

Use A GoPro in RightBooth – With a Second PC and the RightBooth Camera Controller App – Version 1.0.5

IMPORTANT: This solution applies to GoPro Hero 8, 10, 11 and Mini cameras only

IMPORTANT: This solution requires Windows 10 or 11 – 64 bit Operating System. It will NOT work on 32 bit Windows

Overview

This document explains how to configure a system that uses two computers (PC 1 and PC 2) that are networked together over a private WiFi router.

PC 1 runs a RightBooth recording event to send video recording and photo capture commands to PC 2 across the Windows network.

PC 2 runs the RightBooth Camera Controller app and the Camera Tools app. It also has a GoPro connected to it by a USB lead. The Camera Controller app on PC2 receives commands sent from RightBooth on PC 1. The Camera Controller app then controls the local GoPro to record videos and take photos, which are then downloaded onto PC 2. The files are then transferred wirelessly over the network back to PC 1 for further processing by RightBooth.

In this configuration, PC 2 can be a small, lightweight, low spec, battery powered device that is capable of running Windows 10 or 11, (64 bit OS), such as a mini pc, a stick pc or a tablet (such as a Surface Pro).

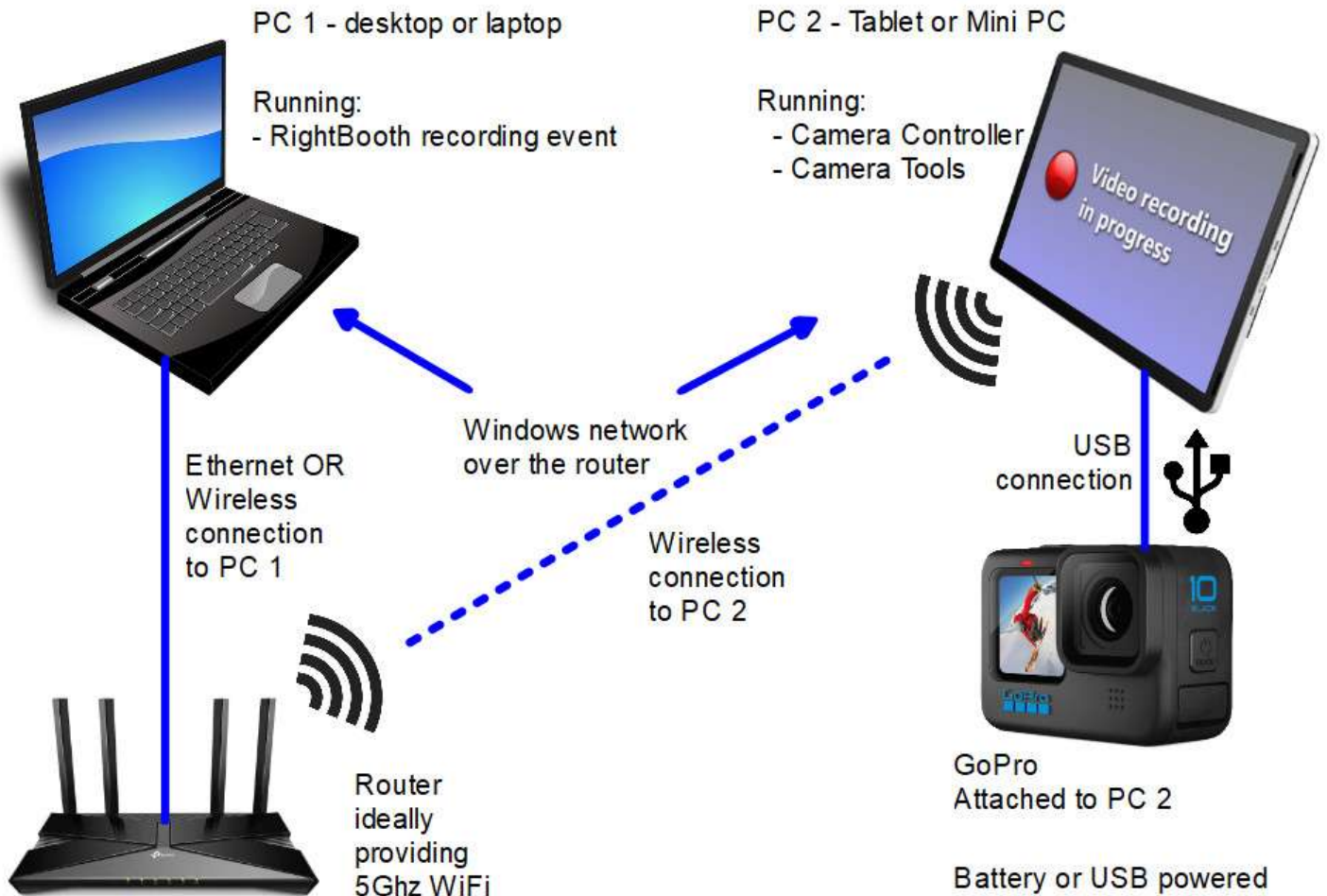
This solution avoids the requirement to use the GoPro WiFi, which can prove to be unreliable in some environments.

Suitable For

- 360 spinner booth equipment
- Roaming video and photo capture scenarios

Configuration 1 – Using a Surface Pro tablet for PC 2

In this configuration, we show a GoPro connected to a Surface Pro 4 tablet running 64 bit Windows. The GoPro and the Surface tablet can be fastened together and used either as a roaming video recorder OR both can be connected to a 360 spinner booth arm...



Surface Pro Details – Typical specification



- Surface Pro 4 - 64 bit
- 64 bit Windows
- Weight: 780g
- Price (refurbished): £150

Total weight:

Surface tablet + GoPro + Internal battery:
900g minimum

Configuration 2 – Using a Stick PC for PC2

In this configuration, we show a GoPro connected to a small Stick PC that is powered by a Powerbank battery. All 3 devices are shown attached to a 360 spinner booth arm...



Powerbank Battery Details – Typical Specification



- Powerbank battery - 10000mAh
- Size: 140mm x 65mm x 15mm
- Output: DC 5V 3A
- Weight: 228g
- Price: £13

Stick PC details – Typical Specification



- Intel Atom x5-Z8350 Quad Core 64 bit
- 2Gb RAM 32Gb eMMC
- Windows 10 Home or Pro 64 bit
- Size: 3.9" x 1.5" x 0.5"
- Weight: 60g
- Power input: DC 5V 2A
- USB 2 x1
- USB 3 x1
- HDMI
- Micro SD slot
- Bluetooth
- Dual band WiFi
- Price: £129

With this equipment combination:

- the Powerbank provides power to the stick PC.
- the GoPro can receive enough power from the stick PC to keep the GoPro battery fully charged (via the USB 3 port).
- the GoPro can be run without its internal battery, although it is probably safer to keep the battery inserted.



Total weight: Stick PC + Powerbank + GoPro + Internal battery: **less than 400g**

Setting Up and Using a GoPro and the Camera Tools App on PC 2

This solution requires you to install 2 apps on PC 2:

- The RightBooth Camera Controller App. Referred to as '**Camera Controller App**' in this document
- The Camera Tools for Heros App. Referred to as '**Camera Tools App**' in this document.

The Camera Controller App (see later) is used in these configurations to communicate with the Camera Tools App, which in turn will control the GoPro camera that is connected to PC 2 by a USB lead.

The Camera Tools App that can be purchased and installed separately here:

<https://www.toolsforgopro.com/cameratools> - Cost: 10 Euros (approx).

Note: If you experience problems with the Camera Tools App you can contact the app developer at:

<https://www.toolsforgopro.com/contact>

For all other technical enquiries, contact support@rightbooth.com

IMPORTANT: Make sure you are running the latest version of the Camera Tools App (version 1.5.0 or later). You can get the latest version here: <https://toolsforgopro.com/dl/herocameratoolswin.exe>

Make sure you install the full product, including the GoPro webcam utility.

The latest release notes for the Camera Tools App is available here:

https://www.toolsforgopro.com/dl/changelog_cameratools.txt

The Camera Tools App lets the Camera Controller App control your GoPro directly in order to record videos and take photos on the GoPro's SD card. The Camera Controller App can then download the video and photo files onto PC 2.

Supported Cameras

This solution can work with the following GoPro cameras over a USB connection (via the Camera Tools app):

Hero 8, 10, 11, Mini

Note: In this document we are using a GoPro Hero 8.

Preparing Your GoPro

- Make sure your GoPro is running with the latest firmware. Full instructions on how to do this can be found here: <https://gopro.com/en/us/update/>
- Make sure you are using an SD card that is fully compatible with your GoPro. See here for recommended cards: https://community.gopro.com/s/article/microSD-Card-Considerations?language=en_US
- Remove all files from your GoPro SD card. You can do this by formatting SD card on your GoPro, using the built in SD Format option available on your GoPro Menu. Then power off your GoPro, remove the battery for around 10 seconds, re-insert the battery and power it back on again.
- Set the correct Date and Time on your GoPro.

Note: You should consider reformatting your GoPro SD card each time prior to hosting an event.

Adding your GoPro into the Camera Tools App

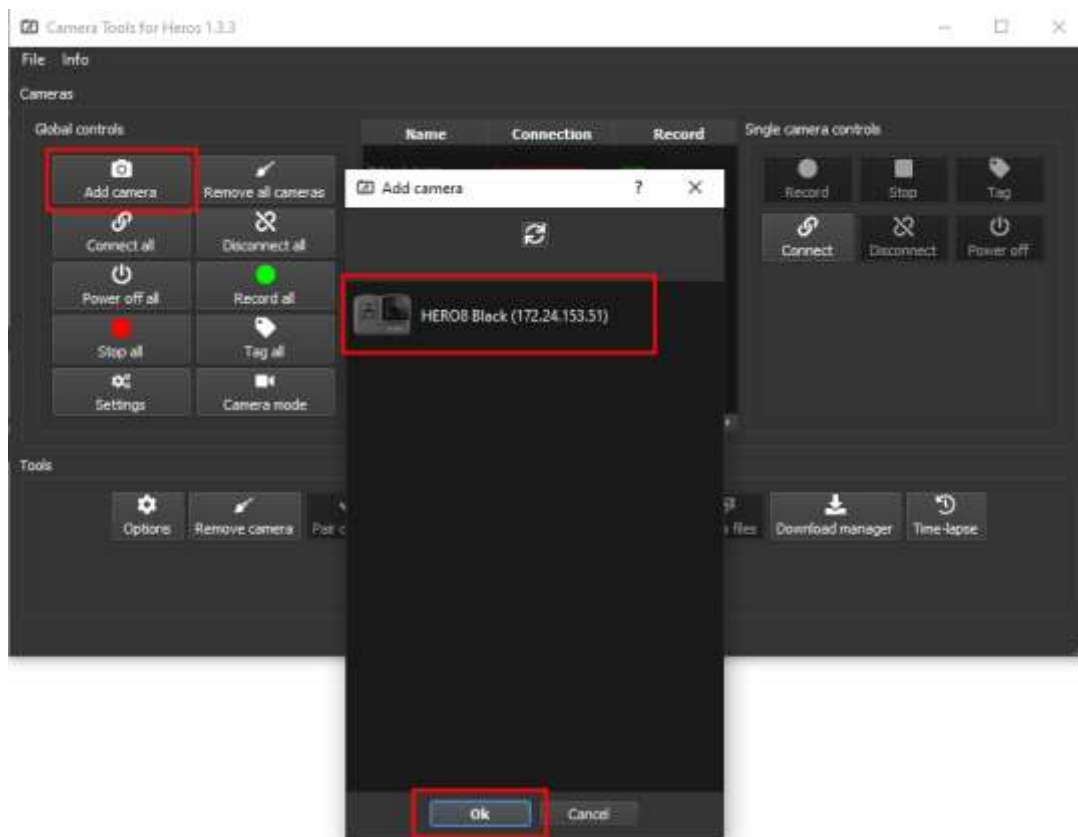
The first time you set up your GoPro on PC2 you will need to configure it for USB connection. This is normally a **one time set up process**, as follows:

- Turn on your GoPro.
- On the GoPro menu, select '**Preferences**', then choose '**Connections**'
- On the GoPro Connections menu, scroll down to the option '**USB Connection**'
- Set the USB Connection to: '**GoPro Connect**'
- Turn on PC 2
- Connect your GoPro to PC 2 using the USB lead provided with your GoPro. Ideally, you should connect your GoPro to a USB 3 port on your PC.
- The GoPro will then show the message:

USB Connected

Leave the GoPro in this mode and continue...

- Run the Camera Tools For Heros App on PC 2.
- Select the '**Add camera**' button.
- On the 'Add camera' panel, choose the '**USB**' option and click the OK button.
- You should now see your camera listed for selection. Choose your camera and click the **OK button**.
- In our example we are adding the **HERO8 Black**...

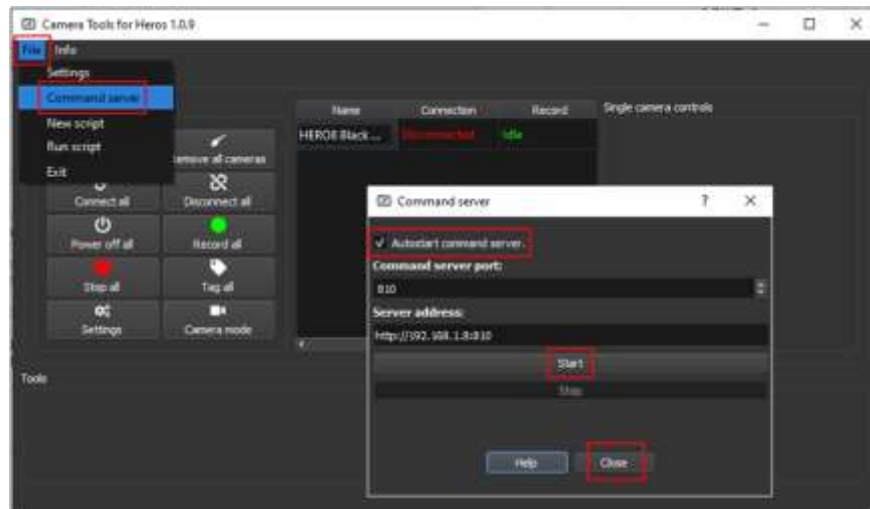


Your GoPro will now be added to the camera list. The Camera Tools app will now remember your camera between sessions so you should not need to repeat this step.

Set the Camera Tools 'Command Server' to Run Automatically

The Command Server is part of the Camera Tools App and it is the feature that the Camera Controller App will use to control your GoPro. Note: This step is usually a one time setup process.

- In the Camera Tools app, click the **File** menu option.
- Click the '**Command Server**' menu option.
- On the Command server panel, tick '**Autostart command server**'. Doing this will ensure that the Command Server will be automatically started each time you run the Camera Tools App, so you won't need to perform this step again.
- Click the **Start** button to start the Command Server running...

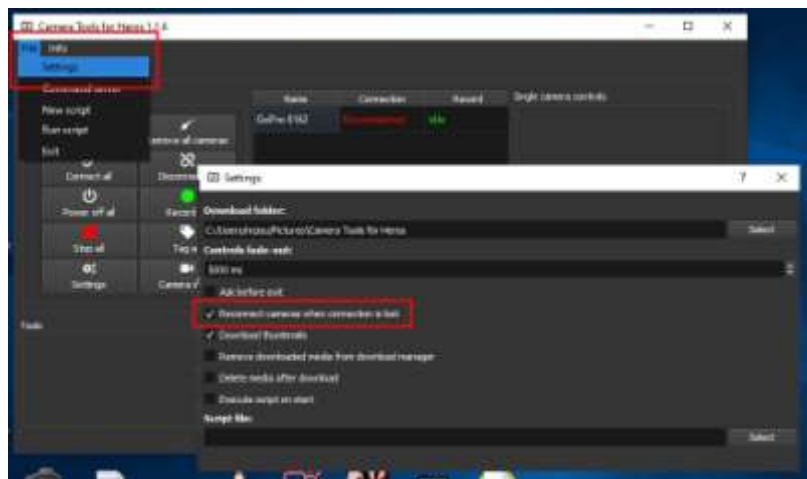


- On the Command server panel, make a note of the **Command server port** number and **Server address**. This information will be required when setting up the Camera Controller App (see later).
- Click the **Close** button on the Command Server window.

Remember, you have configured the Command Server to start automatically each time you run Camera Tools, so you will not need to repeat this step.

Set the Camera Tools App To Reconnect When Connection is Lost

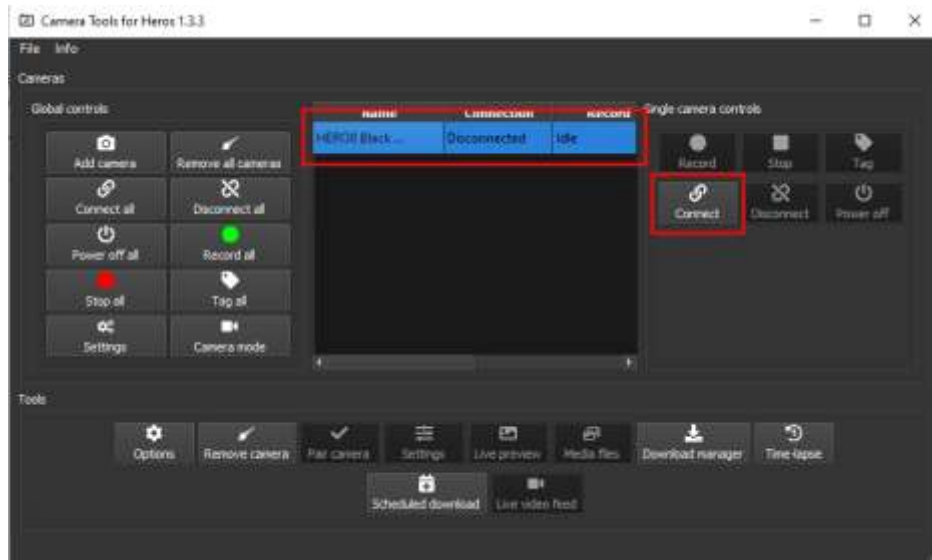
- Click the **File** menu option.
- Click the '**Settings**' menu option.
- In Settings, tick, **Reconnect cameras when connection is lost** and save your changes...



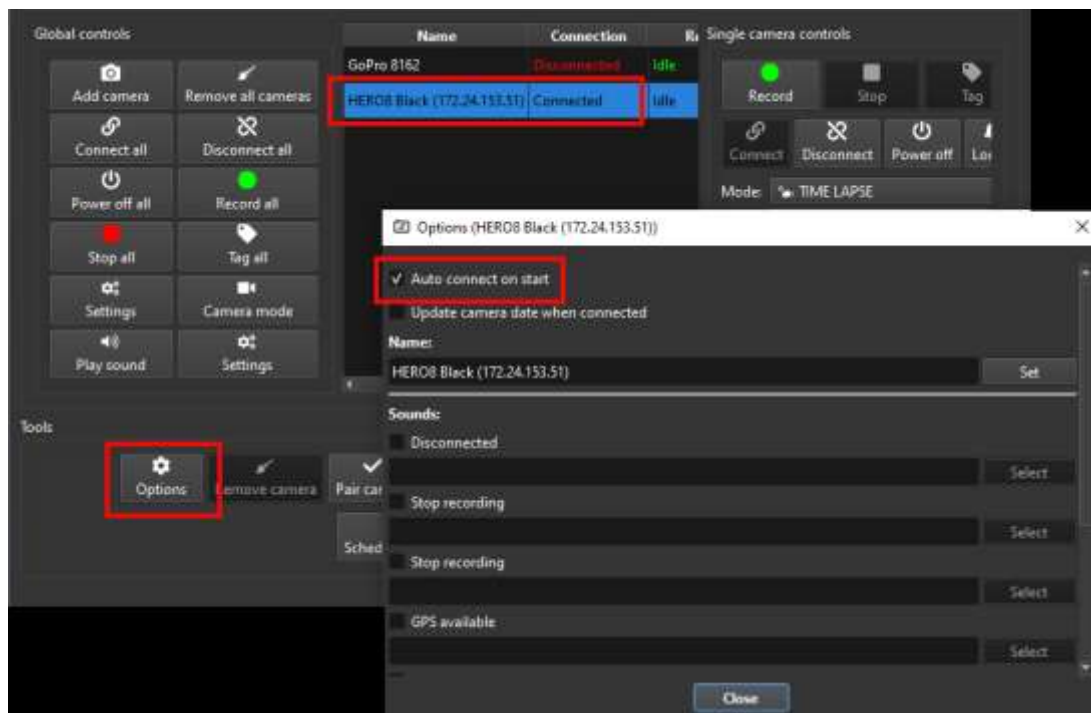
You will not need to repeat this step.

Connect your GoPro to the Camera Tools App

- In the Camera Tools App, click on your camera name in the list to select and highlight it, then click the **Connect** button:



- The camera will then be shown as **'Connected'**.
- Select your camera in the Camera list
- Click the **'Options'** button
- Tick the option: **'Auto connect on start'**...



Now, each time the Camera Tools app runs, it will automatically connect to your GoPro camera (as long as the camera is connected to the computer).

IMPORTANT – For Hero 8 cameras

If your GoPro camera continues to show the 'USB Connected' screen after it has connected to the Camera Tools app:

- select your camera from the list,
- make sure the **Video** option is selected in Camera Tools.
- click the '**Record**' button, followed by the '**Stop**' button to record a very short video.

Performing these actions should remove the 'USB Connected' screen from the camera and will allow all subsequent commands to be sent to the camera.

Set Up the Camera Controller App on PC 2

Download and install the RB Camera Controller App (version 1.0.5 or later) onto PC 2 which is freely available here:

<https://www.airevalleysoftware.com/apps/RBCCSetup.exe>

Make sure all the previous steps have been completed, make sure the GoPro is connected and make sure the Camera Tools App is running.

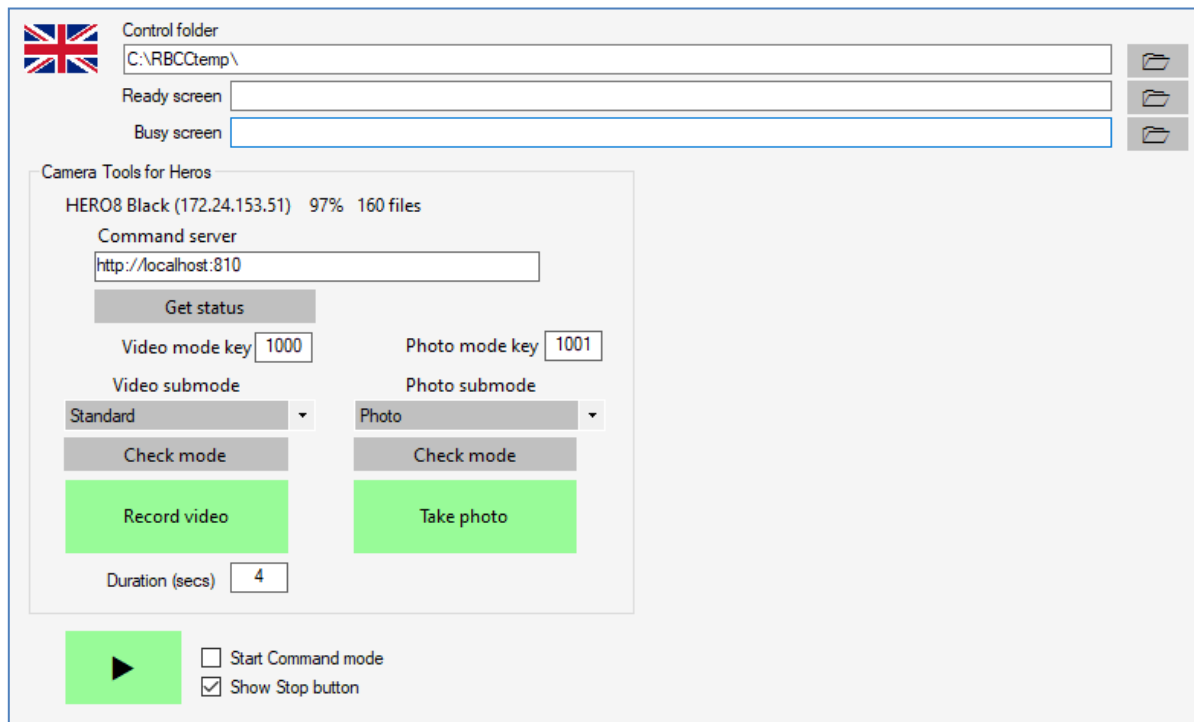
IMPORTANT: The Camera Controller App will be controlling the GoPro by sending commands to the Command Server in the Camera Tools App. By default, these commands are sent through Port 810 on your computer. These commands might get blocked by your Windows Defender Firewall or Virus Protection software. If you find that the Camera Controller App is not controlling your GoPro, try turning off your Windows Defender Firewall and/or stopping your Virus Protection software or making Port 810 available for use within these packages OR add C:\Program Files (x86)\RightBooth\RBCameraController.exe to the exemptions list in your firewall app. For details on how to do this, refer to your Windows Firewall/Virus Protection documentation.

Note: This is usually a 'one time' set up process, as follows:

- Run the RB Camera Controller app.
- If the app has successfully detected your GoPro you will see the Camera name, Battery level and file count showing in the panel (See screenshot below).
- Ensure the Command Server address is using the same Port as the one shown in the Camera Tools app. In our example this is 810, and it can be referenced using localhost, like this: **http://localhost:810**
- Click the **Get status** button to check that RightBooth has correctly set some values into the **Video mode key** and **Photo mode key** text boxes. You should not modify these values.
- Select a **video sub mode** and a **photo sub mode** option from the combo boxes provided. GoPro cameras provide a number of operating submodes for both the video recording and the photo capture modes, and these sub modes vary from model to model. We recommend you choose the standard **video submode** and **photo submode** options, as this will reduce the amount of recording that the GoPro will be required to perform. When you have chosen your submodes you can use both '**Check mode**' buttons to verify that the app correctly switches your GoPro between your chosen submodes.
- Select a **Control folder** for transferring files from the camera. This must be a folder that exists on your PC2 computer, one that is empty of files and one that you have permission to write to. If you are an Admin user I would suggest you create a new folder off the route of Drive C: such as '**c:\RBCCTemp**' and then choose that folder in the app (as shown in the screenshot). If you have restricted login rights, you

may need to create a sub folder in somewhere like My Pictures. Whichever folder you choose, make sure it is empty of files and please note that all the files will be regularly deleted from this folder.

- Use the **Record video** button and **Take photo** button to check that the Camera Controller correctly controls your GoPro and also receives the recorded files from the camera...



Note: You can click on the Flag icon to change the language of the app interface.

Command Mode

The Camera Controller App is now correctly configured to control your GoPro.

Click the large green 'Play' button. The Camera Controller app will now be placed in **Command mode** and it will wait for commands from RightBooth (see later).

While waiting for commands, the Controller will display a default green 'Ready' status screen.

When the Controller receives a command from RightBooth, a default red 'Busy' status screen will be shown. This screen will remain showing until the command has completed.

You can replace the default status screens with your own images by choosing image files for the '**Ready screen**' and '**Busy screen**' text boxes on the main panel.

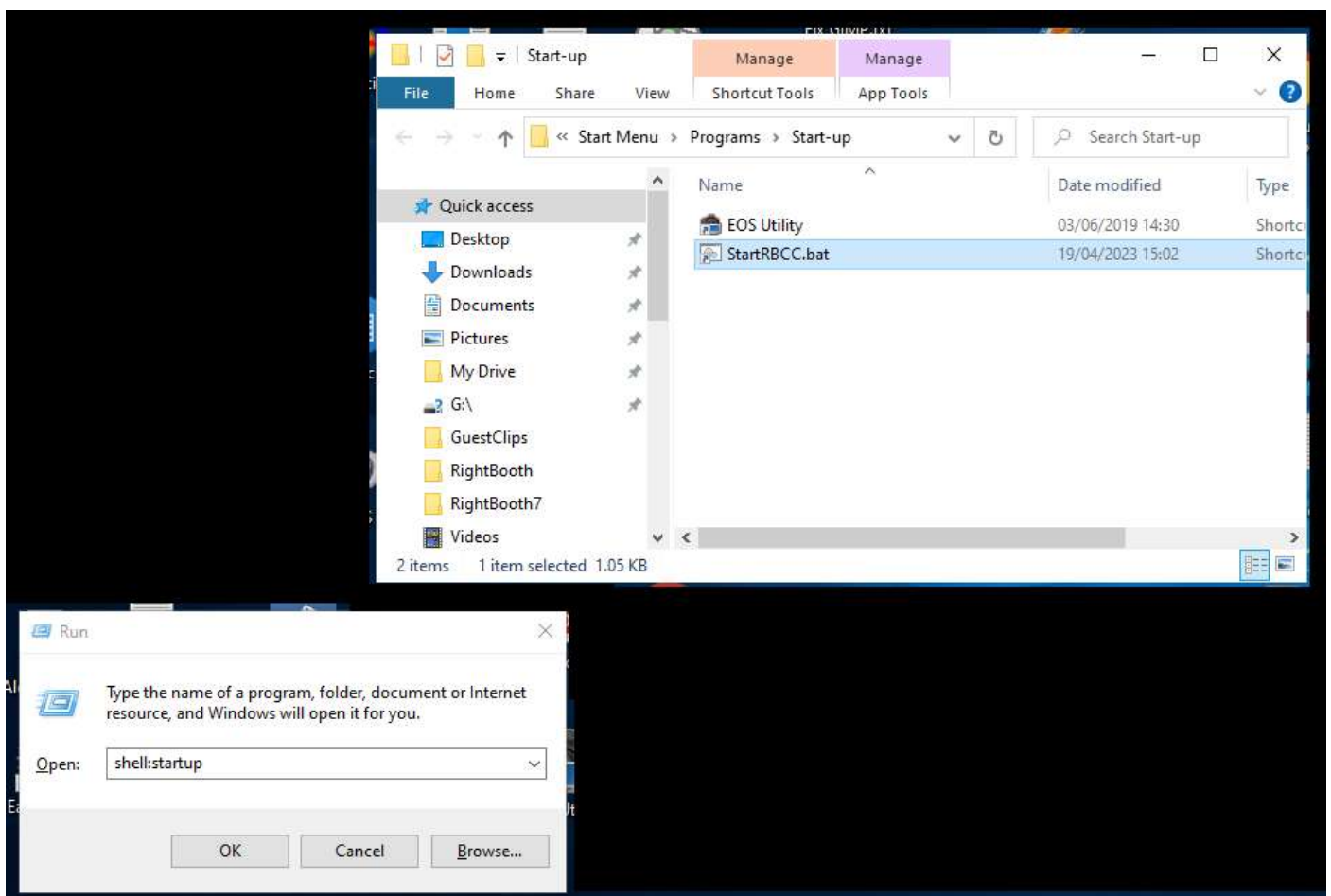
Automatically starting Command Mode

Once the Controller App has been correctly setup, you should tick the option: **Start Command mode**. This will ensure that the app goes into Command mode each time it starts running

Automatically Starting the Apps on PC 2

After both apps are correctly configured on PC 2 you will want to have them both start automatically when you turn on PC 2. To do this:

- In the Camera Tools app, ensure the option: '**Auto connect on start**' is ticked for your GoPro camera (see earlier).
- In the RB Camera Controller app, tick the option: '**Start Command mode**'
- Add a shortcut to the batch file: **C:\Program Files (x86)\RightBooth\StartRBCC.bat** in your Windows Start-up folder. This can be achieved by:
 - o running **shell:startup**
 - o right clicking in the Start-up folder
 - o choose to create a new short cut
 - o browse to the StartRBCC batch file and add it as a new short cut in the Start-up folder:



Automatically Logging Into Windows on PC 2

You will also find it useful to set PC2 to automatically log into your Windows account when the PC powers up (especially if you are using a stick PC without a monitor attached).

See this article for details on how to do this:

<https://tinyurl.com/u7cfd5ca>

Create A Windows Network Over A Private Router

This solution requires you to connect PC 1 and PC 2 to a private router to allow PC 1 to communicate with PC 2.

Here we provide a list of tasks for setting this up. For more details, please search the Internet to find complete information about this topic.

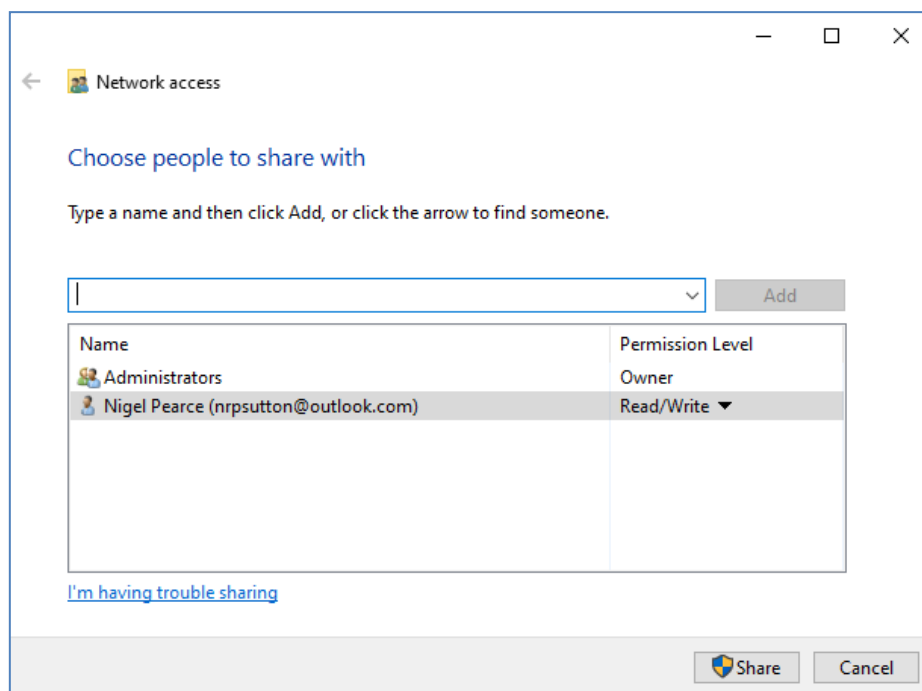
- Obtain a router.
- Configure the router to provide a private WiFi network (ideally with a 5GHz signal). Note: the router does not need to provide any Internet connectivity.
- Connect PC 1 to the router by Ethernet cable (or by WiFi if you prefer).
- Connect PC 2 to the router by its WiFi connection.
- Configure a shared, private Windows network on the two PCs, working across the router.

Share the PC 2 Control Folder

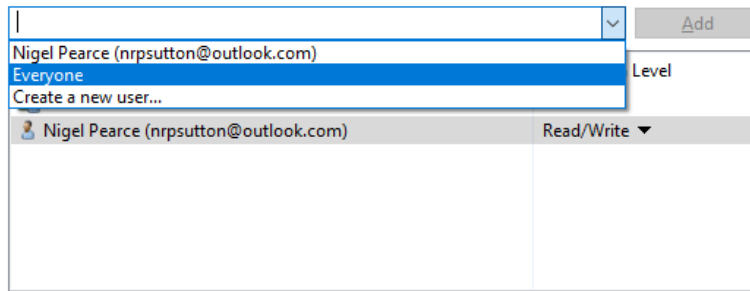
Note: The screen shots in this section are taken from the Windows 10 User Interface, but the principle is the same on Windows 11.

Once you have both your PCs configured to use a Windows network across your private router, on PC 2, share the **Control folder** on the Windows network, this is the folder chosen in the RB Camera Controller (see earlier). This will allow PC 1 to read and write files to the Control folder. To do this:

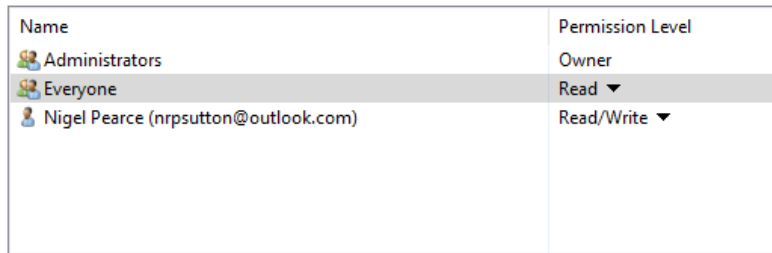
- On PC 2, run **File Explorer** and browse to your chosen Control folder, in our example this is: **c:\RBCctemp**
- Right click on the Control folder name and from the pop up menu select the menu option: **'Give access to'**, then select the sub-menu option: **'Specific people...'** :
- You will then see the **'Choose people to share with'** panel:



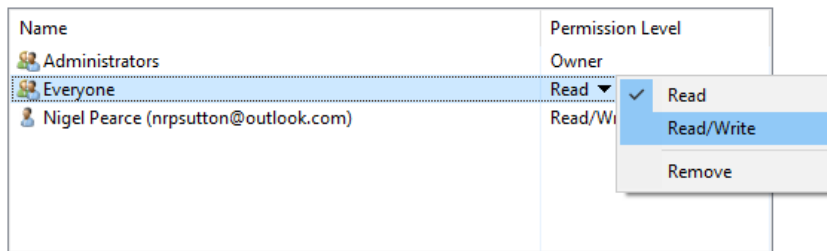
- Click the **Down arrow** and choose **'Everyone'**, then click the **'Add'** button:



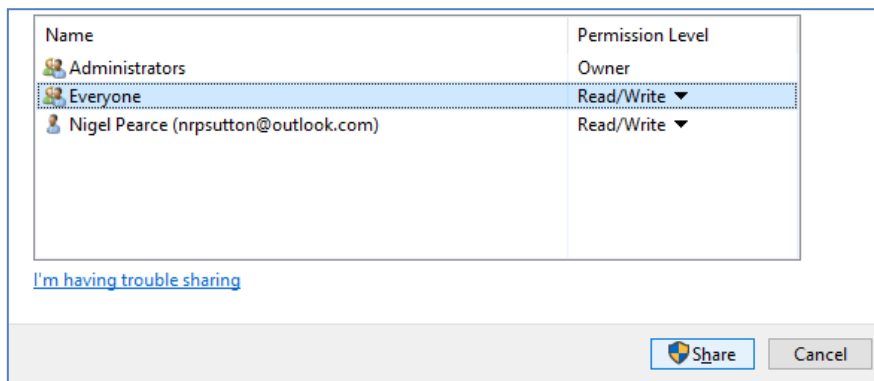
- **'Everyone'** will now be added to the Permissions list with the Permission Level **'Read'**:



- Click the **Down arrow** next to **'Read'** and choose: **'Read/Write'**:



- Everyone will now be set to **'Read/Write'**:



Click the **'Share'** button to share your Control folder on the Windows network.

Make a note of the Control folder's share name because you will be using this when setting up RightBooth on PC 1.

Click **Done** to complete the process.

Set Up RightBooth on PC 1

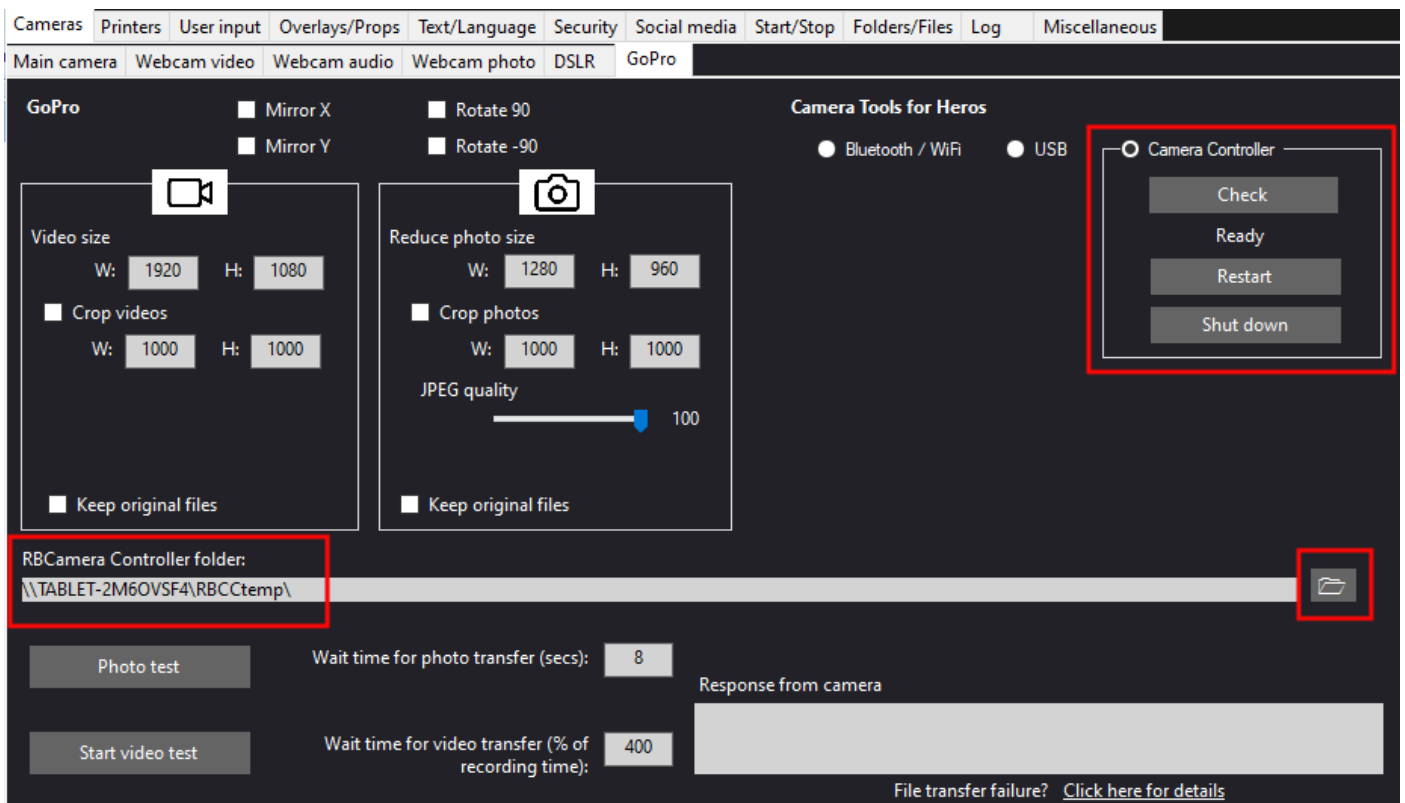
Before working through this section, make sure:

- PC2 is switched on and running both the apps: the Camera Tools app and the Camera Controller app.
- PC2 is connected to the router
- the GoPro is connected to PC2 and is being controlled correctly by the Camera Controller app.

We now turn our attention to PC 1.

- Turn on PC1 and make sure it is connected to the router.
- Install and run RightBooth on PC 1. You must be running version 7.11.1 or later.
- In RightBooth Settings → Cameras → GoPro, in the section Camera Tools for Heros, choose the option: **Camera Controller**
- Browse and select the **RBCamera Controller folder** that was previously shared on PC 2.

In our example screenshot you can see the shared **RBCctemp** folder has been chosen from PC 2 (this is: \\TABLET-2\M6OVSF4 ...

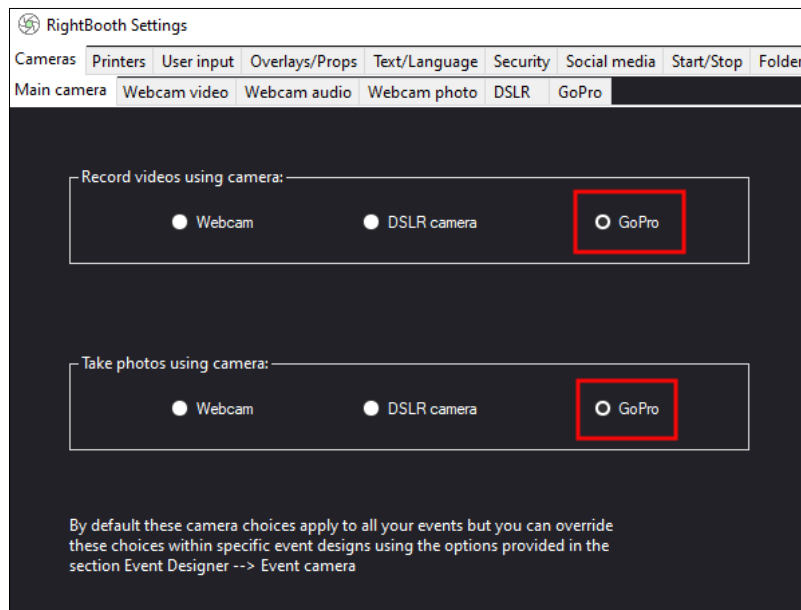


- In the Camera Controller section, click the '**Check**' button to check the status of the Controller app on PC2. You will receive one of the following notifications:
 - **App error** – The Controller app on PC2 is not responding. Check the Controller app is running on PC2.
 - **Folder error** – The PC2 shared Control folder is not accessible. Check your network.
 - **GoPro error** – The GoPro is not connected to the Controller app on PC2. Check the GoPro on PC2.
 - **Not in Command mode** – The Controller app is running but is not in Command mode. Put the Controller app into Command mode on PC2.
 - **Ready** – The Controller app is ready to receive commands.

When the Check button returns **'Ready'**, you can use the **'Photo test'** and **'Video test'** buttons to check that RightBooth receives photos and videos from PC2.

RightBooth is now configured to control your GoPro by sending commands to the RB Camera Controller App on PC 2.

Go to the RightBooth Settings section: **Cameras -> Main camera** and select the **GoPro** option for both video recording and photo capture:



Job done !

Now when you play RightBooth video recording events and photo capture events on PC 1, RightBooth will receive the GoPro videos and photos directly from PC 2.

Quick Start at Your Event Locations

How to start everything at your venue:

- Turn on your router. Wait for it to initialise.
- Turn on your GoPro.
- Ideally, reformat the SD card, then Power the GoPro Off
- Ensure the GoPro is connected to PC 2 with the USB lead.
- Turn on PC 2. This should auto logon to Windows (see earlier)
- Run the Camera Tools App on PC 2 then run the RB Camera Controller app on PC 2. Ideally, this should happen automatically using the StartRBCC batch file (see earlier).
- Turn on PC 1. Wait for it to connect to the router.
- Run RightBooth on PC 1.
- Go to RightBooth Settings → Cameras → GoPro
- Click the Check button in the Camera Controller section to check that RightBooth can communicate with the Camera Controller on PC2.
- Play your RightBooth event.

Problems Connecting to the GoPro or Transferring Files from the GoPro

- Make sure PC1 and PC2 are both connected to the router.

GoPro:

- Make sure your GoPro is running with the latest firmware. See Preparing your GoPro (see earlier).
- Make sure you are using a compatible SD card in the GoPro.
- Reformat the GoPro SD card so that it does not contain any files. Power the camera down, remove the battery, wait a while, re-insert the battery and power it back on.
- Set the correct Date and Time on your GoPro.
- Make sure the GoPro battery has plenty of charge.
- Make sure your GoPro, PC, laptop or tablet is **NOT** set to power down or go into Sleep mode.
- Ensure your GoPro Voice control option is turned **OFF**.
- Check the USB connection and cable between the PC 2 and the GoPro.

PC2:

- Make sure the **Firewall on your PC 2 is not enabled** OR alternatively add the HeroCameraTools.exe and the RB Camera Controller exe into your Firewall app's exemption list.
- Make sure **Camera Tools app is running** and that you have connected the GoPro as a USB camera.
- In Camera Tools, make sure you have ticked '**Autostart command server**'
- Make sure the Controller app is running in Command mode.

PC1:

- Make sure PC1 can access the shared Control folder on PC2. Use Windows Explorer to verify this.
- In RightBooth GoPro Settings, click the '**Check**' button to make sure it can communicate with PC2.
- In RightBooth GoPro Settings, increase the **Wait time for photos to 8 seconds** and increase the **Wait time for videos to 400**.