraphx and Picasso96.

1.29 Warp3d Graphics Software

Warp3D is being developed by Haage and Partner to take advantage of the 3D features of the latest graphics cards such as the Cybervision 64/3D, CyberVisionPPC and Blizzard VisionPPC cards. Warp3D is not the same as OpenGL.

Warp3D supports pixel, line drawing, triangles, textures, Hidden surface removal (ZBuffering), shape cutting (stencil), alpha blending (transparency), fogging and lighting.

Warp3D provides an API to allow programmers to produce software such as games easily without accessing the hardware directly but by a common interface so that it will work on any card on on any model of Amiga.

Warp3D consists of the following:

Library	Purpose
Warp3D.library	Main Warp3D library
Warp3DPPC.library	Warp3D library for PowerPC CPUs
W3D_CyberGFX.library	Warp 3D lib for Cybergraphics RTG boards
W3D_CyberGFX_PPC.library	Warp 3D lib for Cybergraphics RTG and PowerPC CPUs
W3D_Picasso96.library	Warp 3D lib for Picasso96 RTG boards
W3D_Picasso96_PPC.library	Warp 3D lib fot Picasso96 RTG and PowerPC CPUs
W3D_Virge.library	Warp 3D lib for Virge hardware (CV 64/3D)
W3D_Virge_PPC.library	Warp 3D lib for Virge and PowerPC CPUs

Further libraries will be added when new hardware appears.

1.30 OpenGL/Mesa Software

OpenGL (Open Graphics Language) is a 3D system developed by Silicon Graphics to program 3D functions on 3D accelerated graphics cards. It is very widely adopted in industry including SGI, PC, Mac and game consoles. The new Amiga will also adopt it as standard for its new graphics chipset.

There are a few implementations of OpenGL on the Amiga: CyberGL, StormMesa and AmigaMesaRTL. Two are available on Aminet and StormMesa is available from H&P.

OpenGL programs are usually developed using GLUT (GL Utility Toolkit) of which there is a version with AmigaMesa.

For further information, check out Silicon Graphics web pages and H&P's web pages and the program archives:

<http://www.haage-partner.com/>
<http://www.sgi.com/software/opengl>
<http://www.opengl.org/>
<http://www.mesa3d.org/>