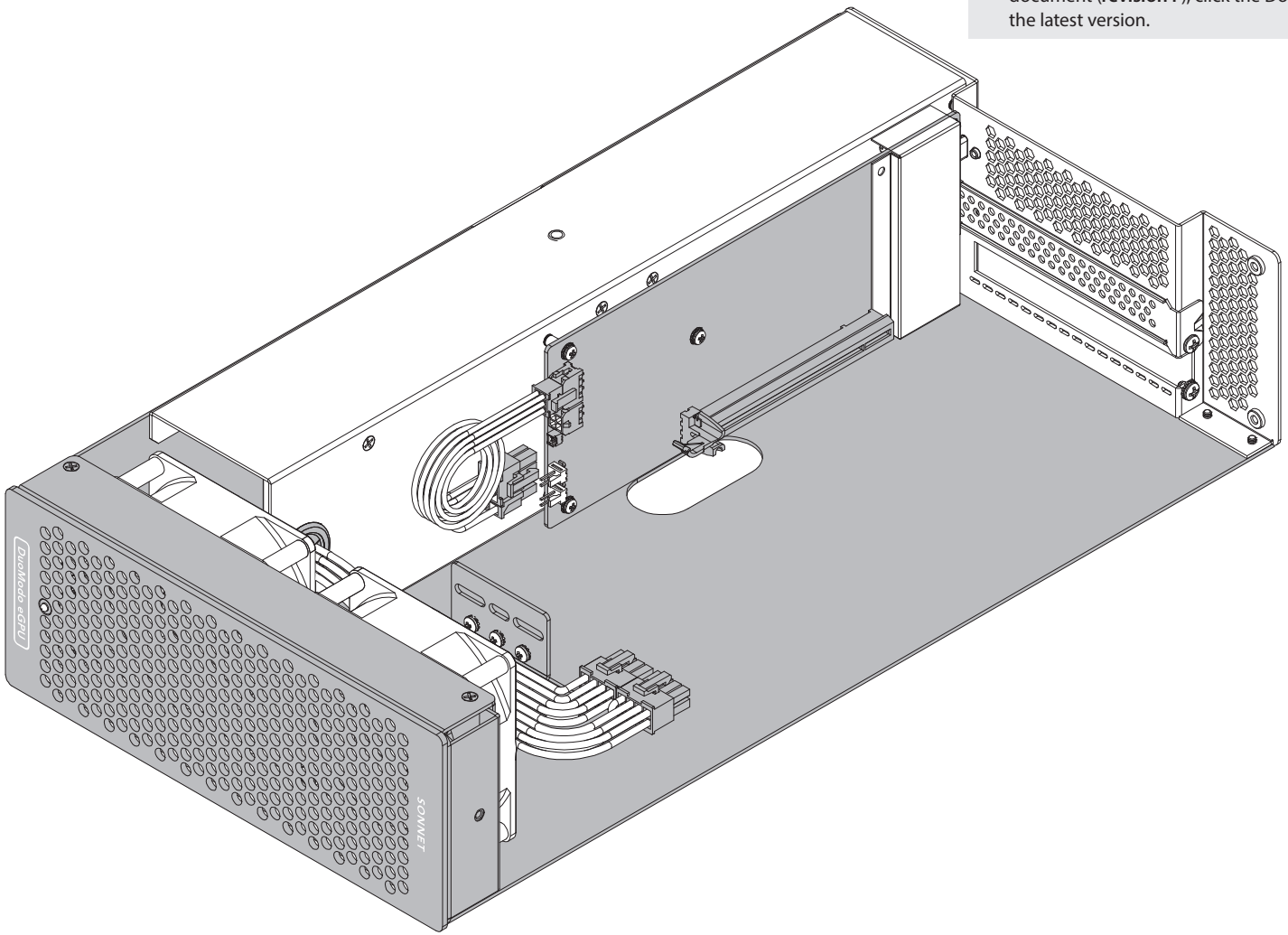
User's Guide
for DuoModo™ eGPU Module

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 https://www.sonnettech.com/support/kb/kb.php
2. Navigate to and click the DuoModo eGPU Module link.
3. Click the Manual link.
4. Click the DuoModo eGPU Module 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 F**), click the Download Now button for the latest version.



THUNDERBOLT™ PCI EXPRESS®

Mac For Windows

CE FC UK CA RoHS COMPLIANT

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Chapter 1 – Introduction, Compatibility Information, and System Requirements

Introduction

Congratulations on your purchase! This user's guide primarily covers GPU card installation steps for the DuoModo eGPU Module. Basic eGPU use information for users with Intel®-based Mac® computers is also provided. Detailed eGPU information must be downloaded separately:

macOS External Graphics Guide
https://www.sonnettech.com/support/downloads/manuals/macos_egpu_info.pdf

Windows External Graphics Guide
https://www.sonnettech.com/support/downloads/manuals/windows_egpu_info.pdf

Compatibility Information and System Requirements

You may download the latest GPU card compatibility list at https://www.sonnettech.com/support/downloads/manuals/Compatibility_Graphics_Cards.pdf

Visit the DuoModo eGPU Module product page at https://www.sonnettech.com/ for the latest system requirements information.

Chapter 2 – DuoModo eGPU Module Description

Interior

1 – Auxilliary Power Cables/Connectors

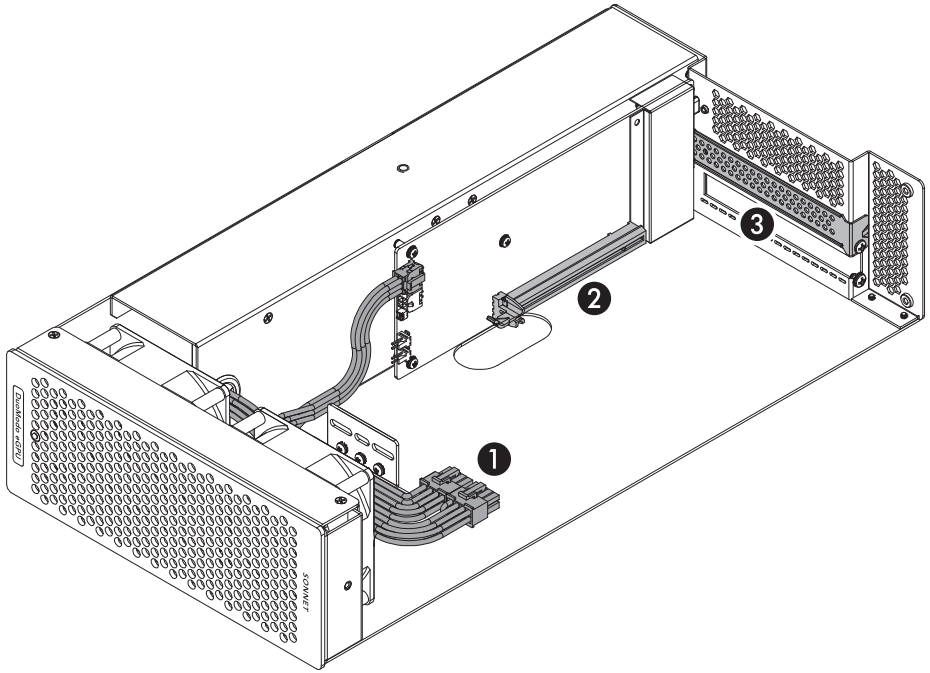
These connectors provide auxiliary power to the installed GPU card.

2 – PCIe Card Slot

This is an x16 mechanical (x4 electrical) PCIe 3.1 slot. It is also compatible with PCIe 4.0, 2.0, and 1.1 cards

3 – PCIe Slot Cover

Remove this cover when installing a double-width card. If a single-width card is installed, leave this in place.

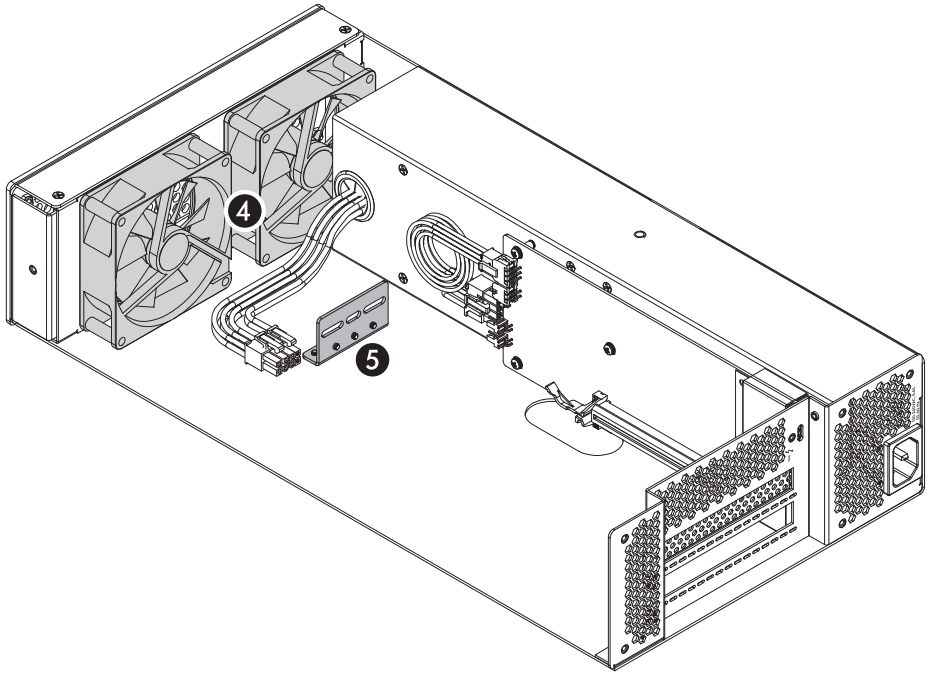


4 – System Fans

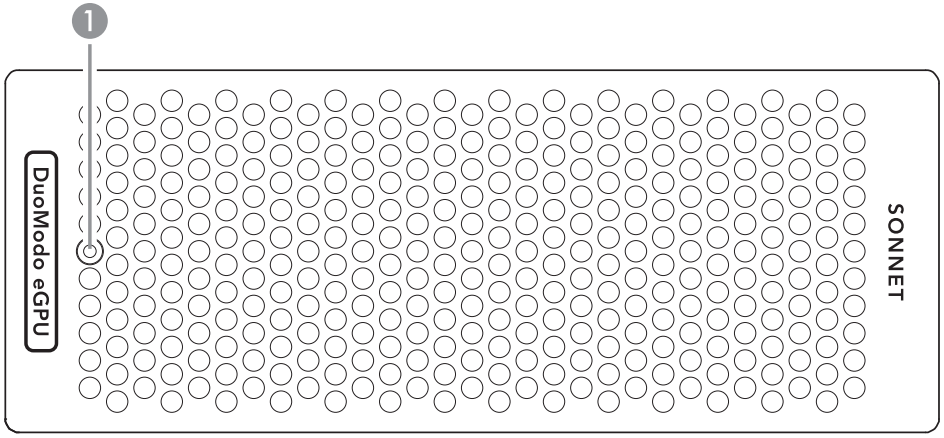
These provide cooling for the installed GPU card, the power supply, and the module's supporting Thunderbolt circuitry. They operate at a whisper when the GPU is running cool, and automatically speed up in steps as the temperature rises. Do not block the fans or the vent holes on the chassis to prevent overheating.

5 – Card Support Bracket

This secures an AMD or NVIDIA reference design card to the module to protect the installed card from shock and vibration damage when the module is transported. Supported cards are 267 mm long, have threaded holes on the back edge, and include AMD Radeon Pro and some Radeon RX models, as well as NVIDIA Quadro RTX and some GeForce RTX models.



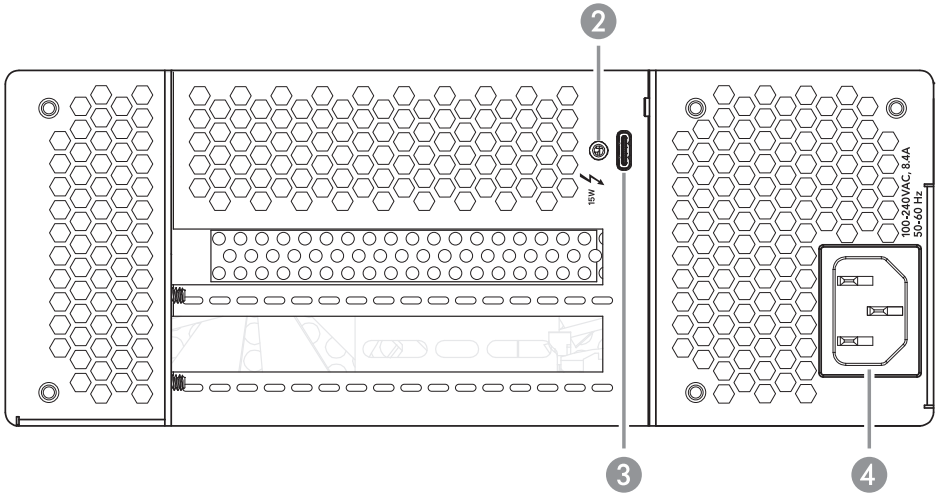
Chapter 2 – DuoModo eGPU Module Description



Front Panel

1 – Power Indicator LED

This lights when DuoModo eGPU Module is powered, the Thunderbolt cable between the module and your computer is plugged in securely, and the computer powered on.



Back Panel

2 – Threaded Nut for ThunderLok

Attach the included Thunderbolt connector retainer clip here.

3 – Thunderbolt Port

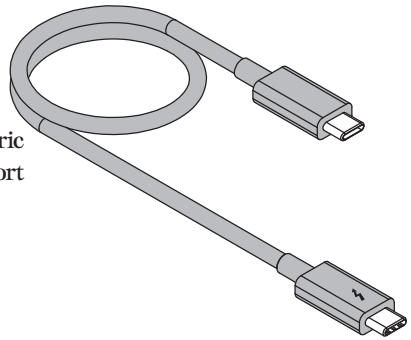
Connect the included (or other certified) Thunderbolt cable between this port and your computer's Thunderbolt port.

4 – Power Input Socket

Connect the included AC power cable here.

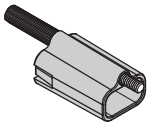
Thunderbolt Cable

Connect this cable between the module and your computer. Connecting the eGPU module to a computer port marked with a generic USB icon (•<) or USB Charging Port icon (ϟ) is NOT supported.



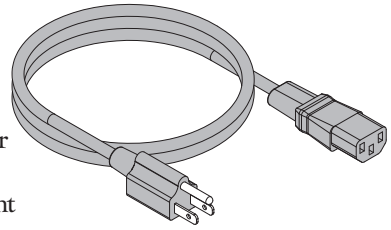
Thunderbolt Connector Retainer Clip (ThunderLok)

This clip secures the Thunderbolt cable connector plugged into the module's Thunderbolt port to prevent accidental cable disconnection. This clip is compatible with Sonnet 0.5- and 0.7-meter Thunderbolt cables.



Power Cable

Connect this between a power outlet and the power input socket on the eGPU module. Note that the power cable included with your product may appear different than the one pictured here, depending on where the product was purchased.



Chapter 3 – GPU Card Installation Steps

1. Remove DuoModo eGPU Module from its packaging, and then set it on a flat, level surface.

Support Note: To avoid damaging components due to static electricity discharge, wear an antistatic wrist strap while working inside the eGPU module.

2. Remove and set aside the screws securing the card support bracket **(Figure 1)**.

3. Remove and set aside the card support bracket **(Figure 1)**.

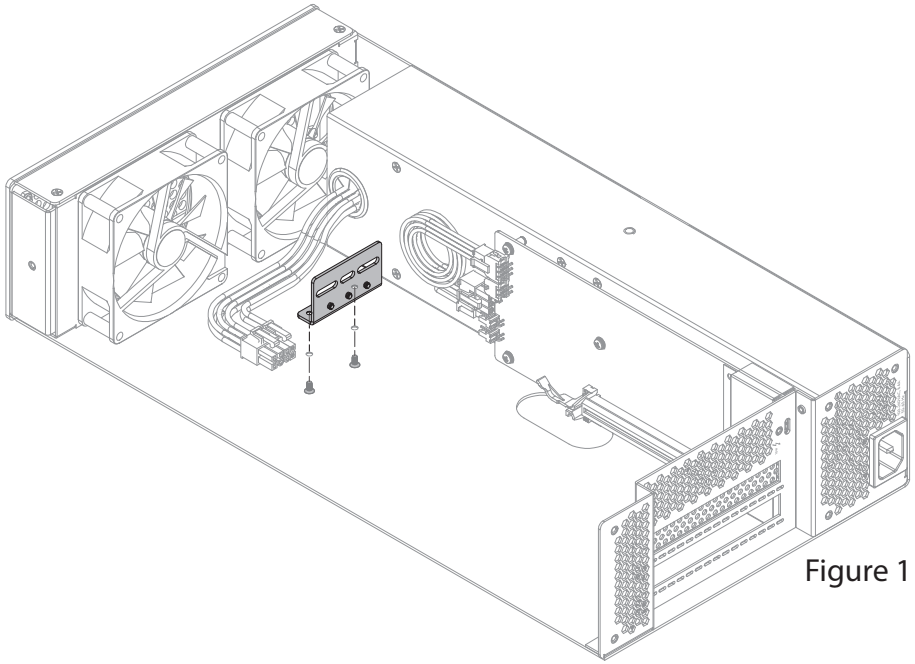


Figure 1

4. Remove and set aside the installed screw next to the PCIe slot access cover **(Figure 2)**.

5. If you are installing a double-width or 2.5-card width GPU card, remove and set aside the screw securing the PCIe slot access cover **(Figure 2)**. Otherwise go to the next step.

6. Remove and set aside the loose PCIe slot access cover **(Figure 2)**.

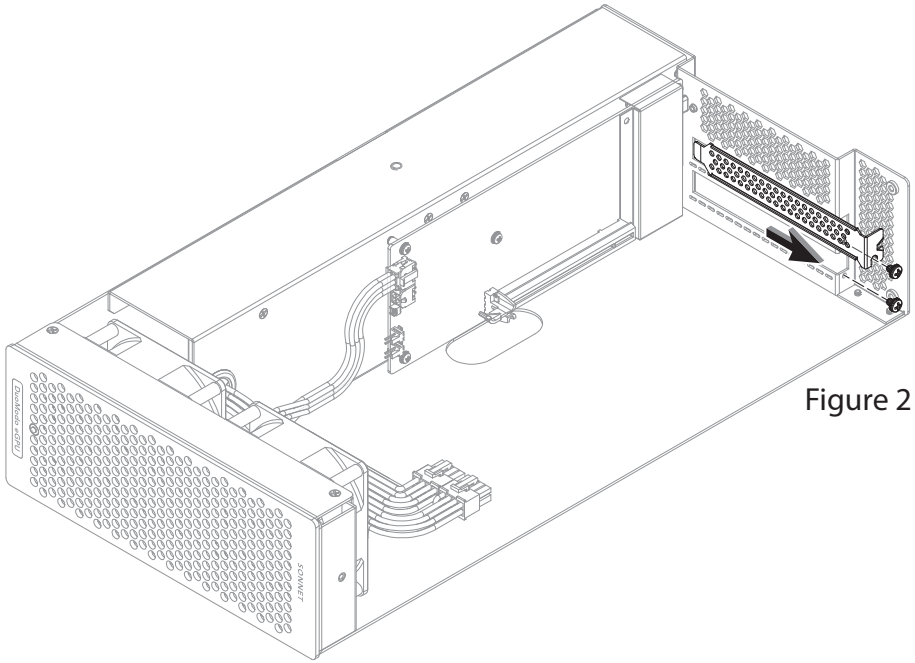


Figure 2

Chapter 3 – GPU Card Installation Steps

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

7. Remove your GPU card from its packaging, handling the card by its edges and without touching any components or gold connector pins.

8. If you are installing a reference GPU card with screw holes on the back edge, such as an AMD Radeon Pro WX 9100 or NVIDIA GeForce RTX 3080, AND you want to provide extra mounting support for the card, skip to step 10.

   Otherwise, line up the card's connector with the 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 3)**.

9. Secure the card using the screw(s) you removed previously; do not overtighten the screw(s) **(Figure 3)**. Skip to the Support Note on page 7.

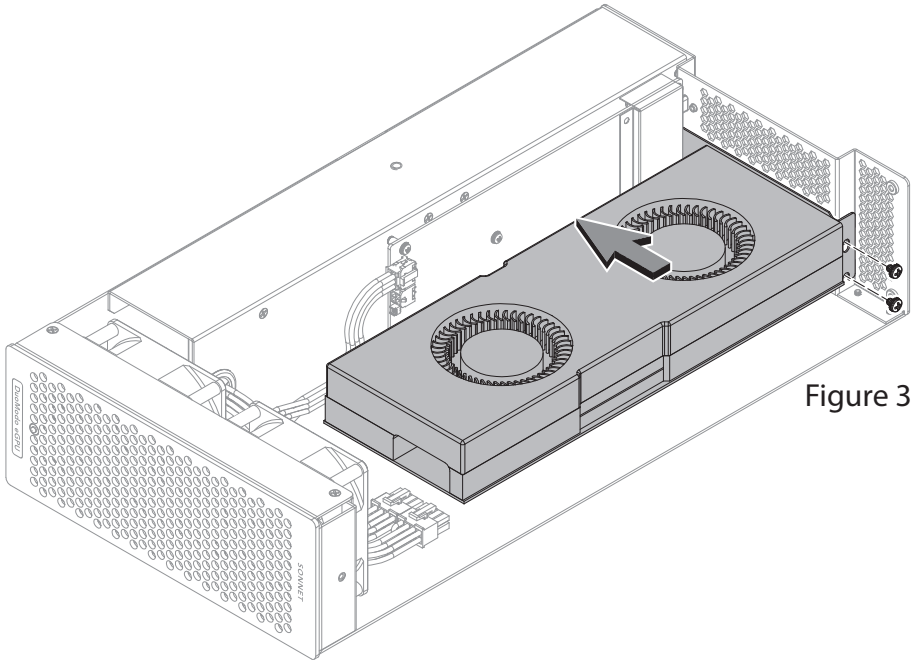


Figure 3

WARNING: Unless you install a 267 mm long AMD or NVIDIA reference GPU card and secure it with the included support bracket, do NOT ship or transport DuoModo eGPU Module with a GPU card installed. **Shipping the module with a heavy GPU card installed and not secured and supported on its end may cause damage to the card and/or the module, and will void your warranty.**

10. Remove and set aside the three screws from the card support bracket **(Figure 4)**.

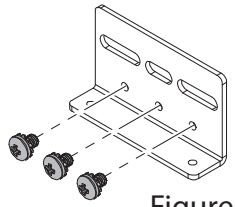


Figure 4

11. Line up the card's screw holes with the support bracket's slots and the edge of the bracket with the edge of the card as shown **(Figure 5)**. Using no fewer than two screws, secure the bracket to the card, tightening them only enough so the bracket won't move around easily.

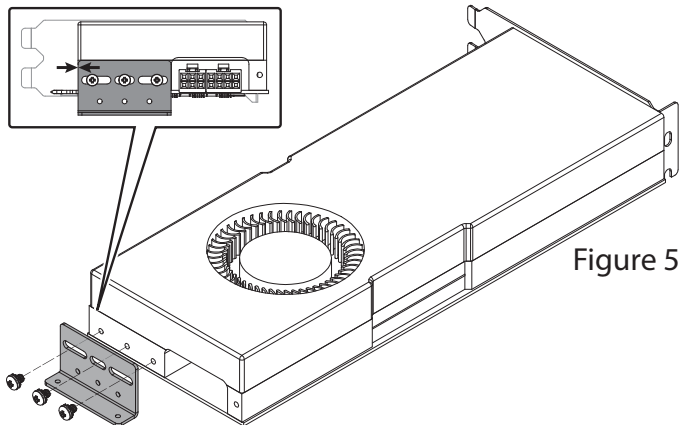


Figure 5

12. Line up the card's slot connector with the 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 6)**.

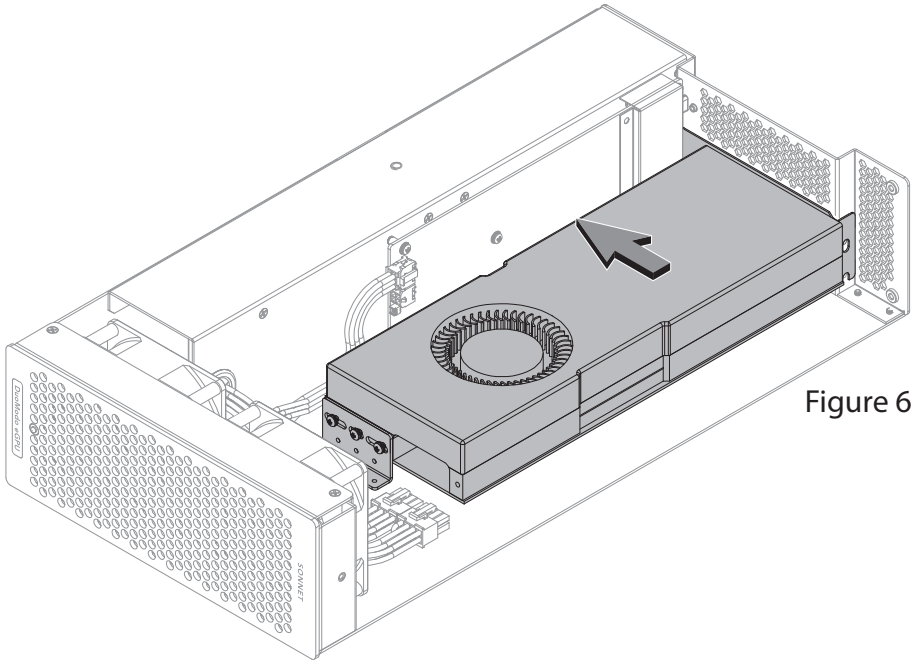


Figure 6

13. Move the card support bracket so its open screw holes line up with the holes in the module's floor **(Figure 7)**, and then being careful not to move the bracket, remove the card from the slot.

Support Note: You may have to perform steps 12 and 13 repeatedly in order to properly align the screw holes in the support bracket and the holes in the floor of the module, making small adjustments each time until the alignment is just right.

14. Tighten the screws securing the support bracket to the GPU card, but do not overtighten them.

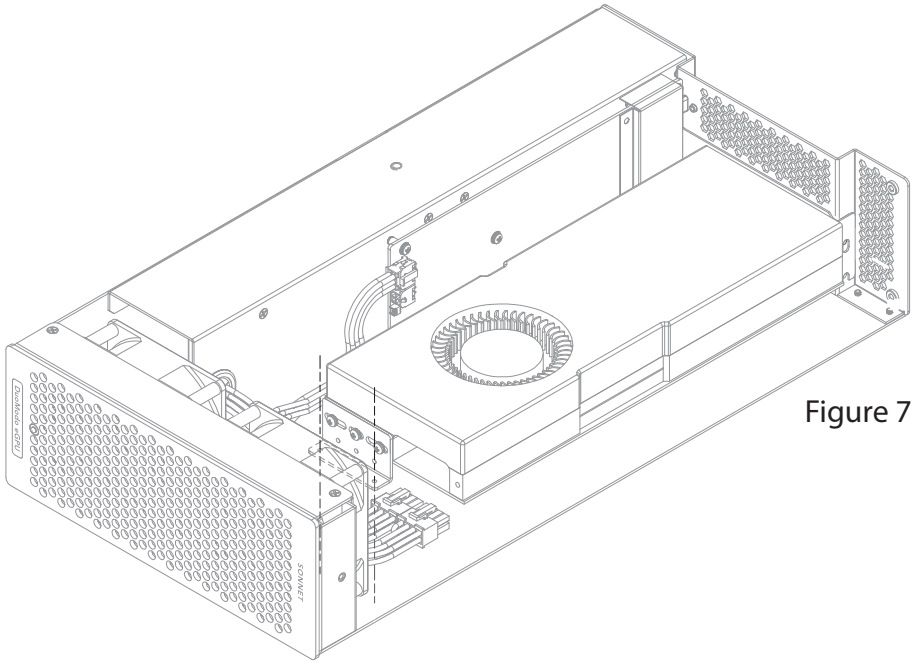


Figure 7

Chapter 3 – GPU Card Installation and System Installation Steps

15. Line up the card's slot connector with the 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 8)**.

16. Using the two screws you removed previously, secure the support bracket to the module's floor **(Figure 8)**.

17. Secure the card's PCIe bracket using the screw(s) you removed previously; do not overtighten the screw(s) **(Figure 8)**.

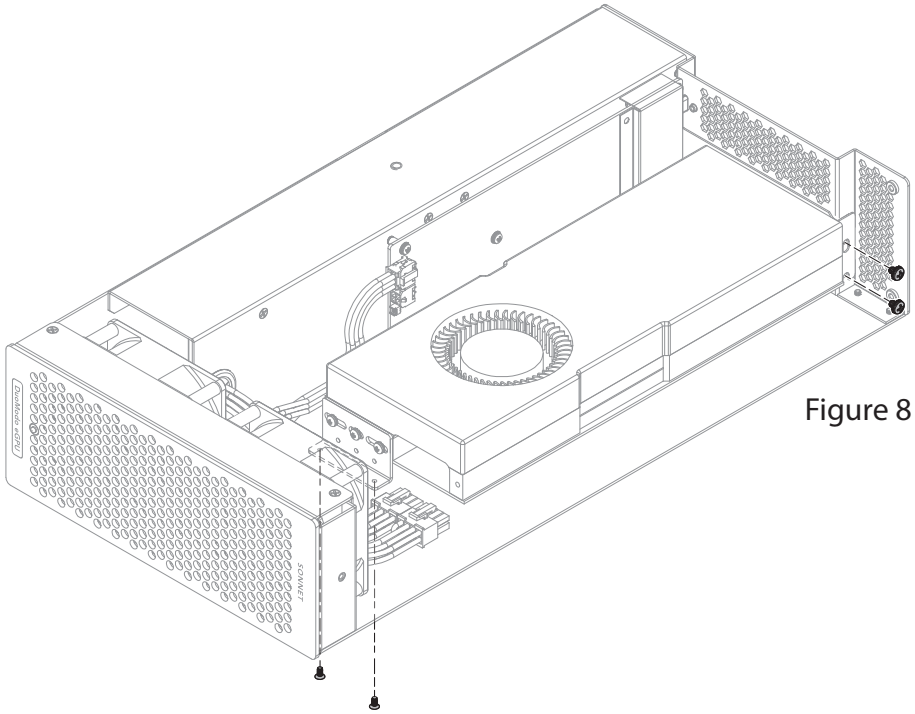


Figure 8

Support Note: The DuoModo eGPU Module includes two "8-pin" auxiliary power connectors, each comprised of a 6-pin plus 2-pin connector pair. To create 8-pin connectors, slide the 6-pin and 2-pin connectors together as shown; note the little nubs on the 2-pin connector that align the connectors to each other **(Figure 9)**.

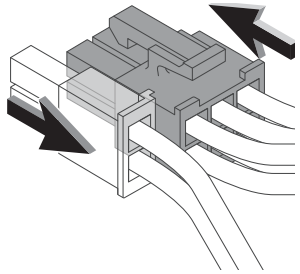


Figure 9

18. Connect the auxiliary power connectors to the GPU card; make sure the connectors are plugged in securely **(Figure 10)**.

19. Following the instructions included with the DuoModo enclosure you purchased, install DuoModo eGPU Module into the enclosure now.

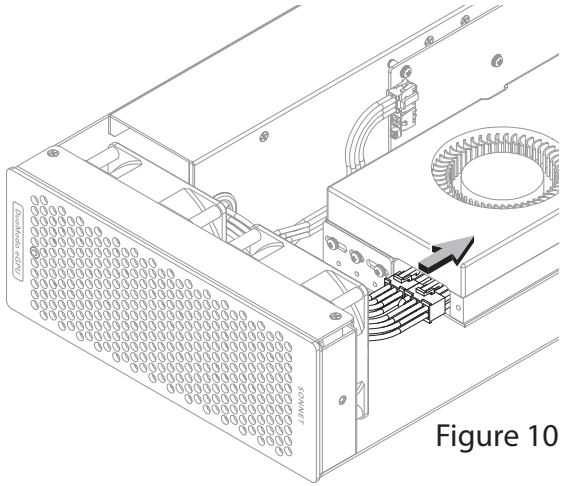


Figure 10

Support Note: The ThunderLok Thunderbolt connector retainer clip secures the included Thunderbolt cable to the eGPU module to prevent accidental disconnects. This clip is compatible with Sonnet 0.5- and 0.7-meter Thunderbolt cables.

To attach the clip to the cable, remove both items from their packaging, and then insert the connector into the connector clip as shown **(Figure 11)**. Note that the connector will pass all the way through the clip; when you connect the cable to the chassis, the clip will secure the connector.

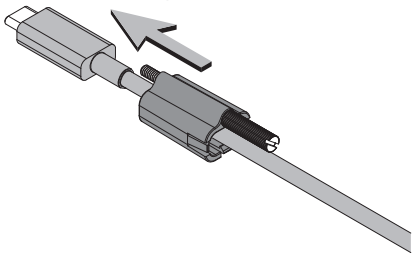


Figure 11

20. Connect the included (or other certified) Thunderbolt cable between the Thunderbolt port on the eGPU module and a Thunderbolt port on your computer **(Figure 12)**. Note that cables marked with a generic USB icon (•<) are NOT compatible. Secure the retainer clip to the module if you attached it.

21. Connect interface cables between monitors and the GPU card.

22. Connect the included power cable between a wall outlet or power strip and the eGPU module's power socket. Note that the module's power indicator will not light until the computer is powered on.

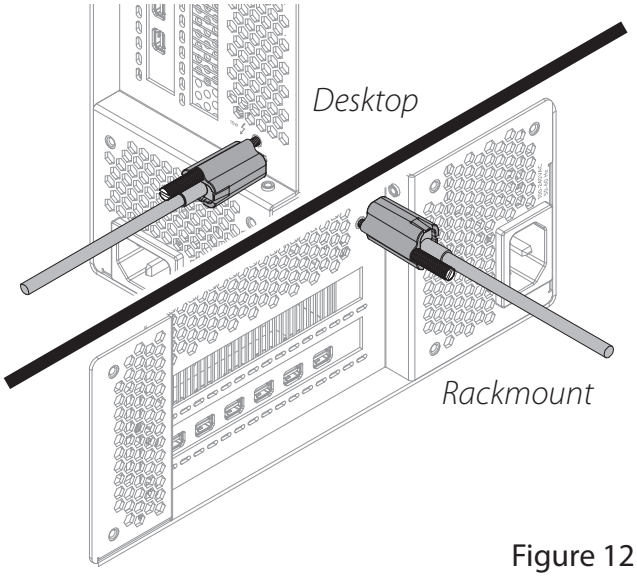


Figure 12

Chapter 4 – Basic Use Information

eGPU Support—macOS

Support Note: For more detailed information, please download the Sonnet macOS External Graphics Guide: https://www.sonnettech.com/support/downloads/manuals/macos_egpu_info.pdf

- **M series Mac computers *do not* support eGPUs; only Intel-based Macs with Thunderbolt 3 ports support them.**
- If you're using a 2016 or 2017 13-inch MacBook Pro, connect the DuoModo eGPU Module to one of the left-hand ports for maximum data throughput.
- The drivers that support the eGPU module are installed as part of macOS. As a result, the DuoModo eGPU Module is ready to use when connected to your computer.
- With DuoModo eGPU Module connected to your Mac (and both turned on), the eGPU module will be ready to use. If you are using macOS 10.14.6+, an eGPU icon will appear in the menu bar.

Support Note: eGPU support in macOS High Sierra 10.13.6 and later is designed to accelerate Metal, OpenGL, and OpenCL applications that benefit from a powerful eGPU. *Not all apps support eGPU acceleration*; check with the application's developer to learn more.

- Starting with macOS Mojave (10.14), you can accelerate applications on a built-in display. We recommend using the latest macOS release for the best eGPU experience.
- If you have an external display connected to the GPU card installed in your DuoModo eGPU Module, you can choose it as the primary display for all apps. Since applications default to the GPU associated with the primary display, this option works with a variety of applications. If you disconnect the eGPU module, your Mac defaults back to the internal graphics processor that drives the built-in display. When the module is reconnected, the external display will automatically be set as the primary display.
- Before unplugging DuoModo eGPU Module from your computer, click the eGPU icon in the menu bar, and then select Disconnect.
- If you have a Mac mini® with FileVault turned on, it may be necessary to connect your primary display directly to the Mac mini during startup, and then, after you log in and see the macOS Desktop, you can unplug the display from Mac mini and connect it to your eGPU. For more information, go to https://www.sonnettech.com/support/kb/kb.php, and then navigate to and click the DuoModo eGPU Module link; read FAQ ID 1084.

eGPU Support—Windows

- For the latest information and detailed instructions on setting up your Windows computer to support the DuoModo eGPU Module, please download Sonnet's Windows External Graphics Guide: https://www.sonnettech.com/support/downloads/manuals/windows_egpu_info.pdf

Chapter 5 – Tips, General Information, and Known Issues

Keeping the Installed Card Cool
With its optimized airflow design and temperature-controlled fans providing cooling at all times, DuoModo eGPU Module provides adequate cooling for the installed card. *Do not block any of the vents*! Otherwise, the card and module's components may overheat.

Power Indicator LED Operation
The DuoModo eGPU Module power indicator LED only turns on when the computer to which the module is connected is on, and turns off when the computer is sleeping or powered off.

Not All Supported Graphics Cards Work Under Every OS Version
In general, macOS supports only AMD-based GPUs, while Windows supports AMD-, some Intel–, and NVIDIA-based GPUs. Please note that some compatible graphics cards may require a later operating system version than the one installed on your computer.

Not All Computers' Thunderbolt Performance is Equal
While DuoModo eGPU Module features a 40Gbps Thunderbolt interface, some computers equipped with Thunderbolt 3 use an x2 PCIe (2-lane) implementation of Thunderbolt 3 technology in some or all of their ports that limits PCIe performance to 20Gbps. For more information, check your computer's user's guide or computer manufacturer's web site.

GPU Card Power Requirements
Visit the DuoModo eGPU Module product page at sonnettech.com for a list of supported GPU cards and their power requirements.

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 cable and Thunderbolt cable from the eGPU module before replacing the card.

PCIe CARDS ARE NOT HOT-PLUGGABLE!
Never install a PCIe card into the module while it is connected to a computer or power outlet! If you do, you risk injury, and damage to the card, chassis, and computer.

Using DuoModo eGPU Module to Charge Your Portable Computer
MacBook Air® and MacBook Pro® with Thunderbolt ports, some PC laptop computers with Thunderbolt 3 ports, and all PC laptops with Thunderbolt 4 ports may be charged *slowly* via the eGPU module's Thunderbolt port (via 15W Power Delivery). Computers with Thunderbolt 2 or Thunderbolt ports cannot be charged via Thunderbolt.

How to Identify Thunderbolt 3 (40Gbps) Cables
Look for the Thunderbolt icon (ϟ) AND the number 3 on the connector housings to identify these cables. Aside from Thunderbolt cables from Apple, cables with USB-C connectors that only have the Thunderbolt icon without the number 3 may only support 20Gbps speeds, and are not recommended for use with the eGPU module. Cables marked with a generic USB icon (⇄) are NOT compatible for connecting the eGPU module to the computer.

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 a newer OS version, 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.

Boot Camp Support Under macOS
Neither Apple, nor Sonnet, nor NVIDIA, nor AMD currently supports eGPUs with Boot Camp.

Thunderbolt 4 Cable Compatibility
All Thunderbolt 4 cables support 40Gbps speeds; you may use them with Thunderbolt 4 or Thunderbolt 3 computers and peripherals without any compromise in performance or functionality.

macOS eGPU Usage Limitations
eGPUs are not supported under macOS when your Mac is in macOS Recovery, or when installing system updates.

Need More Information?
Please visit www.sonnettech.com/support/kb/kb.php, navigate to and then click on the DuoModo eGPU Module link for important information, useful tips, and answers to frequently asked questions.

Chapter 6 – 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.

- When you have to ship the DuoModo eGPU Module, Sonnet recommends that you remove the installed GPU card and ship it separately, *unless* you installed a card secured with the card support bracket included with this product. Because GPU card lengths vary, the eGPU module cannot provide support for the back end of all cards. Some cards have stiffeners, but many do not, and are at risk when shipped inside the module.

- Do not attempt to modify the enclosure. If this device appears to be malfunctioning, contact your reseller or local distributor.

- Do not drop the module; dropping or mishandling module may result in a malfunction leaving the product inoperable.

- Do not insert your fingers or foreign objects inside the PCIe slot.

- 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 here.

FCC Compliance

DuoModo eGPU Module 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 https://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.

Email support requests generally receive the fastest responses, and are usually processed within a 24-hour period during normal business hours, excluding holidays. When you contact Customer Service, have the following information available so the customer service staff can better assist you:

- Product name
- Computer model
- GPU or other PCIe card model
- Operating system version you're using
- Software/firmware versions
- A System Report (macOS) or a Microsoft System Information MSINFO32 (Windows) report (Windows), along with a description of the issue(s) you are encountering with your device

If further assistance is needed, please contact **Sonnet Customer Service** at:
E-mail: support@sonnettech.com
Tel: 1-949-472-2772
(Monday–Friday, 9 a.m.–5 p.m. Pacific Time, excluding holidays)

Japan Customers
Contact Sonnet Customer Service Japan at:
E-mail: jp.support@sonnettech.com

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