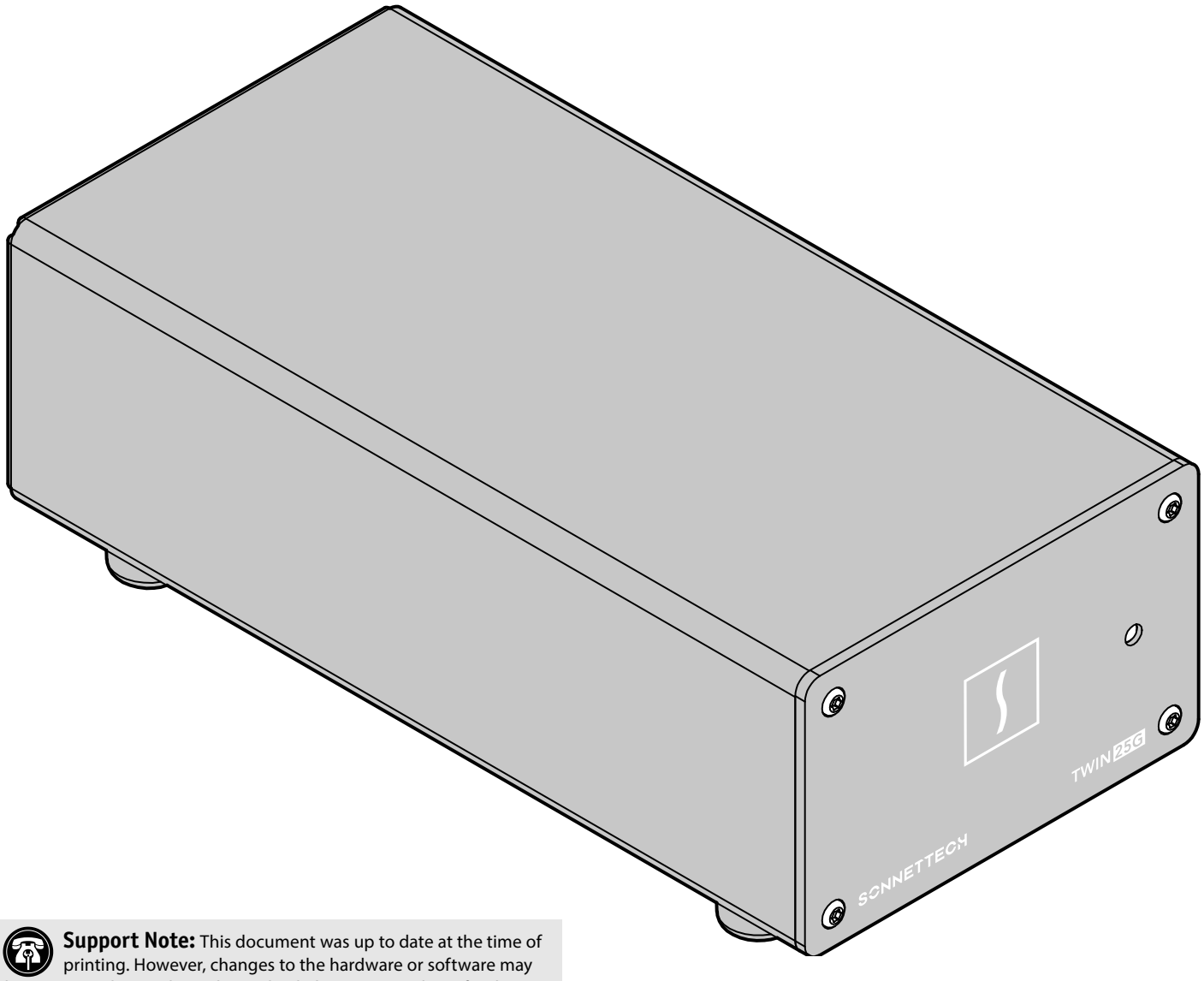
User's Guide
for Twin25G Thunderbolt Adapter



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. Navigate to and click the Twin25G Thunderbolt Adapter link.
3. Click the Manual link.
4. Click the Twin25G Thunderbolt Adapter User's Guide [English] link and then check the Document Version information. If the version listed is later than this document (**revision F**), click the Download Now button for the latest version.

THUNDERBOLT™

Mac

For Windows

CE FC UK CA RoHS COMPLIANT

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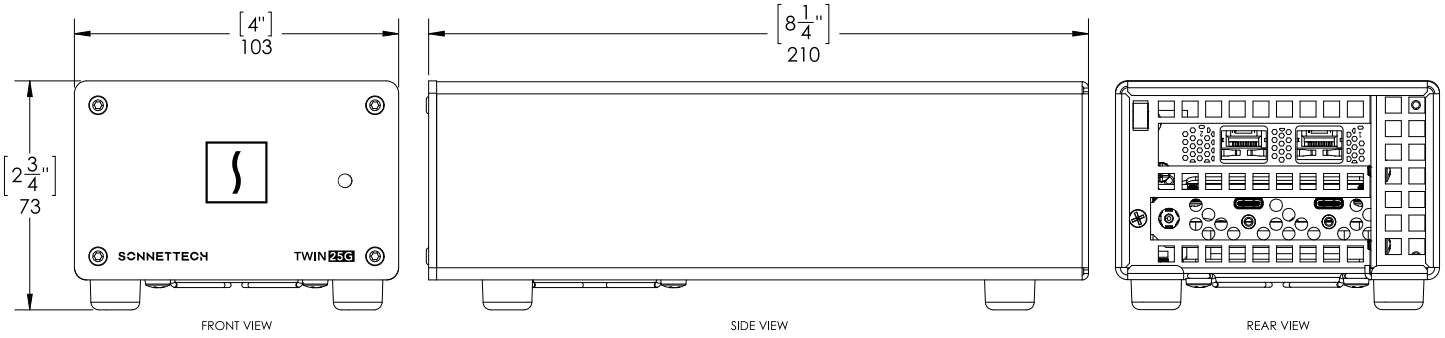
Chapter 1 – Introduction, System Requirements, Driver Information, and System Preparation



Introduction

Congratulations on your purchase! Twin25G™ Thunderbolt™ Adapter is a Thunderbolt to 25 Gigabit Ethernet (25GbE) adapter that enables you to connect your computer with Thunderbolt ports to 25GbE infrastructure.

Mac Compatibility

- Mac (M series)
- Mac (Intel) with Thunderbolt 3 ports
- macOS 13.2–15.3
- *Not compatible with macOS 15.3.1 or 15.4*; Apple update pending

Windows Compatibility

- Windows computer with Thunderbolt 5 or 4 ports
- Windows 11
- Windows Server 2025, 2022

Linux Compatibility

- Linux computer with Thunderbolt 5 or 4 ports
- Linux Kernel 6.1, 6.12

System Requirements

The Twin25G adapter requires the following to operate:

- OM3 or OM4 LC/LC multimode fiber optic cables (sold separately). When used with OM2 cables, 10Gbps speeds are supported.

Driver Information—macOS

The driver that enables the Twin25G adapter to work with Mac computers must be downloaded from Sonnet's Website and installed *before* connecting the Twin25G adapter to your computer; instructions follow.

Driver Information—Windows

Although a driver that enables the Twin25G adapter to work with Windows computers is already present in supported Windows operating systems, you should download the latest driver through the Sonnet Website and install it *before* connecting the Twin25G adapter to your computer; instructions follow.

Driver and Configuration Information—Linux

The drivers that enable the Twin25G adapter to work with Linux are installed as part of Linux Kernels 6.1 and 6.12.

The steps necessary to configure the Sonnet adapter with your computer may vary based on the version of Linux running. Sonnet recommends using whatever method or tools you would normally use for configuring any onboard ports.

Chapter 1 – Introduction, System Requirements, Driver Information, and System Preparation

Preparing to Use the Adapter With a Mac Computer

Introduction

Starting with macOS 12, Apple introduced a new system for device drivers. These new drivers, which run in user space instead of kernel space, are called Dexts (DriverKit Extensions). With the new technology came a new way of installing these drivers; they are installed from an application which must be located in the main Applications folder.

The Sonnet Twin25G installer uses a .dmg disk image to carry the Sonnet Network application, which is easily copied to the Applications folder and run from there.

Computer Preparation Overview

To enable Twin25G Thunderbolt Adapter to work with your system, you will do the following:

1. Update your computer to a supported version of macOS as necessary.
2. Download and install the Twin25G driver installer application (instructions follow); **do not connect the adapter to your computer until this step is completed**.
3. Connect the Sonnet adapter to a switch or storage system (instructions follow).
4. Connect the Twin25G adapter to your computer, and then power on the computer and adapter (instructions follow).
5. Confirm the Twin25G adapter and its Ethernet controllers are recognized by your computer (instructions follow).
6. Configure the adapter through the System Settings' Network control panel (instructions follow).

Preparing to Use the Adapter With a Windows Computer

To enable Twin25G Thunderbolt Adapter to work with your system, you will do the following:

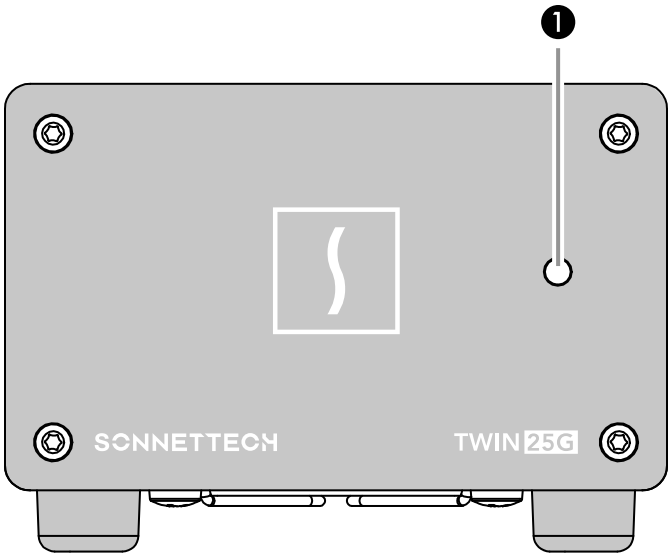
1. Update your computer to a supported version of Windows as necessary.
2. Download and install the Twin25G drivers (instructions follow).
3. Connect the Sonnet adapter to a switch or storage system (instructions follow).
4. Connect the Twin25G adapter to your computer, and then approve the device (always connect); instructions follow.
5. Confirm the Twin25G adapter and its Ethernet controllers are recognized by your computer (instructions follow).
6. Configure the adapter through Windows Device Manager (instructions follow).

Preparing to Use the Adapter With a Linux Computer

To enable Twin25G Thunderbolt Adapter to work with your system, you will do the following:

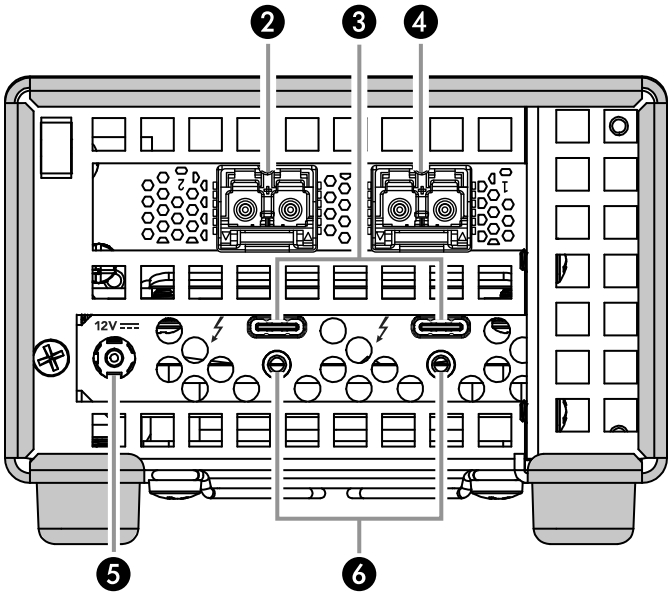
1. Update your computer to a supported version of Linux as necessary.
2. Connect the Sonnet adapter to a switch or storage system.
3. Connect the Twin25G adapter to your computer, and then power on the computer.
4. Configure the adapter using the methods or tools you would normally use for configuring onboard Ethernet ports.

Chapter 2 – Twin25G Thunderbolt Adapter Description



Twin25G Thunderbolt Adapter Indicators and Ports

1 – Power Indicator
This LED lights when the adapter is powered, the Thunderbolt cable between the adapter and your computer is plugged in securely, and the computer powered on. Note that if the adapter is connected to another Thunderbolt device instead of directly to the computer, any other device connected between the computer and adapter must also be powered on before the adapter's power indicator will light up.



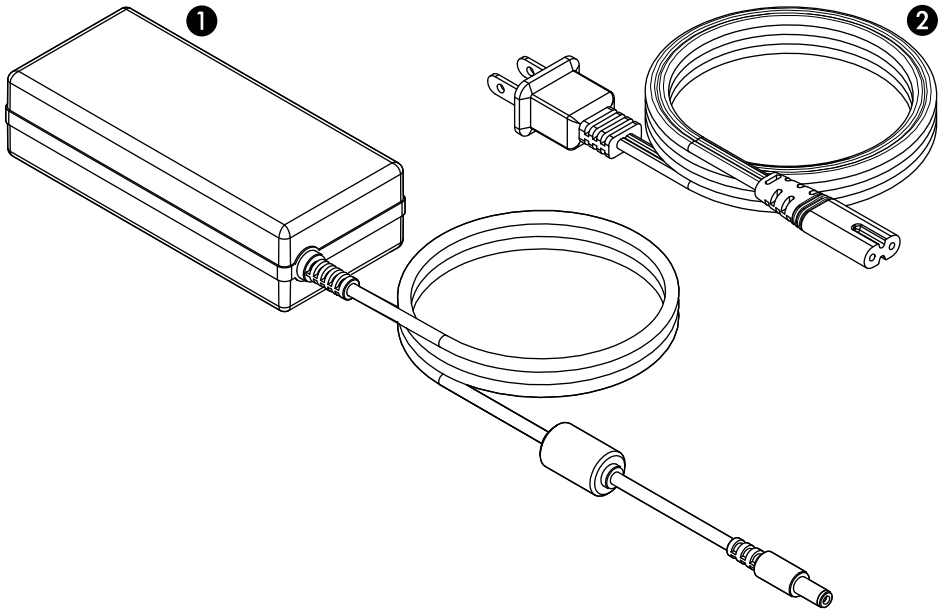
2, 4 – SFP28 Transceivers (Installed)
Connect LC/LC fiber optical cable(s) to these optical transceiver(s). Make sure the transceivers are firmly seated and secured.

3 – Thunderbolt Ports
Connect the included (or other certified) Thunderbolt cable between either port and your computer's Thunderbolt port (or other Thunderbolt device in the chain connected to the computer). *You may not connect two computers to this adapter's Thunderbolt ports, nor to a daisy chain of Thunderbolt peripheral devices between computers.* The second port may be used to connect to another Thunderbolt peripheral device, display, or a USB device (when connected with the proper cable or adapter).

5 – 12VDC Socket
Connect the included 12V, 5A DC power adapter between this socket and the included power cord.

6 – Threaded Nuts for ThunderLok™
Attach the included Thunderbolt connector retainer clip here.

Chapter 2 – Twin25G Thunderbolt Adapter Description



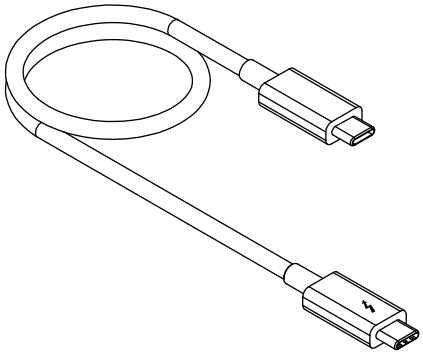
Power Adapter

1 – 12V, 5A Power Adapter

Connect this to the Twin25G adapter's 12VDC socket.

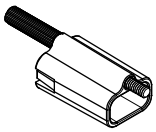
2 – Power Cord

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



Thunderbolt Cable

Connect this cable between the Twin25G adapter and your computer (or other Thunderbolt device in the chain connected to the computer). Connecting the Twin25G to a computer port marked with a generic USB icon (⇄) or USB Charging Port icon (ϟ) is NOT supported.



ThunderLok Thunderbolt Connector Retainer Clip

This secures the included Thunderbolt cable's connector when plugged into the Twin25G adapter's Thunderbolt port to prevent accidental cable disconnection. This clip is compatible with Sonnet Thunderbolt cables.

Chapter 3 – Driver Download/Installation Steps

Driver Download/Installation Steps—macOS 13 and 14 Users

This section describes the download and installation of the driver required to support the Twin25G adapter connected to your Mac computer.

Support Note: Do not connect the Twin25G adapter to your computer until the driver has been installed as described in the next section.

1. Launch a web browser and go to https://www.sonnettech.com/support/kb/kb.php.
2. Navigate to and click the Twin25G Thunderbolt Adapter link.
3. On the Twin25G Thunderbolt Adapter page, click the Driver link, and then click the arrow next to TWIN25G/TWIN10G SFP28 Software [macOS]. After reading the information, click the Download Now button; the file will be downloaded.
4. Locate and double-click the .dmg file you downloaded to open it; a new window will appear. Copy the Sonnet Network application to your computer's Applications folder by dragging it onto the Applications shortcut icon in the installer window.
5. Double-click the Applications shortcut icon to open the Applications folder on your computer.
6. Double-click Sonnet Network.app; a popup window will appear stating Sonnet Network is an app downloaded from the internet. Click Open; the Sonnet Network application will open.
7. In the *Sonnet Network* window, click Enable; this only has to be done once (the application no longer needs to run afterwards). A dialog window will appear.

WARNING: Do NOT delete the Sonnet Network application! Doing so would remove the Twin25G adapter's driver.

8. Click Open System Settings, NOT the highlighted OK button; this will open System Settings > Security & Privacy.
9. Under Security, make sure "App Store and identified developers" is selected. Beneath that, note that the Sonnet Network software was blocked, click Allow, and then reboot your computer; the driver will be installed and you may connect the Twin25G adapter to your computer.

Driver Download/Installation Steps—macOS 15 (Sequoia) Users

This section describes the download and installation of the driver required to support the Twin25G adapter connected to your Mac computer running macOS 15.

Support Note: Do not connect the Twin25G adapter to your computer until the driver has been installed as described in the next section.

1. Launch a web browser and go to https://www.sonnettech.com/support/kb/kb.php.
2. Navigate to and click the Twin25G Thunderbolt Adapter link.
3. On the Twin25G Thunderbolt Adapter page, click the Driver link, and then click the arrow next to TWIN25G/TWIN10G SFP28 Software [macOS]. After reading the information, click the Download Now button; the file will be downloaded.
4. Locate and double-click the .dmg file you downloaded to open it; a new window will appear. Copy the Sonnet Network application to your computer's Applications folder by dragging it onto the Applications shortcut icon in the installer window.
5. Double-click the Applications shortcut icon to open the Applications folder on your computer.
6. Double-click Sonnet Network.app; a popup window will appear stating Sonnet Network is an app downloaded from the internet. Click Open; the Sonnet Network application will open.
7. In the *Sonnet Network* window, click Enable; this only has to be done once (the application no longer needs to run afterwards). A dialog window will appear.

WARNING: Do NOT delete the Sonnet Network application! Doing so would remove the Twin25G adapter's driver.

8. Click Open System Settings, NOT the highlighted OK button; this will open System Settings > Login Items & Extensions.
9. When the Driver Extensions window appears, click the toggle switch for Sonnet Network to On, and then click Done.
10. When the System Extension popup appears, enter the admin password, and then click OK.
11. In the Driver Extension popup, click Done, and then back in the Sonnet Network Installer Window, click Quit.
12. Reboot your computer; the driver will be installed.
13. After the driver installation is complete, restart your computer; you may now connect the Twin25G adapter to your computer.

Chapter 3 – Driver Download/Installation Steps

Driver Download and Installation Steps—Windows Users

This section describes the download and installation of the latest driver required to support the Twin25G adapter connected to your Windows PC.

Support Note: Do not connect the Twin25G adapter to your computer until the driver has been installed as described in the next section.

1. Launch a web browser and go to www.sonnettech.com/support/kb/kb.php

2. Navigate to and click the Twin25G Thunderbolt Adapter link.

3. On the Twin25G Thunderbolt Adapter page, click the Driver link, and then click the Download Now button next to the TWIN25G/TWIN10G SFP28 Software [Windows] link; a new window or tab will open.

4. On the *MLNX_OFED for Windows - WinOF / WinOF-2* page, click the WinOF-2 Download tab to open the WinOF-2 Download Center box, and then select the following:
   • the latest release
   • Windows Server or Windows Client
   • your computer's OS (Distribution) version.
   In the Download/Documentation column, click the WinOF Driver link; the file will be downloaded.

5. Locate the .exe file you downloaded and then double-click it to launch the driver installer.

6. Follow the on-screen instructions to complete the driver installation.

7. After the driver installation is complete, restart your computer; you may now connect the Twin25G adapter to your computer.

Chapter 4 – Twin25G Thunderbolt Adapter Connection Steps

Support Note: The Sonnet ThunderLok™ Thunderbolt connector retainer clip secures the included Thunderbolt cable to the Twin25G adapter to prevent accidental disconnects. It is compatible with Sonnettech 0.5- to 1-meter Thunderbolt cables.

To attach the clip to the cable, remove both from their packaging, and then insert the connector through the connector clip as shown **(Figure 1)**. 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.

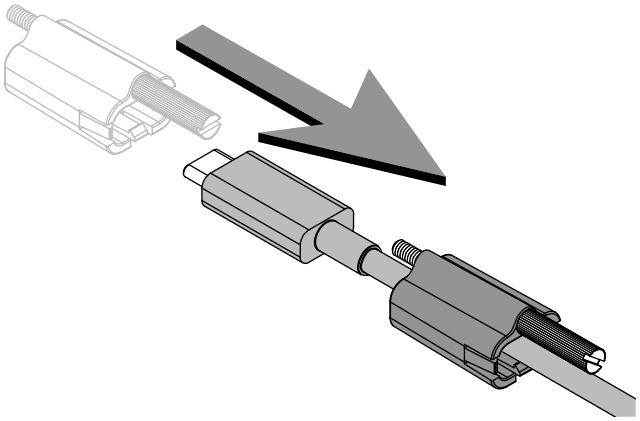


Figure 1

1. Connect the included (or other certified) Thunderbolt cable between a Thunderbolt port on the Twin25G adapter and a Thunderbolt port on your computer, or other Thunderbolt device in the chain connected to the computer **(Figure 2)**. Note that cables or computer ports marked with a generic USB icon (⇄) or USB Charging Port icon (ϟ) are NOT compatible. Secure the retainer clip to the threaded hole beneath the Thunderbolt port on Twin25G if you attached it.

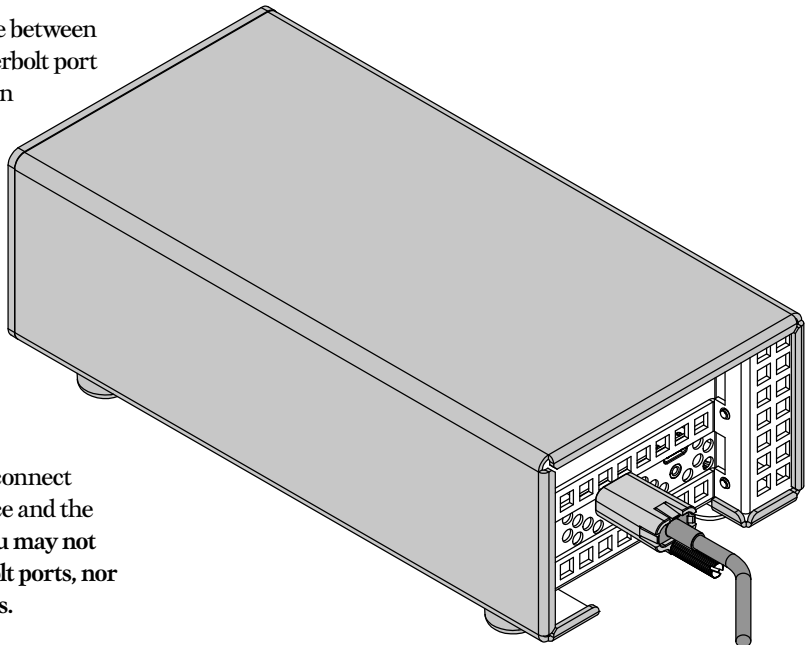


Figure 2

Support Note: If you connect a downstream device to the Twin25G adapter's second Thunderbolt port, we recommend against using it at the same time, as it will impact the Twin25G adapter's performance.

If you are daisy chaining additional Thunderbolt devices, connect another Thunderbolt cable between the downstream device and the open Thunderbolt port on the Twin25G. Also note that **you may not connect two computers to the Sonnet adapter's Thunderbolt ports, nor to a daisy chain of Thunderbolt devices between computers.**

Support Note: Unless your setup requires connection redundancy (and your switch or storage system supports it), connecting the Twin25G adapter to a switch or storage system requires only a single SFP28 transceiver plus appropriate fiber optical cable. You may potentially install the second included transceiver in your switch or storage system.

2. Connect cable(s) between transceiver(s) on the Twin25G adapter and the switch or storage device.

3. Connect the included power cord between a wall outlet or power strip and the power adapter; verify the connector is plugged in securely. Note that the power adapter's power indicator will light at this time.

4. Connect the power adapter cable to the Twin25G adapter's 12V power socket. Note that the Sonnet adapter's power indicator will not light until the computer, and any other Thunderbolt devices connected between it and the adapter, is powered on.

5. Go to the next section, Verification and Configuration Steps.

Chapter 5 – Verification and Configuration Steps

Confirm Twin25G Thunderbolt Adapter and Its Ethernet Controllers are Recognized—Mac Users

This page instructs Mac users how to verify the Twin25G adapter is recognized by the computer; Windows users should skip to the next page.

1. With the Twin25G adapter powered and connected to the computer, turn on the computer.

2. Press and hold down the Option key, and then from the Apple menu, select System Information; a *System Information* window will open.

3. In the *System Information* window, click Thunderbolt... under the Hardware header in the left column **(Figure 3).**

4. In the top right column under the Thunderbolt... Device Tree header, you will see "Echo Express SEL TB3" **(Figure 3).**

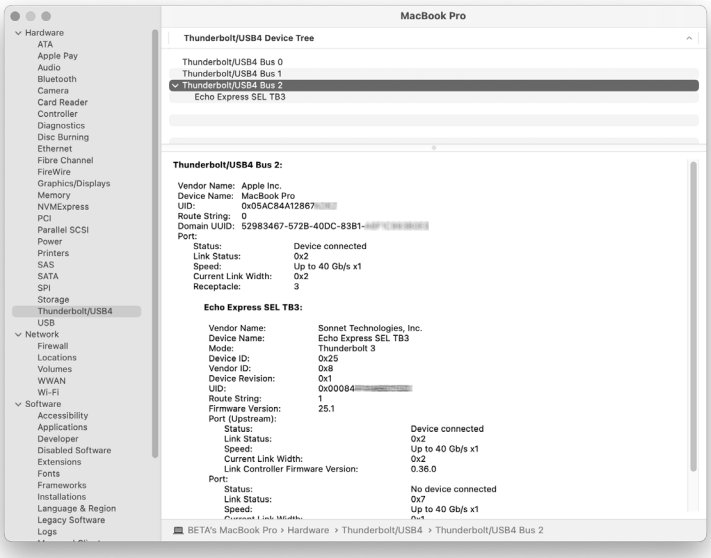


Figure 3

Support Note: If you do not see "Echo Express SEL TB3" listed, disconnect and reconnect the Thunderbolt cable between the computer and Twin25G adapter. Note that it is not necessary to shut down the computer before disconnecting and reconnecting the cable.

5. In the *System Information* window click Ethernet under the Hardware header in the left column **(Figure 4).**

6. At the top of the right column, the Twin25G adapter's ports are listed as two separate Ethernet devices. You should see com.sonnettech.sntmlx5e listed next to Driver **(Figure 4).**

7. Skip to Basic Configuration Steps—Mac Users on page 10.

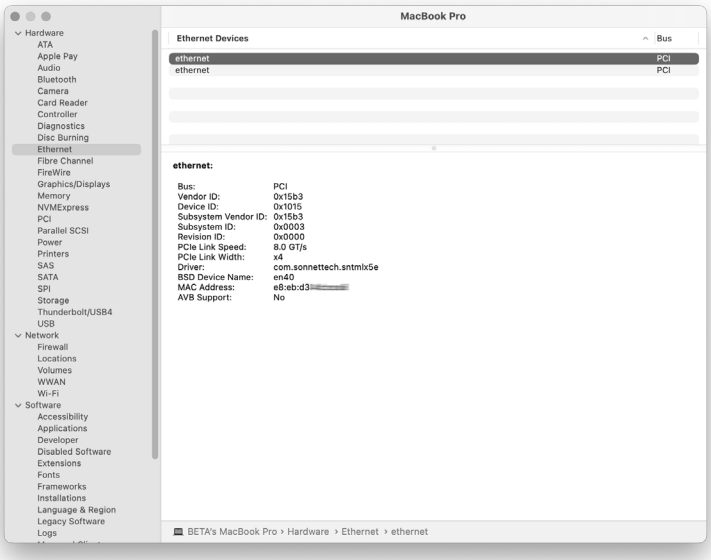


Figure 4

Chapter 5 – Verification and Configuration Steps

Confirm Twin25G Thunderbolt Adapter and Its Ethernet Controllers are Recognized—Windows Users

This section describes how to confirm the Twin25G adapter is recognized by your Windows computer.

1. With the Twin25G adapter connected to a power source and to the computer, turn on the computer.

2. When the computer boots for the first time after connecting the Twin25G, a *New Thunderbolt™ Devices Attached...* window appears **(Figure 5)**. Select Always Connect from the drop-down menu.

Figure 5

3. Right-click on the Windows Start Menu icon and select Device Manager; the *Device Manager* window will appear **(Figure 6)**.

4. In the *Device Manager* window, click the arrow next to Network adapters to expand the list **(Figure 6)**.

5. In the Network adapters list, the various adapters recognized by the system are listed. Each of the Sonnet adapter's ports will have the description "Mellanonx ConnectX..." with either nothing else listed or #2 listed next to it **(Figure 6)**.

6. Skip to the next section, Basic Configuration Steps—Windows Users on page 11.

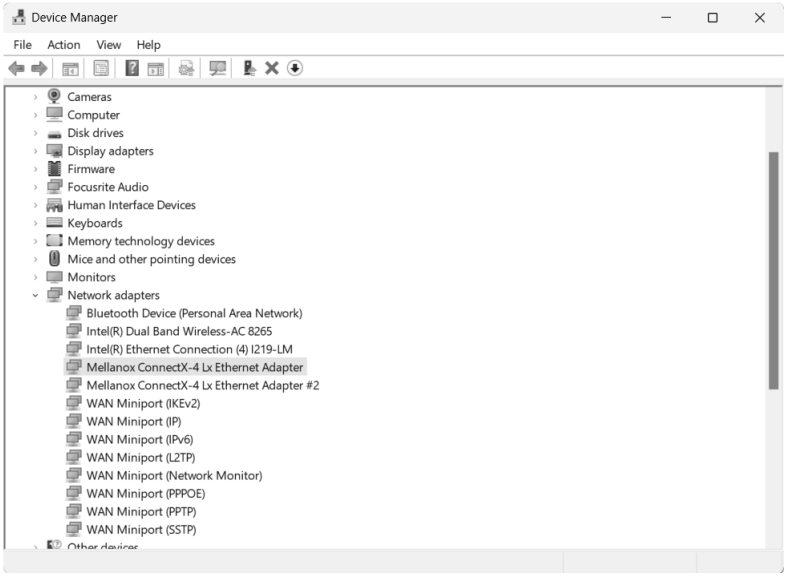


Figure 6

Chapter 5 – Verification and Configuration Steps

Basic Configuration Steps—Mac Users

Listed below are the basic steps necessary to configure the Twin25G adapter to achieve maximum performance.

1. With the Twin25G adapter connected to your computer and 25GbE infrastructure (and everything turned on), open System Settings, and then click Network.

2. In the System Settings Network panel, click one of the Twin25G adapter's ports (identified as Thunderbolt Ethernet Slot x, Port x and Thunderbolt Ethernet Slot x, Port x) in the sidebar, and then click Details **(Figure 7)**.

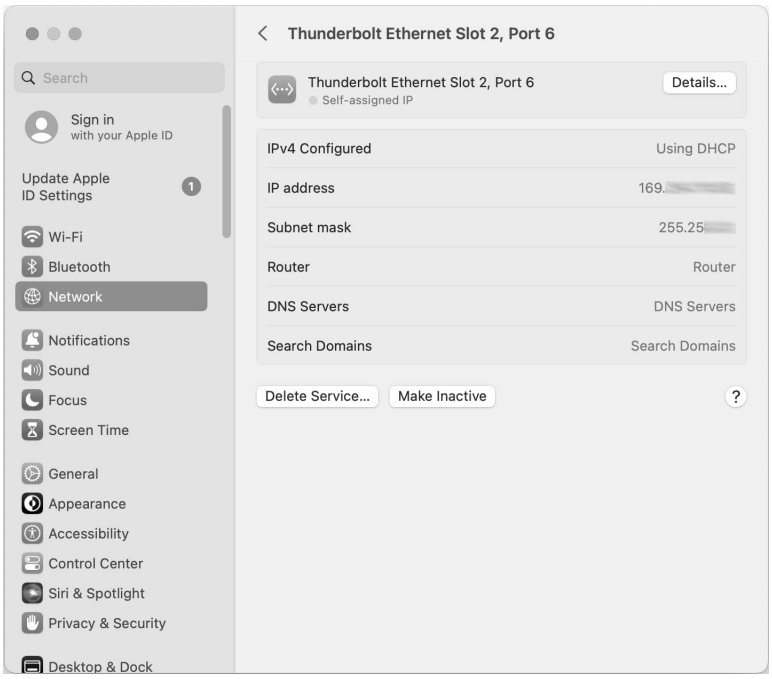


Figure 7

3. In the Details panel, click Hardware. From the Configure drop-down menu, select "Manually". In the Speed drop-down menu, choose autoselect. In the Duplex drop-down menu, select "full-duplex, flow control" (*not* "full duplex"). In the MTU drop-down menu, select "Jumbo (9000)" **(Figure 8)**.

Support Notes: If you connect the Twin25G adapter to a network switch, **you MUST set the speed to Autoselect**; otherwise the link will not be established.

In order to realize maximum performance, **the computer and every network switch and storage system to which the Twin25G adapter is connected must be configured to have jumbo frames enabled**.

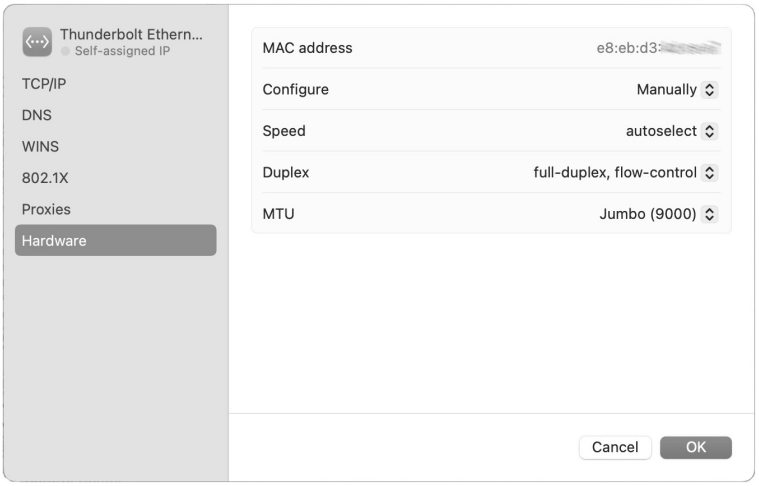


Figure 8

4. When you've completed changing the settings for the port, click OK.

5. Repeat steps 2–4 for the other port if necessary.

Chapter 5 – Verification and Configuration Steps

Basic Configuration Steps—Windows Users

Listed below are the basic steps necessary to configure the Twin25G adapter for use with your computer.

1. With the Twin25G adapter connected to your computer and 25GbE infrastructure (and everything powered on), open Device Manager. Click the arrow next to Network adapters to expand the list, and then double-click one of the Sonnet adapter's ports **(Figure 9)**.

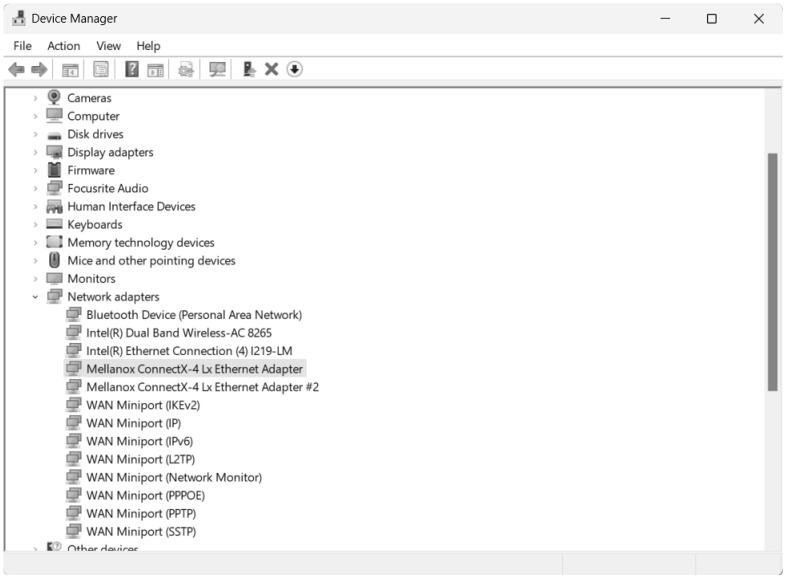


Figure 9

2. In the *Mellanox ConnectX... Properties* window, click the Information tab **(Figure 10)**. Verify that the value for the link speed setting is 25.0 Gbps/Full Duplex.

Figure 10

Support Note: In order to realize maximum performance, **the computer and every network switch and storage system to which the Twin25G adapter is connected must be configured to have jumbo frames enabled**.

3. In the *Mellanox ConnectX... Properties* window, click the Advanced tab, and then from the Property list, click Jumbo Packet **(Figure 11)**. Verify that the value for the port is set to 9014.

4. Repeat steps 1–3 (if necessary) with the other port.

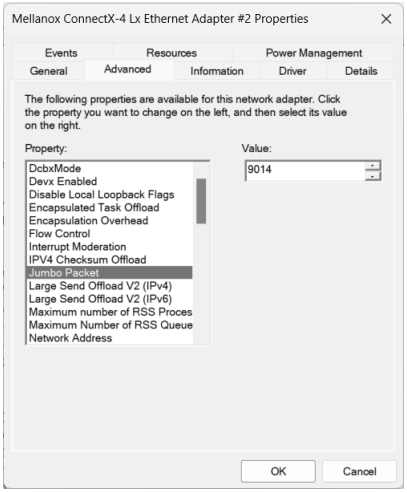


Figure 11

Chapter 6 – Tips, General Information, and Known Issues

TIPS, GENERAL INFORMATION

Keeping the Twin25G Adapter Cool
With its optimized airflow design and automatic, temperature-controlled fan providing cooling at all times, the Sonnet adapter provides adequate cooling for the components inside. *Do not block the fan or any of the vents while the adapter is operating!* Otherwise, the adapter may overheat.

Hot-Plugging the Twin25G Adapter
You may connect and disconnect the Thunderbolt cable between the Twin25G adapter and your computer while your computer is on.

There's No Need to Unplug the Power Adapter
Because the Twin25G adapter automatically powers on and off with the computer to which it's connected, there's no power switch, nor is there any need to disconnect the power cable under normal use. When your computer is sleeping, Twin25G enters a low-power state; this allows it to wake with your computer.

Power Indicator LED Operation
Because the Twin25G adapter automatically powers on and off with the computer to which it's connected, its power indicator only lights when the computer is on, and turns off when the computer is sleeping or powered off.

Connecting Additional Thunderbolt Peripheral Devices
The Twin25G adapter includes two Thunderbolt ports; the first connects it to your computer, while the second supports daisy-chaining of up to five additional Thunderbolt peripheral devices. We recommend against using daisy-chained devices at the same time as the Twin25G adapter due to its high Thunderbolt PCIe bandwidth requirements.

Twin25G Thunderbolt Adapter Provides Upstream Power
The Twin25G adapter can provide up to 15 watts to bus-powered Thunderbolt peripheral devices, enabling them to operate without connecting an additional power adapter.

Using the Twin25G Adapter to Charge Your Notebook or Laptop Computer
MacBook Air and MacBook Pro computers with Thunderbolt 5, 4, or 3 ports, and all PC laptops with Thunderbolt 5 or 4 ports may be charged *slowly* via the Twin25G adapter's Thunderbolt port (via 15W Power Delivery).

KNOWN ISSUES

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 check Sonnet's support pages to verify that the existing drivers work. Note that other software updates for the computer may also break compatibility.

Not All Thunderbolt Cables Deliver Full Performance
Full performance from the Twin25G adapter requires the use of the included (or other certified) Thunderbolt cable.

Chapter 7 – Warnings, FCC Compliance, and Support Information

Warnings

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

- 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.

- Do not drop Twin25G Thunderbolt Adapter; dropping or mishandling the Sonnet adapter may result in a malfunction leaving the product inoperable.

- Follow the instructions in this manual carefully; contact your reseller or local distributor for additional advice not covered in this User's Guide.

- If unusual smells, sounds, or smoke come from the device, or if liquids enter it, switch it off immediately and unplug it from the electrical outlet.

FCC Compliance

Twin25G Thunderbolt Adapter 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

Before contacting Customer Service, please check the Sonnet Web site (www.sonnettech.com) for the latest updates and files. When you contact Customer Service, please have the following information available:

- Product name
- Computer model
- OS version
- Driver software version
- 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, contact **Sonnet Customer Service** at:
E-mail: support@sonnettech.com

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

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