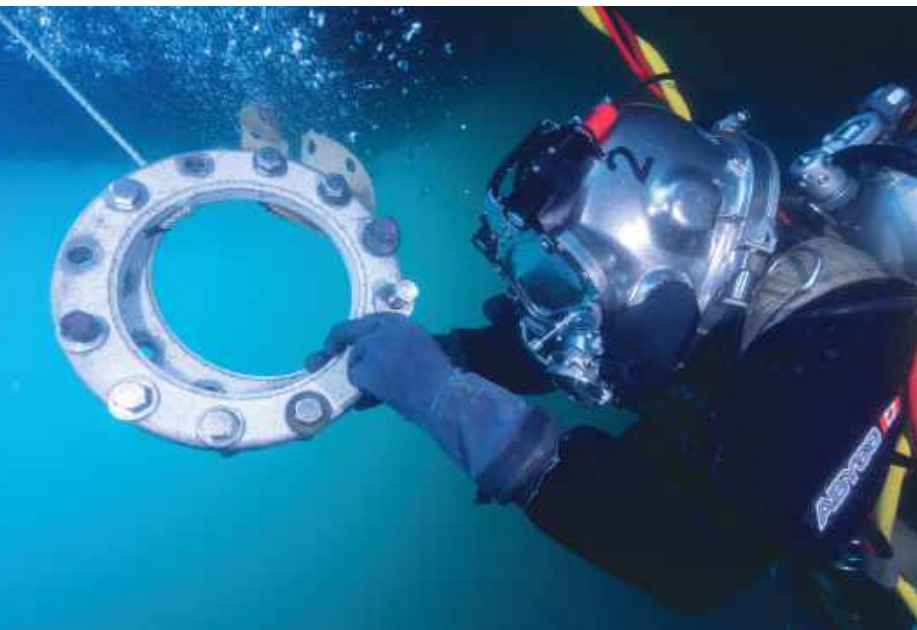




# Dive Camera System

Quick Start Reference Manual.





“The Crew at Reach have thought of everything with the Digital Diver Camera System. The 1080p HD Video quality, picture capture and depth tracking. The entire system is quick to setup, extremely user friendly and the controller with the touch screen monitor makes it incredibly easy to use...  
... Just Awesome.”

James "Reggie" Latham, Director Of Operations  
**DiveSafe International**  
Canada's #1 Diver Training School

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# 1. SETUP

---

1. Confirm the connectors are adequately greased. Connect the camera and light to the tether cable wet connectors. Secure the collars. (make sure to push the connectors all the way on before locking the collar). (Fig 1-3)



Fig 1



Fig 2



Fig 3

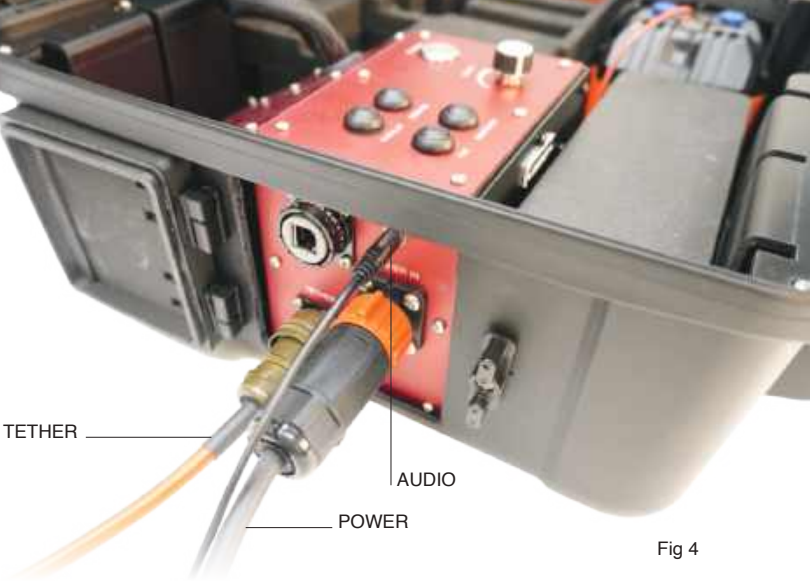


Fig 4

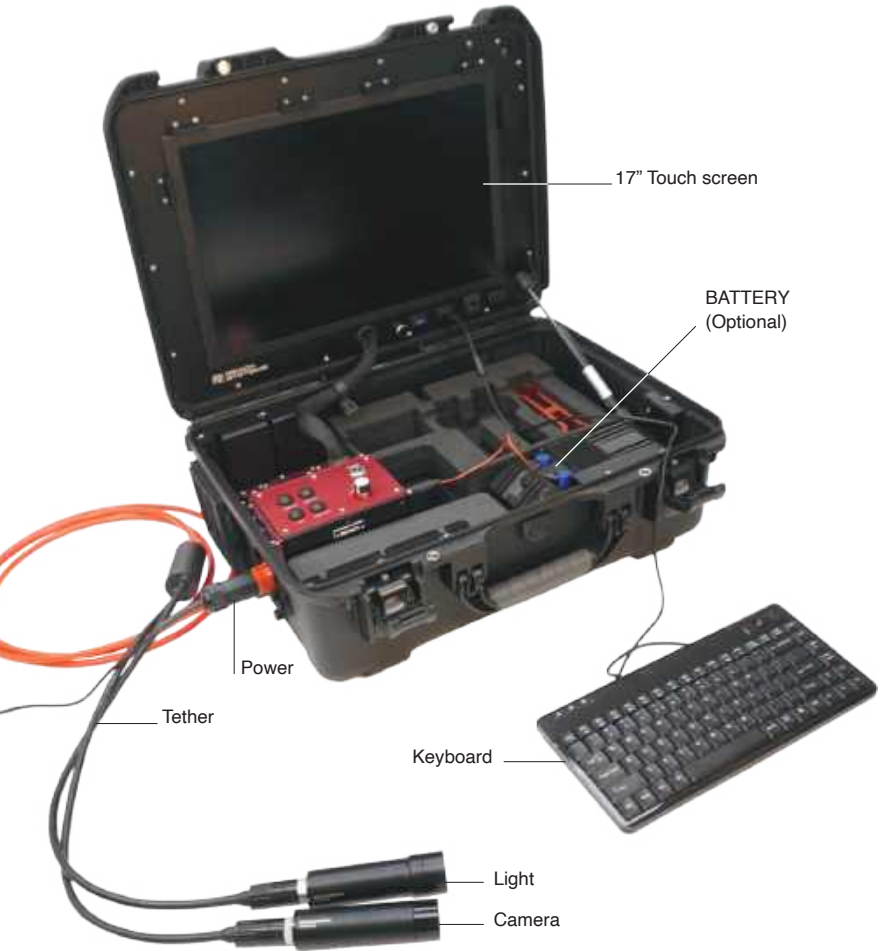
2. Connect the dry end of the tether to one of the connectors on the controller. Secure the collar. Repeat for the second camera system if being used (Note that each tether can be connected to either connector on the controller). (Fig 4)
3. Connect the power supply to the power intake on the left side of the controller.
4. If required, connect the audio input to the audio jack on the connectors panel (Note: a special cable may be required for your Comms system; contact **Reach Systems** for more information).



Fig 4b

# 1. SETUP CONT.

## CONTROLLER OVERVIEW



POWER

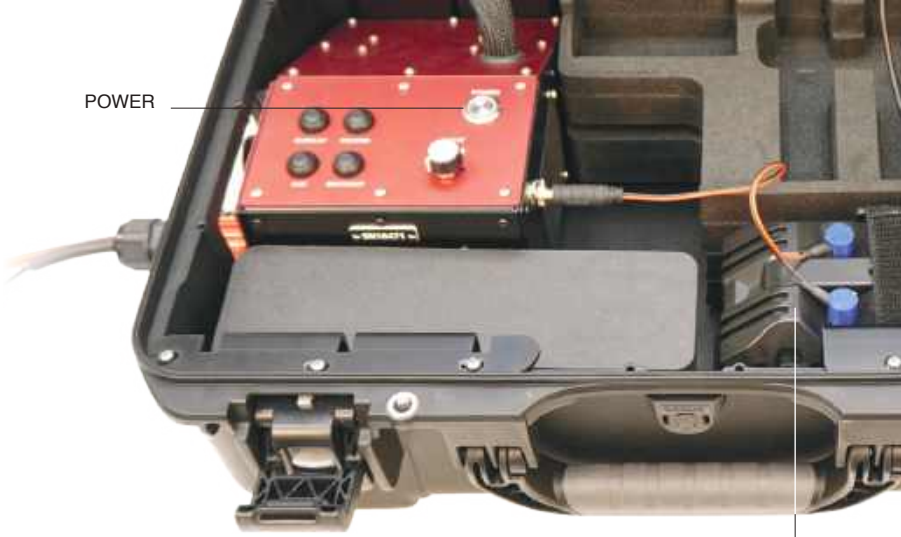


Fig 5

BATTERY  
(Optional)

5. To power with a battery, lock the battery into its bracket  
And plug it into the battery connector on the right side of  
the controller. (Fig 5)

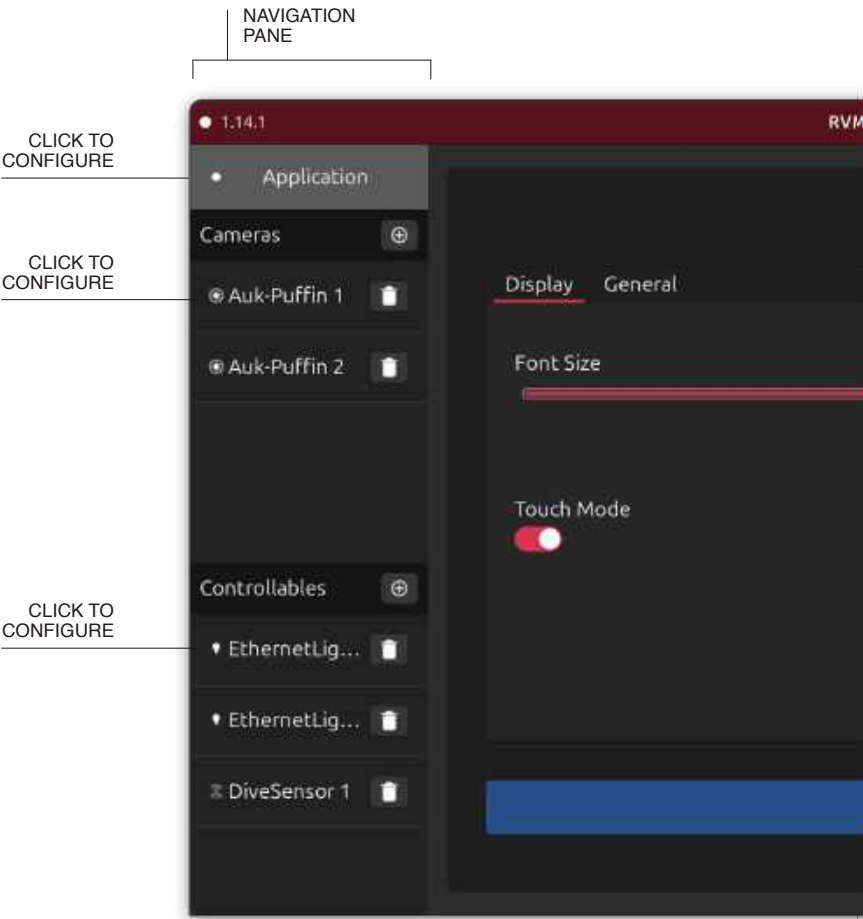
**NOTE: Pay careful attention to the connection polarity.**  
RED for POSITIVE, BLACK for NEGATIVE.  
Reversing the polarity will cause serious system damage.

6. Once all connectors are mated, power up the system by  
pressing and holding the POWER button until it  
illuminates, usually about 4 seconds. Reach Video  
Manager (RVM) software will start automatically.

## 2. DEVICE CONFIGURATION

---

1. Whenever a camera, light, or sensor is added to the system they must be configured in the system, as described below.
2. The Settings screen can be accessed from the tabs on the top right of the control bar. (Fig 6)



3. On the Navigation pane on the left, select “**Application**” for general RVM configurations, or a specific device (Cameras or Controllables) to access the configuration of that device.
4. Click the **Save** button at the bottom of the screen

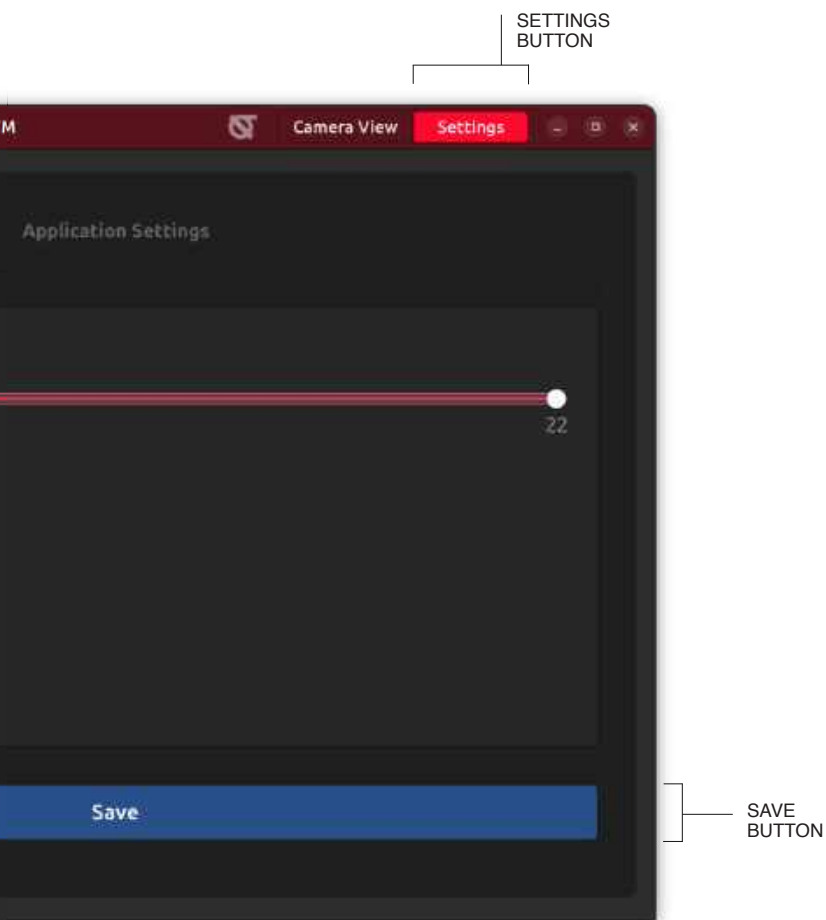



Fig 6

## 2. DEVICE CONFIGURATION

CONT.

### 2.1 ADDING/EDITING A CAMERA

5. On the **Settings** Tab, add a new camera by clicking on the  icon beside the **“Cameras”** title on the Navigation pane. (Fig 7)
6. Fill in the following fields:
  - a. **Name:** Name the camera conveniently (“Camera 1”, “Diver 1”, Diver name, etc.).  
All recordings from that camera will be stored in a folder with the name of the camera.

ADD  
CAMERA

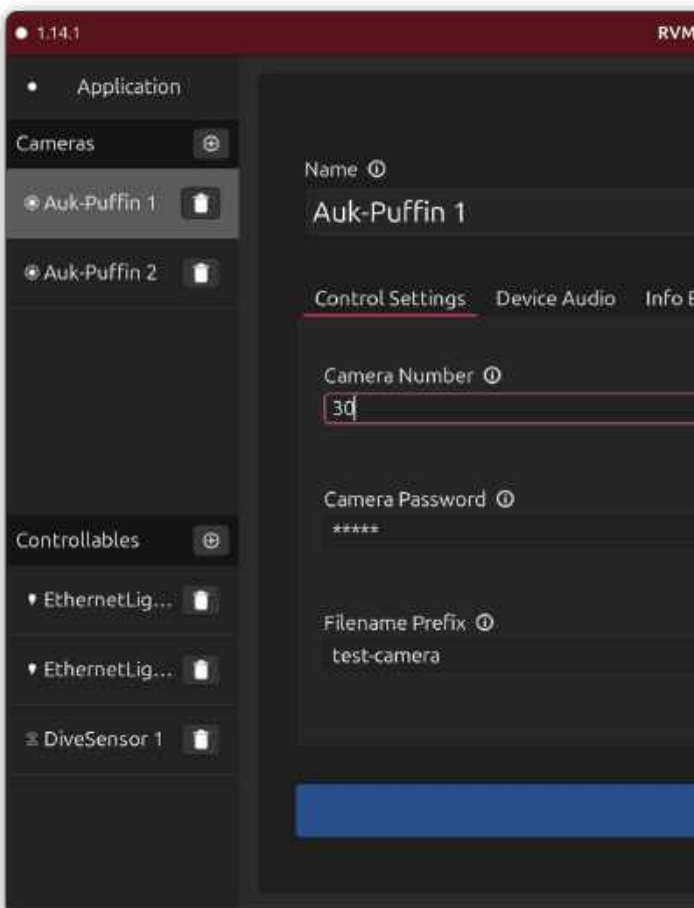
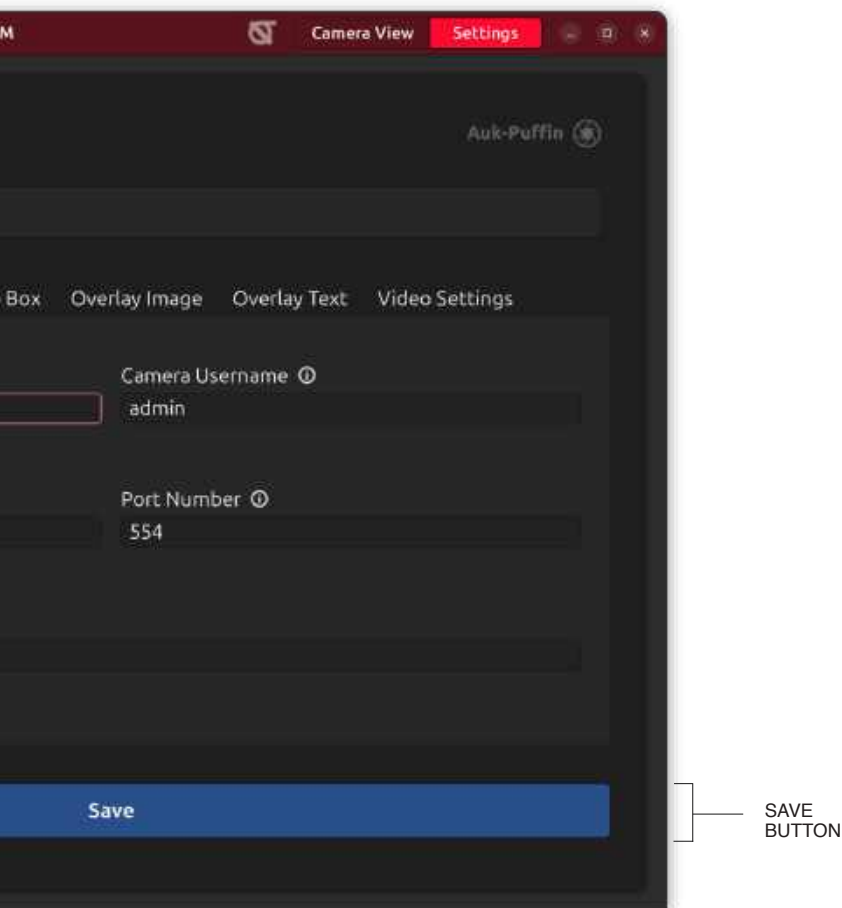


Fig 7

- b. **Camera Number:** 3-digit Camera number / 3 last Digits of the IP address. Refer to the Digital Diver Camera System manual for more information to identify an unknown IP address.
  - c. **Username and Password:** admin / admin
  - d. **Filename Prefix:** An ID for the Video and Snapshot files for the specific camera.  
All recordings from the camera will be stored in a subfolder with this prefix.
7. Click the **Save** button at the bottom of the screen

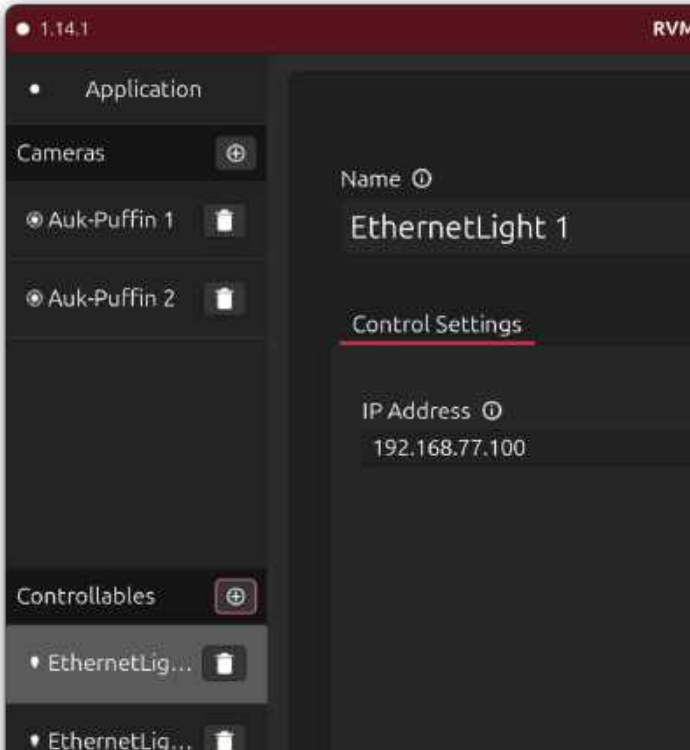
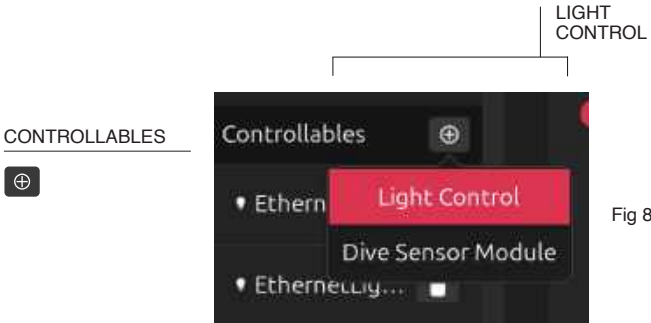


# 2. DEVICE CONFIGURATION

CONT.

## 2.2 ADDING/EDITING A LIGHT

- 8. On the **Settings** Tab, add a new light by clicking on the **+** icon beside the **“Controllables”** title on the Navigation pane. Choose **“Light Control”** (Fig 8)



9. Fill in the following fields:
  - a. **Name** (We recommend using a similar name to the corresponding camera name). (Fig 9)
  - b. **IP Address**. Refer to the Digital Diver Camera System manual for more information to identify an unknown IP address.
10. Click the **Save** button at the bottom of the screen.

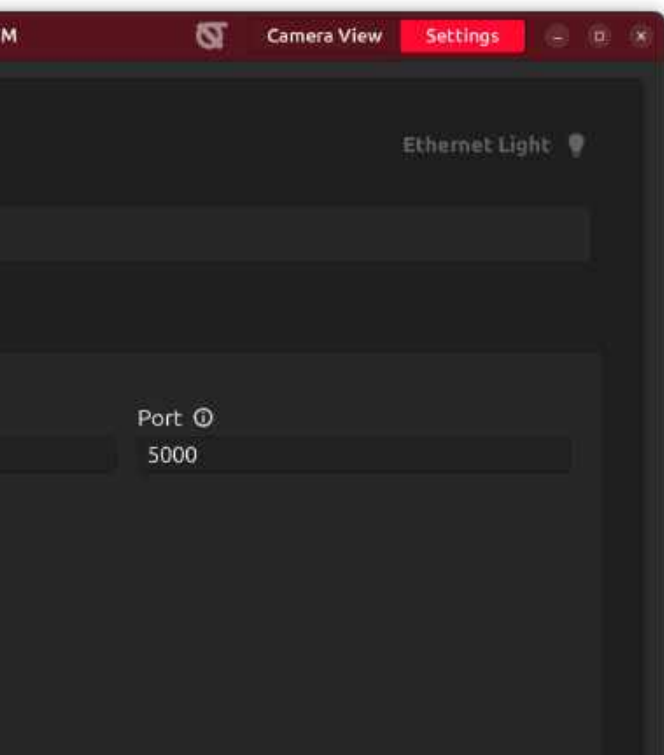



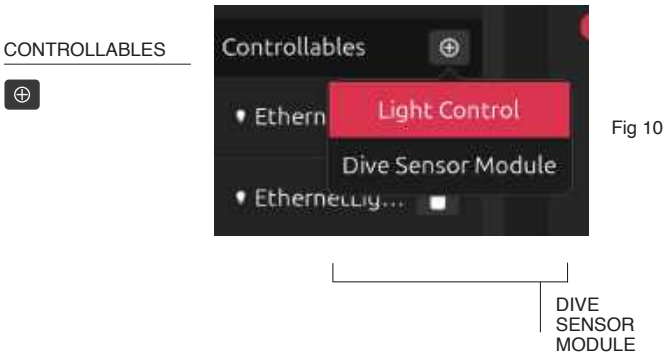
Fig 9

## 2. DEVICE CONFIGURATION

CONT.

### 2.3 ADDING/EDITING A SENSOR

11. On the **Settings** Tab, add a new sensor module by clicking on the  icon beside the “**Controllables**” title on the Navigation pane. Choose “**Dive Sensor Module**” (Fig 10)



12. Fill in the following fields:
  - a. **Name** (We recommend using a similar name to the corresponding camera name)
  - b. **IP Address.** Refer to the Digital Diver Camera System manual for more information to identify an unknown IP address.
13. If using Diver tracking features, fill in these fields as well:
  - a. **Diver Name**
  - b. **Supervisor Name**
14. **Save** after any changes.

## 2.4 ASSOCIATING THE AUDIO INPUT TO A VIDEO FEED

15. On the **Camera Settings** tab, select **Device Audio** and Select “**Built-in Audio Analog Stereo**” to add sound to the video feed. (Fig 11)

The audio will be included in the video recording for the associated camera(s). Note that the audio input can be added to both cameras.

16. Adjust the Audio Volume as needed. You can preview the selected audio device by checking the checkbox beside the ‘preview’ label. You can observe the audio device levels from the bar underneath the volume slider.

17. **Save** after making changes.

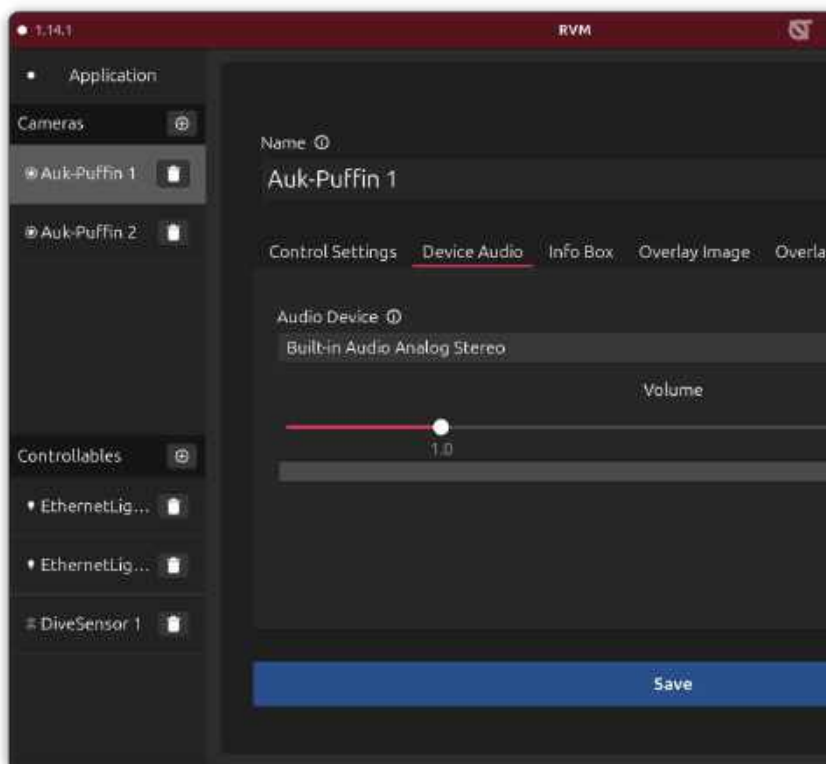


Fig 11

## 2. DEVICE CONFIGURATION

CONT.

### 2.5 DISPLAY CONFIGURATION OPTIONS

18. **Touch Mode:** to best utilize the touch-screen, change the display to “**Touch Mode**” in the **Display** Tab under **Application Settings** (this increases the size of the on-screen buttons). (Fig 12)

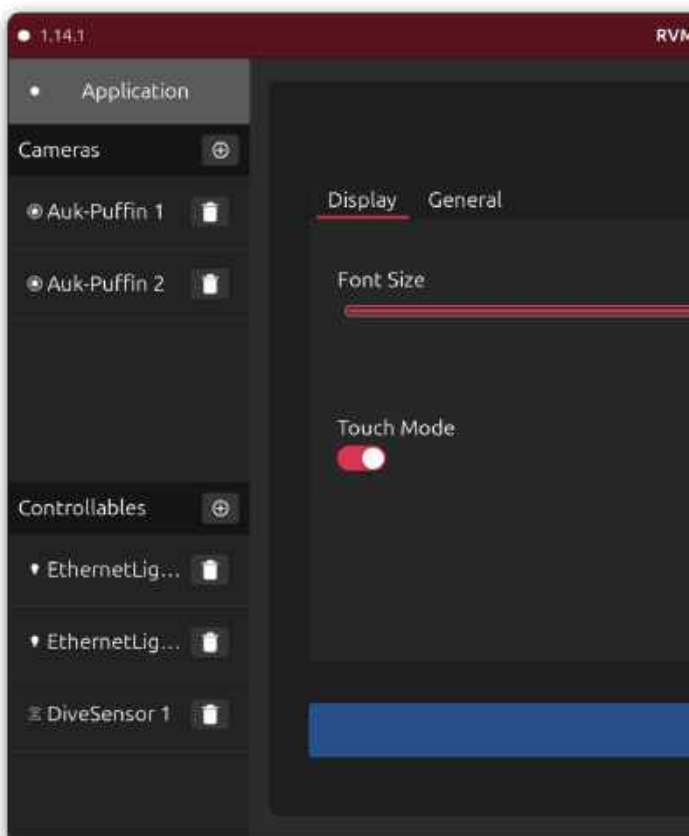
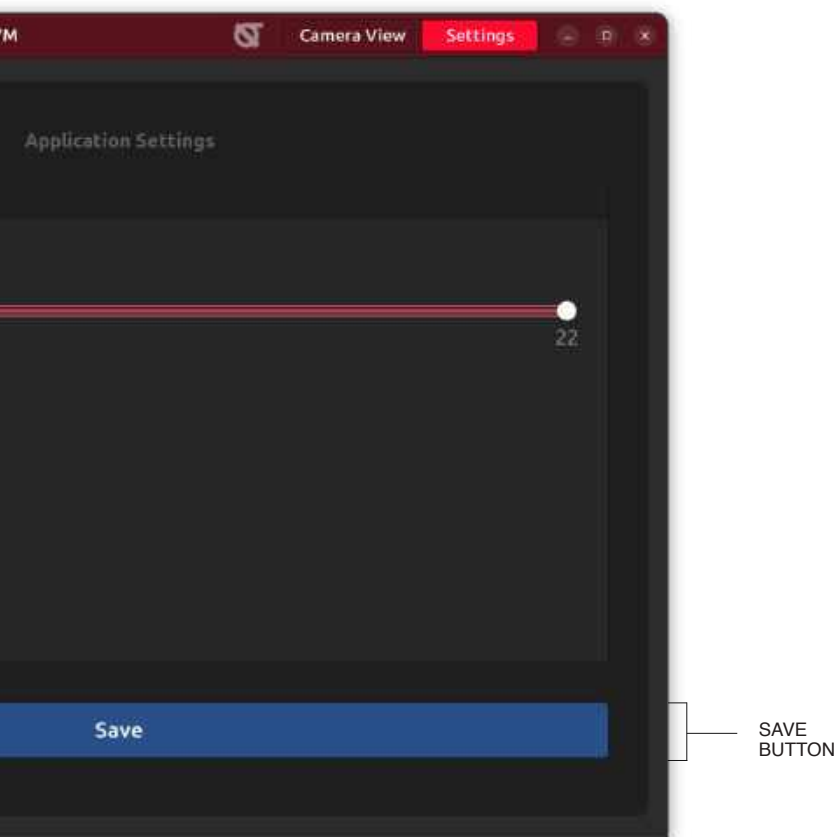


Fig 12

19. **Font Size:** In the **Display** Tab, you can adjust the font size for the Display (note that this only changes some on-screen choices; video overlay font size is not affected).
20. **Save** after making changes.



### 3. OPERATION

---

1. Turn the system on by pressing and holding the **POWER** button until it illuminates, usually about 4 seconds. (Fig 13)
2. Turn each camera video feed on/off by clicking the **Play/Stop Button** on the navigation pane or on the main video feed.
3. For easy access, the unit has physical controls with specific functions:
  - a. **POWER button**
  - b. **Overlay / Record / Aux / Snapshot buttons**
  - c. **Light control knob**
4. Turn each light on/off by clicking the Light power button on the navigation pane.

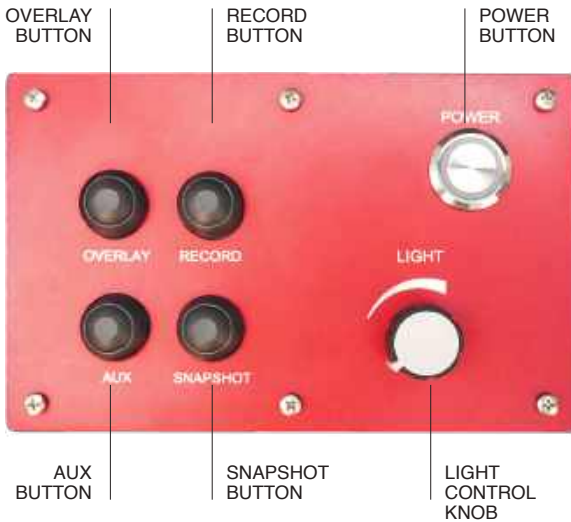


Fig 13

### 3.1 TAKING SNAPSHOTS AND RECORDING VIDEO

5. Take **Snapshots** of a single video feed by clicking on the Snapshot button on the navigation pane or on the main video feed.
6. Take a **snapshot** of the video feed of every camera by pressing the **SNAPSHOT** button on the controller top panel. (Fig 13)
7. Start / Pause / Stop **video recording** of each video feed by clicking on the **Record** button on the navigation pane or on the main video feed. When the video stream is recording, you can stop recording by clicking the left half of the button or pause the recording with the right half of the button. (Fig 14)

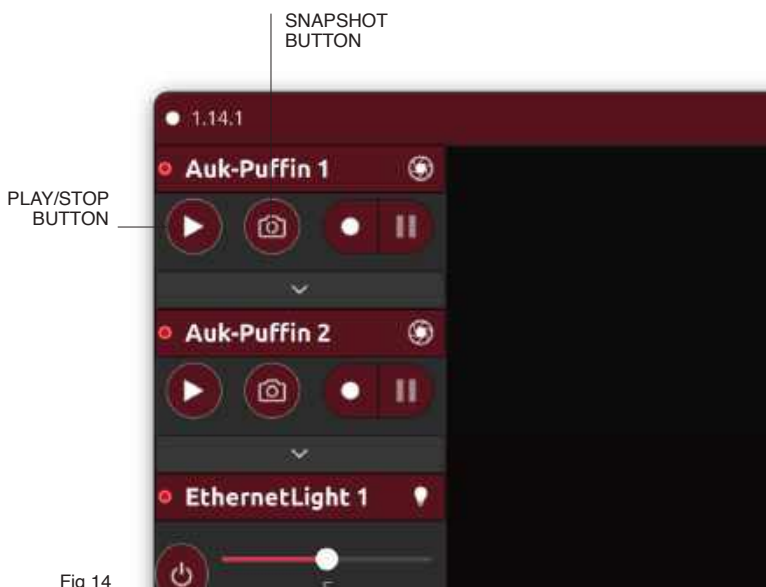


Fig 14

## 3.0 OPERATION CONT.

---

### 3.2 SETTING THE VIDEO OVERLAY OF THE CAMERA FEED

8. Individually turn on/off the different components of the Overlay with the buttons on the screen. Turn all active Overlay on/off with the **OVERLAY** button on the controller top panel.



Text Overlay



Date Overlay



Info box display.



Overlay Image



Video Rate Overlay -streaming speed in frames per second (FPS)-



Overlay grid -Useful for measuring and aligning items on the live view-

---

9. Edit the Text Overlay from the **Edit** button on the Navigation pane. This will prompt a window to edit the text, text position, and color.
10. Modify the size and position of the overlay image by clicking on the **Overlay Image** on the Navigation pane. A company logo can be added to the Overlay using this tool.
11. Adjust other overlay settings by accessing the advanced Overlay settings, including the configuration of the Info Box, in each's camera settings page. Consult the User Manual for more details.



### 3.3 ADJUSTING THE CAMERA

12. Turn on/off each camera's **WDR** (Wide Dynamic Range) and Defog by clicking on the buttons on the Navigation pane.

**Note that these two functionalities can't be active simultaneously.**

**WDR:**



**Defog:**

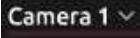


- a. Wide Dynamic Range (WDR) automatically adjusts brightness levels, allowing for better detail in both bright and dark areas of an image. It is most useful for reducing glare on reflective targets.
- b. Defog enhances image contrast to improve visibility in dirty or turbid water.

# 3.0 OPERATION CONT.

## 3.4 CHANGING THE CAMERA VIEWS

- 13. Select a different camera for your view from the Camera Select drop-down menu at the top of the video live feed.



- 14. Swap between Full screen video view and Standard view by clicking the Full screen button at the top of the video live feed or pressing the AUX button on the controller top panel. (Fig 15)



- 15. Swap between single, side-by-side and stacked camera views with the view buttons at the bottom of the video live feed.



- 16. Swap to a single view for the chosen camera by clicking the Expand Camera button at the bottom of the video live feed.



SNAPSHOT  
BUTTON

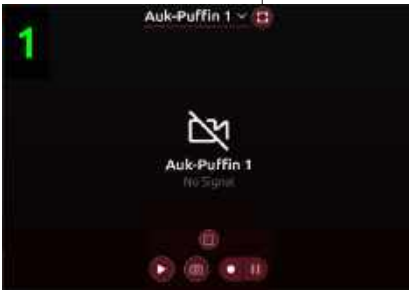


Fig 15

SINGLE VIEW  
BUTTON

STACKED VIEW  
BUTTON



Fig 15b

### 3.5 ADJUSTING THE LIGHT

17. The intensity of each light can be controlled by the corresponding slider on the Navigation Pane.



18. All lights can be simultaneously controlled from the LIGHT knob on the controller top panel.  
Note that adjusting the LIGHT knob will automatically turn all connected lights on.

### 3.6 OPERATING THE CONTROLLER

19. The controller monitor has a detachable sunshade cover. Attach and detach it as needed. (Fig 16)  
Fold and stow in the controller for transport.
20. Increase/decrease the brightness of the monitor with the knob below the monitor.
21. Access the monitor's advanced settings using the monitor remote control. The monitor IR sensor is located on the top right corner of the monitor.

Fig 16



## 3.0 OPERATION CONT.

### 3.7 CHOOSING THE DATA STORAGE LOCATIONS

22. Change the **Data Path** field in **General Settings** to set the main recording folder for video recordings and snapshots. Click on **“Choose Folder”** to open a dialog to select your desired recording folder. Drives connected to the USB 3.0 ports below the monitor can be selected as your recording folder, once an external drive has been connected to one of them.

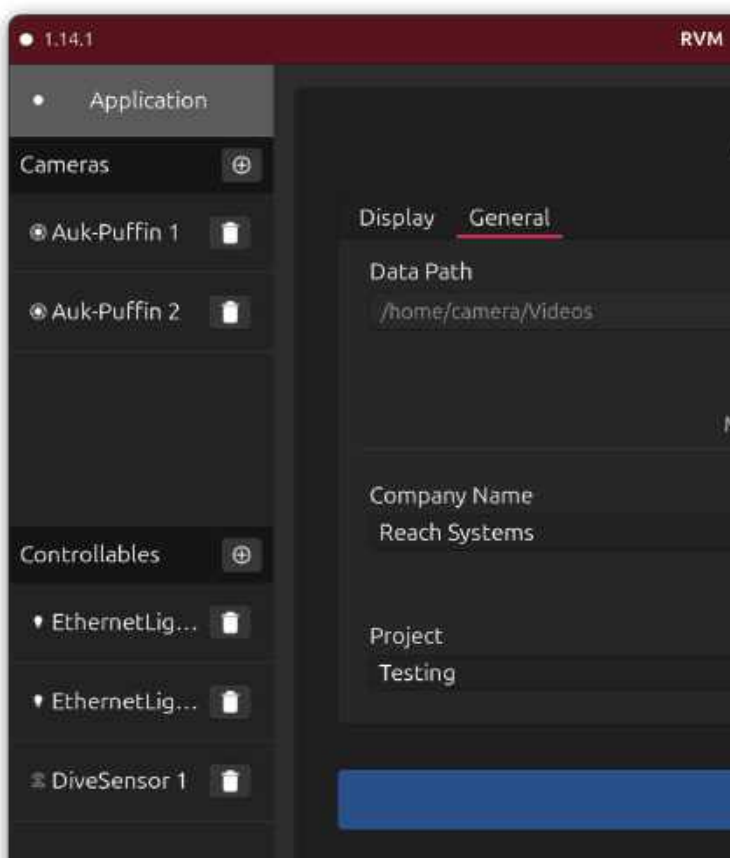


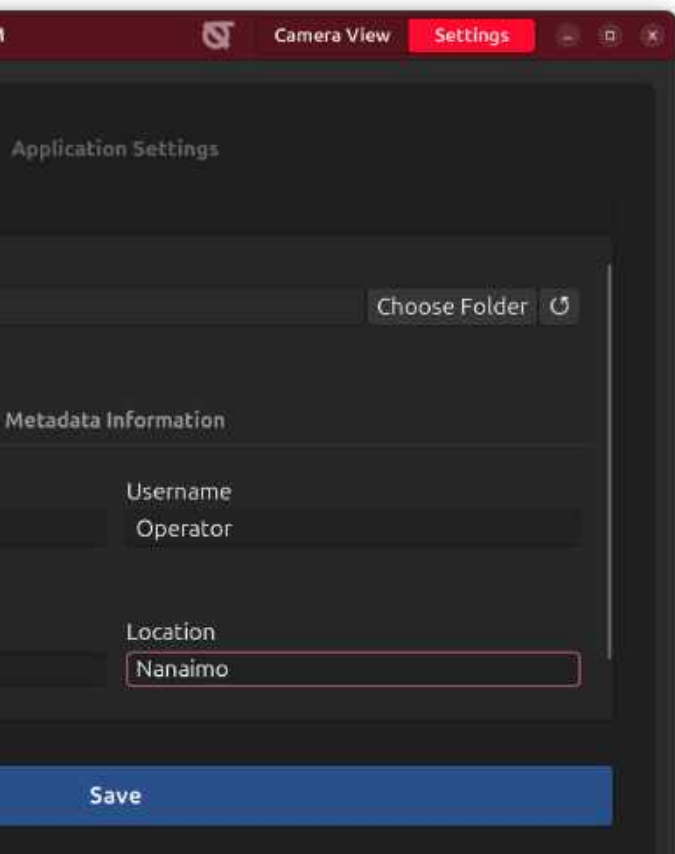
Fig 17

23. Reset the save location to the system default by clicking on the **Reset button** beside “Choose Folder”.



24. Additional Metadata may be entered to help with identifying the files once saved.

25. Hit **Save** after making any changes.



CHOOSE FOLDER BUTTON

SAVE BUTTON

## 3.0 OPERATION CONT.

---

### 3.8 VIEWING THE DIVE SENSOR FEEDBACK

26. When connected the **Dive Sensor** (Fig 18b) module allows you to view compass heading, depth and temperature feedback. (Fig 18)



Fig 18b

DIVE SENSOR  
(Optional)

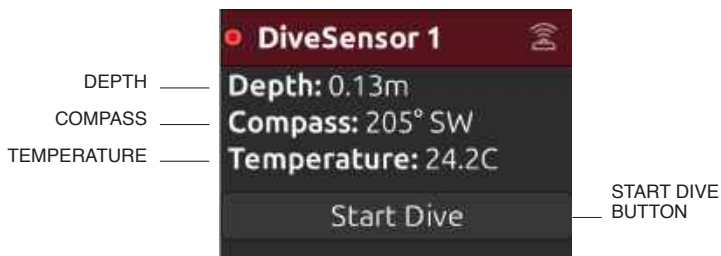


Fig 18



## 3.0 OPERATION CONT.

### 3.9 DIVE LOG

27. When a Dive Sensor is configured, a **Diver log** can be recorded. If a Dive Sensor is connected, the log will collect the depth values from it.
28. Click on the **Start Dive** button on the Navigation pane to start tracking your dive.
29. Click on the four different steps for recording time and depth of each stage:
  - a. **Left Surface**
  - b. **Arrived Bottom**
  - c. **Left Bottom**
  - d. **Arrived Surface**
30. Click on the **Reset** button to remove the last entry if required.
31. Click on **End Dive** to finish the log. (Fig 19)

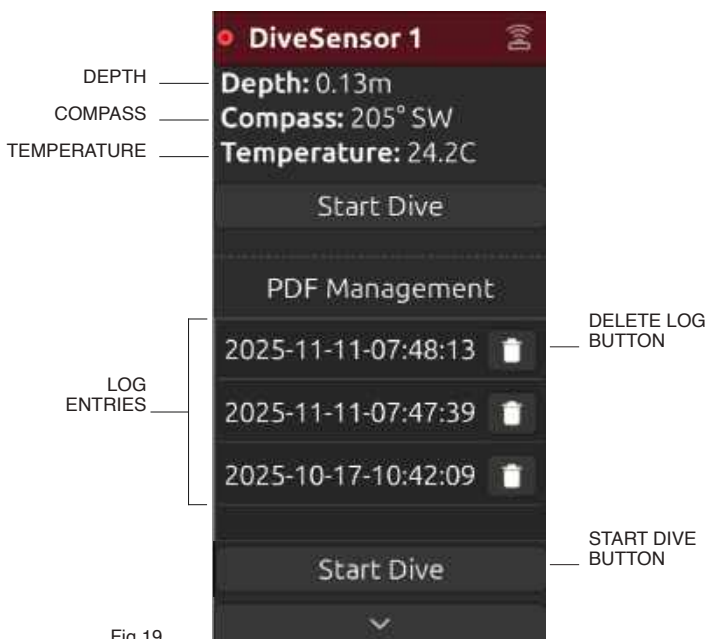
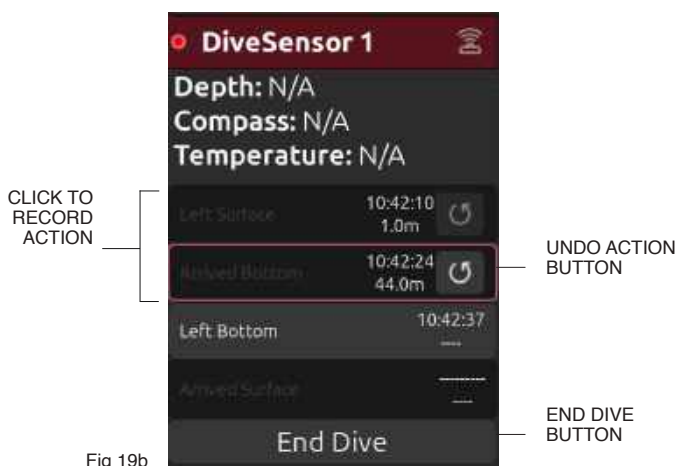
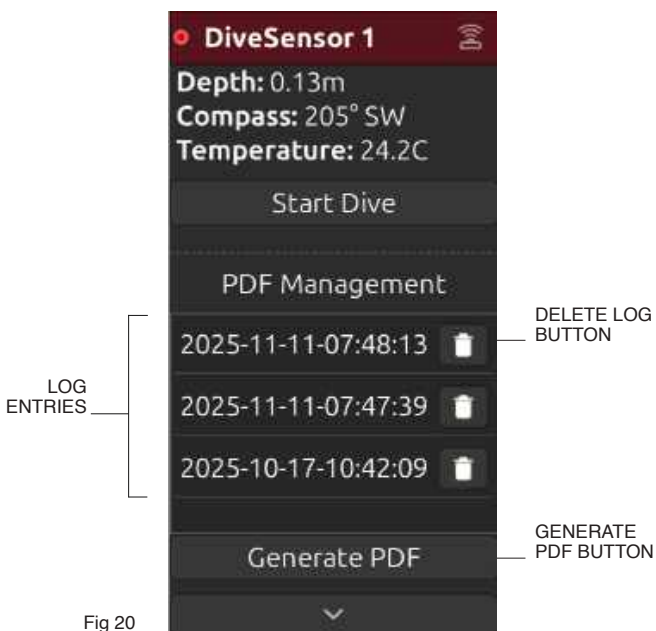


Fig 19



32. Select a log entry and click on **Generate PDF** to generate a report of that dive. A message will prompt with the location of the file within the predefined data storing location. (Fig 20)



## 3.0 OPERATION CONT.

---

### 3.10 MOVING FILES TO AN EXTERNAL DRIVE

33. When recordings are being kept on the local storage drive within the controller, based on predefined data storage location, these files -video, snapshots, etc.- can be transferred to an external drive.
34. Connect an external drive with enough capacity to one of the USB 3.0 ports below the monitor.
35. Open the default recording location using the file button at the bottom-left corner of RVM. This will open a file explorer.



36. Drag or copy and paste the files as desired into the external drive. Note that the files are organized in subfolders by camera (Camera name) and type of file (Recordings/Snapshots)
37. Note that if there was a different recording location in the past, any files recorded at that time will stay in their original location.

### 3.11 SYSTEM POWER DOWN AND DISASSEMBLY

38. Exit the RVM Software application by clicking the **X** at the top right corner of the window. (Fig 21)  
Any active recordings will be properly terminated.
39. Turn the controller off by momentarily pressing the power button. A confirmation dialog will open. (Fig 22)
40. Make sure the system is de-energized before unplugging any component. The system is de-energized when the red LED in the POWER button is extinguished. The system may be disassembled in the reverse order of assembly.

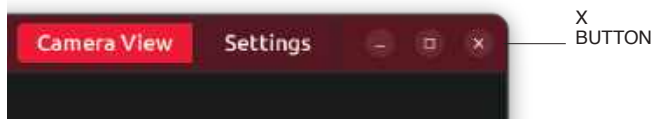


Fig 21

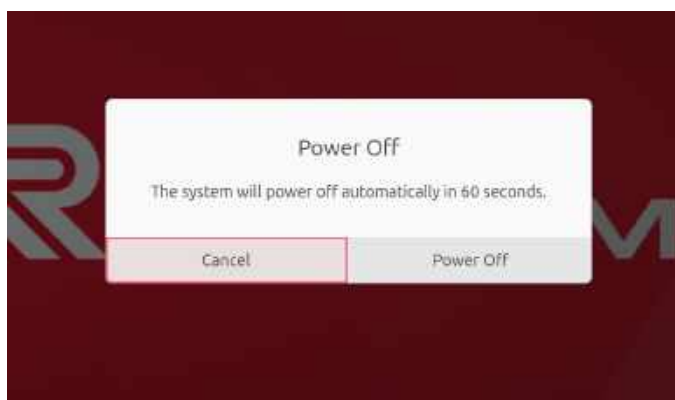


Fig 22

## 3.0 OPERATION CONT.

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### 3.12 POST OPERATION

41. After each use, inspect all components of the Dive Camera System thoroughly for any damage. Check all connectors and tether. Check the Camera, Light, and Sensor for any damage.
42. Verify that no foreign objects that can damage the controller are on or inside the controller box.
43. Rinse the Camera, Light, and Sensor with low-pressure fresh water or submerge it in fresh water for at least 1 hour after using them in saltwater. Dry all components and tether before putting them in storage.



**DO NOT** clean any components using high pressure air or water jets, or any chemicals with the exception of a mild dish soap.



## 4.0 TROUBLESHOOTING

---

There is physical damage visible on any of the components

- Do not turn the system on.
  - Contact Reach Systems' Customer Service.
- 

No power / Power light off

- Verify the power supply is connected to the power source and to the Controller.
  - Confirm that other than the POWER LED not turning on, the controller doesn't turn on either.
  - Push and hold the power for at least 4 seconds while watching the power button LED.
- 

No video from a camera

- Check the Camera configuration in RVM (IP address).
  - Use the IP module scanner software to discover available video streams on the network. Refer to the Digital Diver Camera System manual for more information.
  - Power the system down and check the tether connections at both ends.
  - Power the system down and swap the Camera and Light connections. Test again.
  - Reset the network configuration of the controller's operating system. Refer to the Digital Diver Camera System manual for more information.
-

---

Light won't turn on	<ul style="list-style-type: none"><li>• Check the Light configuration in RVM (IP address).</li><li>• Use the IP module scanner software to discover available lights on the network. Refer to the Digital Diver Camera System manual for more information.</li><li>• Power the system down and check the tether connections at both ends.</li><li>• Power the system down and swap the Camera and Light connections. Test again.</li><li>• Reset the network configuration of the controller's operating system. Refer to the Digital Diver Camera System manual for more information.</li></ul>
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Monitor won't turn on	<ul style="list-style-type: none"><li>• Verify the system is powered up (light on the power button)</li><li>• Power the system off and look for damage in the controller wiring.</li></ul>
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No overlay on video	<ul style="list-style-type: none"><li>• Confirm that there is text entered to the Overlay Text field.</li><li>• Turn Overlay Text, Date, Info Box, Video Rate, Grid on/off.</li><li>• Try both the buttons on the controller top panel and the on-screen commands.</li></ul>
---------------------	--

---

No function on one or more control buttons	<ul style="list-style-type: none"><li>• Make sure the button is being pushed for at least 0.1 seconds.</li><li>• Close and restart RVM.</li><li>• Power cycle the unit to re-start the OS and software.</li></ul>
--	---

---

## 4.0 TROUBLESHOOTING CONT.

---

Control Software does not start automatically upon login

- Start the RVM Software manually clicking on the Reach icon on the top left corner of the icon tray.



---

The Camera or Light IP address is unknown

- Consult the User Manual to be able to identify an unknown IP address.

---

The system becomes un-responsive, including power-off

- Turn off the system by holding the POWER button until the red LED is extinguished (about 5 seconds).
- In extreme cases the power source into the controller may be dis-connected. This should be considered only as a last resort.
- In the event of a forced power down allow the system to remain de-energized for a minimum of 15 seconds before attempting a restart.

---

Other problems or issues

- Refer to the Digital Diver Camera System manual for more information.
  - Contact Reach Systems' Customer Service.
-





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