



# ELSA GLoria Synergy Graphics Controller

---

## Installation Guide

Part Number: EK-COMGS-IG. B01

**February 1999**

This guide describes the installation of the ELSA GLoria Synergy Graphics Controller on Compaq's personal workstation products.

---

**February 1999**

The information in this publication is subject to change without notice.

COMPAQ COMPUTER CORPORATION SHALL NOT BE LIABLE FOR TECHNICAL OR EDITORIAL ERRORS OR OMISSIONS CONTAINED HEREIN, NOR FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE FURNISHING, PERFORMANCE, OR USE OF THIS MATERIAL. THIS INFORMATION IS PROVIDED "AS IS" AND COMPAQ COMPUTER CORPORATION DISCLAIMS ANY WARRANTIES, EXPRESS, IMPLIED OR STATUTORY AND EXPRESSLY DISCLAIMS THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSE, GOOD TITLE AND AGAINST INFRINGEMENT.

This publication contains information protected by copyright. No part of this publication may be photocopied or reproduced in any form without prior written consent from Compaq Computer Corporation.

**FCC NOTICE:** This equipment generates and uses radio frequency energy. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart G of Part 15 of FCC Rules, which are designed to provide reasonable protection against such radio and television interference in a residential installation.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio and television reception, the user is encouraged to try to correct the interference.

© 1999 Digital Equipment Corporation.  
All rights reserved. Printed in the U.S.A.

The software described in this guide is furnished under a license agreement or nondisclosure agreement. The software may be used or copied only in accordance with the terms of the agreement.

COMPAQ, the Compaq logo, the Digital logo and Deskpro, Fastart, Compaq Insight Manager, Systempro, Systempro/LT, ProLiant, ROMPaq, QVision, SmartStart, NetFlex, QuickFind, PaqFax, ProSignia, Registered in U.S. Patent and Trademark Office.

Netelligent, Systempro/XL, SoftPaq, QuickBlank, QuickLock, Open3D, and PowerStorm are trademarks and/or service marks of Compaq Computer Corporation.

The following are third-party trademarks:

ELSA GLoria Synergy is a trademark of ELSA, Inc.

Microsoft, MS-DOS, Windows, and Windows NT are registered trademarks of Microsoft Corporation.

OpenGL is a registered trademark of Silicon Graphics, Inc.

CRYSTAL EYES is a registered trademark of Quality Accessories, Inc.

NUVISION is a registered trademark of Nuvision, Inc.

Other product names mentioned herein may be trademarks and/or registered trademarks of their respective companies.

---

# Table of Contents

## 1 Overview

1.1 Introduction .....	1-1
1.2 Module Description.....	1-1
1.3 Connector Pinouts.....	1-4
1.4 Specifications.....	1-5

## 2 Installation

2.1 Introduction .....	2-1
2.2 Unpacking.....	2-1
2.3 Installation Procedure (Windows NT 4.0) .....	2-2
2.3.1 New Installation or Upgrade of Windows NT .....	2-2
2.3.2 Software Driver Installation .....	2-2
2.3.3 Changing Windows NT Display Characteristics .....	2-4
2.4 Hardware Installation.....	2-4

## Figures

Figure 1-1 ELSA GLoria Synergy Graphics Controller with Video In/Out and 8 MB Memory.....	1-3
Figure 1-2 ELSA GLoria Synergy Controller (without Video) .....	1-3

## Tables

Table 1-1 ELSA GLoria Synergy Graphics Controller .....	1-1
Table 1-2 Supported Systems and Support Matrix.....	1-2
Table 1-3 Standard 15-Pin VGA Connector Pinout .....	1-4
Table 1-4 ELSA GLoria Synergy Graphics Controller Specifications .....	1-5



---

# Preface

## Purpose of This Guide

This guide describes how to install the ELSA GLoria Synergy Graphics Controller in your computer system.

## Who Should Use This Guide

This guide is intended for anyone who has purchased the ELSA GLoria Synergy Graphics Controller, either already installed or as an add-on.

## Structure of This Guide

This guide is organized as follows:

- **Chapter 1, Overview**-Provides an overview of the ELSA GLoria Synergy Graphics Controller.
- **Chapter 2, Installation**-Describes how to install the Compaq ELSA GLoria Synergy Option in your Compaq personal workstation running Windows NT.

## Related Documentation

The following related documentation may be used when Graphics Support Services Software is available for use with the ELSA GLoria Synergy Graphics Controller.

- *Graphics Support Services Software Version 4.8 for Microsoft Windows NT Installation and User Guide for Alpha Systems*
- Compaq Open3d documentation for Tru64 UNIX

## Conventions Used in This Guide

In this guide, every use of Windows NT means the Windows NT operating system.

This guide also uses the following conventions:

Convention	Meaning
<b>Note</b>	A note calls the reader's attention to any item of information that may be of special importance.
<b>Caution</b>	A caution contains information essential to avoid damage to the equipment.
<i>italic type</i>	<i>Italic type</i> indicates complete titles of manuals.
<b>bold type</b>	<b>Bold type</b> indicates text that is highlighted for emphasis.
Monospaced	In text, this typeface indicates the exact name of a command, routine, partition, pathname, directory, or file.

## Reader's Comments

Compaq welcomes your comments on this or any other manual. You can send your comments to Compaq by mail to the following address:

Compaq Computer Corporation  
Information Design  
PKO3-2/E30  
129 Parker Street  
Maynard, MA 01754-2199

# 1

---

## Overview

### 1.1 Introduction

This chapter provides a brief overview of the ELSA GLoria Synergy Graphics Controller.

### 1.2 Module Description

The Compaq ELSA GLoria Synergy accelerator module is a single expansion-slot, 32-bit PCI bus graphics option that provides 2D and 3D graphics acceleration for Alpha workstations and Intel systems running Windows NT.

There are two ELSA GLoria Synergy Graphics Controller available with 8 MB of SGRAM memory. These options are listed in Table 1-1.

**Table 1-1 ELSA GLoria Synergy Graphics Controller**

<b>Option</b>	<b>Description</b>
SN-PBXGK-BB	ELSA GLoria Synergy Graphics Controller with 8 MB of SGRAM memory (without Video)
SN-PBXGK-BC	ELSA GLoria Synergy Graphics Controller with 8 MB of SGRAM memory (with Video In/Out)

## Overview

Table 1-2 provides a support matrix for the SN-PBXGK-BB and SN-PBXGK-BC ELSA GLoria Synergy Graphics Controllers.

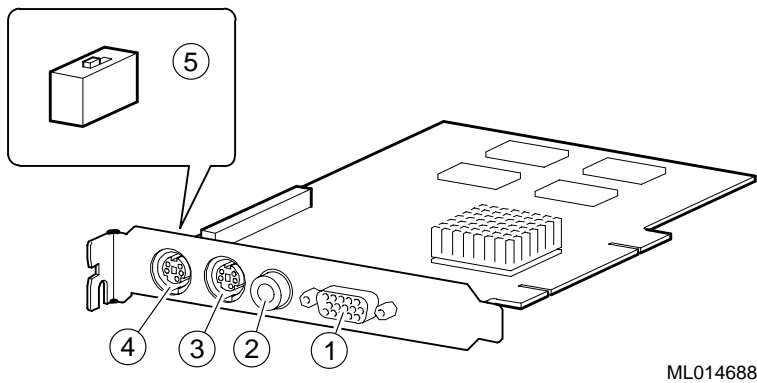
**Table 1-2 Supported Systems and Support Matrix**

Option	System
SN-PBXGK-BB	Compaq Professional Workstation XP1000
	DPWS 433a(u) (enhanced)
	500a(u) (enhanced)
	600a(u) (enhanced)
SN-PBXGK-BC	DPWS 433a(u) (enhanced)
	500a(u) (enhanced)
	600a(u) (enhanced)

The ELSA GLoria Synergy Graphics Controller modules contain one switch jumper for enabling or disabling the VGA capability when more than one VGA graphics module is installed in the same system.



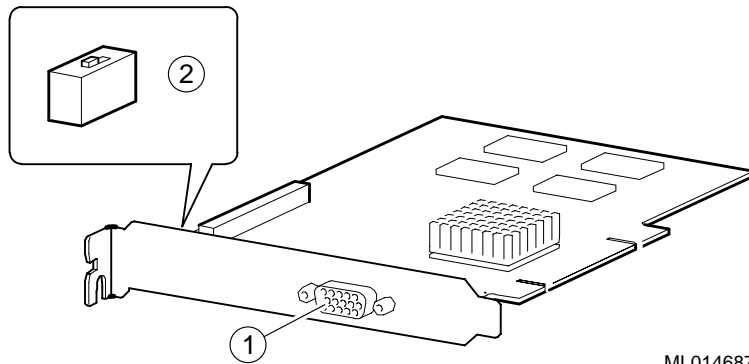
**Figure 1-1 ELSA GLoria Synergy Graphics Controller with Video In/Out and 8 MB Memory**



ML014688

- ① Standard 15-pin VGA connector
- ② Video input connector
- ③ S-Video input
- ④ S-Video Output (Not Supported)
- ⑤ VGA enable/disable switch (switch default = enabled)

**Figure 1-2 ELSA GLoria Synergy Controller (without Video)**



ML014687

- ① Standard 15-pin VGA connector
- ② VGA enable/disable switch (switch default = enabled)

## Overview

### 1.3 Connector Pinouts

Table 1-3 contains a listing of the pins and signals found on the standard 15-pin VGA connector.

**Table 1-3 Standard 15-Pin VGA Connector Pinout**

Pin No.	Signal
1	RED VIDEO
2	GREEN VIDEO
3	BLUE VIDEO
4	NC (no connection)
5	GROUND
6	GROUND
7	GROUND
8	GROUND
9	+5V SUPPLY
10	GROUND
11	Monitor ID2
12	BI-DIRECTIONAL DATA
13	HORIZONTAL SYNC or COMPOSITE SYNC
14	VERTICAL SYNC (VCLK)
15	DATA CLOCK

## 1.4 Specifications

Table 1-4 lists the specifications for the ELSA GLoria Synergy Graphics Controller.

**Table 1-4 ELSA GLoria Synergy Graphics Controller Specifications**

Resolution	1600 x 1200 (maximum) @ 75 Hz
Color planes	32 bit double buffered
Z-buffer	16 bit
Unified memory (frame buffer, Z-buffer, texture memory)	8 MB
Form factor	Single half-length PCI card
PCI	PCI 2.1, 32-bit, 33 MHz, 5V signaling
Input voltage	3.3 Vdc, 5 Vdc, +12 Vdc
Power	25 W maximum
Operating temperature	10°C to 40°C (50°F to 104°F)
Relative humidity	10% to 90% noncondensing



# 2

---

## Installation

### 2.1 Introduction

This chapter describes the installation of the ELSA GLoria Synergy Graphics Controller in a Compaq personal workstation system. Topics included in this chapter are:

- Unpacking
- Windows NT 4.0 installation
- Hardware installation

### 2.2 Unpacking

The graphics option hardware is packaged in a single carton that contains the following:

<b>Description</b>	<b>Part Number</b>
Graphics option w/o Video	SN-PBXGK-BB
Graphics option with Video	SN-PBXGK-BC
<i>ELSA GLoria Synergy Graphics Controller Installation Guide (this manual)</i>	EK-COMGS-IG
CD-ROM containing Windows NT and UNIX software drivers for Alpha and Intel systems	GSSS Version 4.8

## Installation

### 2.3 Installation Procedure (Windows NT 4.0)

---

#### Note

---

If a graphics option other than the ELSA GLoria Synergy Graphics Controller was previously operating in the system, keep that option installed and refer to Section 2.3.2. If the previously installed graphics option is not available or it is not operational, refer to Section 2.3.1.

---

#### 2.3.1 New Installation or Upgrade of Windows NT

Before installing the software drivers during a Windows NT upgrade or new installation, install the ELSA GLoria Synergy Graphics Controller as described in Section 2.4. You can then install Windows NT as described in the Windows NT documentation.

During Windows NT installation, a hardware and software component list is displayed, like the one shown here:

Computer: Compaq Personal Workstation xxx (xxx = CPU type)

Display: VGA Compatible

Keyboard: XT, AT, or Enhanced Keyboard (83-104 keys)

Keyboard Layout: US

Pointing Device: Mouse Port Mouse

No Changes: The above list matches my computer

When you have completed the Windows NT installation, go to Section 2.3.2.

#### 2.3.2 Software Driver Installation

If you have purchased the ELSA GLoria Synergy Graphics Controller as an add-on, you must install the software drivers. Install the 2D and 3D drivers (the Compaq optimized OpenGL support) from the included diskettes (or the Graphics Support Services Software CD-ROM that will be included in future releases) by performing the following steps:

1. Boot your system and log into Windows NT if you have not already done so.
2. From the desktop, choose **My Computer**.
3. From My Computer, choose **Control Panel**.
4. From Control Panel, choose **Display**.

## Installation

5. From the Display Properties dialog box, choose the **Settings** tab.
6. From the Settings dialog box, choose the **Display Type** button to see the driver and adapter (board) information.
7. From the Display Type dialog box, choose **Change**.
8. From the Change Display dialog box, choose **Have Disk**.
9. In the Install from Disk dialog box, you are prompted to insert the manufacturer's installation disk into the selected drive. Insert the appropriate diskette (Alpha or Intel) into the floppy drive (or the Graphics Support Services Software CD-ROM that will be included in future releases into the CD-ROM drive unit).
10. Enter the path of the PowerStorm 4D10T driver and choose **OK**.

The path is of the following format, where `dev:\` is the drive name (for example, `A:\` for floppy diskettes or `E:\` for the E drive):

`dev:\` (Alpha or Intel systems - Floppy Diskettes)

`dev:\i386\pbxgk\nt40` (Intel systems - GSSS CD-ROM)

**or**

`dev:\alpha\pbxgk\nt40` (Alpha workstations - GSSS CD-ROM)

11. In the Change Display dialog box, the driver whose path you just defined is displayed. Confirm this choice by choosing **OK**. The driver name displayed is:  
`PowerStorm 4D10T`
12. When the message displays stating that this is a third party driver, confirm by choosing **Yes**. A status box displays reflecting the progress of the driver installation.
13. When the files have been copied to your hard disk, a dialog box indicating that the driver was successfully installed is displayed. Choose **OK** and remove the CD-ROM from the drive.
14. Choose **Close** to close the Display Type dialog box.
15. Choose **Close** to close the Display application.
16. When a message displays stating that you must restart your computer to use the new display driver, choose **No**.
17. Shut down your system by choosing **Shut Down** from the Start menu, then remove power from your computer system and install the PowerStorm 4D10T graphics option as described in Section 2.4 if you haven't already done so.
18. After installing the ELSA GLoria Synergy Graphics Controller, reboot your system to access the new display driver. After your system reboots, a message displays

## Installation

indicating that the default screen resolution and refresh rate are being used. For information on changing these values, refer to Section 2.3.3.

### 2.3.3 Changing Windows NT Display Characteristics

After installing the ELSA GLoria Synergy Graphics Controller, you can change the screen resolution and refresh rate, collectively referred to as the *display mode*. Before changing the display mode, you should verify that your monitor can accept the new values (refer to the monitor documentation). To change the display resolution and refresh rate, perform the following steps:

1. From the desktop, choose **My Computer**.
2. From My Computer, choose **Control Panel**.
3. From Control Panel, choose **Display**.
4. From the Display Properties dialog box, choose the **Settings** tab.
5. From the Settings dialog box, click on the arrows in the **Desktop Area** to change the screen resolution.

To change the refresh rate, choose one of the options in **Refresh Frequency**. (You can also change the resolution and refresh rate by choosing **List All Modes** and the desired mode, and then choosing **OK**.) If the refresh rate selected is not supported by the resolution you chose, the resolution will automatically change to the nearest value supported by that refresh rate, or the refresh rate will change to support the resolution.

6. Choose **Test** to verify that the settings work correctly. A test pattern will be displayed on your monitor for about five seconds.
7. You will now see the question “Did you see the test bitmap properly?”. If you are satisfied with the video display, choose **Yes**.

Choose **OK** to accept the changed settings.

8. You may have to adjust your monitor to align the new resolution to the monitor. This is typically done by using the controls on the front or side of the monitor.

## 2.4 Hardware Installation

The following section describes how to install the ELSA GLoria Synergy Graphics Controller. To install the graphics option, perform the following steps:

---

### Note

---

Before installing the graphics option, check your monitor specification for signal compatibility and supported features offered by the graphics option.

---



## Installation

---

### Caution

---

Static electricity can damage sensitive electronic components. When handling your graphics option, use an antistatic wriststrap that is connected to a grounded surface on your computer system.

---

1. Perform a normal power down of your computer system and disconnect the monitor cable.
2. Remove the cover from your computer (refer to your system documentation).
3. Put on an antistatic wriststrap.

---

### Caution

---

An antistatic wriststrap must be worn when handling any module to prevent damage to the module.

---

4. If your computer has an existing graphics module, remove the screw that secures it and then remove the module.
5. If your system had a previously installed graphics option, you can use that slot if it is a PCI slot, or you can select any empty PCI expansion slot. Remove the slot cover if you are using a new slot. Refer to your system owner's guide for information about graphics option slots.
6. Grasp the top edge of the graphics option and carefully insert it into the slot, then firmly seat it.
7. Secure the module retaining bracket.
8. Replace the computer cover.
9. Ensure that the monitor cable is connected to the video output connector located on the back of the graphics option.
10. Perform a normal power up of your computer system.