LeViteZer Control Software

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Disclaimer

Every thing here in this manual is subjected to be changed. Information and screenshoots may be different from the final product.

Current version is still an Beta version, which means that some features are missing or might not work properly.

Version Notes

Current LeViteZer Control version: v0.8.1

Current Box version: v0.0.7

Boxes

These are the boxes compatibles with this software

USB to SDI box

Simple box to control Black Magic Cameras. Does not have Ethernet control.

Big Box

Allows Control of Black Magic Cameras and Gimbals, it can be used with other peripherals, too. Provides Ethernet control.

Installation

Installing on Windows and Linux

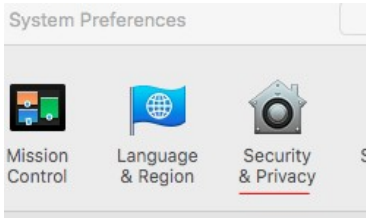
On Windows

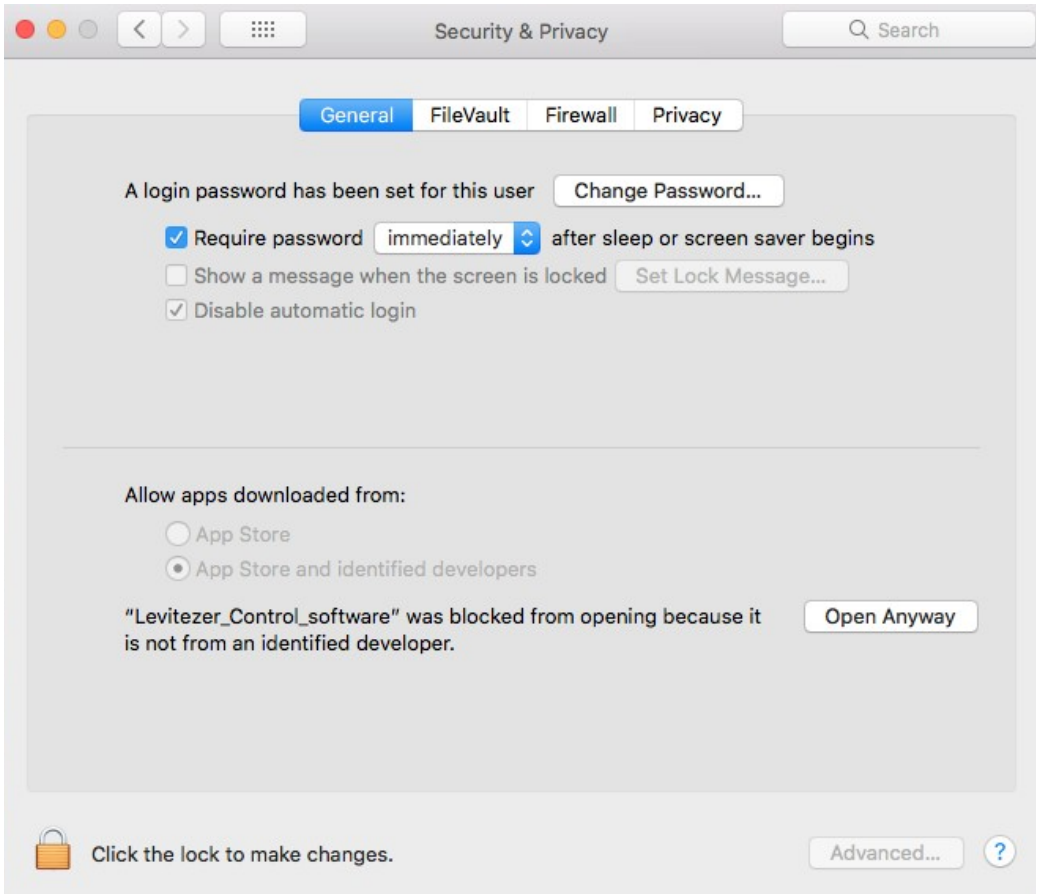
1. Unzip the file in any directory of your choice.
2. There should be an executable called “Levitezer Control.exe”, execute it to start.

On Linux an *.appimage file is provided. Make It executable and run it.

Installing on Mac

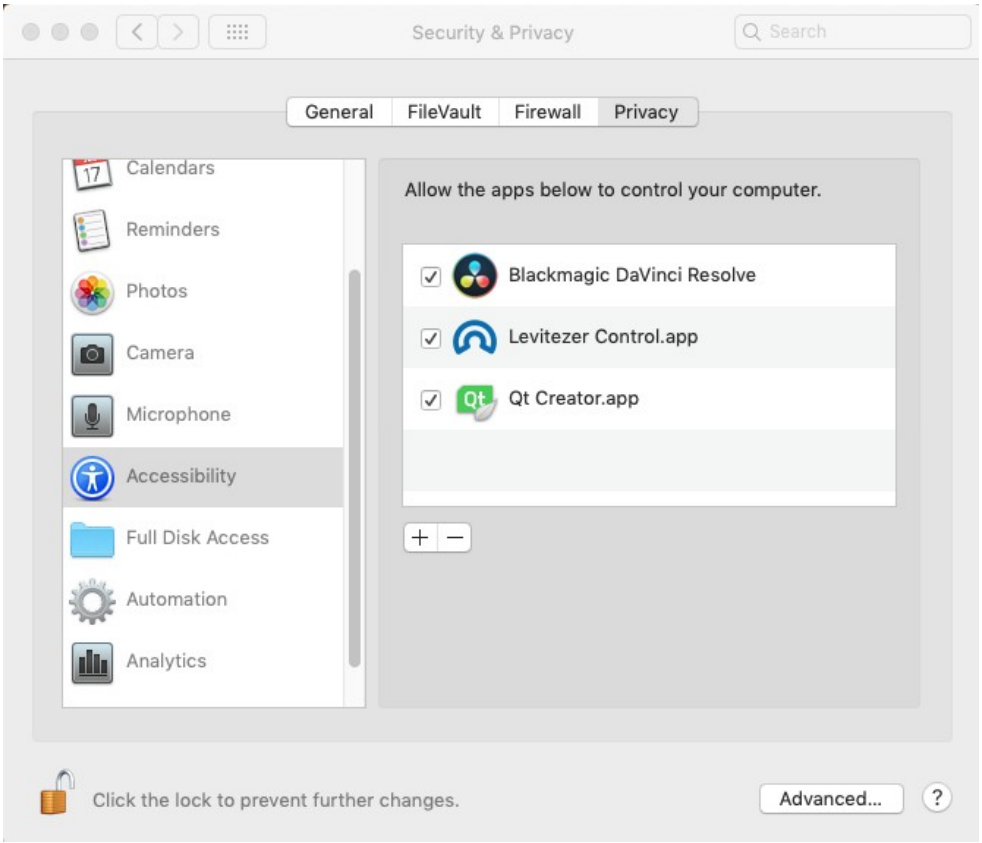
Once you download the file, you need to give permission to be opened. The first attempt to open the application will warn you this is a no secure application because it was download from Internet browser. Accept the dialog and then open Security and Privacy on System Preferences, then a “Open Anyway” button show up. After clicking it the app show run. Note that you only need to do this after download only.





Then place the application file wherever you want. It will be able to open just fine.

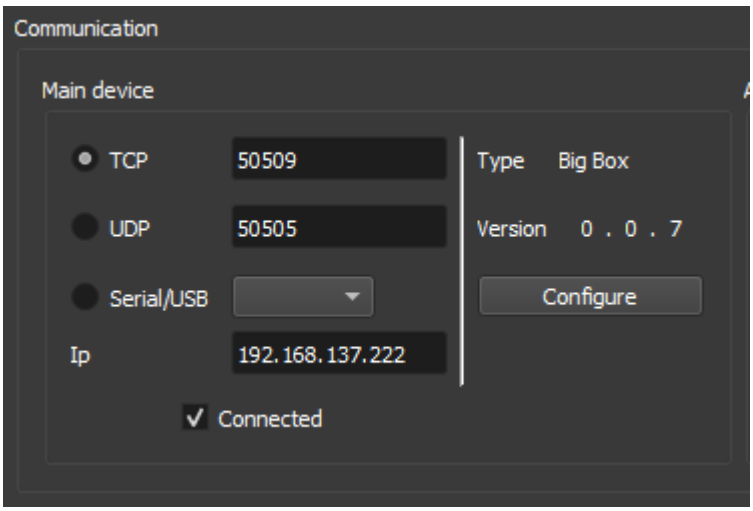
When using the application it might ask About giving accessibility permissions, this is necessary in order to use some controls like color wheels and Joystick. Make sure the application is white-listed as shown in the next picture. To reach this window go to settings→Security & Privacy→ Privacy →Accessibility.



Connecting to your Box

Over USB

On Settings Tab→ Main Device. Select “Serial/Usb” and then choose the port. On Linux and MacOs this port name starts with “/dev/tty”. On Windows the port name will be “COM” and a number.



Over Ethernet

The first time you will need to connect over USB and set the box configuration. Set Box IP address according to your network needs.

Alternatively, the computer IP address can changed to match the network of the box’s default IP address. Please, See Appendix 1: Changing computer IP address

Once configuration is correct two different Transport Protocols are available: UDP and TCP. Usually it is advised to use TCP. Select the Box port and IP address and make sure the “connected” checkbox is checked.

Default TCP port: 50509

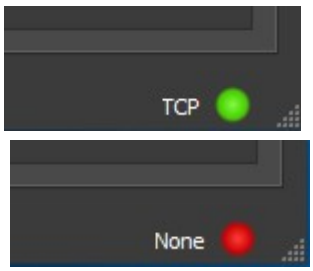
Default UDP port: 50505

Overall view of the application

Foot section

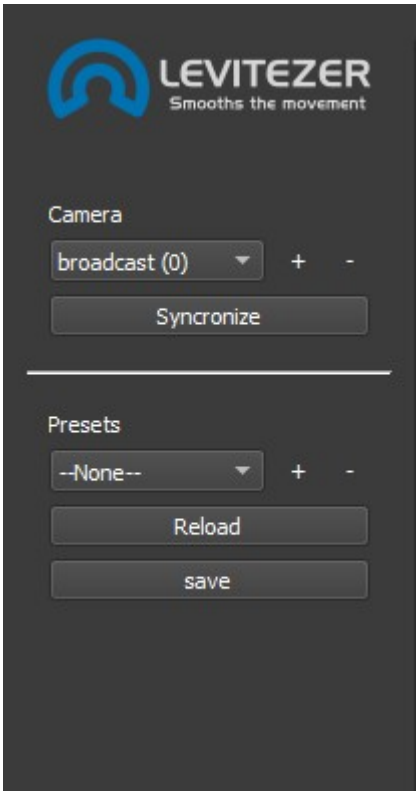
At the bottom left information messages may appear To let the user know about different issues, for example when a device was disconnected.

On the Bottom left status of connection is displayed by a LED light and the connection method which can be “None”, “Serial/Usb”, “UDP” or “TCP”.



Presets

Note: No all parameters can be used in a preset. For instance Tally light control won't change through different presets.



Creating or Coping a Preset

On the left bar, use the "+" button to create a preset by providing the name. The current parameters before creating the preset will be copied to the new preset.

Operating with Presets

After creating/selecting a preset you can manipulate the different controls and save their state into the selected preset by clicking "save" button. Then on the presets fast selections (See Main tab) Buttons. You can set every button to the desired preset and recall it by clicking it. Presets will be recalled when selected on the left panel as well.

While Editing a preset, any changes can be discarded by Clicking the "Reload" button.

Deleting a preset

Select it from the left panel list, then click the "-" button. This will delete it without confirmation.

Cameras

Adding Cameras

Similar to presets cameras can be added by clicking '+' button. This is basically to set the current camera id since the box we are connected to may have many cameras over SDI.

The id set on the camera must match with the actual id on the physical camera.

Id 0 is a broadcast id, meaning that all the cameras will receive the parameters.

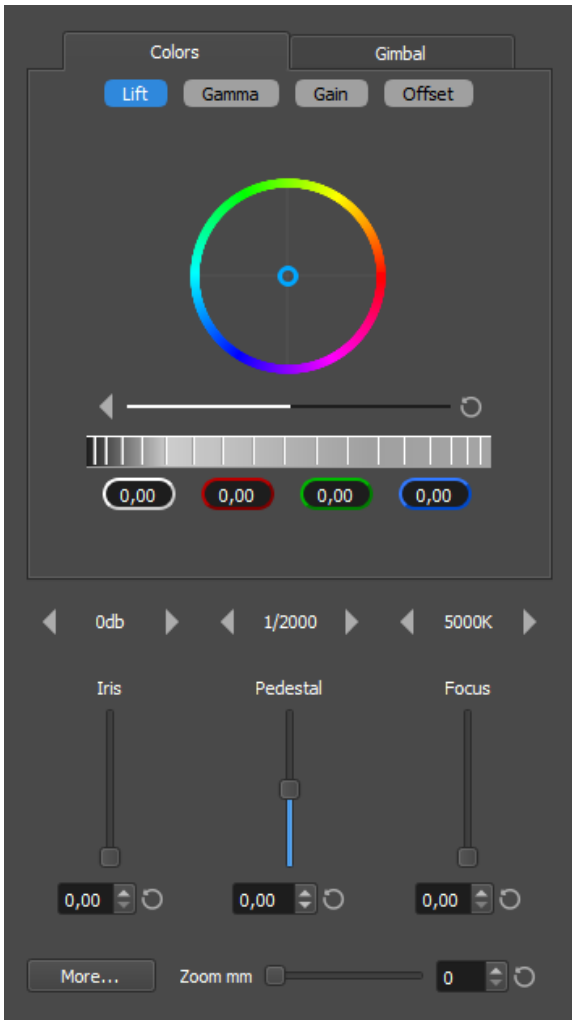
Camera Synchronization

Since we do not receive data from the camera the GUI controls are not reflecting the camera parameter states when the application starts up. Then before operate with presets it is recommended to synchronize with camera using the “Synchronize” button. Also it is important to synchronize whenever the camera parameters/settings are changed externally.

Deleting a camera

Select it from the left panel list, then click the “-” button. This will delete it without confirmation.

Main Tab



About Controls

Most of controls have at least 2 ways of control: Directly using mouse pointer and through scrollwheel. The scrollwheel is most of the time the slowest and smoother approach.

All the controls have a reset button (a circled arrow) that sets it to its default value.

Side Panel

This panel groups some of the essential controls for camera and gimbal.

Color Correction

Color Lift, Gamma, Gain and Offset can be controlled with the colored wheel and the blue tocken on the center (HSV) or with RGB sliders.

The current color values are presented on the luma, red, green and blue labels.

By Default the control mode is HSV. Hue is the angle of the token from the center of the wheel. Saturation is set as the distance between the center and the edge of the colored wheel. And Value is controlled by the gray wheel below the colored wheel, this gray wheel also controls the Y(luma).

The left button switches to RGBY mode, 4 sliders should appear in place of the colored wheel to control each variable.

Gimbal

On this tab we can access the a joystick and angle control. See Joystick section and Angle Control section to learn more

Camera Sensor and Lens Control

Below Color correction there are control for “Sensor Gain”, “Shutter Speed”, and “White balance” which have only a few values that can be selected.

Other Controls

When clicking “More...” button a list of other controlled shows up on the right side of the main tab

Click again to restore the right panel.

Dynamic Controls

This panel is customizable, to Add a control just click the plus button and then Select what control you want from the dialog. At this moment some do not work. Most of them in the “Gimbal” Selection. So use the ones on the “camera” selection or the “Grouped Controls” only.

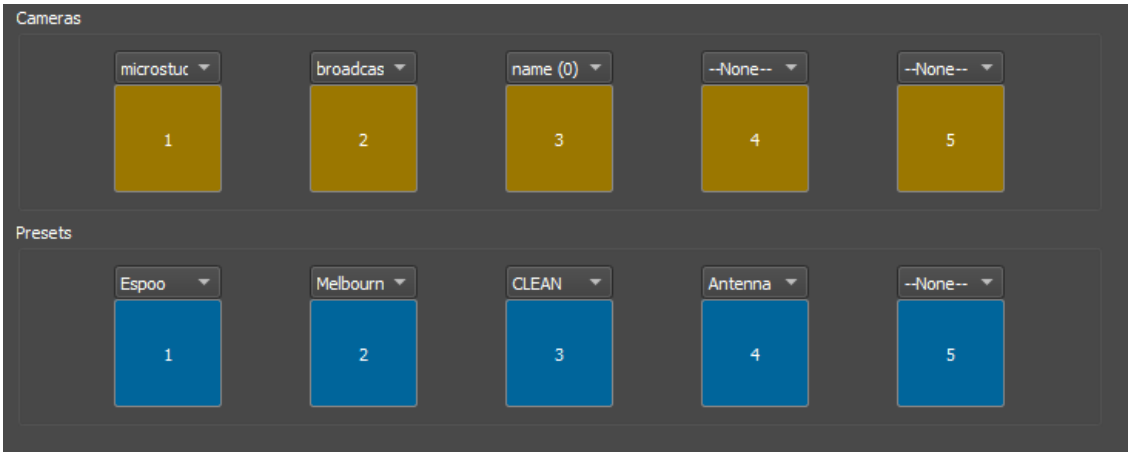
To remove a control just click the “-” button next to the name.

Fast Buttons

These are straightforward to use.

Jump between presets using the bottom row.

Jump between cameras on the top row.



Alternatively you can select these presets from a “Stream deck” device but at the moment we have not finished integrating it with our Application.

Importing and exporting presets

We can backup the presets to file and recover them on the future.

To Backup

Go to File → Export values. Save the *.levitzer file wherever you want.

To Restore

Go to File → Import values. Select your *.levitezer file from the file selection.

Flashing Firmware To Box

If you need to update your box with a hex file, follow the following steps.

Note: Make sure the Hex file is the correct one for your device.

1. Connect your box over Serial/USB
2. On the menu bar go to Tools →Box Updater

3. On the Box Updater window click "Select Hex File", then choose the hex file.
4. Click Upload button. Wait until the console shows "---Process finished---" message

Gimbals Parameters

Joystick

Speed may be changed using keyboard keys

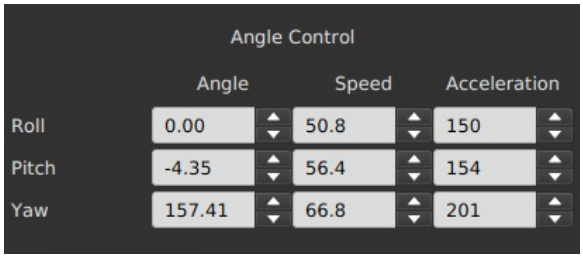
- 1 → slowest speed
- 2 → slow
- 3 → fast
- 4 → fastest

Also we can limit the axis we are controlling

- press and hold shift key to control Y axis only (Tilt)
- press and hold control key to control X axis only (Pan)

If Joystick is controlling a gimbal, acceleration can be changed by using right click on the mouse → configuration.

Angle Control



The current gimbal position (angle) will be saved every time a preset is saved. Then we can use the joystick to move to the desired position. Alternatively, we can input the angles directly.

The target speed and acceleration can be set per angle, they will be used upon recalling presets.

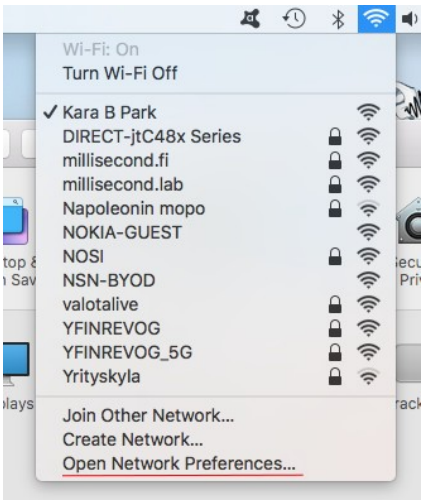
Appendices

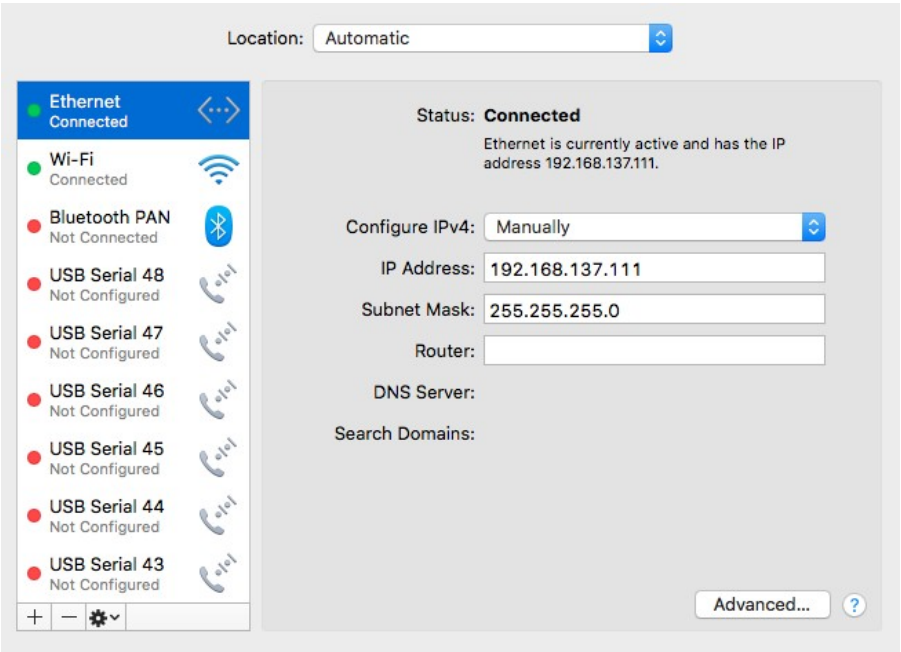
Appendix 1: Changing computer IP address

On Mac

The Box default IP address is 192.168.137.222. You need to change your computer IP so it is on the same network as the box.

- First connect a Ethernet cable to the computer
- On Mac you can do this by opening “Open Network Preferences” in the network icon on the desktop upper bar → select “Ethernet” on the left list → choose “Manually” on “Configure IPv4” field and fill the following text fields



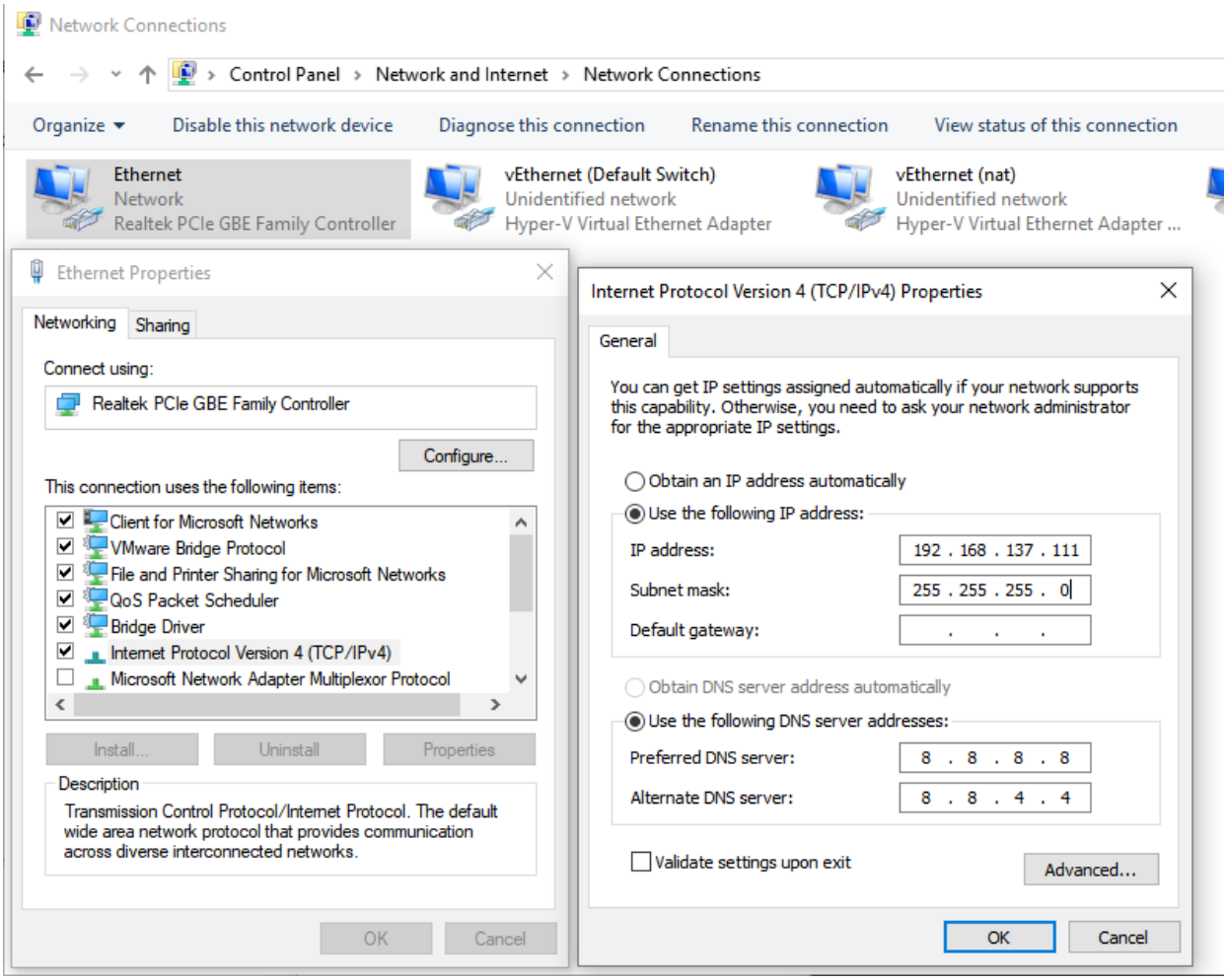


  - IP address = 192.168.137.x (x could be any number between 2-200 like 111)
  - subnet mask = 255.255.255.0

On Windows

1. Log on to the computer by using the Administrator account.
2. Click Start, point to Control Panel, and click Network Connections.
3. Right-click the local area connection that you want to modify and then click Properties. (Usually called “Ethernet”).
4. In the “This connection uses the following items box”, click Internet Protocol (TCP/IP), and then click Properties. The Internet Protocol Version 4 (TCP/IP) Properties dialog box appears.

5. Click Use the following IP address if you want to specify the IP address for the network adapter.
6. In the IP address box, type the IP address that you want to assign to this network adapter. Any IP addres on the range 192.168.137.2-192.168.137.200 should work
7. In the Subnet mask box, type 255.255.255.0.
8. Click OK. In the Local Area Connection Properties dialog box, click Close.
9. In the Local Area Connection Status dialog box, click Close.

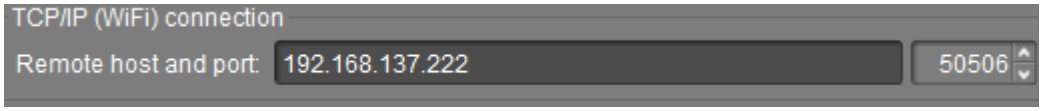


Appendix 2: Basecam GUI connection over Ethernet

Link to basecam GUI: https://www.basecamelectronics.com/files/SimpleBGC_GUI_2_68b7.zip

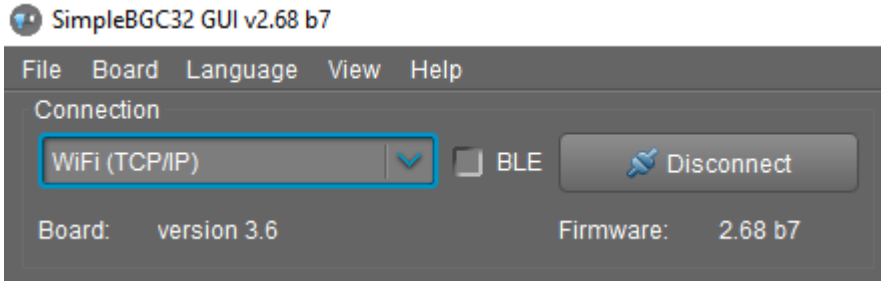
Note: To download a different version, modify the version number on the link.

To Connect to Gimbal through a Levitezer Box using Basecam GUI over Ethernet, go to File → Settings and set the box's IP address and port 50506 on the "TCP/IP (WiFi)connection"



configuration.

Click save, and then select WiFi(TCP/IP) on the connection and click connect.



Important Note: Once you are done with the Basecam GUI, you must restart the Box so it can work properly.