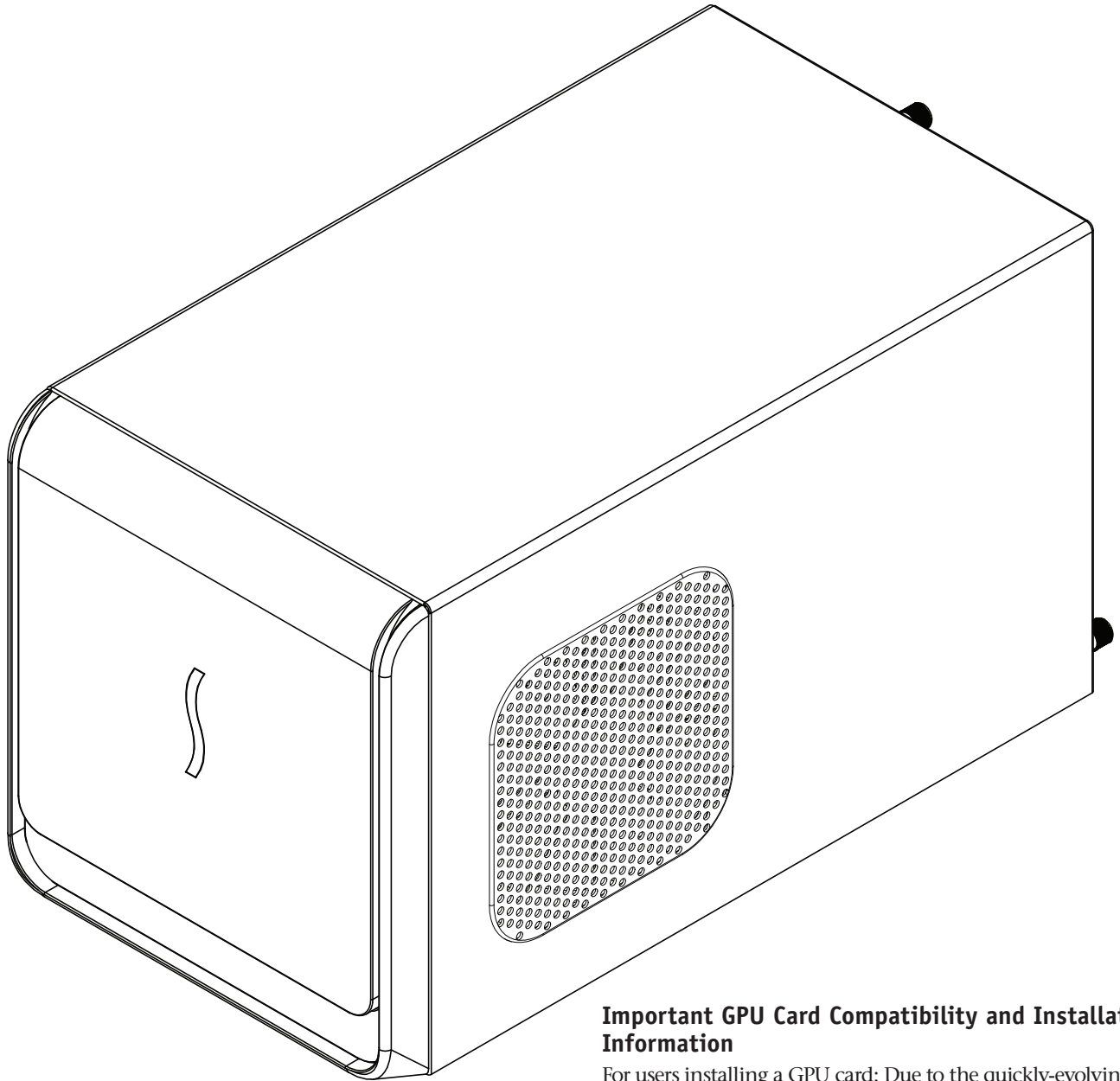


User's Guide

for eGFX Breakaway™ Box and eGFX Breakaway Box 550
Thunderbolt™ 3 to eGPU PCIe Card Expansion Systems



Important GPU Card Compatibility and Installation Information

For users installing a GPU card: Due to the quickly-evolving status of external GPU (eGPU) support and compatibility, **you must visit the Sonnet web site for the latest information, and download additional instructions not included in this guide.** Please visit the eGFX Breakaway Box support page at www.sonnettech.com/support/kb/kb.php?cat=524, click the Manual tab, and then locate and download the OS-specific instructions.

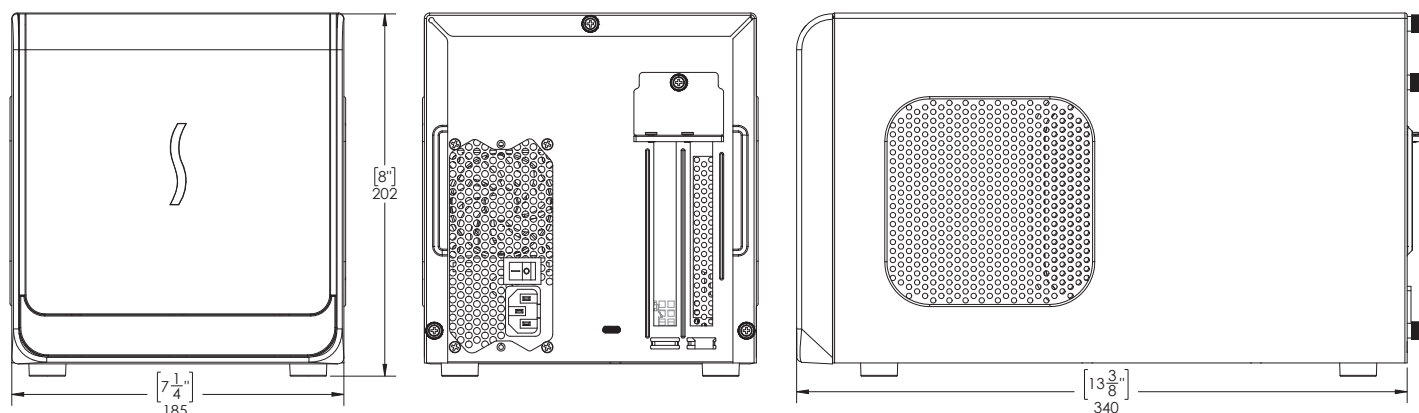
For additional information on supported cards and eGPU support, visit sonnettech.com/product/egfx-breakaway-box.html.



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Chapter 1 – Introduction and Compatibility Information



Introduction

Congratulations on your purchase! The eGFX Breakaway Box is a Thunderbolt 3 to PCI Express card expansion system for desktop GPU or other PCIe cards. This user's guide applies to the eGFX Breakaway Box (part number GPU-350W-TB3Z) and eGFX Breakaway Box 550 (part number GPU-550W-TB3), and covers card installation steps.

Mac® Compatibility (Non-GPU Cards)

- Macs with Thunderbolt 3 ports
- Macs with Thunderbolt or Thunderbolt 2 ports and Apple Thunderbolt 3 (USB-C) to Thunderbolt 2 Adapter
- macOS® 10.12.6+

Windows® Compatibility (Non-GPU Cards)

- PCs with a Thunderbolt 3 port
- 64-bit editions of Windows 10, Version 1703 OS Build 15063 (Creator's Update) or newer

GPU Card Compatibility

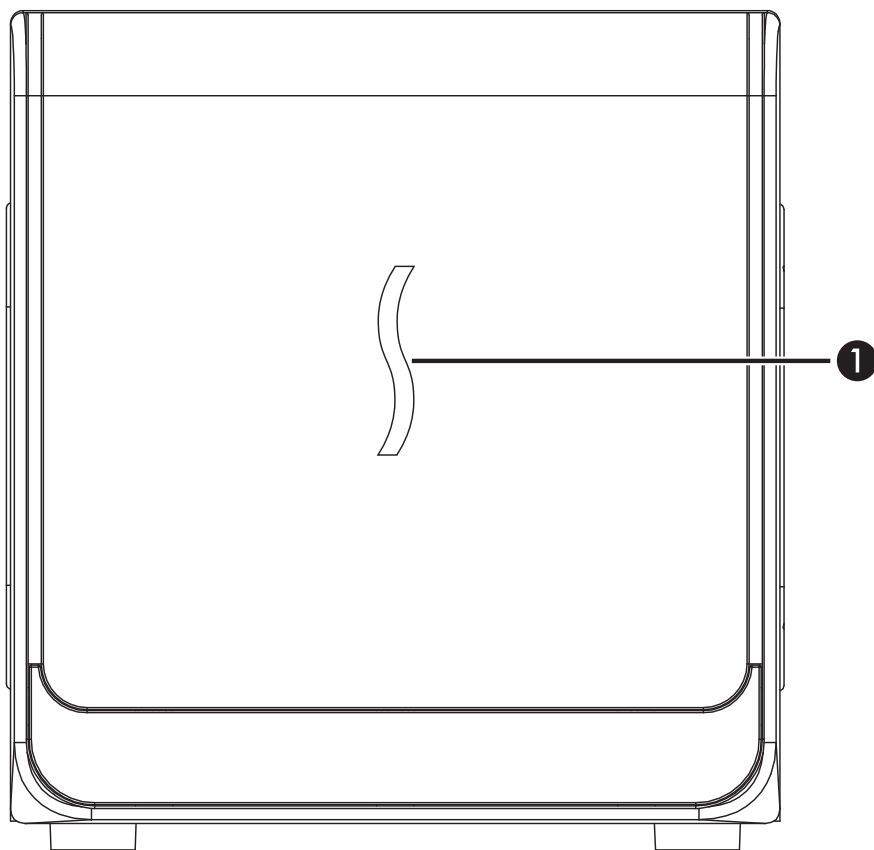
Visit the eGFX Breakaway Box product page on the Sonnet web site at sonnettech.com/product/egfx-breakaway-box.html?tab=1 for a list of card families supported. For a table of graphics cards' power requirements, visit sonnettech.com/product/egfx-breakaway-box.html?tab=2. For OS-specific card compatibility information, visit the eGFX Breakaway Box support page at www.sonnettech.com/support/kb/kb.php?cat=524, click the Manual tab, and then locate the OS-specific installation instructions.



Support Note: This document was up to date at the time of printing. However, changes to the hardware or software may have occurred since then. Please check the Sonnet website for the latest documentation.

1. Go to www.sonnettech.com/support/kb/kb.php
2. Click the Thunderbolt Product link.
3. Click the eGFX Breakaway Box link, and then click the Documentation link.
4. Click the eGFX Breakaway Box User's Guide [English] link and then check the Document Version information. If the version listed on the last page of this manual is later than this document (revision B), click the Download Now button for the latest version.

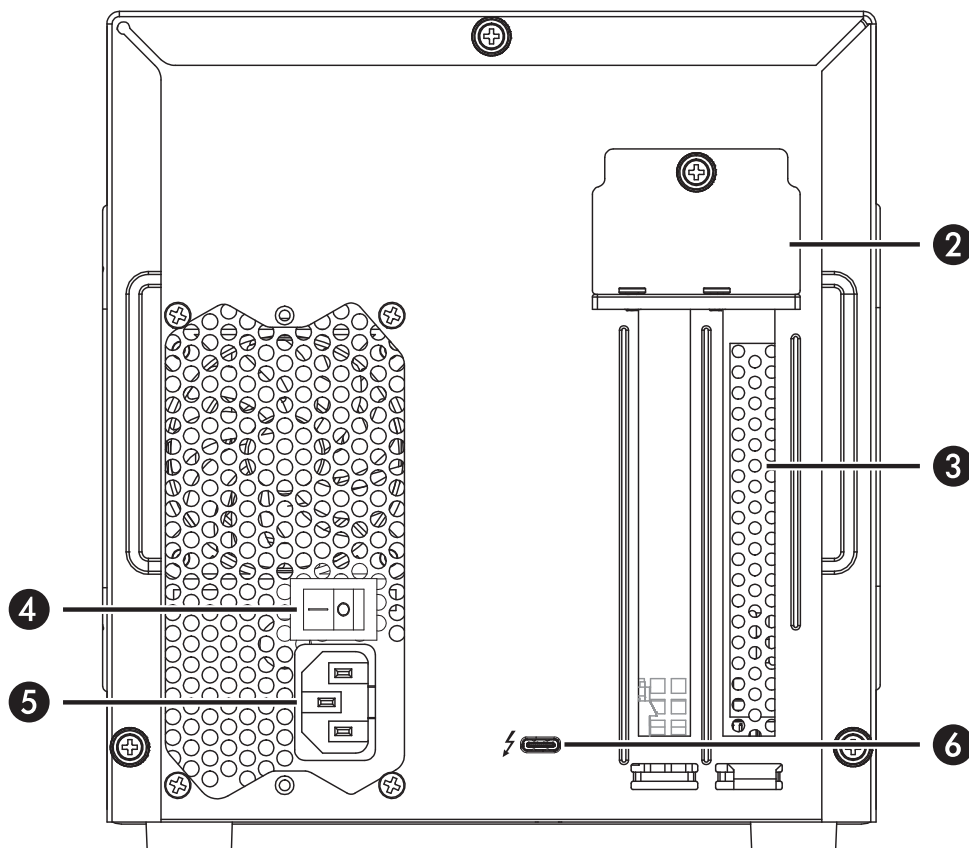
Chapter 2 – eGFX Breakaway Box Description



Exterior

1 – Power Indicator LED

This indicator lights when the eGFX Breakaway Box is connected to a power source and the power switch turned on, the Thunderbolt cable between the chassis and your computer is plugged in securely, and the computer powered on.



2 – PCIe Card Bracket Locking Plate

This secures the installed card and port access cover in place.

3 – Port Access Cover

This covers the open space when you install a single-width card.

4 – Power Switch

Flip the switch to the On position to enable operation.

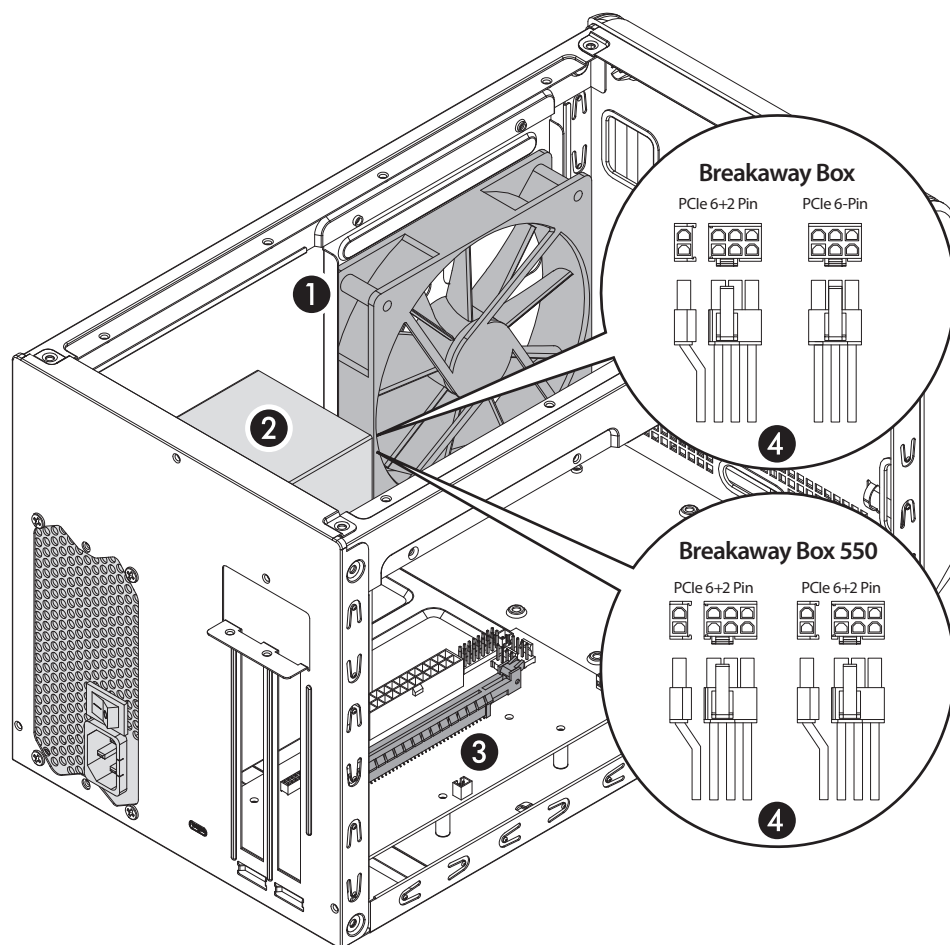
5 – Power Input Socket

Connect the included AC power cable here.

6 – Thunderbolt 3 Port

Connect the included Thunderbolt 3 (40Gbps) cable between this port and your computer's Thunderbolt 3 port.

Chapter 2 – eGFX Breakaway Box Description



Inner Assembly

1 – Main Fan

This temperature-controlled fan provides cooling for the installed card and the chassis' supporting circuitry. It operates at a whisper when the card is running cool, and automatically speeds up in steps as the temperature rises. Do not block the fan or the vent holes on the chassis to prevent overheating.

2 – Power Supply

This provides power for the installed card and all supporting circuitry inside the box. The power supply has its own fan that operates independently from the main fan. Do not block the fan or the vent holes on the chassis to prevent overheating.

3 – PCIe Slot

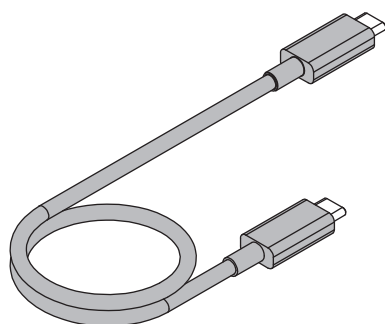
This is an x16 mechanical (x4 electrical*) PCIe 3.0 slot.

4 – Auxiliary Power Connectors

Should the card you install require auxiliary power, plug in the necessary connectors to provide the required power. eGFX Breakaway Box includes one 8-pin (6+2 pin) connector, plus one 6-pin connector. eGFX Breakaway Box 550 includes two 8-pin (6+2 pin) connectors.

Thunderbolt 3 (40Gbps) Cable

Connect this cable between the Breakaway Box and your computer.



* Thunderbolt 3 specification

Chapter 3 – Card Installation Steps and Setup Completion Information

1. Remove the eGFX Breakaway Box (referred to as “the box” from this point forward in this section) from its packaging, and then set it on a flat, level surface.
2. Remove and set aside the three thumbscrews securing the top cover to the inner assembly (**Figure 1**).

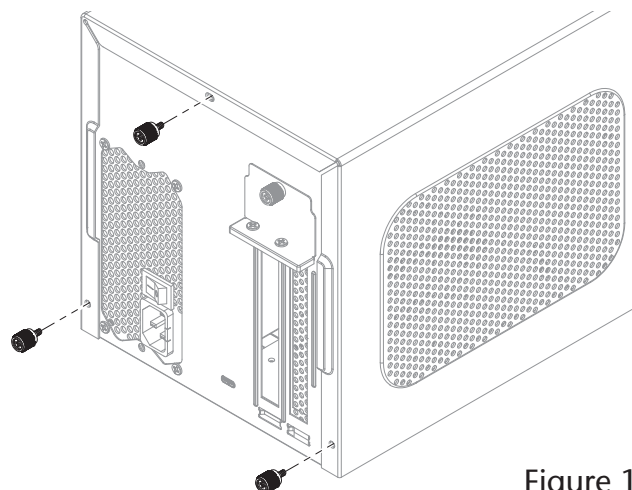


Figure 1

3. Grasping the raised sections on the back edge, slide the top cover toward you until it stops (**Figure 2**).
4. Lift the top cover up until it stops, pull the sides apart slightly, and then remove and set aside the cover (**Figure 2**).

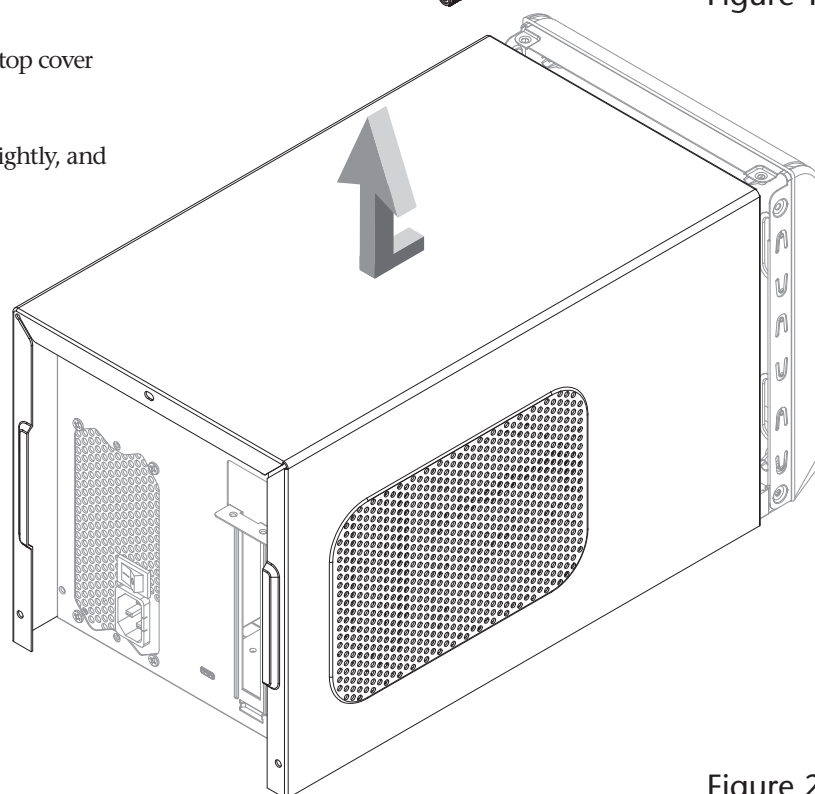



Figure 2

 **Support Note:** To avoid damaging components due to static electricity discharge, wear an antistatic wrist strap while working inside the eGFX Breakaway Box.

5. Remove and set aside the two screws securing the PCIe card bracket locking plate to the inner assembly (**Figure 3**).
6. Remove and set aside the thumbscrew securing the PCIe card bracket locking plate, and then remove the port access cover (**Figure 3**).

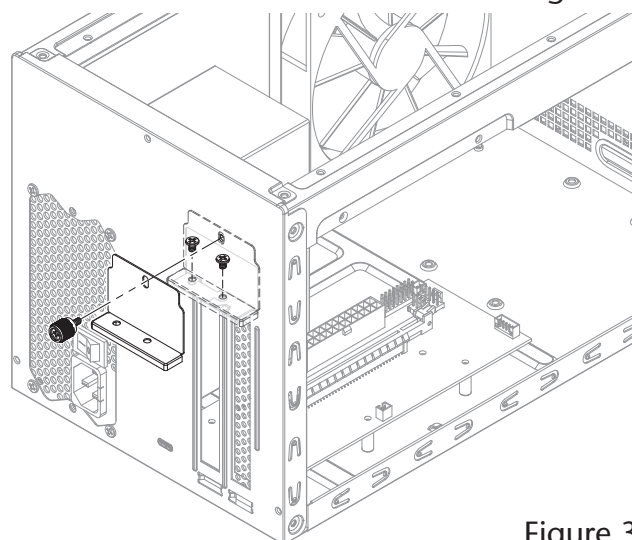


Figure 3

Chapter 3 – Card Installation Steps and Setup Completion Information



WARNING: When handling computer products, take care to prevent components from being damaged by static electricity; avoid working in carpeted areas. Handle PCIe cards only by their edges and avoid touching connector traces and component pins. Also, avoid touching the box's circuit boards and any of its components.

7. Remove the PCIe card from its packaging, handling the card by its edges and without touching any components or gold connector pins.
8. Insert the PCIe card into the inner assembly through the top or side, depending on the size of your card (**Figure 4**). Please note that in some instances, it may be necessary to remove the main fan in order to insert the card into the inner assembly.

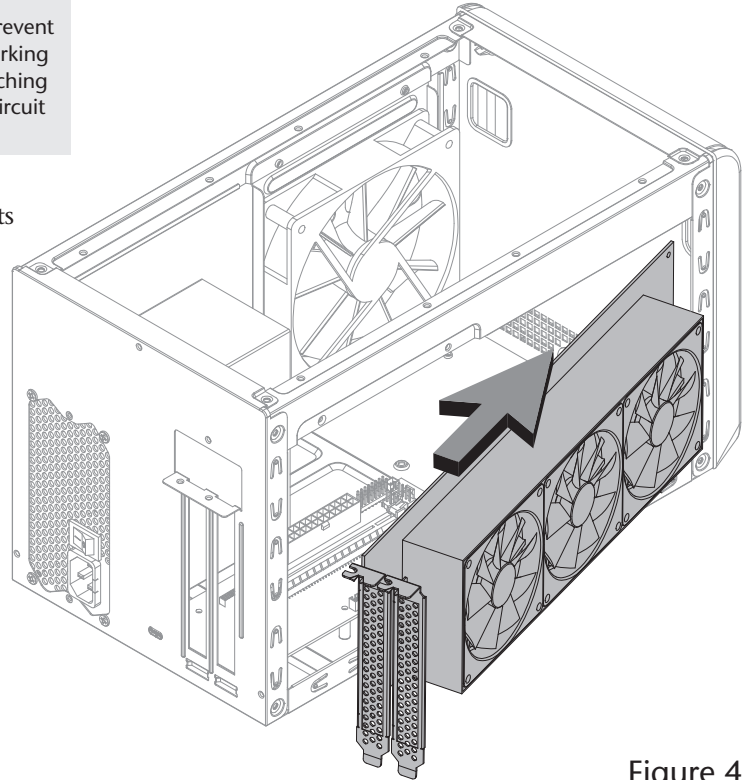


Figure 4

9. Line up the card's connector with the PCIe slot, and then gently but firmly press the card straight into the slot; do not rock the card or force the card into the slot. If you encounter excessive resistance, check the card's connector and the slot for damage, and then try inserting the card again (**Figure 5**).
10. If necessary, connect the auxiliary power connectors to the card.

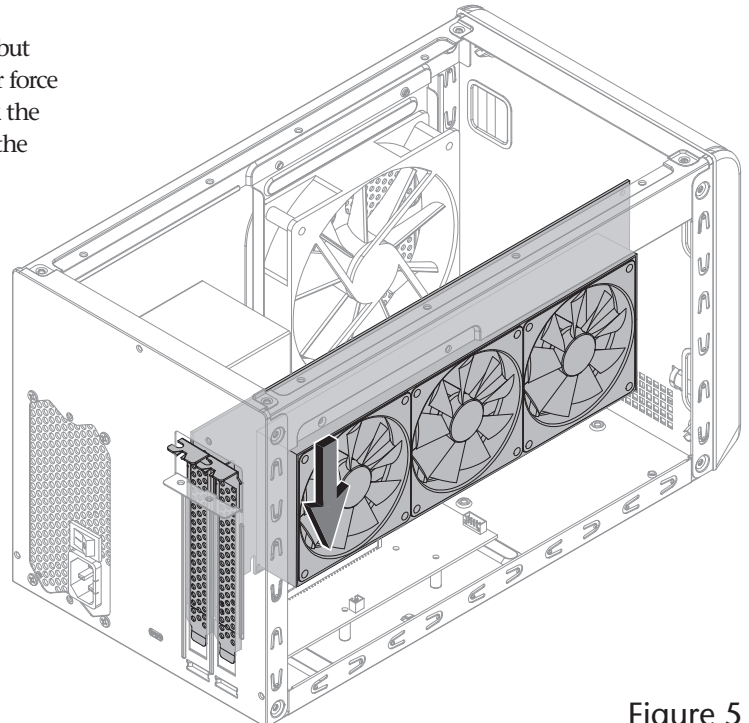


Figure 5

Chapter 3 – Card Installation Steps and Setup Completion Information

11. Secure the card using the previously-removed PCIe card bracket locking plate, screws, and thumbscrew (Figure 6).

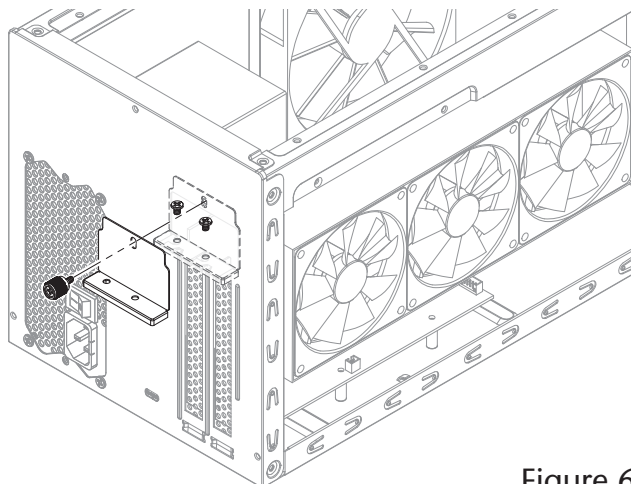


Figure 6

12. Pulling its sides apart slightly, lower the top cover over the inner assembly's top brackets as shown, and then push the sides toward each other so that the guides on the cover and assembly engage each other (Figure 7).
13. Slide the top cover all the way forward until it stops (Figure 7).

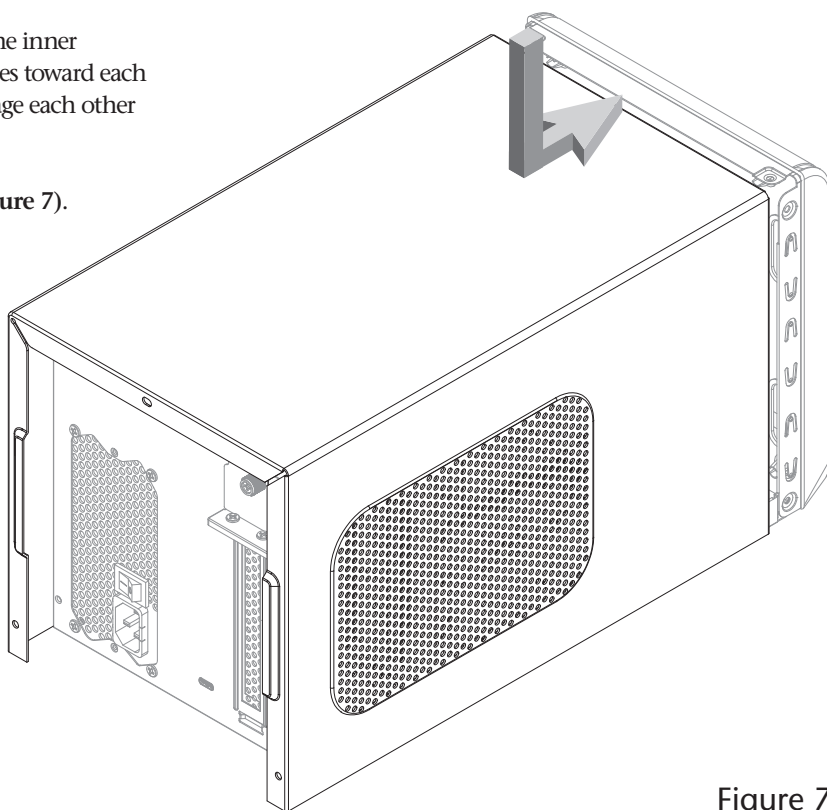


Figure 7

14. Secure the top cover to the inner assembly with the three thumbscrews you removed previously (Figure 8).
15. Connect the included power cord between a wall outlet or power strip and the box's power socket, and then flip the power switch to the on position. Note that the power indicator on the box will not light until the computer is powered on, but LEDs inside the box (visible through the grills) will light whenever the box is powered.

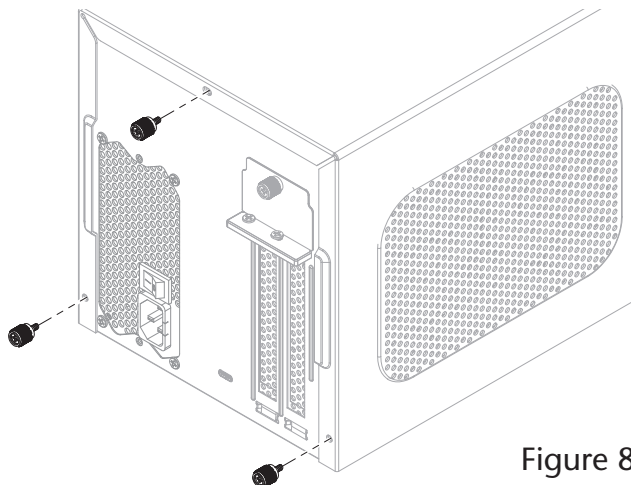


Figure 8

eGPU Setup Completion Information

If you installed a GPU card, you must download additional instructions on how to enable the eGFX Breakaway Box plus the installed GPU card to work with your system, please visit the eGFX Breakaway Box support page at www.sonnettech.com/support/kb/kb.php?cat=524, click the Manual tab, and then locate and download the latest OS-specific instructions..

Chapter 4 – General Information and Known Issues

Keeping the Installed Card Cool

With its optimized airflow design and temperature-controlled main fan providing cooling at all times, eGFX Breakaway Box provides adequate cooling for the installed card. *Do not block any of the vents!* Otherwise, the card and Breakaway Box's components may overheat.

Fans' Operation

The Breakaway Box's main fan does not operate when the computer to which the box is connected is sleeping or turned off. The Breakaway Box's power supply fan runs whenever the box is powered and switched on, even when disconnected from a computer, or connected to a computer that is off or sleeping.

Power Indicator LED Operation

The Breakaway Box power indicator LED only turns on when the computer to which it is connected is on, and turns off when the computer is sleeping or powered off.

eGFX Breakaway Box Has Only One Thunderbolt 3 Port

As a requirement for Thunderbolt certification as an external GPU-ready enclosure, the eGFX Breakaway Box was designed with a single Thunderbolt 3 port. Connecting additional devices, especially a Thunderbolt display, could rob critical PCIe bandwidth from a GPU card.

Not All Computers' Thunderbolt 3 Performance is Equal

While the eGFX Breakaway box features a 40Gbps Thunderbolt 3 interface, some computers equipped with Thunderbolt 3 use an x2 PCIe (2-lane) implementation of Thunderbolt 3 technology that limits PCIe performance to 20Gbps. For more computer information, visit <http://gtrusted.com/technology/thunderbolt/thunderbolt3-hosts/>

The eGFX Breakaway Box Supports the Power Requirements of Most, But Not All Graphics Cards

Visit the eGFX Breakaway Box product page on the Sonnet site at sonnettech.com/product/egfx-breakaway-box.html?tab=3 for a power compatibility list.

Replacing a Card After Initial Installation

If you decide to swap the card after the initial setup, shut down the computer, and then disconnect the power cord and Thunderbolt cable from the Breakaway Box before replacing the card.

PCIe CARDS ARE NOT HOT-PLUGGABLE!

Never install a PCIe card into Breakaway Box while it is connected to a computer or power outlet! If you do, you risk injury, and damage to the card, chassis, and computer.

Most GPU Cards Will Not Perform at 100%

eGFX Breakaway Box performance is defined by the host system, graphics card, and Thunderbolt bandwidth. While you may not achieve full desktop performance in all applications, you will see a significant graphics performance boost.

eGFX Breakaway Box Provides Upstream Power

The eGFX Breakaway Box is designed to provide 15 watts of upstream power, while the eGFX Breakaway Box 550 provides up to 87 watts of upstream power, useful for charging your notebook.

Using the eGFX Breakaway Box to Charge Your Notebook or Laptop Computer

Apple® MacBook Pro® computers with Thunderbolt 3 and some PC laptops with Thunderbolt 3 may be charged via the eGFX Breakaway Box's Thunderbolt 3 port, but some PC laptops will not accept charging from a Thunderbolt peripheral; see <https://gtrusted.com/technology/thunderbolt/thunderbolt3-hosts/> for more information. Computers with Thunderbolt 2 or Thunderbolt ports may not be charged via Thunderbolt.

How to Identify Thunderbolt 3 (40Gbps) Cables

Look for the Thunderbolt icon (⚡) AND the number 3 on the connector housings to identify these cables. Cables with USB-C connectors that only have the Thunderbolt icon without the number 3 support 20Gbps speeds, and are not recommended for GPU and other PCIe cards with high bandwidth requirements.

Not All Thunderbolt 3 Cables Deliver Full Performance or Power Delivery Capabilities

Full performance and power delivery capabilities from the eGFX Breakaway Box require the use of the included Thunderbolt 3 (40Gbps) cable (which also supports up to 100W power delivery), or a comparable Thunderbolt 3 (40Gbps) cable. When shopping for a Thunderbolt 3 cable, please be aware that some cables support only lower data transfer speeds (20Gbps) and/or power delivery capabilities (60W).

Operating System (OS) Updates May Break Compatibility

Specific device drivers that work under one OS version may not work under a later version. Before updating your computer to the latest OS, we recommend that you contact Sonnet or your PCIe card's manufacturer to verify that the existing drivers work. Note that other software updates for the computer may also break compatibility.

Chapter 5 – Precautions, FCC Compliance, and Support Information

SAFETY PRECAUTIONS

Please read this section carefully before proceeding. These precautions explain the correct and safe use of this device, thereby helping to prevent injury to you or others, and also help you to minimize the risk of damaging the device.

Warnings

Always follow the basic warnings listed here to avoid the risk of serious injury or death from electrical shock, short-circuiting, fire, and other hazards. These warnings include, but are not limited to:

- Do not attempt to modify the enclosure. If this device appears to be malfunctioning, contact your reseller or local distributor.
- Do not drop the chassis; dropping or mishandling chassis may result in a malfunction leaving the product inoperable.
- Do not insert your fingers or foreign objects inside the slot(s).
- Do not expose the device to rain, use it near water or containers that contain liquids which might spill into any openings, or in damp or wet conditions.
- If unusual smells, sounds, or smoke come from the device, or if liquids enter it, unplug it from the electrical outlet immediately.
- Follow the instructions in this manual carefully; contact your reseller or local distributor for additional advice not covered in this User's Guide.

FCC Compliance

eGFX Breakaway Box complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: This device may not cause harmful interference, AND this device must accept any interference received, including interference that may cause undesired operation.

Contacting Customer Service

The Sonnet Web site located at www.sonnettech.com has the most current support information and technical updates. Before you call Customer Service, please check our Web site for the latest updates and online support files, and check this User's Guide for helpful information.

When you call Customer Service, have the following information available so the customer service staff can better assist you:

- Product name
- Serial number of that product
- Date and place of purchase
- Computer model
- GPU or other PCIe card model
- Operating system version you're using
- Software/firmware versions

USA Customers

If further assistance is needed, please contact **Sonnet Customer Service** at:

Tel: 1-949-472-2772

(Monday–Friday, 7 a.m.–4 p.m. Pacific Time)

E-mail: support@sonnettech.com

For Customers Outside the USA

For support on this product, contact your reseller or local distributor.

Visit Our Web Site

For the most current product information and online support files, visit the Sonnet Web site at www.sonnettech.com/support/. Register your product online at <http://registration.sonnettech.com> to be informed of future upgrades and product releases.