



Guide for installing DAD Thunder | Core Thunderbolt 3 driver

Introduction.

This document describes the procedure for installing the DAD Thunder | Core Core Audio Thunderbolt 3 driver on an Apple Mac computer and an ASIO driver for Windows PC.

DAD Thunderbolt 3 Core Audio Driver (DADdriver):	Latest version in download section
Compatible with macOS 11/Big Sur and macOS 12/Monterey and onwards on Apple Silicon/M1 and Intel Computers	
DAD Thunderbolt 3 ASIO Driver:	Latest version in download section
Compatible with Windows 10 and 11	

Note. Check the latest release note in the download section in relation to support of the latest MacOS and Windows versions.

The Thunderbolt 3 driver will work with the DAD Thunder | Core enabled products, which currently is AX64, AX Center and Core 256 as well as Avid MTRX products and Dynaudio Control 01.

In order to manage the Thunder | Core enabled products, the DADman software must be installed. The version of DADman for Mac and PC should be 5.6.7.1 or later. Note that The DAD Thunderbolt 3 driver and DADman are two different applications which are not connected or mutually dependent.

The Thunderbolt 3 driver enables the DAD Thunder | Core interface to be accessible via the Audio MIDI application on the Mac as an audio device for other audio applications on the computer. On Windows PC the DAD Thunder | Core interface is accessible via the ASIO driver configuration of your Audio application

Please refer to the release note for documentation of the latest DADman and driver software and product firmware.

Installation of DAD Thunderbolt 3 driver on MacOS

The driver software must be installed completely before it can work properly.

When you install the driver, it is of no importance if you have units or other peripheral devices connected to the Thunderbolt 3 / USB-C port on the computer. In the process described below there are no devices connected before installation.

The installation sequence is the following:

1. Copy the driver .pkg file to the computer desktop and double click in order to start installation
2. Follow the installation instructions click *Next* and then *Install*.



3. Enter Administrator password and click *Install*
4. If the driver has not been installed before on the computer you get the message "System extension blocked". Click on *Open Security Preferences*. (see figure 1)
5. In the "Security and Privacy" window you have to click on the lock symbol in the bottom left corner and unlock settings and click *Allow*. (see figure 2 and 3)
6. Restart the Computer and open the Thunderbolt 3 driver application, and connect the DAD Thunder | Core interface to the USB-C/Thunderbolt 3 port on the Computer. Make sure that you are using a high-speed (20Gbps) Thunderbolt 3 USB-C cable.

In order to configure the driver settings please refer to the Driver Operation section below.

Note that the system extension dialogue can have different layouts on various versions of macOS

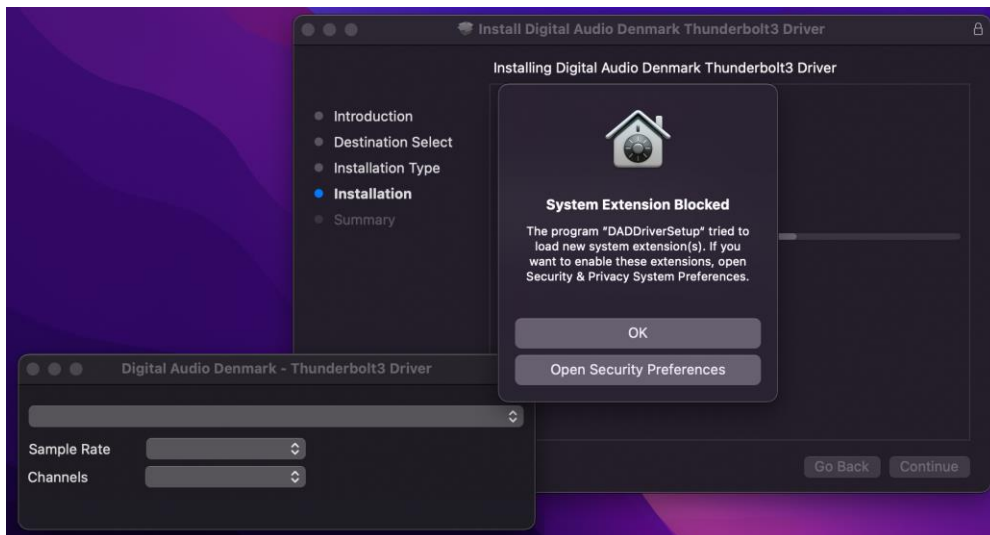


Figure 1, System Extension Dialogue

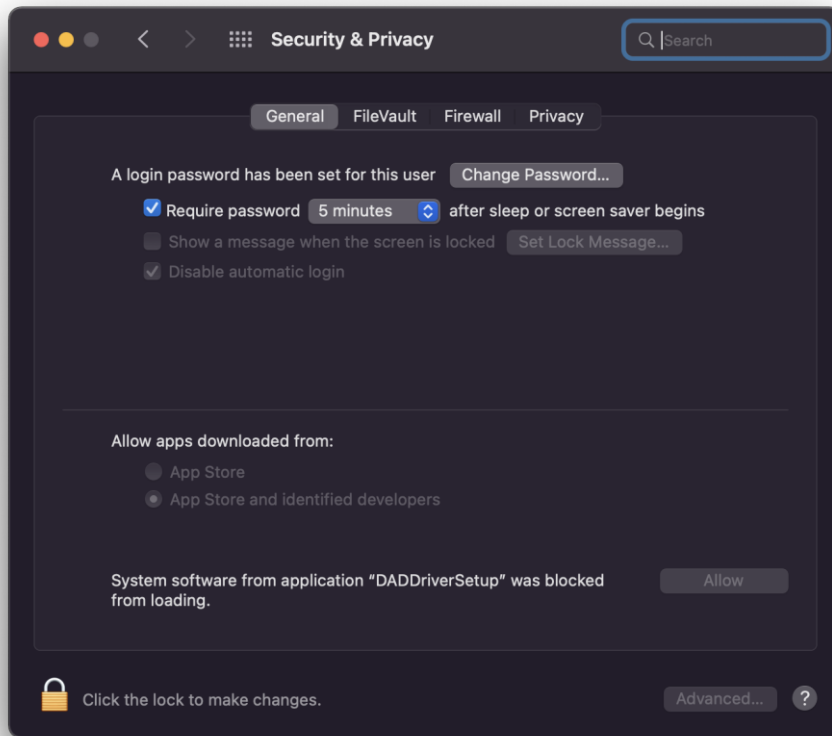


Figure 2, Unlocking Security Settings

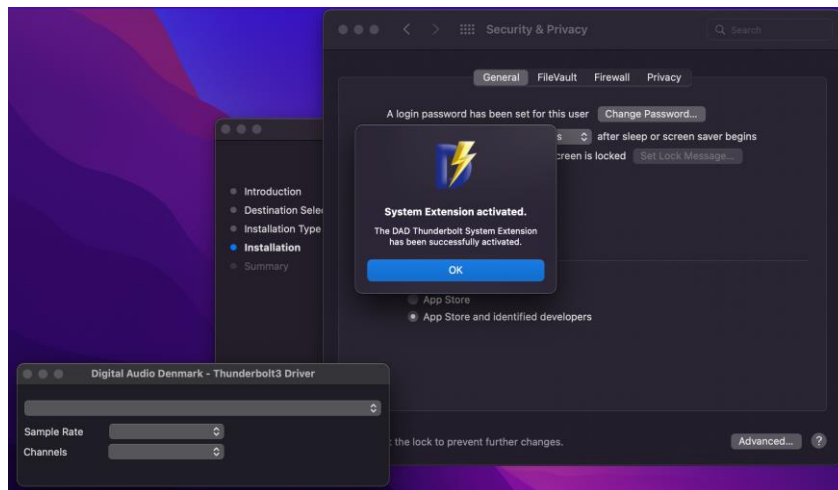


Figure 3, System Extensions Activated

Driver Operation



Once the driver is installed and a DAD Thunder | Core interface is connected to the Thunderbolt 3 / USB-C port on the computer, the driver can be set-up with the relevant configuration by opening up the DADDriverSetup application.

The driver application configuration window is shown below.

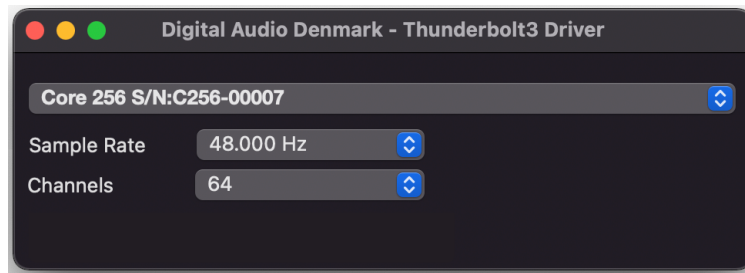


Figure 4, Driver application configuration

Device Selection

In the first line in the dialogue, selection of the DAD Thunder | Core interfaces attached to the driver is made. If more devices are daisy-chained on the Thunderbolt 3 / USB-C port, any of these devices can be selected.

Sample Rate

The second line enables selection of the sample rate of the audio transferred via the driver and the Thunderbolt 3 connection.

The following sample rates can be selected: 44.1, 48, 88.2, 96, 176.4, 196, 352.8 and 384 kHz

Channels

The third line enables the number of channels that is set-up via the driver, and thereby the number of channels that is visible for the device in Core Audio / Audio MIDI set-up. (see figure 5).

Note that all DAD Thunder | Core interfaces support 256 bi-directional channels in the audio hardware.

The following bi-directional channel groups can be selected: 16, 64, 128 and 256 channels

Below is shown the appearance of the DAD Thunder | Core interface when shown in the Audio Device widow. The Format will reflect the setting made in the driver. The format can also be set-up via the Audio Device window.

Note that the configuration will apply for both input and output

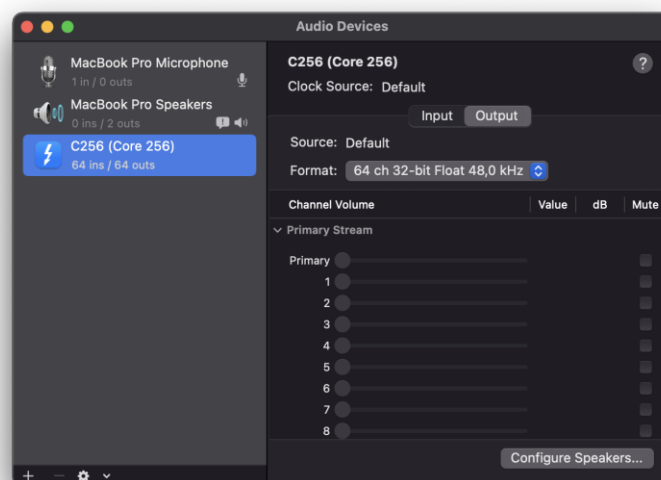


Figure 5, Audio MIDI set-up window



Installation of DAD Thunderbolt 3 driver on Windows PC

The driver software has to be installed completely before it can work properly.

When you install the driver, it is of no importance if you have units or other peripheral devices connected to the Thunderbolt 3 / USB-C port on the computer. In the process described below there are no devices connected before installation.

The installation sequence is the following:

1. Copy the driver .msi windows installer file to the computer desk top and double click in order to start installation
2. Follow the installation instructions click Next and then Install.
3. Once the driver is installed open your audio application and chose the Digital Audio Denmark ASIO driver
4. In order to configure the ASIO driver open the ASIO dialogue window in the audio configuration section of your audio application
5. Configuration can be done on the parameters shown in figure 8



Figure 6, ASIO driver installation window.

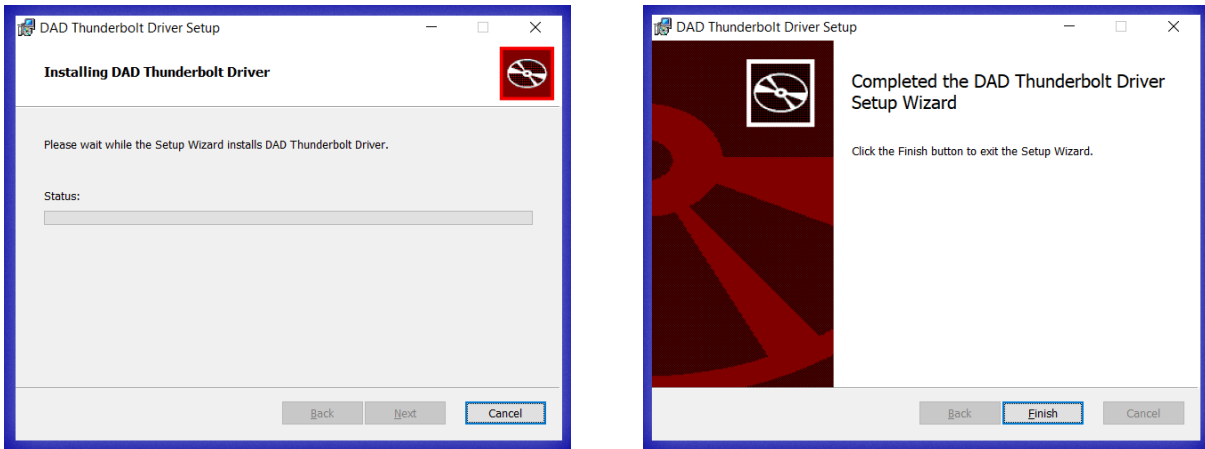


Figure 7, ASIO driver install progress.

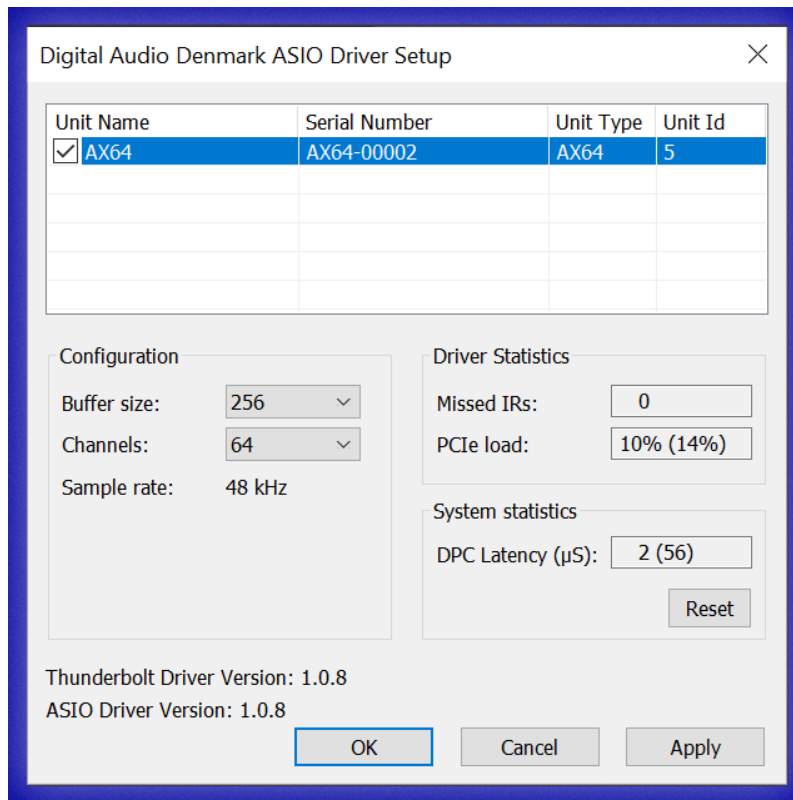


Figure 8, ASIO driver configuration window.



Driver Configuration

The ASIO driver dialogue has the following functionality:

Device Selection

In the first line in the dialogue, selection of the DAD Thunder | Core interfaces attached to the driver is made. If more devices are daisy-chained on the Thunderbolt 3 / USB-C port, any of these devices can be selected.

Buffer Size

Buffer size can be selected (samples): 16, 32, 64, 256, 512, 1024

Note: start with a large buffer size in order to assure you have a stable audio path

Sample Rate

The sample rate is defined by the setting in your audio application. The ASIO driver supports the following sample rates: 44.1, 48, 88.2, 96, 176.4, 196, 352.8 and 384 kHz

Channels

The second line enables the number of channels that is set-up via the driver, and thereby the number of channels available for your audio application. The performance of your audio system will depend on the number of channels selected

The driver window provides various status information for monitoring the PC and audio transfer performance.

Driver Statistics - Missed IRs

This number should be 0. The readout shows missed audio interrupts due to other Windows system interrupt priorities.

Driver Statistics - PCIe load

This number is the PCIe bus load and should be low in percentage but scales with the number of audio channels. The number in brackets is the max/peak value.

System Statistics - DPC Latency

Deferred Procedure Call (DPC) Latency, This number tells how fast the ASIO driver gets access in the Windows operating system. This value should be low.