

# SPHERE

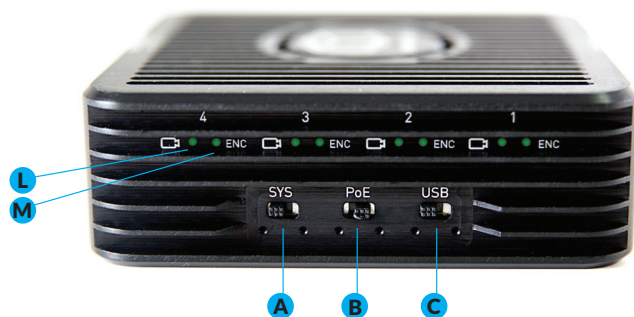
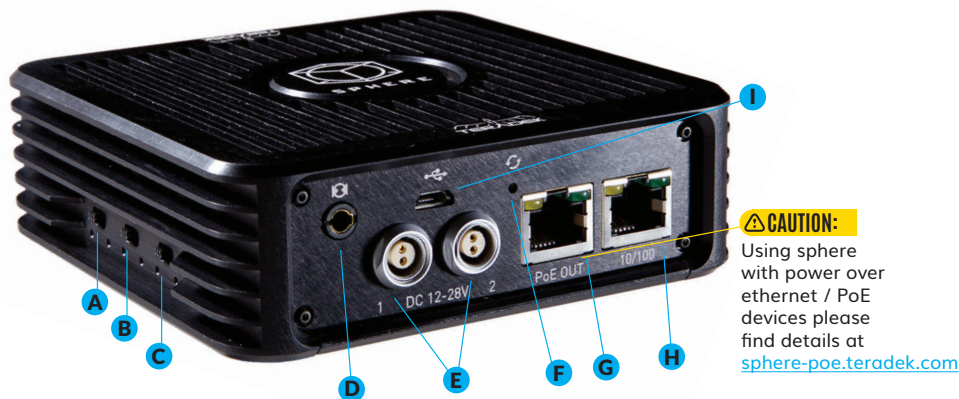
## User Guide



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 PLEASE READ PG 1

## PHYSICAL CONNECTIONS



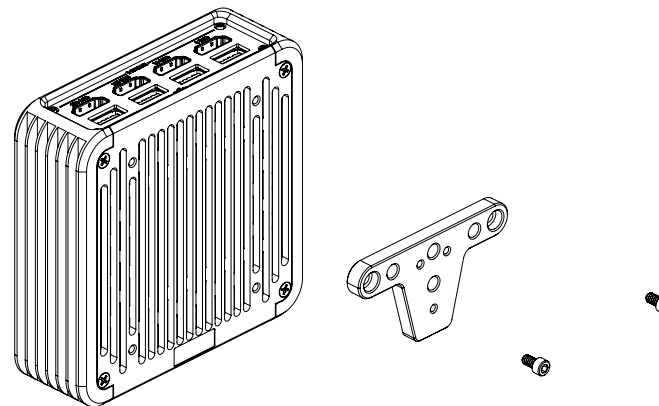
- |                            |                          |                    |                            |
|----------------------------|--------------------------|--------------------|----------------------------|
| A: System on/off switch    | E: 12-28V DC Inputs      | H: 10/100 Ethernet | K: USB Power Ports 1-4     |
| B: PoE on/off switch       | F: Reset Button          | I: Micro USB       | L: Video Input Status LEDs |
| C: USB Power on/off switch | G: 10/100 Ethernet + PoE | J: HDMI Inputs 1-4 | M: Encoder Status LEDs     |
| D: 1/8" Line Input         |                          |                    |                            |

## POWER AND CONNECTIONS

1. Connect power to Sphere using the included A/C adapter or one of the available accessory power cables (see [Teradek.com](http://Teradek.com)).
2. If using the Teradek Sphere GoPro rig, assemble your cameras into the rig. Attach the center support to the base using the provided screws, place the cameras evenly into the base, and then attach the top plate.
3. Connect HDMI cables between your rig's cameras and Sphere's HDMI inputs (J). Turn each camera on. If using the Sphere GoPro rig, press the mode button until the camera is in photo mode. See [Teradek.com](http://Teradek.com) for additional camera set up tips.
4. If your camera can be charged via USB, connect USB cables between Sphere (K) and the camera, then turn the USB switch (C) to on.
5. Move the System on/off switch (A) to the on position.



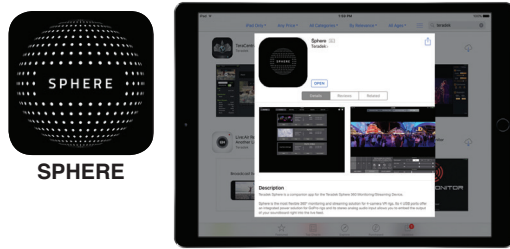
If mounting Sphere on a tripod or articulating arm, attach the T-bracket to the bottom of Sphere using the included screws. The bracket has four 1/4"-20 threaded holes for use with various mounting hardware.



### WHAT'S IN THE BOX?

- |                                       |                  |
|---------------------------------------|------------------|
| Sphere                                | A/C adapter, 24V |
| Go Pro rig with screws                | Ethernet cable   |
| T-bracket with screws                 | SKB medium case  |
| 4 Ultra thin HDMI cables (micro-full) |                  |

## DOWNLOAD THE APP



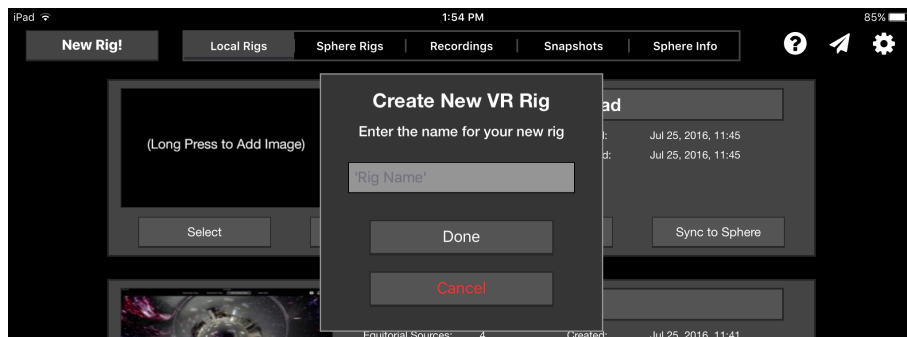
Connect your iPad Pro to the Internet and download Teradek's Sphere app from the App Store.

## CONNECT TO SPHERE

Sphere has two 10/100 Ethernet ports for connecting to a network. In addition, one port (G) is Power-over-Ethernet (PoE) enabled for connecting to and powering a PoE capable Wi-Fi access point.

1. If using a PoE capable access point, flip the PoE switch (B) to on and connect an Ethernet cable between the PoE port (G) and your Access Point. If connecting to a standard switch or network router, ensure the PoE switch is off and connect a cable from your network device to either port.
2. Connect your iPad Pro to the network and open the Sphere app.

## WELCOME TO THE SPHERE APP



The Sphere App allows different camera configurations (rigs) to be saved on the iPad or synced to any Sphere on the same network. Once a rig has been created, you'll add cameras, set their orientation and arrangement, and begin stitching the images. The main screen contains the following menu options:

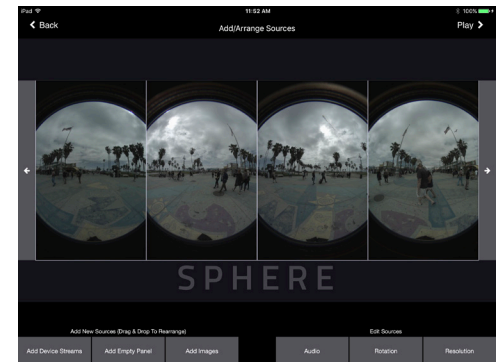
- The **Local Rigs** menu shows all rigs saved to the iPad, from here each rig can be opened for editing (Select), copied, deleted, synced to a sphere, or renamed (tap the rig name to edit). Additionally, a thumbnail image can be assigned to the rig.
- **Sphere Rigs** contains a listing of any rig configurations stored on available Sphere devices. From here, rigs can be synced to the iPad or deleted. A status indicator shows whether the configuration is synced or not.

- The **Recordings** and **Snapshots** menus allow you to view panoramic videos and images stored on the iPad.
- The **Info** menu displays information about Spheres on the network and allows you to perform firmware upgrades.

## ADDING CAMERAS

After connecting to Sphere and starting the app, you'll need to create a rig and add cameras to it.

1. Tap **New Rig!** Enter a name for it, tap **Done**, and then tap the rig listing to open the source configuration screen.
2. Tap **Add Device Streams** and select all of the cameras connected to sphere, tap **Done**.
3. Drag and drop sources to arrange them. If your rig has a top or bottom camera, drag it up or down on the screen to change its orientation. Drag sources to the bottom of the screen to remove them.
4. Rotate sources by tapping **Rotation**. Rotate buttons overlaid on the source icons rotate just that camera, while the **Rotate All** buttons rotate all sources.
5. Video quality can be adjusted by tapping **Resolution**. An audio source can be specified with the **Audio** button. Once the rig orientation is set, tap the play icon to save the configuration and open the calibration screen.

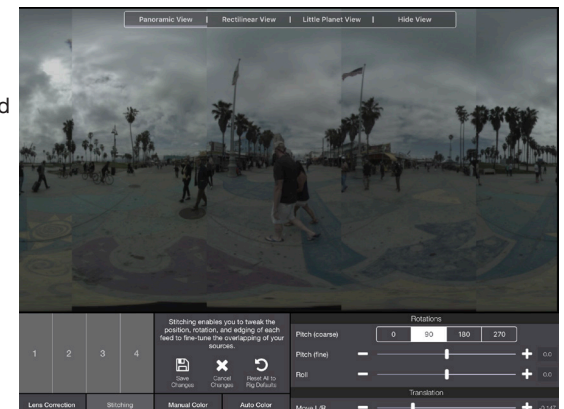


## STITCHING AND VIEWING YOUR VIDEO

Once all sources have been selected and arranged, it's time to stitch the video. The calibration view contains controls to adjust image position, shape, blending, and color. This view also allows you to save snapshots, record video, and stream to the Internet. On initial load, the Sphere tutorial is displayed. Follow it in the App to learn about the available functions and steps to stitch your image. The tutorial can be dismissed by tapping **Close** or **X**, and displayed by tapping the **?** button.

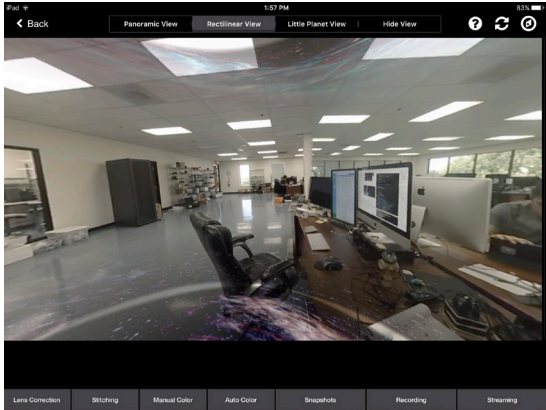
### Views:

- **Panoramic** displays the flattened panoramic image. This is how the stitched video looks when recorded or sent to the web. The panoramic view is helpful when aligning different sources.

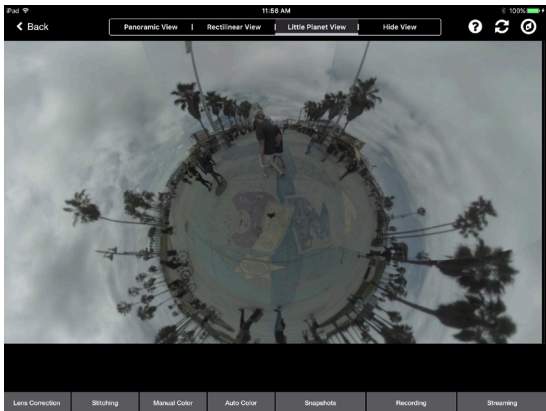




- The **Rectilinear view** is the standard view for previewing your shot as a real-time, 360 degree image. The view can be zoomed by pinching the screen, panned with a finger, or panned by moving the iPad. To disable motion-controlled panning, tap the **compass** icon in the top-right corner. This view is helpful when adjusting the top and bottom sources, if used.

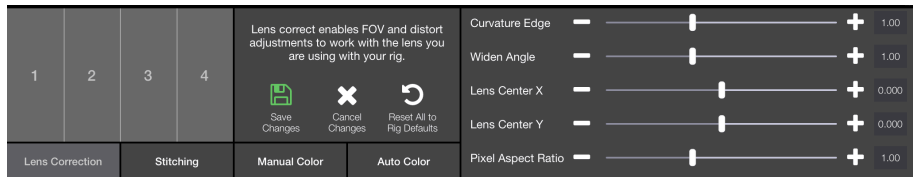


- **Little Planet view** maps the image to a sphere, making it look like a little planet when the bottom of the image is centered (hence the name).
- **Disable view** allows you to turn off the local monitoring when it is not needed. Disabling the view saves resources and battery life, helpful when streaming or recording over a longer period.

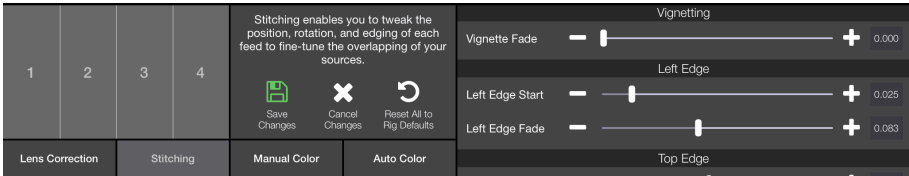


#### Picture Controls:

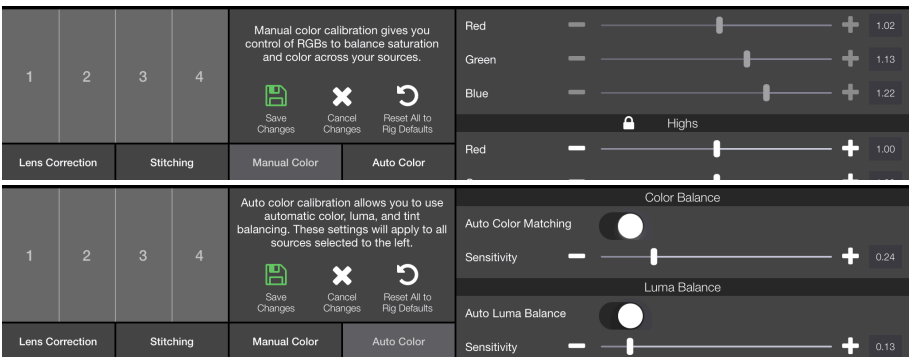
1. **Lens Correction** contains controls to adjust for any distortion caused by a particular camera/lens combination.



2. The **Stitching** panel allows you to adjust each source's position and edges relative to the others. It has settings for pitch, roll, position, and edge adjustments.



3. The **Manual** and **Auto** color panels allow you to match source brightness, contrast, and hue in situations where each camera cannot be exposed evenly. For cameras with continuous auto-picture controls (like GoPro) the auto color settings help to keep cameras looking similar even if the exposure changes.

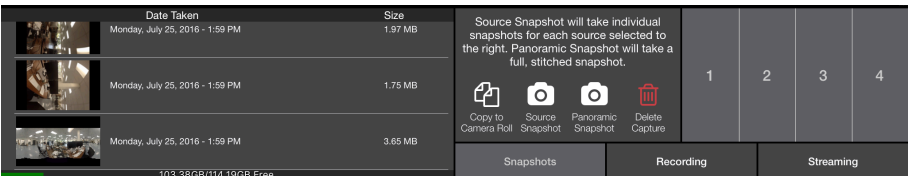


## OUTPUTS

After stitching your cameras and saving the changes, you can do a number of things. To simply monitor the stitched image, tap the video to collapse the controls and choose your desired view. The stitched video can also be saved as a snapshot or recording, or sent to a streaming platform like YouTube.

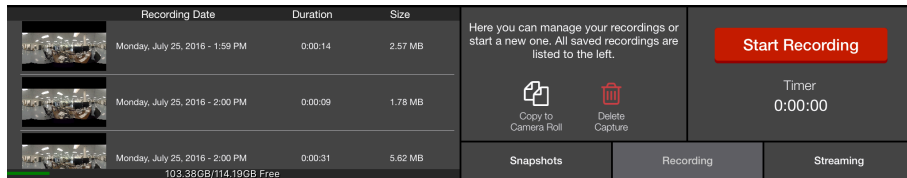
#### Snapshots:

The **Snapshots** menu allows you to save a snapshot of the full panoramic view or an undistorted device stream. After saving a snapshot they can be viewed from Sphere's main menu or copied to the camera roll.



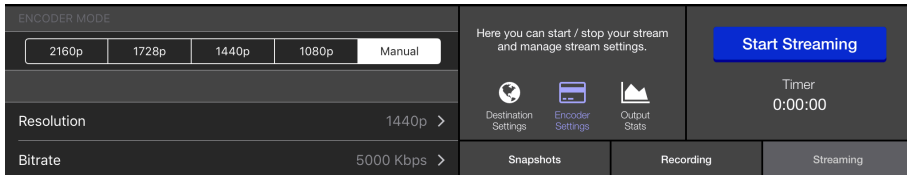
### Recording:

The **Recording** panel allows you to start and stop recordings of the full panoramic view. After recording, they can be viewed in app, or exported to the Camera roll for uploading to the Internet.

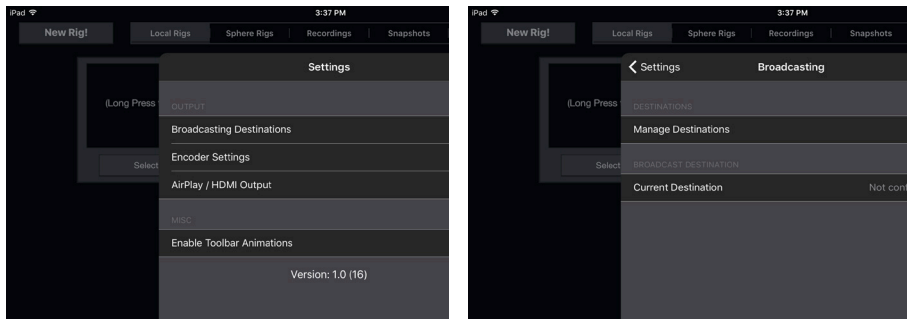


### Streaming:

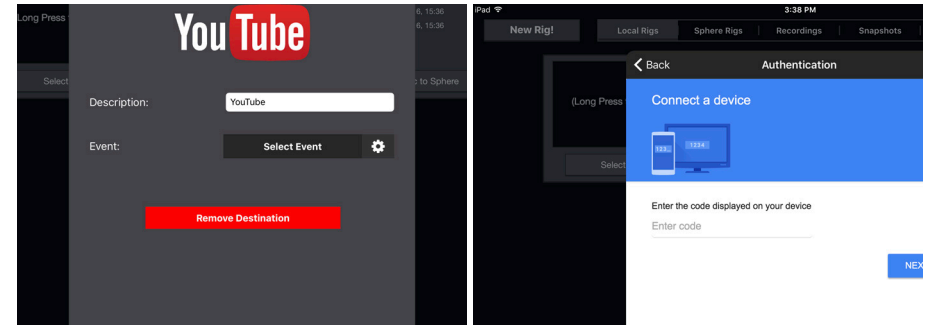
The **Streaming** panel allows you to start and stop a live stream to YouTube or any other platform with support for live 360° video. Streaming live video from Sphere requires the streaming license, which is available at [teradek.com](http://teradek.com) if it wasn't purchased with the device.



1. To configure a streaming destination, tap the gear icon to open the Settings menu and select **Broadcast Destinations**.
2. Tap **Manage Destinations** and then **Add Destination**.



3. Select either YouTube or Custom RTMP. If streaming to YouTube, follow the steps to Authenticate and select an event. If streaming to an RTMP server, enter the RTMP destination information. Tap done. NOTE: When streaming to YouTube, make sure your event is configured for 360 Streaming.



4. Return to the video calibration/preview screen, open the Streaming panel, and hit **Start Broadcast**.