# Connectivity Best Practices and Trouble Shooting Guide

## FOR USB 2.0, 3.0, USB-C CAMERAS

Nothing is more frustrating than being ready to shoot, but getting stopped dead in your tracks when a tethered capture session is not cooperating.

**Getting started**

First, make sure that your software supports your camera make and model for tethered shooting.

- Confirm software and operating system support for your camera »

**Download the most recent version of your software**

Software doesn't always auto-update so make sure your software is installed correctly and all current updates have been made. Software offers RAW file support and tethering support separately for camera models.

Be sure your camera is supported by checking here: www.tethertools.com/software

- SmartShooter updates »
- Lightroom for Mac OS / Windows updates »
- Capture One Pro for Mac OS / Windows updates »
- DarkRoom updates »

**Ensure your camera's firmware is up-to-date**

If you are not familiar with updating your camera firmware, please view these links for the latest firmware updates:

- Canon »
- Nikon »
- Sony »
- Panasonic »
- Phase One »
- Hasselblad »
- Fujifilm »

**Establish your connection**

1. Turn on your computer and login. Keep camera powered off.
2. Ensure no software is running in the background, either as an application in the Tool Bar / Dock or in the System Tray / Menu Bar.
3. Open tethering software you will use to receive images.
4. Start tethered capture session in software.
5. Turn on the camera. Software should detect connected camera.
6. Begin shooting to see images appear in software.

**Connection issues**

If your connection was working during a tethered capture shoot but has dropped, here are steps to recover from a dropped connection:

1. Turn off the camera.
2. Avoid using adapters, hubs or extensions during troubleshooting unless one is recommended for your particular camera or computer.
3. Ensure your cable is snug in the port and secured with cable management device.
4. Disconnect the camera from the computer.
5. Close software and ensure that no other software is running in the background.
6. Open tethering software.
7. Reconnect the camera.
8. Turn on the camera and try tethered shooting.

*If this sequence does not work, please restart the computer and repeat the Getting Started process from above.*

## BEST PRACTICES WHEN SHOOTING TETHERED

**Ensure your camera's sleep mode is turned off**

The computer needs to recognize the camera at all times during a tethered shoot. If your camera goes into sleep mode, the computer may not recognize the connected camera and cause the tethered connection to drop.

**Nikon users: remove the memory card out of your camera**

When shooting tethered with Nikon cameras, and many software programs, the images are not written to the memory card in the camera; they bypass the card and are written to the computer's hard drive in the folder you designate your images to be saved. If you have a card full of data, or a card in your camera at all, it could interfere with the data transfer. It's best to simply remove it. (This is not applicable to those shooting with Smart Shooter, as the images can be saved to both the card and computer file simultaneously.)

**Check battery charge**

If your camera battery charge is low, you may find that tethering connections drop frequently. To ensure a solid connection, replace with a freshly charged battery or utilize Tether Tools ONsite Relay Camera Power System for uninterrupted power.

**Canon R series cameras**

The Canon R's and other select cameras do not allow turning off Power via USB-C. This can cause data and power to go through your cable at the same time, potentially damaging your cable and interrupting your tethered connections. For these cameras, we recommend using these cable combinations to ensure optimal data transfer and improved connectivity:

A) TetherPro USB 3.0 (A) to C Cable plus an adapter like this one, OR

B) TetherPro Right Angle Adapter Cable 20" + TetherBoost Pro USB Core Controller ( USB-C 3.2 Gen 2 connection).

For more information, See Here

## CAMERA SETTINGS

**USB-C power delivery setting**

Many current camera models utilize a USB-C connection. These connections can provide the camera with the ability to charge the battery over USB-C and/or to power the camera via USB-C, when connected. While these features can be beneficial in some situations, USB-C Power Delivery/Power Supply can also cause problems with tethering. Therefore, we always recommend turning these settings OFF when connecting for tethering.

*Note: Not all USB-C cameras provide a setting to turn this feature off.*

**Tethering settings**

Some camera manufacturers, including Sony, FujiFilm, and Nikon have camera settings that affect how the camera behaves when connected via USB. In some cases, these settings can prevent the camera from being recognized properly by tethering software. Please be sure to consult the manual for information about what camera settings, if any, are required for a tethered connection.

## USB-A 3.0 CONNECTIONS

**Dropped connections or no connection at all with a USB 3.0 camera**

Cameras that utilize USB 3.0, or higher connections can sometimes have difficulty connecting to computers when using USB-A style ports. The core issue is that computer manufacturers, mostly to be as efficient with power as possible, either under-power or dynamically-power their USB 3.0 ports. This issue can affect many of the most popular camera models from Nikon, Canon, Sony, Phase One and others.

As a solution, we recommend the TetherBoost Pro which conditions the line and regulates the power from camera to the computer, eliminating these limitations and allowing your tethered connection to operate up to full USB 3.0 speeds for tethering connections from 15' to 65' (4.6-20m) without any loss in signal. More informaiton on this below.

## TETHERING LONG DISTANCE

USB-spec suggests that the longest base cable that should be used for tethered photography is 16ft (5m). Every additional 16ft (5m) you will want to have a Core Controller, Active Extension cable or TetherBoost Pro Extension in the line.

**USB-C proper distance connections**

For USB-C, whether using a Pigtail (20") adapter cable, or up to a 15' (4.6m) cable, simply daisy-chain 16' TetherBoost Pro Units together until you reach the max recommended distance of 65' (20m).

**Connection setup**


**Always connect TetherBoost Pro to your computer, not your camera end of the connection.*

**USB 3.0 proper distance connections**

- **16' (5m) SETUP:** USB 3.0 Cable ▶ TetherBoost Pro
- **32' (10m) SETUP:** USB 3.0 Cable ▶ TetherBoost Pro ▶ Active Extension
- **48' (15m) SETUP:** USB 3.0 Cable ▶ TetherBoost Pro ▶ Active Extension ▶ Active Extension
- **65' (20m) SETUP:** USB 3.0 Cable ▶ TetherBoost Pro ▶ Active Extension ▶ Active Extension ▶ TetherBoost Pro ▶ Active Extension