ATTO ThunderLink® Thunderbolt™5 Devices Installation and Operation Manual

ATTO ThunderLink FC 5642

80-Gigabit Thunderbolt 5 to Dual 64 Gigabit Fibre Channel Adapter

ATTO ThunderLink FC 5322

80-Gigabit Thunderbolt 5 to Dual 32 Gigabit Fibre Channel Adapter

ATTO ThunderLink FC 5082

80-Gigabit Thunderbolt 5 to Dual 8 Gigabit Fibre Channel Adapter

ATTO ThunderLink NS 5102

80-Gigabit Thunderbolt 5 to Dual 100 Gigabit Ethernet Adapter

ATTO ThunderLink NS 5252

80-Gigabit Thunderbolt 5 to Dual 25 Gigabit Ethernet Adapter

ATTO ThunderLink NS 5254

80-Gigabit Thunderbolt 5 to Quad 25 Gigabit Ethernet Adapter

ATTO
The Power Behind the Storage

155 CrossPoint Parkway
Amherst, NY 14068

P. +1.716.691.1999
atto.com

© 2025 ATTO Technology, Inc. All rights reserved. All brand or product names are trademarks of their respective holders. No part of this manual may be reproduced in any form or by any means without the express written permission of ATTO Technology, Inc.

12/2025 **PRMA-xxxx-xxxx**

Table of Contents

1 ThunderLink Adapter Installation 3

Verifying packaging contents 3

Installing Drivers 3

macOS® 3

Windows® 3

Thunderbolt 5 4

2 ATTO360 Storage & Networking editions 5

Download and Install ATTO360 5

3 ThunderLink Adapter LEDs 6

ATTO ThunderLink FC 5642 / 5322 6

ATTO ThunderLink FC 5082 6

ATTO ThunderLink NS 5102 7

ATTO ThunderLink NS 5252 7

ATTO ThunderLink NS 5254 7

Standards and Compliances 8

FCC 8

ICES-003 8

UKCA 8

European Union 8

VCCI-CISPR 32 8

AZ/NZ CISPR 32 8

TUV 9

RoHS 9

Warranty Information 10

Manufacturer limited warranty 10

1 ThunderLink Adapter Installation

This manual gives you information for installing and configuring your ThunderLink Adapter.

Verifying packaging contents

- Note the serial number of your ThunderLink unit: _____
- AC adapter and power cord
- Getting Started Guide

Note ***ThunderLink Fibre Channel Adapters ship with short-wave SFPs. Gen 6 & 7 Fibre Channel technology necessitates that all optics must be a fully certified ATTO -branded SFP***

CAUTION ***ThunderLink Adapters contain components that are sensitive to electrostatic discharge (ESD). ESD can cause damage to these components. Do not attempt to open the ThunderLink Adapter enclosure as it will void your warranty. Always back up your system data before changing or installing any hardware.***

Note ***ATTO ThunderLink Adapters feature a small slot on the right side of the Adapter. This is to allow for additional security via Kensington lock.***

Installing the ThunderLink Adapter

CAUTION ***For Windows PC: the Thunderbolt certified adapter driver must be installed before plugging in the adapter for it to function properly. Please follow the Windows instructions under Installing Drivers before proceeding.***

1. Ensure you have the following prerequisites:
   - Thunderbolt technology-enabled host.
   - A Thunderbolt cable.
   - A storage adapter (Fibre Channel, or Ethernet) cable.
   - Compatible storage (Fibre Channel, or Ethernet).
2. Connect the ATTO provided AC adapter to the ThunderLink and the power cord to a power point.
3. Connect the storage to the ThunderLink to your storage node of switch via the storage adapter cables.
4. Connect your ThunderLink to your laptop or other computing adapter via Thunderbolt cable.

Note ***ATTO Thunderlink Adapter LEDs will illuminate when both the AC adapter and a Thunderbolt technology-enable host are connected.***

CAUTION ***Use only the ATTO provided AC Adapter with ThunderLink. Alternate AC Adapters are not supported and can cause damage to internal components.***

Installing Drivers

macOS®

Note ***At this time users cannot see more than 256 LUNs in macOS***

Downloading drivers from the ATTO website

1. Power on your system and log in as a user with proper administrative privileges.
2. Go to www.atto.com.
3. On the main menu, click **Support,** and choose **Software Downloads**.
4. Under the **ATTO Product** tab, choose **ThunderLink Thunderbolt Adapters**.
5. Under the **Product Family** tab, choose select your model.
6. Under the **Operating System** tab, select macOS.
7. Find the entry for the latest driver, and select download.
8. A download window appears. Follow the instructions for downloading the driver.
9. Open the .dmg file, and run the .pkg installer file.

Windows®

Downloading drivers from the ATTO website

1. Power on your system and log in as a user with proper administrative privileges.
2. Go to www.atto.com.

3. On the main menu, click **Support,** and choose **Software Downloads**.
4. Under the ATTO Product tab, choose ThunderLink Thunderbolt Adapters.
5. Under the **Product Family** tab, choose select your model.
6. Under the **Operating System** tab, select your Windows Operating System.
7. Find the entry for the latest driver, and select download.
8. A download window appears. Follow the instructions for downloading the driver.

Linux

Note ***Newer PCs may ship with UEFI firmware with Secure Boot enabled. With Secure Boot the operating system boot loaders, Linux kernel, and all kernel modules must be signed with a private key and authenticated with a corresponding public key.***

When trying to load an unsigned ATTO driver on a secure boot system, you will see the following error: **modprobe: ERROR: could not insert '<driver-name>': Required key not available** Refer to the Linux driver read me file (readme.html) contained in the driver bundle for instructions on signing and authenticating your ATTO Linux drivers.

1. Power on your system and log in as the root or a user with proper administrative privileges.
2. Go to www.atto.com.
3. On the main menu, click **Support,** and choose **Software Downloads**.
4. Under the **ATTO Product** tab, choose **ThunderLink Thunderbolt Adapters**.
5. Under the **Product Family** tab, choose select your model.
6. Under the **Operating System** tab, select Linux.
7. Find the entry for the latest driver, and select download.
8. Select a download destination to download the ATTO driver .tgz file.
9. Open a terminal window and change directory to the location of the ATTO driver .tgz file.
10. Extract the file using the command **tar -xfz<filename.tgz>**
11. Change the directory created above and run the installer script **./install.sh**

Thunderbolt 5

Thunderbolt 5 extends the capabilities of Thunderbolt to 80Gb/s while utilizing USB-C connectors. Please note the following guidelines for best practice when using an ATTO Thunderbolt 5 Adapter.

1. We recommend Intel certified Thunderbolt cables to be used with ATTO ThunderLink Devices.
2. Active cables (1 and 2 meter) provide 80Gb/s bi-directional connectivity, with up to 120Gb/s uni-directional support with bandwidth boost
3. Thunderbolt 5 utilizes a USB-C connector and only platforms designated by the Intel Thunderbolt logo are compatible with ATTO Thunderbolt adapters.
4. Minimum OS requirements for Windows/macOS/Linux
    - PC with Thunderbolt 5 – Windows 11
    - PC with Thunderbolt 4 – Windows 10 or 11
    - PC with Thunderbolt 3 – Not supported
    - Mac with Thunderbolt 4/5 – macOS 14.4 or newer
    - Mac with Thunderbolt 3 – macOS 15.0 or newer
    - Linux with Thunderbolt 4/5 – RHEL/Rocky 10
    - Linux with Thunderbolt 4/5 – Ubuntu 22.04.5 LTS (HWE) or newer

Note **Dedicated Host & Device ports**

 This icon indicates the dedicated host port and should be used only for connecting to hosts.

 This icon indicates the dedicated device port and should be used only for connecting devices

2 ATTO360 Storage & Networking editions

The ATTO360 Networking (Ethernet) & ATTO360 Storage (Fibre Channel/SAS) applications provide an effective mechanism to configure your ThunderLink Adapter. Features include:

- The names of ATTO Adapters installed in the host
- Information about the drivers and firmware controlling the Adapters, including version information

You may also use ATTO360 to:

- Update the flash image when a new version is released by ATTO
- Modify the NVRAM settings
- Optimize settings via several tuning profiles that increase performance of your ATTO product
- Monitor and Diagnose connectivity issues with ATTOexpert AI for troubleshooting and eliminating bottlenecks
- Revert to default factory settings

Download and Install ATTO360

Visit the ATTO website to download the latest version of ATTO360 to manage your ThunderLink device.

Ethernet/Thunderbolt 5 users – Click here to learn more and download ATTO360 Networking;
https://www.atto.com/products/software/atto360-networking-software/

Fibre Channel & SAS/Thunderbolt 5 users – Click here to learn more and download ATTO360 Storage;
https://www.atto.com/products/software/atto360-storage-software/

Note ***The only Thunderbolt 5 model that is not supported by ATTO360 is the TLFC-5082(8G Fibre Channel version) please use the ATTO ConfigTool to manage your device which can be downloaded here;*** **https://www.atto.com/support/software-downloads/**

3 ThunderLink Adapter LEDs

Front Power LED – Illuminates when both the AC adapter and a Thunderbolt technology-enabled host are connected.

Color – Blue

Thunderbolt Port A LED – Illuminates when a Thunderbolt technology-enabled host is connected to Port A.



Color – Blue

Thunderbolt Port B LED – Illuminates when a Thunderbolt/USB/Display Port device is connected to Port B.



Color – Blue

Protocol LEDs – See the LED configuration for the ATTO ThunderLink models below.

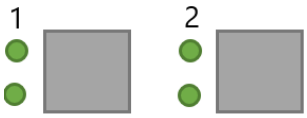
ATTO ThunderLink FC 5642 / 5322



Green LED – Illuminates when a link has been established on the Port. Blinks when there is no link on the Port.

Amber LED – Blinks when there is activity on the Port. Off when there is no link on the Port

ATTO ThunderLink FC 5082



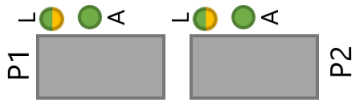
Both Green LEDs illuminate when an 8G link has been established on the Port. Both Green LEDs blink when there is activity on the Port.

Top Green LED illuminates when a 4G link has been established on the Port. Top Green LED blinks when there is activity on the Port. Bottom Green LED is Off with a 4G link.

Bottom Green LED illuminates when a 2G link has been established on the Port. Bottom Green LED blinks when there is activity on the Port. Top Green LED is Off with a 2G link.

Both LEDs are Off when there is no link on the Port

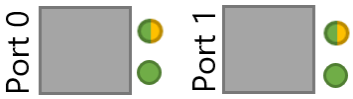
ATTO ThunderLink NS 5102



Green/Amber LED – Illuminates Green when a 100G link has been established on the Port. Illuminates Amber when a 25G/10G link has been established on the Port. Off when there is no link on the Port.

Green LED – Blinks when there is activity on the Port. Off when there is no link on the Port

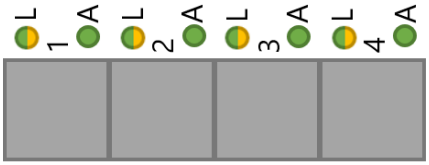
ATTO ThunderLink NS 5252



Green/Amber LED – Illuminates Green when a 25G link has been established on the Port. Illuminates Amber when a 10G/1G link has been established on the Port. Off when there is no link on the Port.

Green LED – Blinks when there is activity on the Port. Off when there is no link on the Port

ATTO ThunderLink NS 5254



Green/Amber LED – Illuminates Green when a 25G link has been established on the Port. Illuminates Amber when a 10G/1G link has been established on the Port. Off when there is no link on the Port.

Green LED – Blinks when there is activity on the Port. Off when there is no link on the Port

Standards and Compliances

The equipment described in this manual generates and uses radio frequency energy. If this equipment is not used in strict accordance with the manufacturer's instruction, it can and may cause interference with radio and television reception.

FCC

Class B

This equipment has been tested and found to comply with the limits for a Class B digital Adapter, pursuant to part 15 of the FCC Rules.

ICES-003

This Class B digital apparatus complies with Canadian ICES-003.

*Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada

UKCA

This product complies with BS EN55032, BS EN55035.

European Union

Marking by the symbol  indicates compliance of this ATTO Adapter to the EMC Directive and the Low Voltage Directive of the European Union.

VCCI-CISPR 32

VCCI Class B Statement

この装置は、クラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。

取扱説明書に従って正しい取り扱いをして下さい。

This is a Class B product based on the standard of the VCCI Council. If this is used near a radio or television receiver, it may cause radio interference. Install and use equipment according to the instruction manual.

AZ/NZ CISPR 32

This product complies with AZ/NZ CISPR32.

TUV

The product has been certified and bears the Mark, as applicable, of the EMC and Product Safety authorities as indicated below:

Safety CB IEN62368-1 (all national deviations)

Emissions/Immunity: EN55032, EN55035, EN61000-3-2, EN61000-3-3, EN61000-4-2, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11.

RoHS

ATTO ThunderLink Adapters comply with Directive 2011/65/EU, (EU) 2015/863 on the Restriction of the Use of Hazardous Substances in Electrical and Electronic Equipment (RoHS).

Warranty Information

Manufacturer limited warranty

ATTO Technology, Inc. (“ATTO”) warrants to the original purchaser of this product (“Product”) that the Product is free from defects in material and workmanship for the term described for this specific Product on ATTO's website (**www.atto.com**). ATTO's liability shall be limited to replacing or repairing any defective product at ATTO's option. There is no charge for parts or labor if ATTO determines that this product is defective.

PRODUCTS WHICH HAVE BEEN SUBJECT TO ABUSE, MISUSE, ALTERATION, NEGLECT, OR THOSE PRODUCTS THAT HAVE BEEN SERVICED, REPAIRED OR INSTALLED BY UNAUTHORIZED PERSONNEL WILL NOT BE COVERED UNDER THIS WARRANTY. DAMAGE RESULTING FROM INCORRECT CONNECTION OR AN INAPPROPRIATE APPLICATION OF THIS PRODUCT SHALL NOT BE THE RESPONSIBILITY OF ATTO. LIABILITY UNDER THIS LIMITED WARRANTY IS LIMITED TO ATTO PRODUCT(S). DAMAGE TO OTHER EQUIPMENT CONNECTED TO ATTO PRODUCT(S) IS THE CUSTOMER'S RESPONSIBILITY. THIS LIMITED WARRANTY IS MADE IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED. ATTO DISCLAIMS ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. TO THE EXTENT IMPLIED WARRANTIES CANNOT BE EXCLUDED, SUCH IMPLIED WARRANTIES ARE LIMITED IN DURATION TO THE EXPRESS WARRANTY PERIOD APPLICABLE TO THE PRODUCT. BECAUSE SOME STATES OR JURISDICTIONS DO NOT ALLOW LIMITATIONS ON THE DURATION OF IMPLIED WARRANTIES, THE ABOVE MAY NOT BE APPLICABLE. ATTO'S RESPONSIBILITY TO REPAIR OR REPLACE A DEFECTIVE PRODUCT IS THE SOLE AND EXCLUSIVE REMEDY PROVIDED TO THE CUSTOMER FOR BREACH OF THIS WARRANTY.

ATTO IS NOT RESPONSIBLE FOR DAMAGE TO OR LOSS OF ANY DATA, PROGRAMS OR ANY MEDIA. THE PRODUCTS ARE NOT INTENDED FOR USE IN: (I) MEDICAL ADAPTERS OR THE MEDICAL FIELD; OR (II) USE IN RUGGED APPLICATIONS.

ATTO IS NOT LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, IRRESPECTIVE OF WHETHER ATTO HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. NO ATTO DEALER, AGENT OR EMPLOYEE IS AUTHORIZED TO MAKE ANY MODIFICATION, EXTENSION OR ADDITION TO THIS WARRANTY.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

To register your product, authorize your software, download drivers or tools, or contact tech support please Login or Register at **https://www.atto.com/register/**