CODEX®

TECHNICAL BULLETIN

COMPACT DRIVE AND READER FAQs

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Compact Drive and Reader FAQs

This document includes common questions about the Compact Drive, Reader, and Adaptor. If you have a question that is not covered below or in our other FAQ documents please contact **support@codex.online**:

What operating systems is the Compact Drive Reader compatible with?

The Compact Drive Reader can be used on Mac, Windows, and Linux.

What OS versions are required for Compact Drive Reader?

The minimum required OS versions to use the Compact Drive Reader are:

- macOS 10.14.4
- Windows 10
- CentOS 7

Is a driver or licence required for the Compact Drive Reader?

No, there is no driver or licence required for the Compact Drive Reader. It can be used as a “plug and play” device.

Can I use the Compact Drive and Reader with Device Manager and HDE?

Yes the Compact Drive and Reader can be used with Device Manager and HDE on macOS. (Device Manager and HDE is not available on Windows.)

What is the connection speed of the Compact Drive Reader?

The connection speed of the Compact Drive Reader depends on the type of USB connection and on the power that is delivered by the host.

We recommend to connect the Reader directly to a USB-C port that is capable of providing the maximum current allowed by USB-C (3A). The Compact Drive Reader will then provide a connection speed of 1 GB/s. A USB-A port can only provide 0.9A and the connection speed will be limited to around 180 MB/s. The connection speed is indicated by the status light on the front of the Compact Drive.

- Blue: 3A from host, for performance ~1GB/s.
- Green: 1.5A from host, for performance ~550MB/s.
- Amber: 0.9A from host, for performance ~180MB/s. In this case it is likely that the Compact Drive Reader is connected to a USB-A port.

USB 2.0 ports should not be used as they provide only 0.5A, which will result in poor and unreliable performance.

What is the correct procedure to connect the Compact Drive Reader?

When using a Mac:

- Connect the Compact Drive Reader to the Mac host with the USB-C cable before booting the Mac, or
- If the Mac is already booted, connect the USB-C cable to the Compact Drive Reader first and then to the Mac host.
- Connecting on Mac with either of the above methods will result in the Compact Drive Reader receiving 3A for best performance*.

If the cable is connected to the Mac host first, and then to the Compact Drive Reader second, it may only get 1.5A and have reduced performance.

*3A may not be available to the Compact Drive Reader if other bus powered devices are already attached to the Mac.

Which cables are suitable for use with the Compact Drive USB-C Reader?

The following cable types have been tested and are known to work with the Compact Drive USB-C Reader:

- 0.5m USB-C cable
- 1m USB-C cable
- 0.5m Thunderbolt 3 cable (passive type)
- 1m Thunderbolt 3 cable (passive type)

NOTE: The quality of different USB-C cables can vary depending on the manufacturer. If you experience reliability issues then try another cable, or a cable from another supplier.

The following cables are known to not work correctly with the Compact Drive USB-C Reader:

- 2m Thunderbolt 3 cable (active type)

Can I use the Compact Drive Reader via a USB hub?

We do not recommend to use the Compact Drive Reader via a USB hub, as the power to the device is not guaranteed and this may result in reduced performance.

Can I use the Compact Drive Reader via a Thunderbolt 2 > Thunderbolt 3 adaptor?

No, because Thunderbolt 2 > Thunderbolt 3 adaptors do not pass USB signals and power in the required way. The Compact Drive Reader should be connected to either a USB-C or Thunderbolt 3 port.

Can I use the Compact Drive Reader with a Mac Pro 2013 model?

The Compact Drive Reader can be used with a Mac Pro 2013 model* in the following setups:

- Connected to a Sonnet Allegro USB-C PCIe card, which is installed in a Thunderbolt expansion chassis such as the Sonnect Echo Express SE I. In this case the performance will be around 800 MB/s.
- Connected to a CalDigit TS3 Plus, via the 10 Gbps or 5 Gbps USB-C ports. When connected to the 10 Gbps USB-C port the performance will be around 550 MB/s. When connected to the 5 Gbps USB-C port the performance will be around 375 MB/s.
- Connected to a USB-A host port on the Mac Pro, using a USB-C to USB-A cable. In this case the performance will be limited to 180 MB/s.

The Compact Drive can also be loaded into an Adapter to work in the Capture Drive Dock which connects to the Mac Pro via TB2. This is the highest performance option for offloading data from the Compact Drive to the Mac Pro with a maximum rate of 1400 MB/s.

The Compact Drive Reader cannot be used with a Mac Pro 2013 model* in the following setups:

- Connected directly to an official Apple TB3 to TB2 adapter, which is then connected to a TB2 port on the Mac Pro. In this case the Compact Drive will not load at all.
- Connected to the loop through port of a TB3 peripheral or expansion device. In this case the Compact Drive will not stay loaded reliably and result in errors during the copy process. This includes connection to the TB3 downstream port of the CalDigit TS3 Plus.

* Or any Mac that has Thunderbolt 2 host ports.

Can I put camera tape or other labels on a Compact Drive?

Thin labels or asset stickers can be applied to the plastic surface of the Compact Drive (that has the large CODEX logo). No tape or labels should be applied to the metal surfaces of the Compact Drive.

The bottom surface of the Compact Drive is made of black anodised metal and must be kept clean to ensure that it does not overheat during recording. This is because the metal surface makes direct contact with the camera's cooling core.

We strongly recommend that camera or fabric tape should be avoided as it may impede the Compact Drive being loaded in the Reader or Adapter, and leave residue that could cause damage or prevent proper cooling.

What is the capacity of the Compact Drive?

The user capacity of the CA08-1024 model is 960GB.

I have accidentally reformatted a Compact Drive. Can the data be recovered?

When a Compact Drive is reformatted in the ALEXA Mini LF a secure erase operation is performed. This means that data is entirely deleted and recovery is not possible.

If a Compact Drive is reformatted or erased on a computer then a variety of methods can be used. In this case it may be possible to recover data using an application or specialist data recovery service, but Codex does not provide any specific recommendations.

How long does it take to download a full Compact Drive?

Assuming that the Compact Drive Reader is connected via USB-C (to achieve ~1GB/s speeds), and that the backup storage is fast enough to write at ~1GB/s, the download time for 960GB of data would be 16 minutes. If a copy application is used to perform a verification pass (recommended) then this will add some overhead to the process - depending on the type of checksum and verification method used it may double the overall download time.

Here are some approximate download times for a full 960GB Compact Drive containing 32 minutes of ALEXA Mini LF 4.5K OpenGate MXF/ARRIRAW recording (at 24fps), along with the data rate that the backup storage would need to achieve them*:

Reader or Dock model and connection type	Download time for 960GB (minutes)	Data rate (MB/s)
Compact Drive Reader via USB A-C cable (0.9A from host, amber LED)	89	180
Compact Drive Reader via USB C cable (1.5A from host, green LED)	29	550
Compact Drive Reader via USB C cable (3.0A from host, blue LED)	16	1000
Compact Drive in Adapter in Capture Drive Dock (Thunderbolt 2)	12	1400
Compact Drive in Adapter in Capture Drive Dock (Thunderbolt 3)	6	2700
Compact Drive in Adapter in Capture + Transfer Drive Dock (Thunderbolt 3)	6	2700

* These tests were performed using an iMac Pro 10-core system with 3GHz Xeon processor.

What operating systems is the Capture Drive Adapter for Compact Drive compatible with?

The Adapter can be used on Mac and CodexOS (Vault S and XL series).

What OS, software, and firmware versions are required for the Capture Drive Adapter?

The minimum required OS versions to use the Capture Drive Adapter are:

- Mac: macOS 10.14.4 and Capture Drive Dock or Capture + Transfer Drive Dock with firmware 1.04.
- Vault XL and S Series: CodexOS, software version 5.0 (includes required firmware for Adapter, and latest SDK for MXF/ARRIRAW support).

Which devices is the Capture Drive Adapter compatible with?

The Capture Drive Adapter for Compact Drive can be used with:

- Capture Drive Dock (CDX-75013, CDX-75013-1 and CDX-75014), firmware 1.04.
- Capture + Transfer Drive Dock (CDX-62103), firmware 1.04.
- Vault XL (CDX-62101), software version 5.0.
- Vault S (CDX-60002), software version 5.0.

How do I load the Compact Drive into the Capture Drive Adapter?

When inserting the Compact Drive into the Capture Drive Adapter the CODEX text on the top surface of each device should be aligned.

Can I use the Capture Drive Adapter for Compact Drive in camera?

The Capture Drive Adapter for Compact Drive is not compatible with any cameras; cameras such as ALEXA SXT and LF will continue to use SXR Capture Drive.