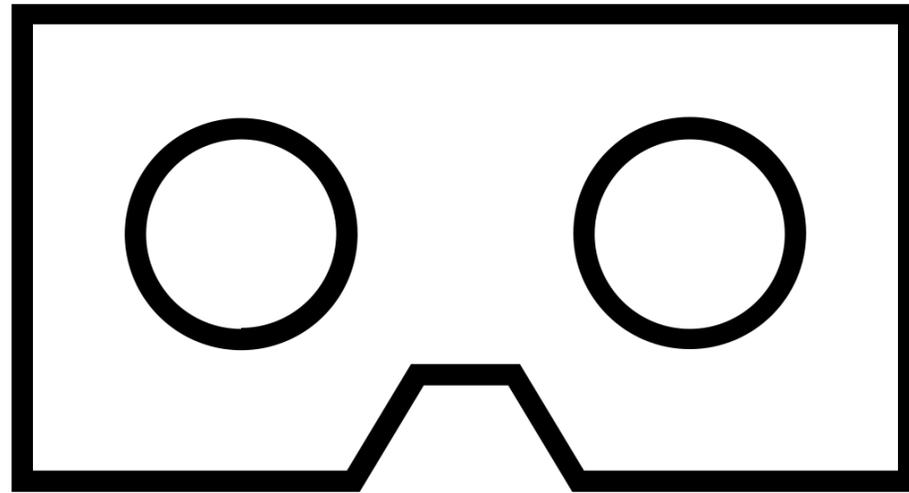


Focus on Virtual Reality



Mark Sumner
College of Agriculture and Life Sciences
Virginia Tech

AR, VR, and 360° Media in Extension

- Augmented Reality (AR)
- Virtual Reality (VR)
- 360° Photos and Videos

What's your interest in VR?

Google Expeditions



4-H'ers engage with virtual reality at the launch of the partnership between 4-H and Google.

Virginia 4-H is partnering with Google to bring computer science and modern technology to 4-H'ers across the state, giving Virginia youth more access to technology education, the latest equipment, and the opportunity to apply computer science to their fields of interest.

“Virginia 4-H and Google partner to bring computer science to youth across the commonwealth”, VCE

<https://vtnews.vt.edu/articles/2017/10/cals-4hgoogle.html>

How to ...

- Capture 360° photos
- Produce a virtual tour viewable on a Google cardboard viewer

Our Workflow

- ✓ • Install the Ricoh Theta Basic app on your smartphone. <https://theta360.com/en/about/application/basic.html>
- Capture 360° photos. Position the **camera** as **upright** as possible.
- Shoot **landscape oriented** photos with your smartphone.
- Record **MP3** audio clips with the Zoom recorder.
- Transfer 360° photos and audio clips to the PC.
- If needed, trim audio clips with Audacity.
- View 360° photos with the desktop Ricoh Theta app.
- Select one or more 360° photos and upload to ThingLink. <https://www.thinglink.com>
- Create a tour by **tagging** a 360° photo to create hot spots for **photos, audio clips, links to different 360° scenes** , etc...
- Share the link to your tour.
- View tour on your smartphone with a Google cardboard viewer.



Container Gardening



VR Kit

- Ricoh Theta V 360 4K VR Camera
- Manfrotto VR PIXI EVO Kit
- Zoom H1n Audio Recorder



“RicoH THETA V 360 4K VR Camera”, B&H Photo

https://www.bhphotovideo.com/c/product/1333693-REG/ricoh_theta_360_degree_camera.html

Working with the Camera



Power

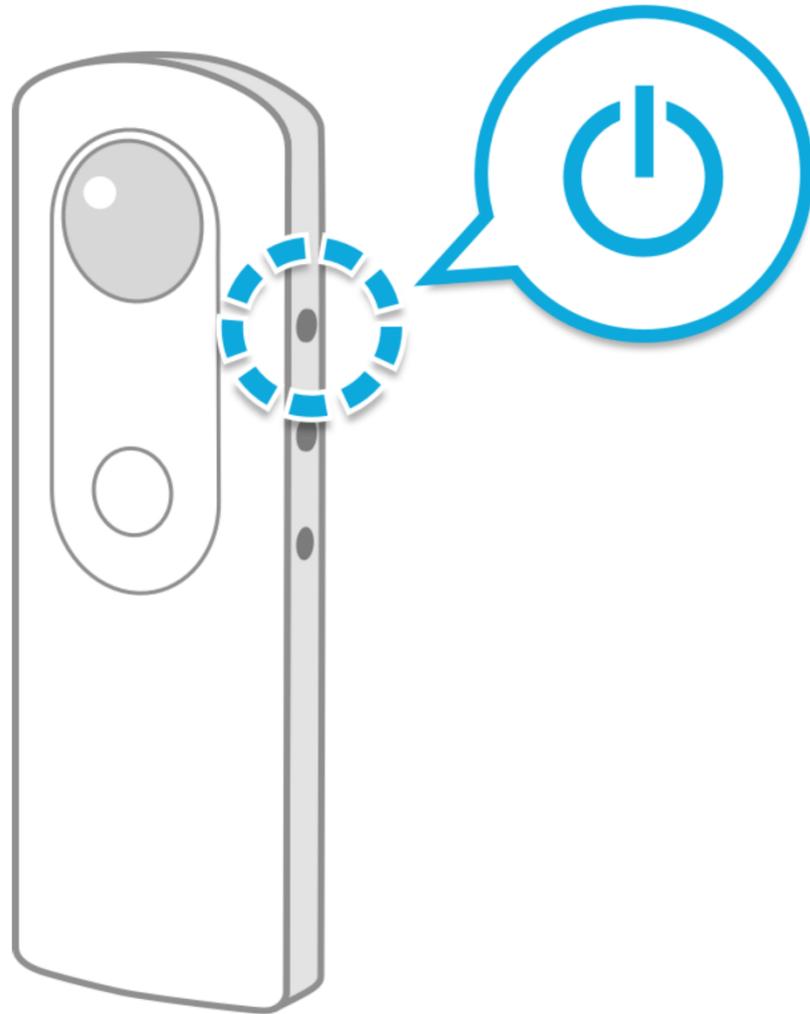
Wi-Fi

“Quick Reference Guide”, Ricoh Theta, <https://theta360.com/en/support/story/v/settings/>



How to connect to THETA

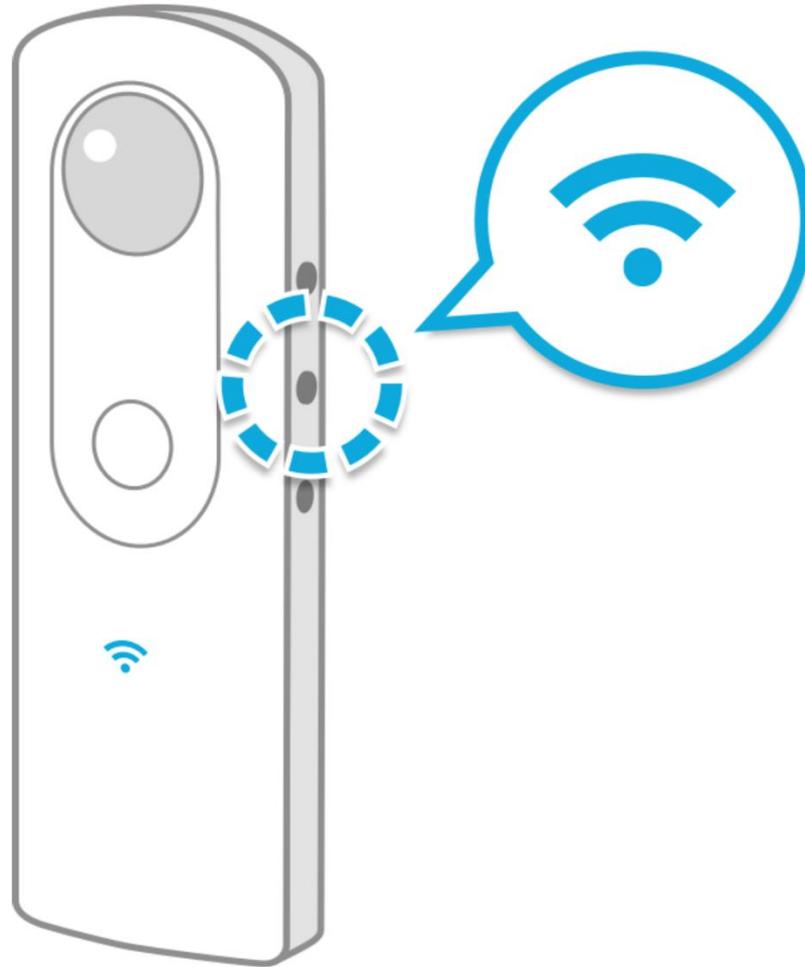
1 Press the power button on the camera to turn the power on.





How to connect to THETA

- 2 Press the Wi-Fi button to turn the Wi-Fi function on. The Wi-Fi LED on the front of the device lights.





How to connect to THETA

3 On the smartphone's Wi-Fi setting screen, select the camera's SSID and enter the password.

<How to connect with an SSID and password>



SSID:

THETA XS **12345678** .OSC

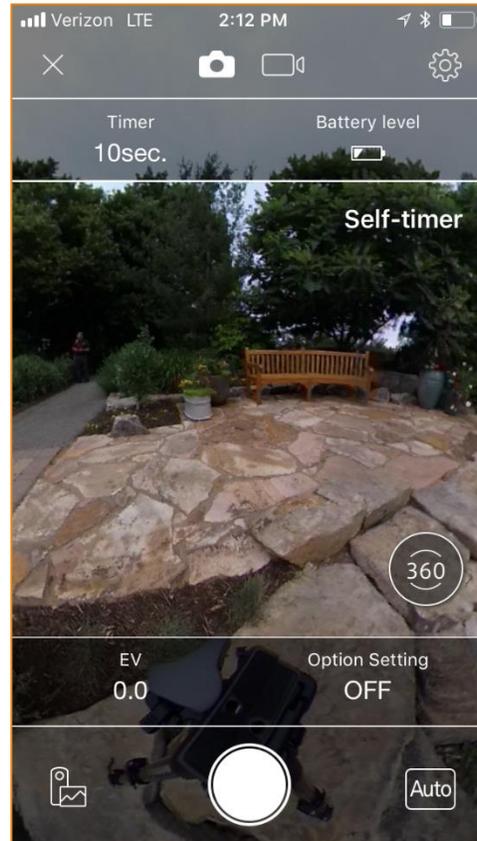
Password:

12345678

*The serial number on the base of the device is the SSID and password.
*The number written on the base of the device is the default password.
*The number written in the figure above is an example.



Ricoh Theta Basic App





Placing the Camera

- Place the camera in a spot where you would want to stand and look around.
- Position the camera as **upright** as possible

“How The Associated Press Trains Its Journalists to Shoot in 360 Degrees”, Facebook Media

<https://media.fb.com/2017/01/05/how-the-associated-press-trains-its-journalists-to-shoot-in-360-degrees/>

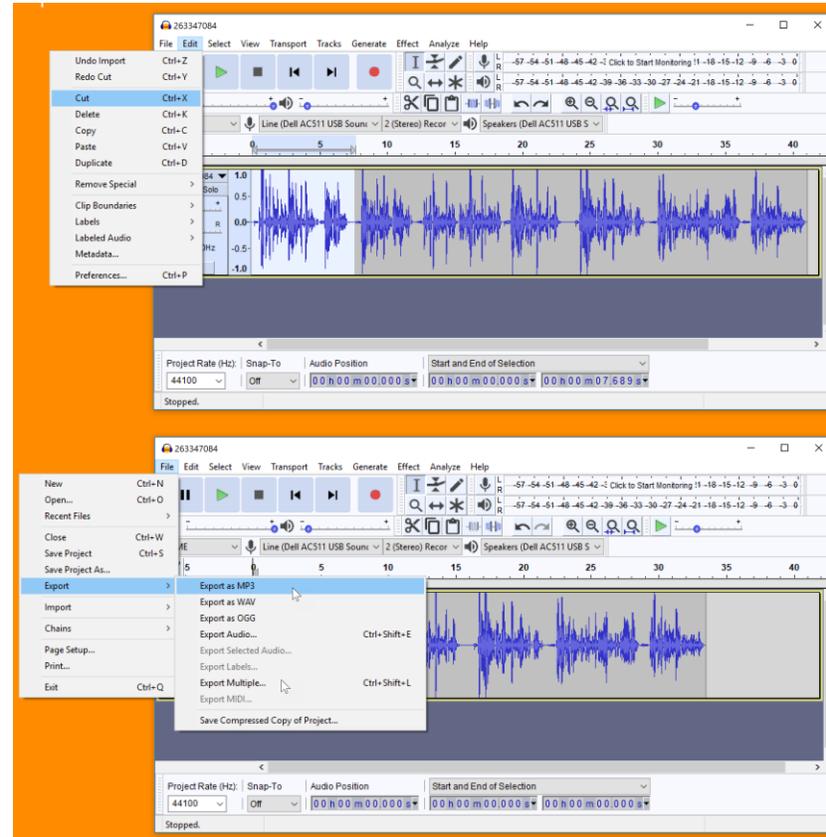
Working with the Audio Recorder



“H1n Operation Manual”, Zoom, https://www.zoom-na.com/sites/default/files/products/downloads/pdfs/E_H1n.pdf

How to Trim Audio in Audacity

File > Cut



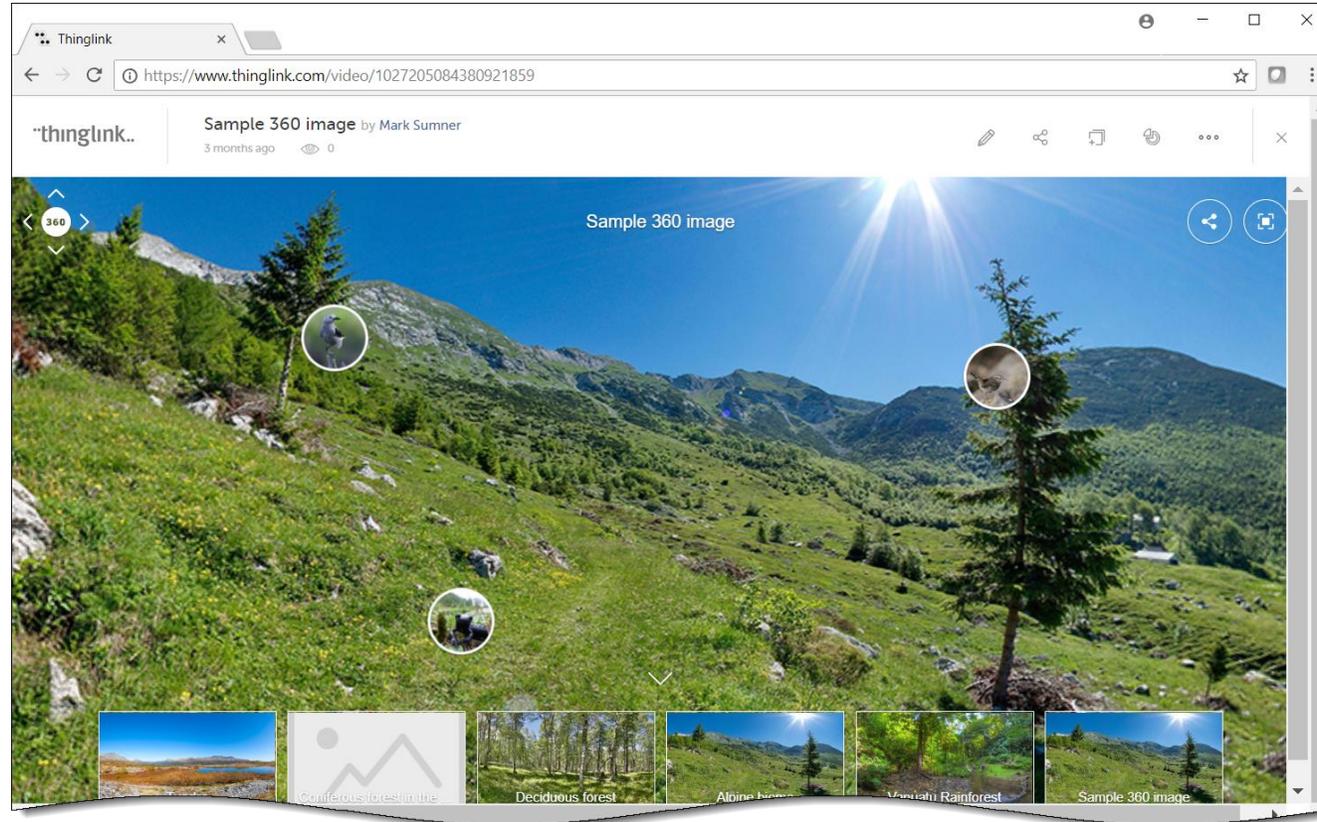
Export > Export as MP3

Audacity, <https://www.audacityteam.org/>

Planning for a Photo Shoot

- Where do you want to place the camera?
- What elements (hot spots) do you want viewers to explore in your scene?
- What photos will you need to annotate your scene?
- Do you want to include any sound clips?

ThingLink



ThingLink, <https://www.thinglink.com/>

Working with ThingLink

Optimizing ThingLink for Virtual Reality (VR) Viewing

- **Settings > Upload Audio:** Add an ambient background audio track to your tour.
- Add an **Image** tag to display a photo with an audio clip.
- Use the **Tour** tag to link to different 360° scenes within your tour.

“Browser 360/VR”, ThingLink, <https://support.thinglink.com/articles/360-vr>



Container Gardening



ADD TAG

[SHOW HELP VIDEO](#)

SETTINGS

SAVE & EXIT

Google Cardboard



Unofficial Cardboard

<https://www.unofficialcardboard.com/>

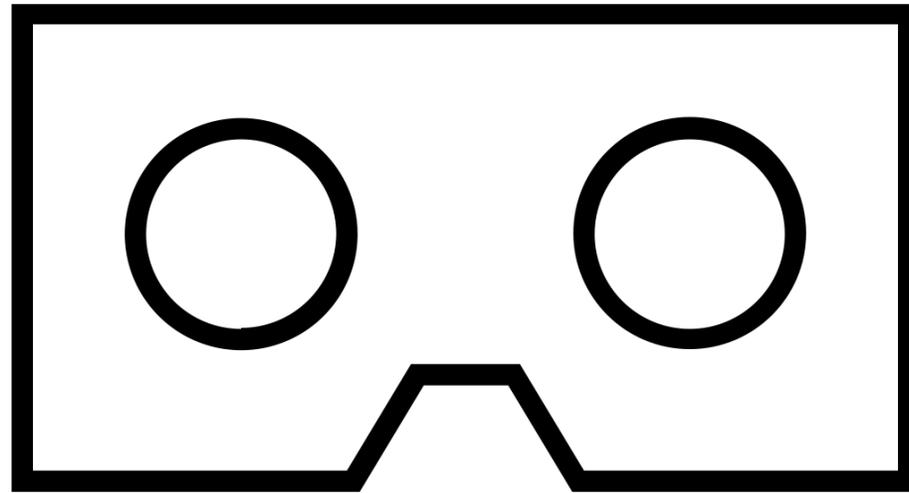
Review

- Ricoh Theta V - <https://theta360.com/en/about/theta/v.html>
- Audacity (with LAME MP3 encoder) - <https://www.audacityteam.org/>
- Thinglink - <https://www.thinglink.com/>
- Unofficial Cardboard - <https://www.unofficialcardboard.com/>

Shopping List

- Ricoh Theta V 360 4K VR Camera, \$396.99
- Lowepro Tahoe 25 II Bag, \$11.95
- Manfrotto VR PIXI EVO Kit, \$89.99
- Zoom H1n Audio Recorder, \$119.99
- Audacity, free
- ThinkLink (Premium Teacher Subscription), \$35 per year

More About Virtual Reality



“Virtual Reality”, American Library Association
<http://www.ala.org/tools/future/trends/virtualreality>

Mark Sumner

CALS-IT

College of Agriculture and Life Sciences

Virginia tech

sumnerm@vt.edu