



phantom®
HAPTIC DEVICES

Phantom Device Driver Installation Guide

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Hardware usage guidelines are provided to assist the user in protecting the effectiveness and life of the device. They are not intended as recommendations for the prevention of repetitive stress injury, carpal tunnel syndrome or any other conditions, injuries or disorders; users should consult their own physicians. By using the Phantom device, the user acknowledges and agrees that Geomagic shall have no liability for any disorder, condition or injury arising from any use of the device.

Warning Do NOT open the Phantom device. Attempting to open or repair the device by anyone other than a certified authorized service center voids the manufacturer warranty and hardware maintenance contract.

Questions or Comments

If you have any questions for our technical support staff, please contact us at SensableSupport@geomagic.com. You can also phone 1-888-736-7225 (U.S.A. only) or 1-781-939-7444 (International).

If you have any questions or comments about the documentation, please contact us at SensableDocumentation@geomagic.com.



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Contents

	Preface.....	i
	Resources for Learning Freeform Modeling or Openhaptics Toolkit	i
	Typographical Conventions	ii
Chapter 1	Getting Started	1-1
	Contents of the Shipping Box	1-1
	System Requirements	1-2
	Overview of the Phantom Device Driver Installation Process	1-3
Chapter 2	Installing the Phantom Device Driver	2-1
	Installing the PDD	2-1
	Overwrite PDD	2-4
	Configuring the Phantom device	2-4
	Connecting the Phantom device	2-4
Appendix	Troubleshooting	A-1
Appendix	Customer Support	B-1

Preface

Congratulations on your purchase of a Phantom haptic device! This guide will step you through the installation and of the Phantom Device Driver. Detailed instructions for installing the Phantom® haptic device can be found in the *Phantom Device Guide*.

Throughout the documentation the use of the term “Phantom device” refers to any of the Phantom® family haptics. Any exceptions are noted.

Resources for Learning Freeform Modeling or Openhaptics Toolkit

The following documentation and materials are provided to help you learn how to use the systems:

The *Freeform Modeling Installation Guide* The Freeform Install Guide is a printed and electronic document that contains instructions on installing and setting-up the Freeform Modeling system as well as troubleshooting tips.

The *Freeform Modeling Tutorials* An electronic document containing several lessons that exercise the basic features of the system. If you do a typical install, this document is available from the Freeform program group. Otherwise the document can be found on the product CD.

The *Openhaptics Installation Guide* The Openhaptics Install Guide is a printed and electronic document that contains instructions on installing the toolkit and deploying your haptically enabled application.

The *Openhaptics Programmer’s Guide* This guide explains the Openhaptics toolkit (which includes the QuickHaptics™ micro API), and introduces you to the architecture of the toolkit, how it works, what you can do with it, as well as the fundamental components of creating haptic environments.

The *Phantom Device Driver Installation Guide* The PDD Install Guide (this document) is a printed and electronic document that contains instructions on installing the Phantom Device Driver as well as troubleshooting tips.

The *Phantom Device Guide* A printed document that is shipped with your haptic device that describes the process of installing the device drivers and connecting the haptic device as well as how to work with the device including proper handling, troubleshooting, and device specifications. This can also be found in electronic form on the Freeform Modeling product CD.

Product CD Users may also find helpful files located on the product CD.

WebSite A variety of information is available via the website at <http://www.sensable.com>, including updated information, answers to Frequently Asked Questions, expert “tips and tricks,” example models, and more.

Typographical Conventions

This guide uses the following typographical conventions:

Convention	Description	Example
<i>Italics</i>	First use of a new term; reference to another document or file.	A <i>Voxel</i> is...; see the <i>Device Guide</i> .
Bold	Keywords, actual user input, or examples.	Click Ok .
Greater Than (>)	Indicates a menu pick, as in “select Options from the Tools menu”.	Tools>Options

1

Getting Started

This guide covers the currently shipping Phantom Device Driver. The information contained in this manual was current at the time of publication. Visit www.sensable.com for the latest information.

This chapter describes the following:

- The contents of the shipping box
- System Requirements

An overview of the installation process

Contents of the Shipping Box

If you are purchasing a Phantom haptic device for the first time, in your shipping box you should find the following:

- **The Phantom 3D Touch Device:** The Phantom device uses high-fidelity force feedback to make it possible to touch and manipulate virtual objects.
- **The Phantom Device Guide:** Describes the process of installing the device drivers and connecting the haptic device as well as how to work with the device including proper handling, troubleshooting, and device specifications. This can also be found in electronic form on the Freeform Modeling product CD.
- **The Freeform Modeling or Openhaptics Kit:** This kit contains a CD-ROM and the Installation Guides.
- **One of the following:**
 - **Parallel Port Cable:** (For Phantom Desktop Units) The cable is used to attach the Phantom Desktop device to the computer's parallel port.
 - **FireWire® Cable:** (For Phantom Omni Units) This IEEE-1394a compliant six pin to six pin FireWire cable is used to connect the Phantom Omni device to the IEEE-1394a compliant six pin FireWire port on your computer.
- **Universal Power Supply:** The power supply can be used on any standard circuit, using the supplied power cord.
- **Power Cord:** The power cord connects the Universal Power Supply to the wall outlet.

If any items are missing, please call Customer Support at 1-888-736-7225.

System Requirements

This section describes the hardware and software requirements for running one of the applications. Check the support section of the website for the latest system requirements information and specific qualified system configurations.

Some users have had success running system configurations that deviate from the following. In such cases, these configurations are not officially supported by Geomagic, Inc.

Additionally, a variety of hardware platforms are tested in combination with the graphics subsystems. While we make every attempt to be as thorough as possible, hardware manufacturers change their products frequently and may be shipping newer products or have discontinued active support for others. Check the support section of the website for the latest system requirement information and specific qualified systems.

32-Bit Operating Systems

The 32-bit editions of software are designed to run on the Microsoft® Windows® XP Professional (32 bit edition), Windows® Vista (32 bit edition) or Windows® 7 (32 bit edition). Running the system requires the following:

- 512 MB of free hard disk space for OpenHaptics, 4GB for Freeform.
- 1280 x 960 or higher display resolution
- Either:
 - Phantom Desktop or Premium devices: An EPP or ECP compatible parallel port, or if using the Phantom Communications Converter (sold separately), an IEEE-1394a compatible FireWire Card.
 - Phantom Omni: IEEE-1394a compatible FireWire Card

Additionally, your machine must meet either the recommended or minimum requirements:

Recommended:

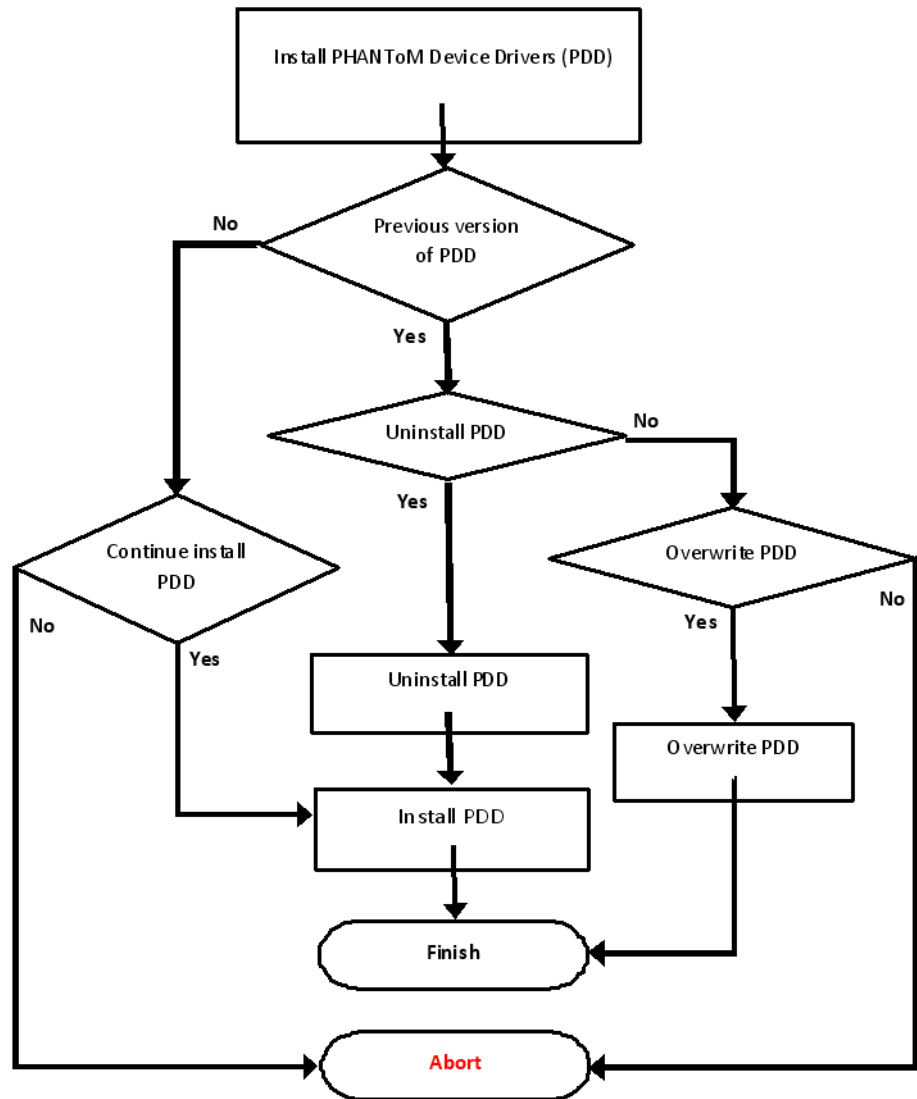
- Dual Xeon® Pentium® IV 2.4 GHz or better processor
- 2 GB RAM
- Windows® XP Professional SP3 or Windows® 7

64-bit Operating Systems

The 64-bit editions of the software are designed to run on the Microsoft® Windows® XP (64 bit edition), Windows® Vista (64 bit edition) or Windows® 7 (64 bit edition). Running the system requires the following:

- 512 MB of free hard disk space for OpenHaptics, 4GB for Freeform.
- 1280 x 960 or higher display resolution
- Either:
 - Phantom Desktop or Premium devices: An EPP or ECP compatible parallel port, or if using the Phantom Communications Converter (sold separately), an IEEE-1394a compatible FireWire Card.
 - Phantom Omni: IEEE-1394a compatible FireWire Card.

Overview of the Phantom Device Driver Installation Process



1 GETTING STARTED

Overview of the Phantom Device Driver Installation Process

2

Installing the Phantom Device Driver

This chapter will step you through the Phantom Device Driver installation process, help you verify that your system is set up properly, and describe how to properly handle the Phantom haptic device. The instructions are for both existing and new users except as noted.

The CD-ROM contains two types of software:

- The Freeform Modeling *or* Openhaptics Toolkit application
- The Phantom Device Drivers (PDD)

Note that, as with most other software packages, you must have administrator privileges on the machine in order to install. If you are unfamiliar with installing software or do not have administrator privileges, please see your System Administrator for more information.

The installation procedures for installing on Windows® XP, Windows® Vista and Windows® 7 have some noted differences from the installation instructions provided in the Phantom Device Guide. Depending on your operating system, the images found in the remainder of this document may vary from what you actually see on your computer screen.

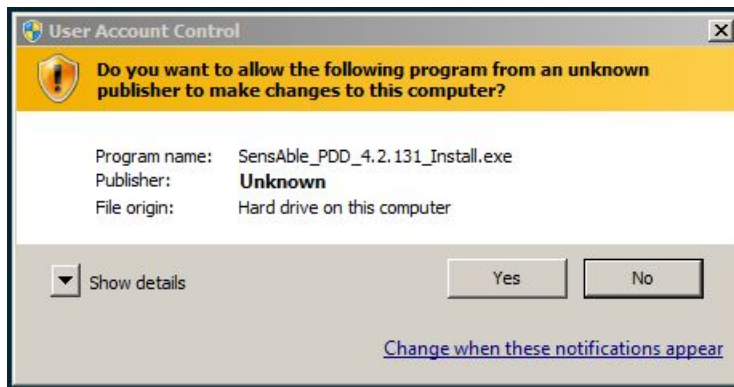
Installing the PDD

- 1 Insert the product CD into your CD-ROM drive or download the PDD from <http://sensable.com/support-downloads.htm>. The Installation Wizard starts automatically.

Note If the installation wizard does not start, you will need to manually start the installation. Using Windows Explorer, browse the **CD** and locate and double-click the **Install Wizardx.exe** file.

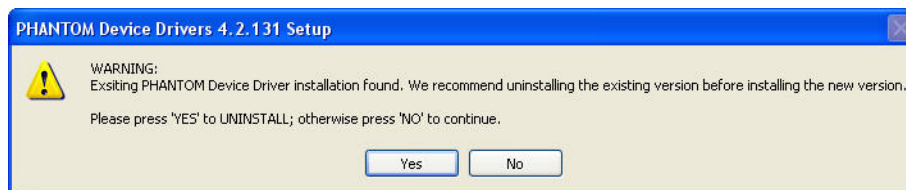
- 2 If you are using Windows® Vista or Windows® 7, the User Account Control window will appear, as seen in Figure 2-1. Click **Yes** to proceed with the installation.

FIGURE 2-1.



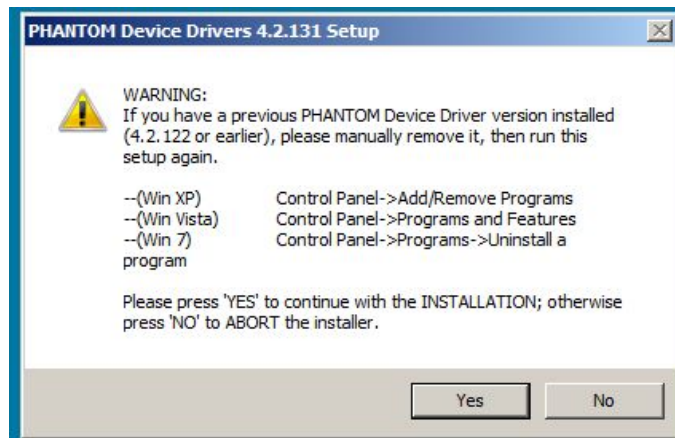
- 3 If a previous version of the PDD is detected, a warning message will appear, as seen in Figure 2-2. From this warning you can Uninstall or Overwrite the previous version. If you click **Yes** on the warning message, follow the instructions of the Install Wizard to complete the PDD Installation. If you click **No** on the warning message, see **Overwrite PDD**.

FIGURE 2-2.



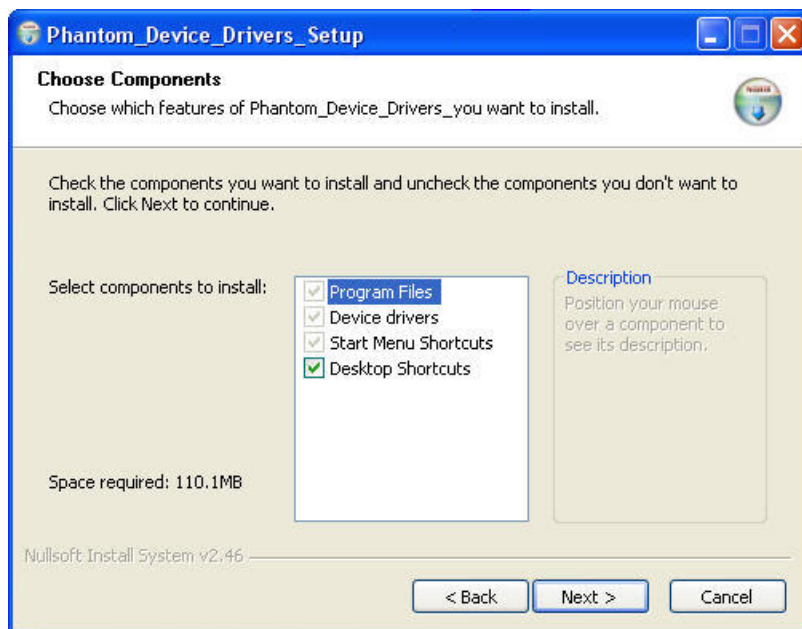
- 4 If a previous version of the PDD is not detected (non-existent or earlier than PDD v4.2.122), the warning message in Figure 2-3 will appear. The message instructs you to manually uninstall the previous version of the PDD before starting the installation process.

FIGURE 2-3.



- 5 Follow the Install Wizard to start the installation of the PDD.
- 6 In the **Choose Components** dialog, be sure the check box, "Desktop Shortcuts" is selected. This will create desktop shortcuts for the **Phantom Configuration** and **Phantom Test**. If you do not install the Desktop Shortcuts, you will need to go to **Start>Programs>Sensible** to run the Phantom Configuration and Phantom Test.

FIGURE 2-4.



Overwrite PDD

If you selected to Overwrite the PDD (figure 2-2), once the Overwrite PDD option is confirmed, the installation procedure will begin. Then, follow the normal installation procedure.

Note Make sure that all programs using the PDD are closed before overwriting the existing PDD.

Configuring the Phantom device

After you have installed the PDD, double-click the **Phantom Configuration** icon on your desktop. You will be presented with a dialog box for configuring your device. Make sure that the correct Phantom model is chosen.

Note If you have not installed Desktop Shortcuts, go to **Start>Programs>Sensable** to run the Phantom Configuration.

Connecting the Phantom device

Before you connect the Phantom haptic device, be sure to restart your computer. After you have restarted your computer, plug the Phantom device into a power source and into your PC as described in the *Phantom Device Guide*.

Warning To lift the Phantom Desktop grab the metal covers and support the base when moving it. To lift the Phantom Omni grasp both sides of the base. Lifting a Phantom device by any of its moving parts may break the device. DO NOT lift by the stylus.

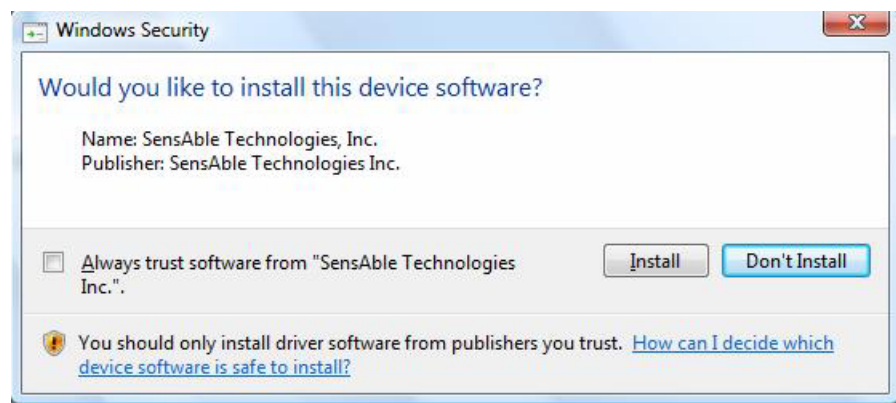
Appendix: Troubleshooting

This chapter provides tips for correcting some common problems that you may encounter when installing the Phantom Device Driver. You can also visit the support section of the website for additional information. If you are unable to resolve your problem, please contact your authorized Reseller or Customer Support.

During the PDD installation various control and warning windows may appear. Please read through the information below to ensure that you respond appropriately. Improper response can result in a corrupted installation.

The Windows® Security Messages appear...

FIGURE A-5.



- 1 Check to Always trust software from “Sensable Technologies Inc.”
- 2 Click **Install**.

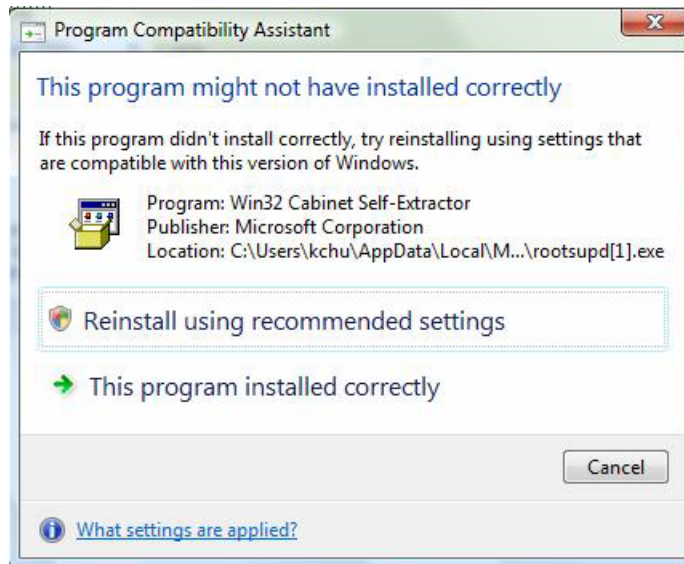
Verify that you have the correct settings for your particular Phantom device and computer in the Phantom Configuration tool available from your Desktop or Start Menu.

Root Certificates (Windows® Vista Only)

- 1 Before installing the PDD you may need to you update your Root Certificates. Input the web address below into your browser to go directly to the Update Root Certificate download page and follow the instructions for updating the root certificates: <http://www.microsoft.com/downloads/en/details.aspx?FamilyID=f5eff286-5412-4d7f-81b2-3a1418a4f8b9>.
- 2 If you have trouble with the link, visit www.microsoft.com and click Downloads and Trials>Download Center. Search All Downloads for Root Certificates and follow the instructions.

- 3 The Program Compatibility Assistant window (Figure 3-6) may pop-up, referring to the Win32 Cabinet Self-Extractor Program. If it does, select, **This program installed correctly**.

FIGURE A-6.



Appendix: Customer Support

If you encounter any difficulties within your warranty period, you can obtain Technical Support through the three channels listed below. If you are out of warranty and do not have active maintenance, Technical Support is limited.

- If you purchased your software/device from a distributor, please contact them first.
- Customer Support can be reached via e-mail at SensibleSupport@geomagic.com.
- Customer Support can also be reached via telephone:
 - In the United States: 1-888-736-7225
 - Outside the United States: +1-781-939-7444

