

## Thunderbolt 3 Dual-4K Docking Station for Laptops - Windows Only

TB3DK2DPW

TB3DK2DPWUE



\*actual product may vary from photos

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- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
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# Introduction

The TB3DK2DPW and TB3DK2DPWUE integrate Thunderbolt™ 3 technology to offer throughput at speeds up to 40Gbps. It lets you connect dual-4K monitors (60Hz) to your Windows® based laptop. Plus, the dock offers a range of input and output ports, such as DisplayPort, Gigabit Ethernet, USB fast-charge, USB 3.0, USB-C™, headphone, microphone, and Thunderbolt 3.

## Packaging contents

- 1 x Thunderbolt 3 dual-4K docking station for laptops
- 1 x Thunderbolt 3 cable - 40Gbps - 0.5 m
- 1 x universal power adapter
- 1 x power cord (NA) - 2 x power cords (UK/EU) for TB3DK2DPWUE
- 1 x instruction manual

## System requirements

- Host laptop with an available Thunderbolt 3 port
- Available AC electrical outlet
- DisplayPort equipped display(s) with cable(s) as needed (for additional external display)
- Thunderbolt 3 equipped display(s) with cable(s) as needed (for additional external display)

**Note:** To connect a second display, you must use one of the docking station's Thunderbolt 3 USB-C ports. Additional adapter purchases might be required to use the docking station with HDMI, DVI, or VGA displays. See the **Configure a display device** section for further details.

- A 4K-capable display is required to achieve 4096 x 2160p resolution (4K is also known as 4K x 2K)
- Any of the following operating systems:
  - Windows 10 (32-bit or 64-bit)
  - Windows 8 / 8.1 (32-bit or 64-bit)
  - Windows 7 (32-bit or 64-bit)

### Notes:

- The docking station only supports Windows operating systems.

- Video output capabilities are dependent on the video card and hardware specifications of your connected host laptop.

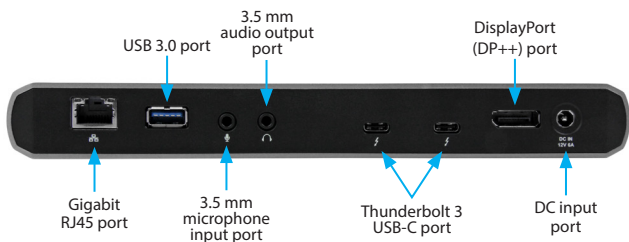
Operating system requirements are subject to change. For the latest requirements, please visit [www.startech.com/TB3DK2DPW](http://www.startech.com/TB3DK2DPW) or [www.startech.com/TB3DK2DPWUE](http://www.startech.com/TB3DK2DPWUE).

# Product diagram

## Front view



## Rear view



# About Thunderbolt 3

Thunderbolt 3 technology uses the USB-C connector, with bandwidth up to 40Gbps. It supports USB 3.1, DisplayPort 1.2, and PCI Express 3.0.

Thunderbolt technology supports both video and data throughput. However, it prioritizes video bandwidth to help ensure seamless display performance. The performance of the remaining dock functions depends entirely on your display configuration.

Thunderbolt 3 products must be used with Thunderbolt 3 cables.

Your computer's Thunderbolt 3 ports might not function properly until you update one or more of the following on your computer:

- BIOS
- Thunderbolt firmware
- Thunderbolt 3 controller drivers
- Thunderbolt 3 software

The required updates will vary depending on your computer.

For an up-to-date list of affected computers and instructions, visit <http://thunderbolttechnology.net/updates>. If your manufacturer isn't listed on the Thunderbolt website, contact your manufacturer.

## About DP alt mode (DisplayPort alternative mode)

DP alt mode is a specification that allows a DisplayPort video signal to transfer over USB-C. It enables the use of the USB-C interface for DisplayPort signals. Thunderbolt 3 supports the full USB-C standard, including support for DP alt mode. Because the docking station supports DP alt mode, you can connect Thunderbolt 3 or USB-C based video devices, cables, or adapters to the secondary Thunderbolt 3 port on the rear of the docking station.

## Thunderbolt temperature

Due to the high-performance of Thunderbolt technology, Thunderbolt products sometimes generate more heat than traditional hardware. Therefore, it's normal for the docking station to warm up when in use. As such, it's recommended that you don't place your laptop on the docking station's surface, as doing so will result in even higher temperatures.

These higher temperatures do not represent a safety hazard to users or to hardware.



# About USB 3.0 and USB 3.1 Gen 1

USB 3.0 is also known as USB 3.1 Gen 1. This connectivity standard offers speeds up to 5Gbps. Any mention of USB 3.0 in this manual or on the StarTech.com website for TB3DK2DPW or TB3DK2DPWUE refers to the 5Gbps USB 3.1 Gen 1 standard. Any mention of USB 3.1 Gen 2 refers to the 10Gbps Gen 2 standard.

## About the docking station USB-C ports

Not all USB-C ports support the full functionality of the USB Type-C™ standard. Some ports might only provide data transfer, and might not support video (DP alt mode). The docking station includes two USB-C ports:

- **Front-panel USB-C port:** This is not a Thunderbolt 3 port. It's a USB-C port that lets you connect peripherals using USB 3.0 (5Gbps) technology. This port supports data throughput only. The port does not support DP alt mode or USB power delivery.
- **Rear panel Thunderbolt 3 USB-C port(s):** These USB-C ports are Thunderbolt 3 ports with a USB-C connector. One port is for connection to a host laptop, while the second can be used as a Thunderbolt 3 port or a USB-C port. When used as a USB-C port, it lets you connect peripherals using USB 3.1 Gen 2 (10Gbps) technology. This port supports DP alt mode, but does not support USB power delivery.

**Note:** Either of the Thunderbolt 3 USB-C ports on the docking station can be used to connect to your host laptop.

## About the docking station ports

The USB-A (USB 3.0) port located at the back of the docking station is a standard USB 3.0 throughput port. When the dock is connected to a host laptop, this port provides a trickle charge to a selection of USB-charged devices.

The front USB-A (USB 3.0) port is compliant with Battery Charging Specification Revision 1.2 (BC1.2), which means that you can use the port to connect and charge a device faster than you can using a traditional standard USB 3.0 port.

This front USB 3.0 port can fast-charge a connected device even when the dock isn't connected to a host laptop. When the docking station is connected to a host laptop, the front USB 3.0 port functions as a Charging Downstream Port (CDP), which has simultaneous charge and sync capabilities.

The provided power adapter must always be connected to the docking station in order to charge a device using the front-panel USB fast-charge port.

# Install the docking station

The docking station is natively supported when connected to a Windows 10 or Windows 8 / 8.1 operating system. In these operating systems, the docking station will automatically detect and install the required drivers once connected to a Thunderbolt 3 port on your host laptop. However, Windows 7 users will need to download and install the required drivers. Follow the instructions below to install the docking station.

## Power the docking station

1. Select the appropriate power cord for your region and connect it to the power adapter.
2. Connect the power adapter to an AC electrical outlet and then to the docking station's **DC IN** (power input) port. The docking station should now be receiving power.

## Connect the docking station

1. Connect your external display(s) to the docking station (example, DisplayPort or Thunderbolt 3 displays).

**Note:** See the **Configure a display device** section for dual-display configuration requirements.

2. Connect your peripherals to the docking station (example, USB devices, RJ 45 network).
3. Connect the provided Thunderbolt 3 cable to a Thunderbolt 3 port on your host laptop and to one of the **Thunderbolt 3 USB-C** ports on the docking station.

**Note:** Either of the Thunderbolt 3 USB-C ports on the docking station can be used to connect to your host laptop.

## Install drivers

Install drivers in Windows 10 or Windows 8 / 8.1

Once the docking station is powered and connected to your host laptop, the required drivers should automatically install.

You might see a pop-up message requesting permission to allow the docking station to connect to your computer. If you see this pop-up message, do the following:

1. Click on the pop-up message.
2. On the following prompt, select **Always Connect** from the drop-down list.
3. Click **OK**. If required, follow any other on-screen instructions to complete the installation.

The drivers can also be found under the **Support** tab on our website at [www.startech.com/TB3DK2DPW](http://www.startech.com/TB3DK2DPW) or [www.startech.com/TB3DK2DPWUE](http://www.startech.com/TB3DK2DPWUE).

### Install drivers in Windows 7

When the docking station is powered and connected to your host laptop, you need to install the required drivers.

You might see a pop-up message requesting permission to allow the docking station to connect to your computer. If you see this pop-up message, do the following:

1. Click on the pop-up message.
2. On the following prompt, select **Always Connect** from the drop-down list.
3. Click **OK**. If required, follow any other on-screen instructions.

### Install Ethernet drivers in Windows 7

1. Download the latest driver. Use a web browser and navigate to [www.startech.com/TB3DK2DPW](http://www.startech.com/TB3DK2DPW) or [www.startech.com/TB3DK2DPWUE](http://www.startech.com/TB3DK2DPWUE).
2. Click the **Support** tab.
3. Download the **Intel\_I21x.zip** driver.
4. When the download is complete, extract the contents of the compressed file that you downloaded.
5. Navigate to the location where you extracted the driver contents, and open the **Windows** folder.
6. Double-click the **Setup.exe** file and follow the on-screen instructions to complete the Ethernet driver installation process.

### Install USB drivers in Windows 7

1. Download the latest driver. Use a web browser and navigate to [www.startech.com/TB3DK2DPW](http://www.startech.com/TB3DK2DPW) or [www.startech.com/TB3DK2DPWUE](http://www.startech.com/TB3DK2DPWUE).
2. Click the **Support** tab.
3. Download the **Fresco\_FL1100.zip** driver.
4. When the download is complete, extract the contents of the compressed file that you downloaded.
5. Navigate to the location where you extracted the driver contents.
6. Double-click the **Setup.exe** file and follow the on-screen instructions to complete the USB driver installation process.

# Charge a device

If you're only using the front USB 3.0 port to charge a device, a connection to a host laptop isn't required.

- To charge a device, connect it to the USB 3.0 port located on the front of the docking station.

**Note:** This front USB 3.0 port can only fast-charge connected devices that comply with USB Battery Charging Specification Revision 1.2.

# Configure a display device

Use your Windows operating system to adjust display settings for multiple monitors. Your laptop hardware must support dual external displays through its Thunderbolt 3 port.

## Connect a display to the DisplayPort port

The docking station's DisplayPort connection supports DisplayPort 1.2, as well as DP++. Because the port supports DP++, you can use passive adapters or cables to connect different types of monitors to the DisplayPort port.

Type of Display	Adapter Needed (sold separately)
DisplayPort	None
HDMI	<a href="#">DisplayPort to HDMI 4K Audio / Video Converter</a> (DP2HD4KS)
DVI	<a href="#">DisplayPort to DVI Adapter</a> (DP2DVI2)
VGA	<a href="#">DisplayPort to VGA Adapter</a> (DP2VGA2)

## Connect a display to the Thunderbolt 3 USB-C port

You can also connect a display (or a display adapter) to one of the docking station's **Thunderbolt 3 USB-C** ports. One of the docking station's Thunderbolt 3 ports must remain connected to your host laptop.

Type of Display	Adapter Needed (sold separately)
DisplayPort	<a href="#">USB-C to DisplayPort Adapter Cable - 4K 60Hz</a> (CDP2DPMM1MB)
HDMI	<a href="#">USB-C to HDMI Adapter - 4K 60Hz</a> (CDP2HD4K60)
DVI	<a href="#">USB-C to DVI Adapter</a> (CDP2DVI)
VGA	<a href="#">USB-C to VGA Adapter</a> (CDP2VGA)

Visit [www.StarTech.com](http://www.StarTech.com) for a range of USB-C video adapters and cables.

**Note:** The docking station lets you connect two 4K displays.

Video adapters sometimes limit the maximum available resolution. Check the documentation of the video adapter to determine its maximum supported resolution.

## Connect multiple Thunderbolt 3 displays in a daisy chain

You can also set up dual displays using multiple Thunderbolt 3 displays in a daisy-chain configuration.

**Example:** You can connect a Thunderbolt 3 display to the **Thunderbolt 3 USB-C port** on the docking station. You can then connect another Thunderbolt 3 device, such as a second Thunderbolt 3 display, through the first Thunderbolt 3 display.

## Supported video resolutions

Thunderbolt technology supports both video and data throughput. However, it prioritizes video bandwidth to help ensure seamless display performance. The performance of the remaining dock functions depends entirely on the display configuration you used.

The docking station supports the follow maximum resolutions:

Number of Displays	Ports	Maximum Resolution
1	DisplayPort port	4096 x 2160p (up to 60Hz)
1	Thunderbolt 3 USB-C port	4096 x 2160p (60Hz)
2	DisplayPort port and Thunderbolt 3 USB-C port	4096 x 2160p (up to 60Hz) and 4096 x 2160p (60Hz)

- Depending on the configuration and the supported resolutions of your connected monitor(s), the docking station can support video resolutions lower than specified above.
- In a multi-display configuration, set the refresh rates on each of your connected monitors to the same values, otherwise your monitors might not properly display.
- Video output capabilities are dependent on the video card and hardware specifications of your connected host laptop.
- Certain monitors may be limited to 4K at 30Hz when connecting through DisplayPort. (See [Trouble Shooting](#) for further details.)

# Bandwidth allocation

Thunderbolt technology carries video and data bandwidth, and it prioritizes video bandwidth to help ensure seamless display performance. The performance of the remaining dock ports (for example, the USB 3.0 ports) depends entirely on the display and I/O (input and output) configuration that you have used.

When multiple high-resolution displays are connected, the docking station needs to allocate additional bandwidth to the displays, and the extra bandwidth is reallocated from the other I/O ports on the docking station. In this situation there is less bandwidth available for the remaining ports (for example, the USB 3.0 ports).

The bandwidth allocation table outlines the approximate download bandwidth allocation values. The allocation amount depends on the number and the resolution of your connected displays.

<b>Video and I/O Configuration</b>	<b>DisplayPort Resolution</b>	<b>Thunderbolt 3 USB-C Resolution</b>	<b>I/O Bandwidth Remaining</b>
Data only (No Displays)	N/A	N/A	Download: 22Gbps Upload: 22Gbps
DisplayPort (Single Display - 4K)	4096 x 2160p (Up to 4K - up to 60Hz)	N/A	Download: 22Gbps Upload: 22Gbps
Thunderbolt 3 USB-C (Single Display - 4K)	N/A	4096 x 2160p (4K - 60Hz)	Download: 22Gbps Upload: 22Gbps
DisplayPort and Thunderbolt 3 USB-C (Two Displays - Dual-4K)	4096 x 2160p (4K - up to 60Hz)	4096 x 2160p (4K - 60Hz)	Download: 8Gbps Upload: 22Gbps

- The bandwidth values are approximate and depend on several variables including the number, type, resolution, and refresh rate of your connected display(s).
- When connecting a display to one of the Thunderbolt 3 USB-C ports, a USB-C video adapter may be required, depending on the input of your display.

# Troubleshooting

If you are experiencing issues, there are some quick tests that you can complete to narrow down the source of the issue.

## Update your computer to use Thunderbolt 3

Visit <http://thunderbolttechnology.net/updates> and look for your computer in the list of affected computers. If your computer is listed, then you must update your computer for its Thunderbolt 3 ports to function properly. To update your computer, follow the instructions on the website or contact your manufacturer.

## Verify that your components are Thunderbolt compliant

1. Make sure that you are using Thunderbolt compliant cables. First-generation Thunderbolt and Thunderbolt 2 use the same connector type as Mini DisplayPort. If you are using a Mini DisplayPort cable that is not Thunderbolt compliant, replace the cable with one that is compliant.
2. Make sure that the port on your computer is Thunderbolt 3 compliant. Thunderbolt 3 uses the USB-C connector type, but not all USB-C connectors are compatible with Thunderbolt 3. If you are using a USB-C port that is not Thunderbolt 3 compliant, switch to a port that is Thunderbolt 3 compliant.
3. Make sure that your peripheral is Thunderbolt compliant. If you're not sure, check with the manufacturer.

## Replace the Thunderbolt cable

- Use the Thunderbolt peripheral with a different cable that is Thunderbolt compliant.

## Test the Thunderbolt peripheral

1. Use a second Thunderbolt peripheral, and see if it works. Ideally, the second peripheral is one that you know works in other setups. If the second peripheral works in the current setup, then there is probably an issue with the first Thunderbolt peripheral.
2. Use the Thunderbolt peripheral with a second setup. If it works in the second setup, then there is probably an issue with the first setup.

## Important operation notes

- Certain monitors may be limited to 4K at 30Hz when connecting through DisplayPort. These monitors include the following models: Dell P2715Q, Viewsonic VX2475Smhl-4K, Philips 288P6LJEB, LG 31MU97C-B, Asus PB287Q (these models will need to be set to 4K at 30Hz)

# Technical support

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For the latest drivers/software, please visit [www.startech.com/downloads](http://www.startech.com/downloads)

## Warranty information

This product is backed by a three-year warranty.

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