OCEAN VOYAGER

USER MANUAL

L-VDR DR-100L

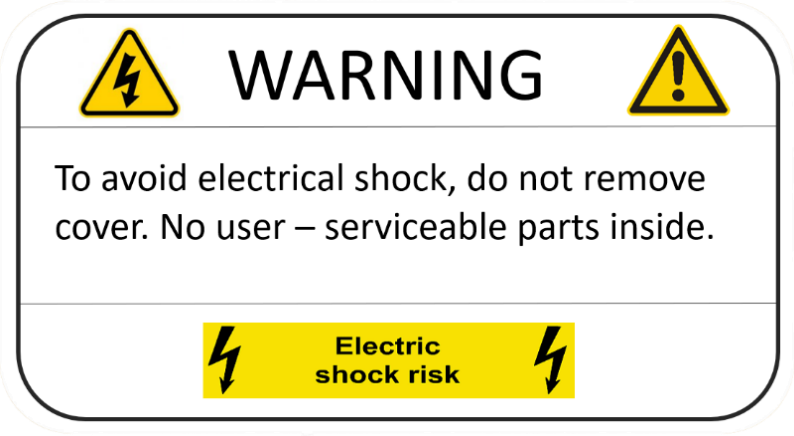
OCEAN VOYAGER MARINE ELECTRONICS SYSTEMS

Introduction

Thanks for purchasing Ocean Voyager Light Voyage Data Recorder L-VDR DR-100L product. Usage details of DR-100L can be found in this manual. Please read this manual carefully to avoid usage-based problems during operation. Please refer to warnings shown in this manual before usage. Immediately contact authorized service partner in case of malfunction. Please send an e-mail to info@oceanvoyagermarine.com for your feedbacks.

This manual prepared only for Ocean Voyager Light Voyage Data Recorder (L-VDR) DR-100L model. Do not use this manual for different products or models.

This product comprises of software's and hardware. Ocean Voyager service partners will support n case of software and hardware updates



This document prepared for L-VDR DR-100L. Before starting installation read the instructions first. Before start of using the product make sure settings done properly and in accordance with this document. For to protect from damages move carefully. For this product to work effectively check the Compass Safe Distance first. It's forbidden to change of settings or unauthorized access to the system.

In accordance with IMO regulations, the L-VDR shall be kept operational of all times and be powered off only for maintenance purposes.

TABLE OF CONTENTS

1 GENERAL

1.1 About L-VDR

The purpose of a Light Voyage Data Recorder (L-VDR) is to maintain a store, in a secure and retrievable form, of information concerning the position, movement, physical status, command and control of a vessel over the period leading up to, and following, an incident having an impact thereon. Information contained in L-VDR shall be made available to both the administration and the shipowner. This information is for use during any subsequent investigation to identify the cause(s) of the incident.

DR-100L is the first generation of Ocean Voyager L-VDR product. It is the easiest L-VDR to install and maintain.

1.2 System Configuration

DR-100L comprises of 3 components as below.

NO	COMPONENT	PART	DR-100L	CATEGORY
1	Data Acquisition Unit	DR-103	1 Pcs	Protected
2	Remote Alarm Panel	DR-106	1 Pcs	Protected
3	Indoor Microphone Unit	DR-101	4 Pcs	Protected

1.3 System Description

The L-VDR system continuously store the data in DAU by overwriting the old data with new data. System has 1 TB disk capacity.

Following data may be recorded by DR-100L.

- Date and Time (UTC)
- Ship’s Position
- Speed
- Heading
- Depth (Echo sounder)
- AIS
- Bridge Audio
- Communications Audio

When power supply fails.

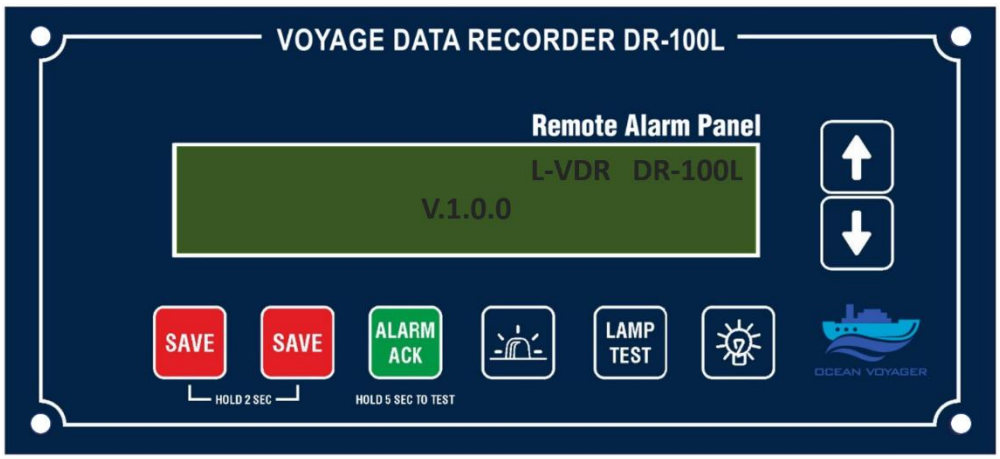
DR-100L powered by 110-220VAC 50/60 Hz and 24 VDC from emergency power source of the ship. If both the ship's main power and emergency power source fails, DR-100L will be powered by internal batteries to keep recording bridge audio. The batteries run the system for 2 hours and 5 minutes. 2 hours and 5 minutes later system stops recording and shows an alarm on remote alarm panel (Waiting for DAU).

1.3.1 Data Acquisition Unit (DAU)

Processor, power switch, emergency switch, batteries, audio module, main board are in the Data Acquisition Unit (DAU). DAU controls the running of the entire system. The Processors Data Recording Unit with 1 TB SSD records voyage data and is accessible by LAN connection while protected from any unauthorized changes. The DAU provides 2 channels of microphone input, 2 channels of VHF audio input and 5 serial data inputs as well.

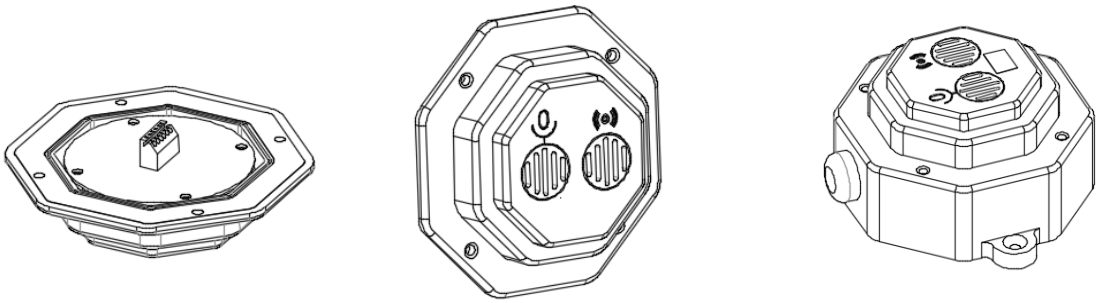
1.3.2 Remote Alarm Panel (RAP)

The Remote Alarm Panel (RAP) is used to control, view, acknowledge and mute alarms originating by the DAU and download its data to the USB Emergency Backup Disk. In any event period, these events are events such as fire, accident, collision, possible sinking of a ship, or abandonment of the ship for any reason, at any time after the event, two of the 'SAVE' buttons on the RAP can be used to download the last 4 hours of recorded data to the USB Emergency Backup Disk. It is important when to use buttons. After any emergency 'SAVE' buttons can be used to download all situational information. In case of leaving the ship in emergency, an authorized person shall download data to USB Emergency Backup Disk and keep it in safe during abandonment of the ship.



1.3.3 Microphone Units

The L-VDR system compromises 2 sets of microphone units. Microphone units must be located inside the bridge for to record bridge audio. Microphone cables must be kept away from any damage or paint. Do not apply paint on any microphone cables.



Use microphone screws for mounting microphone tightly. Make sure four screws tighten properly.

1.3.4 Data Acquisition Card (DAQ-C)

Data Acquisition Card (DAC) is used to convert audio and contact signals into recording format. It processes 8 channels audio data, power supply unit signals and UPS unit signals.

2 OPERATION

2.1 Power On/Off

NOTICE!

The L-VDR shall be kept operational of all times and be powered off only for maintenance purposes.

- **Power on:**

Use the key to open the panel cover of DAU. The AC power switch and battery power switches are located on the left middle corner.

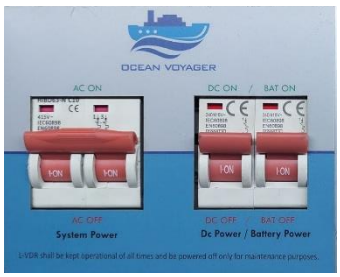
Switch on the AC power switch before switching on the emergency power switch and battery switch in the respective sequence to start up the L-VDR system. The L-VDR runs its startup process for about 2 minutes.

Please refer to below instructions for to shut down the L-VDR system.

Step 1

Step 2

Step 3



NOTE:

110-220VAC is the main power supply for the L-VDR system. When power supply run off, the emergency power source of the ship provides the required power, if both main power supply and emergency power fails, the internal batteries will automatically take over to provide the required power supply.

- **Power off:**

To power off the L-VDR system, switch off the battery power first and then switch off the Emergency power and AC power switch.

NOTE: In case not to follow power off directions, system may occur malfunction. Follow the power off instructions.

Please refer to below instructions for to shut down the L-VDR system.

Step 1

Step 2

Step 3

2.2 Operation of Remote Alarm Panel (RAP)

The Remote Alarm Panel (RAP) can be operated by direction keys on the panel.

Under normal operation, the operator can.

- Alarm acknowledges
- Lamp test & buzzer test
- Adjust brightness level
- Emergency save data to Emergency Backup disc which located under the DAU.

Panel Key	Description
Save	Hold 2 (Two) sec. on both 2 (Two) buttons to lock last 4 hours data in Emergency Backup Disc
Alarm ACK	Hold 5 (Five) sec. to run system test - Push once for silence the alarm
Buzzer	Buzzer hole - No button
Lamp Test	Runs lamp test and buzzer test
Lamp	Adjust brightness level
Down	Move down - View alarms
Up	Move up - View alarms

The alarm codes that listed on the RAP screen listed by time generated.

When ACK button pushed on RAP the ACK button light for specific alarm turns off and buzzer stops. If problem solved before pushing the button, alarm code does not disappear from the screen. ACK button must be pushed. For silencing buzzer push the ACK button anytime. After the problem solved acknowledged alarm disappears from the screen. For each alarm ACK button must pushed. Move down or move up to see other alarms and push ACK button for each alarm displaying on the screen.

2.2.1 Alarm Codes

#	Code	Description	Message	Troubleshooting
01	101	AC 110V/220V Lost	AC 110V/220V Lost	Check AC power switches and ship supply
02	102	Battery Discharge	Bat Discharge	Check AC power switches and ship supply
03	103	Battery Voltage Lost	Bat Voltage Lost	Check battery cable connections and battery power
04	104	DC Voltage Lost	DC Voltage Lost	Check DC power supply unit connections
05	105	Audio Channel 1 Online Test Fail	Aud. Ch1 Online Fail	Check mic. cable connections and fuse
06	106	Audio Channel 2 Online Test Fail	Aud. Ch2 Online Fail	Check mic. cable connections and fuse
07	107	Audio Channel 3 Online Test Fail	Aud. Ch3 Online Fail	Check mic. cable connections fuse
08	108	Audio Channel 4 Online Test Fail	Aud. Ch4 Online Fail	Check mic. cable connections and fuse
09	109	Audio Channel 5 Online Test Fail	Aud. Ch5 Online Fail	Check mic. cable connections and fuse
10	110	Audio Channel 6 Online Test Fail	Aud. Ch6 Online Fail	Check mic. cable connections and fuse
11	111	Audio Channel 7 Online Test Fail	Aud. Ch7 Online Fail	Check VHF cable connections and fuse
12	112	Audio Channel 8 Online Test Fail	Aud. Ch8 Online Fail	Check VHF cable connections and fuse
13	113	Audio Channel 1 Manuel Test Fail	Aud. Ch1 Man Fail	Check mic. connections
14	114	Audio Channel 2 Manuel Test Fail	Aud. Ch2 Man Fail	Check mic. connections
15	115	Audio Channel 3 Manuel Test Fail	Aud. Ch3 Man Fail	Check mic. connections
16	116	Audio Channel 4 Manuel Test Fail	Aud. Ch4 Man Fail	Check mic. connections
17	117	Audio Channel 5 Manuel Test Fail	Aud. Ch5 Man Fail	Check mic. connections
18	118	Audio Channel 6 Manuel Test Fail	Aud. Ch6 Man Fail	Check mic. connections
19	119	Audio Channel 7 Manuel Test Fail	Aud. Ch7 Man Fail	Check VHF connections
20	120	Audio Channel 8 Manuel Test Fail	Aud. Ch8 Man Fail	Check VHF connections
21	121	Fix Capsule Connection Lost	FPC Conn Lost	Control cable connections – Check LAN cables
22	122	Float Capsule Connection Lost	FFC Conn Lost	Control cable connections – Check LAN cables
23	123	Fix Capsule App Not Running	FPC Not Running	Contact service
24	124	Float Capsule App Not Running	FFC Not Running	Contact service
25	125	AIS No Connection	AIS No Connection	Check device and connections
26	126	Gyro No Connection	Gyro No Connection	Check device and connections
27	127	Sounder No Connection	Sounder No Conn	Check device and connections
28	128	Speed Log No Connection	Speed Log No Conn	Check device and connections
29	129	GPS No Connection	GPS No Connection	Check device and connections
30	130	RAP No Connection	RAP No Connection	Check device and connections
31	131	DISPAN No Connection	DISPAN No Conn	Check DISPAN - connections
32	132	Inlet Fan Fail	Inlet Fan Fail	Contact service

33	133	Outlet Fan Fail	Outlet Fan Fail	Contact service
34	134	Emergency Backup Disk Fail	BUP Disk Fail	Contact service
35	135	Emergency Backup Disk Capacity Fail	BUP Disk Cap Fail	Contact service
36	136	Backup Fail	Backup Fail	Contact service
37	137	GPS Time Difference	GPS Time Dif.	Check main GPS time
38	138	Backup Quota Full-Contact Service	Backup Quota Full	Contact service
39	1000	Backup Started	Backup Started	No action needed
40	1001	Backup Finished	Backup Finished	No action needed
41	139	Battery Disconnected	Battery Disconnected	Check Battery Power
42	140	Emergency Supply Disconnected	Emergency Supply Disconnected	Check Emergency DC Power

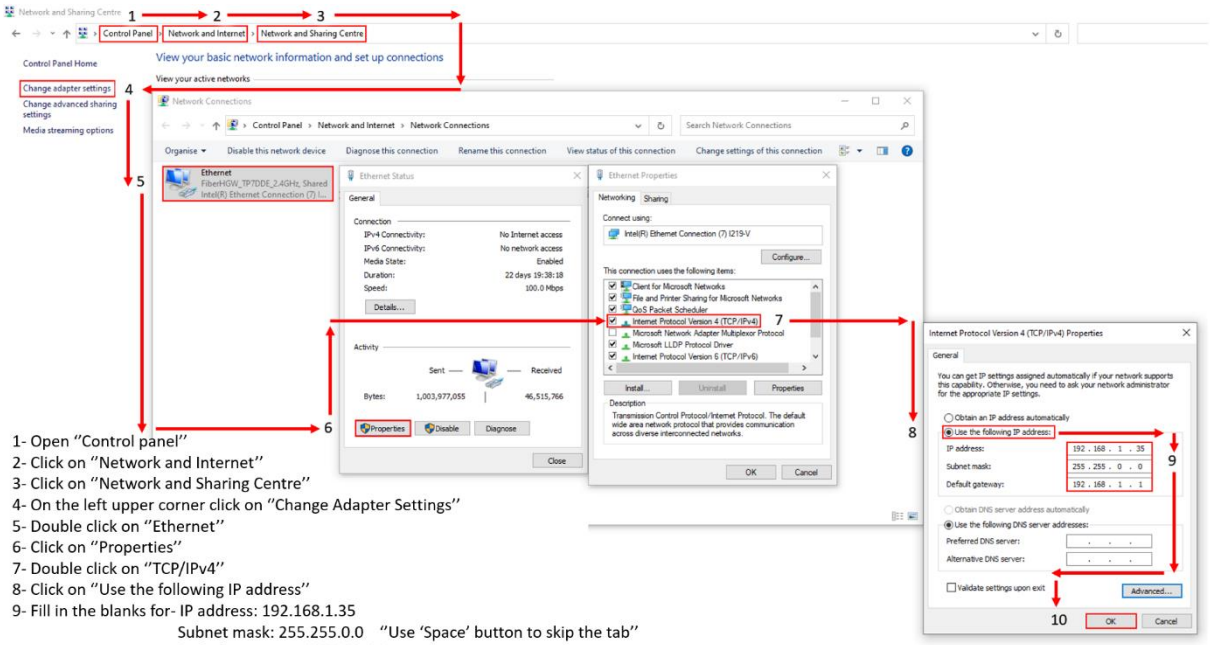
2.2.2 Backup Disk

The emergency USB Backup Disc must stay plugged in the port under the DAU. If emergency backup buttons pushed for 2 seconds, last 4 hours data will be downloaded to USB backup disc. After backup complete alarm, disk can be removed. During normal operation USB disk must stay plugged in USB port under the DAU panel. It takes about 10 minutes to download last 4 hours data to emergency backup disc. Backup data can be downloaded only three times. After 3 times backup downloaded, contact service alarm displays. For to fix the alarm contact service immediately. Do not change or damage USB backup disc.

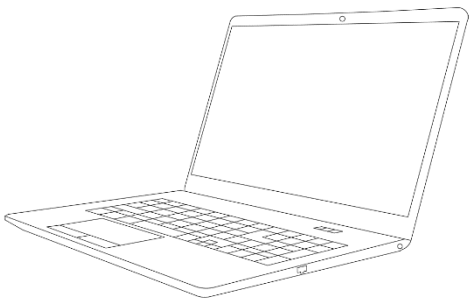
2.3 Operation of VDR App

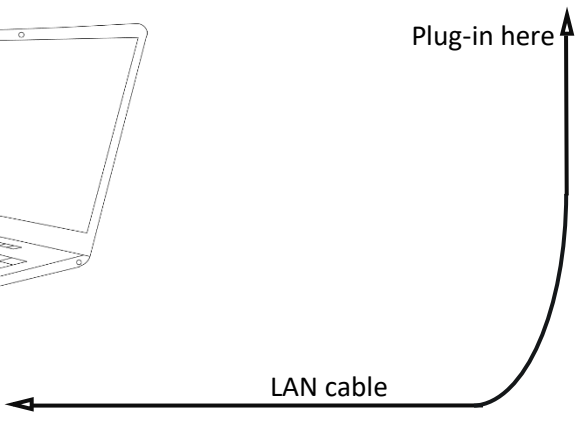
2.3.1 Login

Set below settings on PC before using VDR application.



1- Open ''Control panel''
2- Click on ''Network and Internet''
3- Click on ''Network and Sharing Centre''
4- On the left upper corner click on ''Change Adapter Settings''
5- Double click on ''Ethernet''
6- Click on ''Properties''
7- Double click on ''TCP/IPv4''
8- Click on ''Use the following IP address''
9- Fill in the blanks for- IP address: 192.168.1.35
Subnet mask: 255.255.0.0 ''Use 'Space' button to skip the tab''
Default gateway: 192.168.1.1
10- Click ''OK''

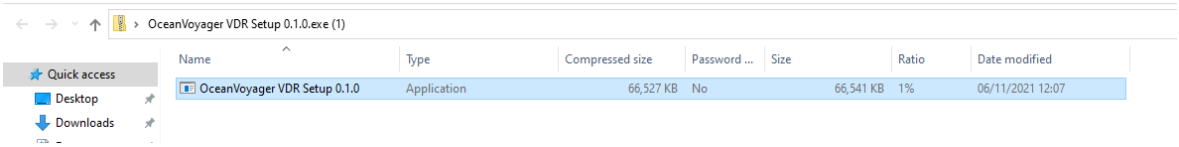




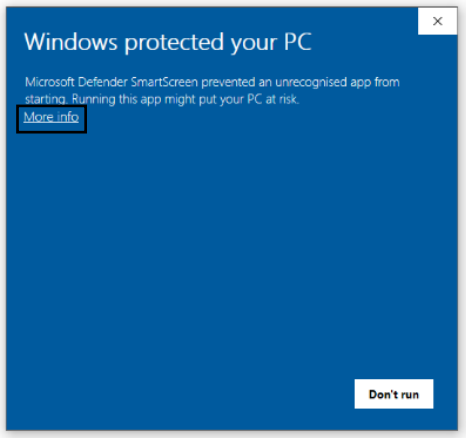
Follow below steps to install the VDR application.

Download the application file by using download link. Open zip file and double click on OceanVoyager VDR Setup 1.1.0.exe.zip setup fie.

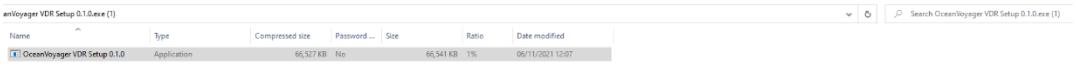
If no download link exists, please contact with technic@oceanvoyagermarine.com

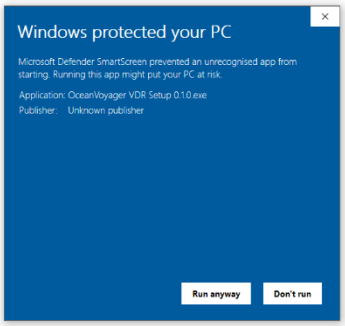


After clicking on installation file, the window below pops up. Click on 'More info' text.



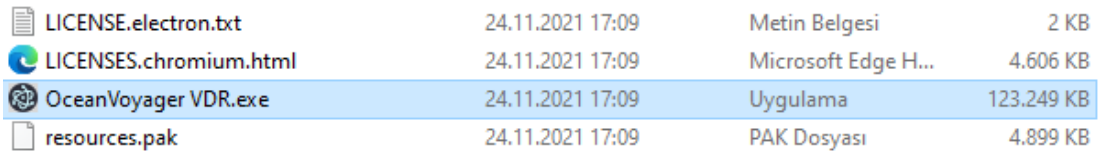
And then click on Run anyway. After few seconds, the application will be installed on PC.



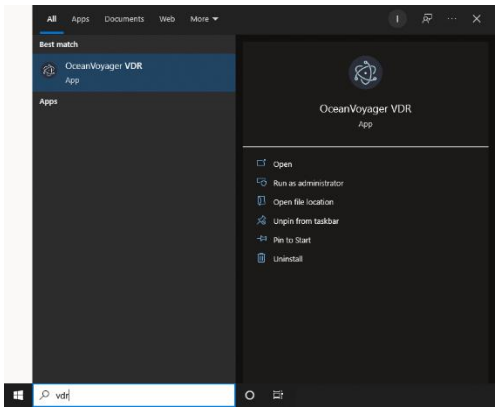


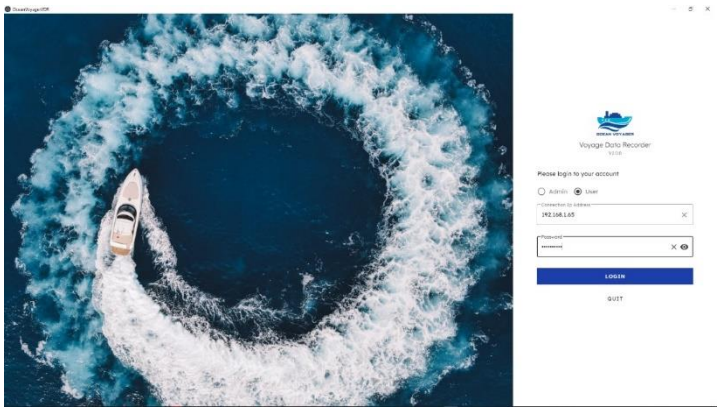
Open the installation folder on pc.

Double click on OceanVoyager VDR.exe application file to start application.



If no folder found than click on windows button on keyboard and go to search box, type ‘VDR‘on the searching box.



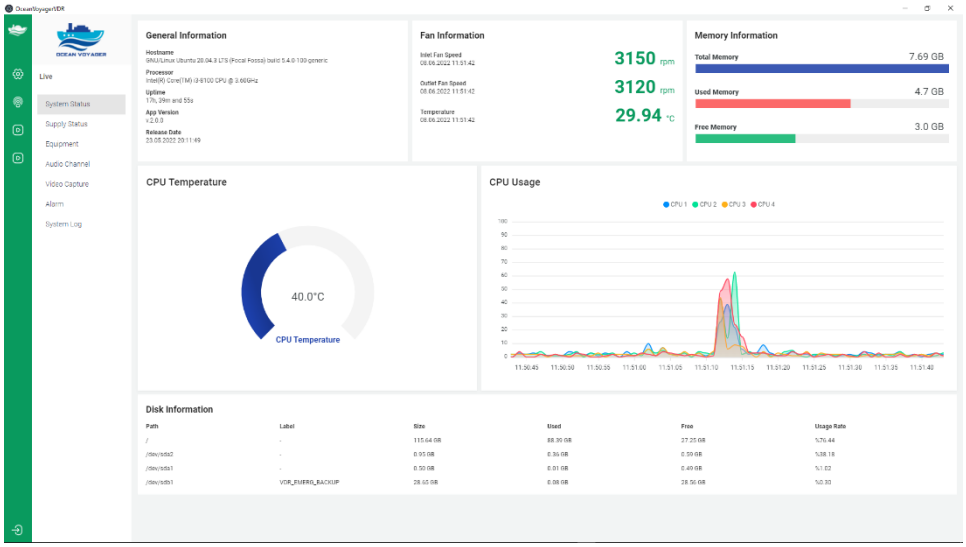


Click on VDR application symbol to start the application.

On the first page write username and password to log in to the application.

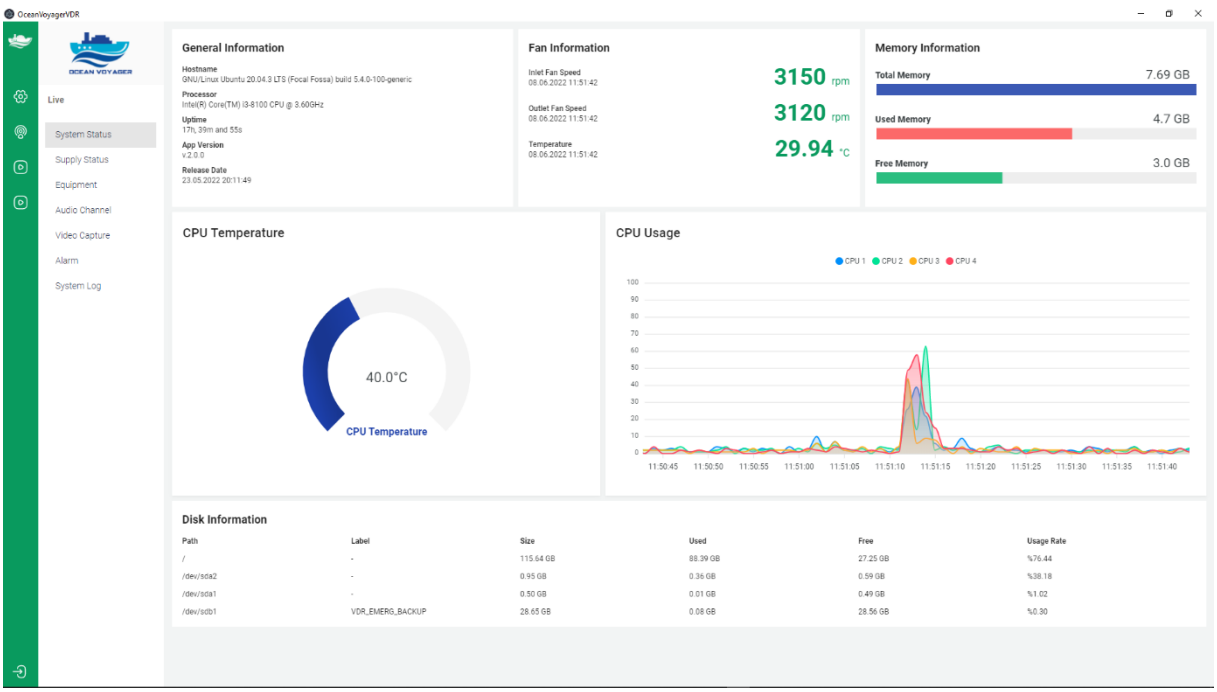
If no username or password applicable, please contact with technic@oceanvoyagermarine.com

Homepage,



VDR app can be used for to view live data, apply configuration changes, download, and display recorded data by connecting a proper computer. When proper connection done with LAN cable, computer will be successfully connected to DAU or any capsule. For to connect to DAU, FFC or FPC use LAN port which located under the DAU panel. Use the LAN cable to make connection. Use proper IP setting to connect DAU successfully. To do that, apply IP settings that indicated above.

2.3.2 Live Data

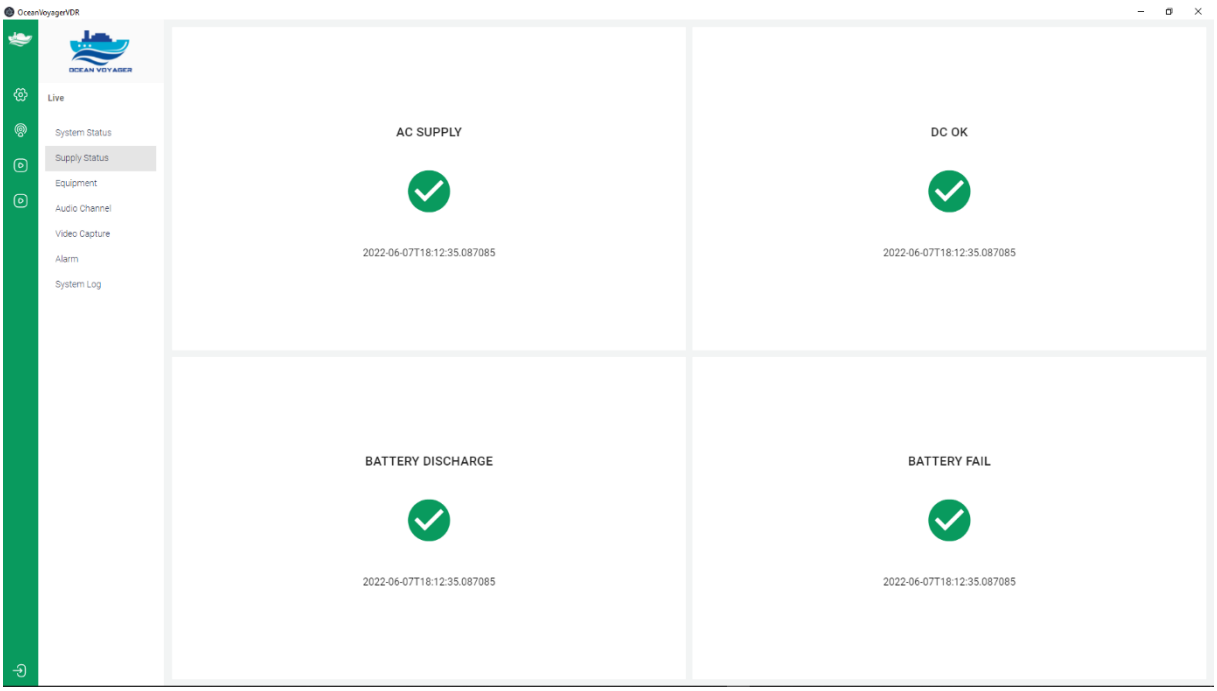


2.3.2.1 System Status

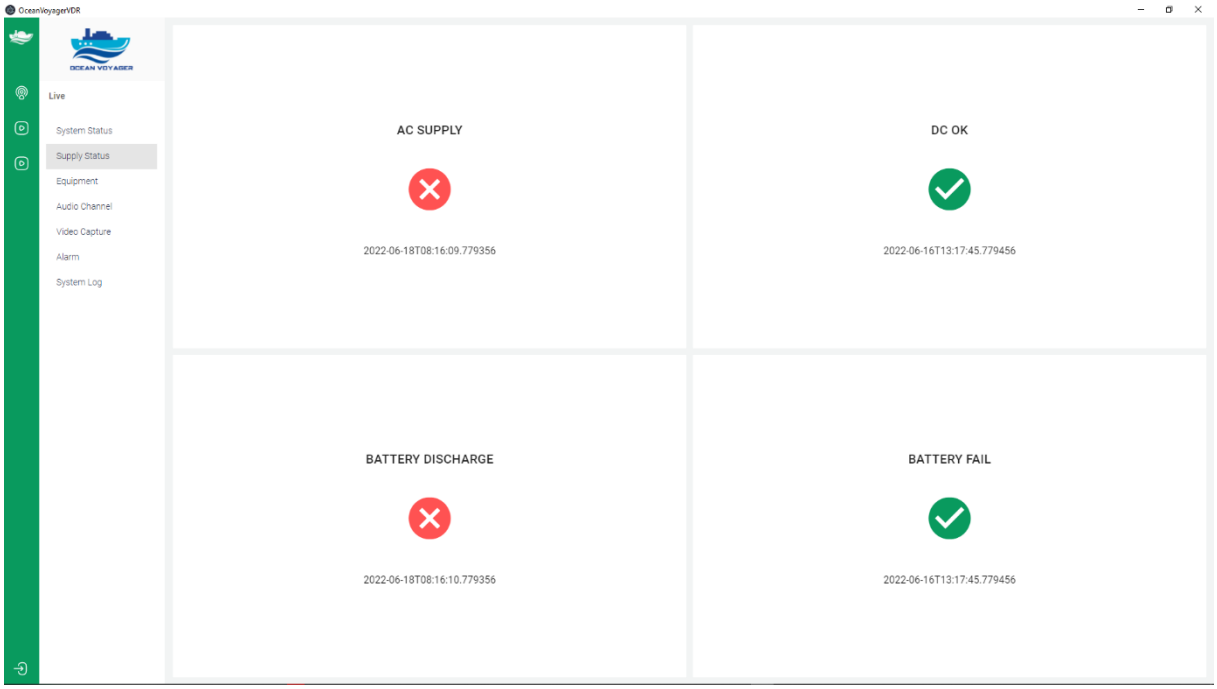
General information about the system can be found on this page. System load on the processor, system memories, fan speed, system temperature, system version, system load, disk memories, software of the system, CPU usage can be viewed. To log out of the page use the log out icon on the left bottom corner of the page. If any version ready to be updated, version number of the system can be checked from this page.

2.3.2.2 Supply Status

This page shows the status of power supply. If there is loss of DC voltage or run out of battery situation, indicators show it. The alarms display on the RAP simultaneously. The time under any icon indicates the exact time for last status.

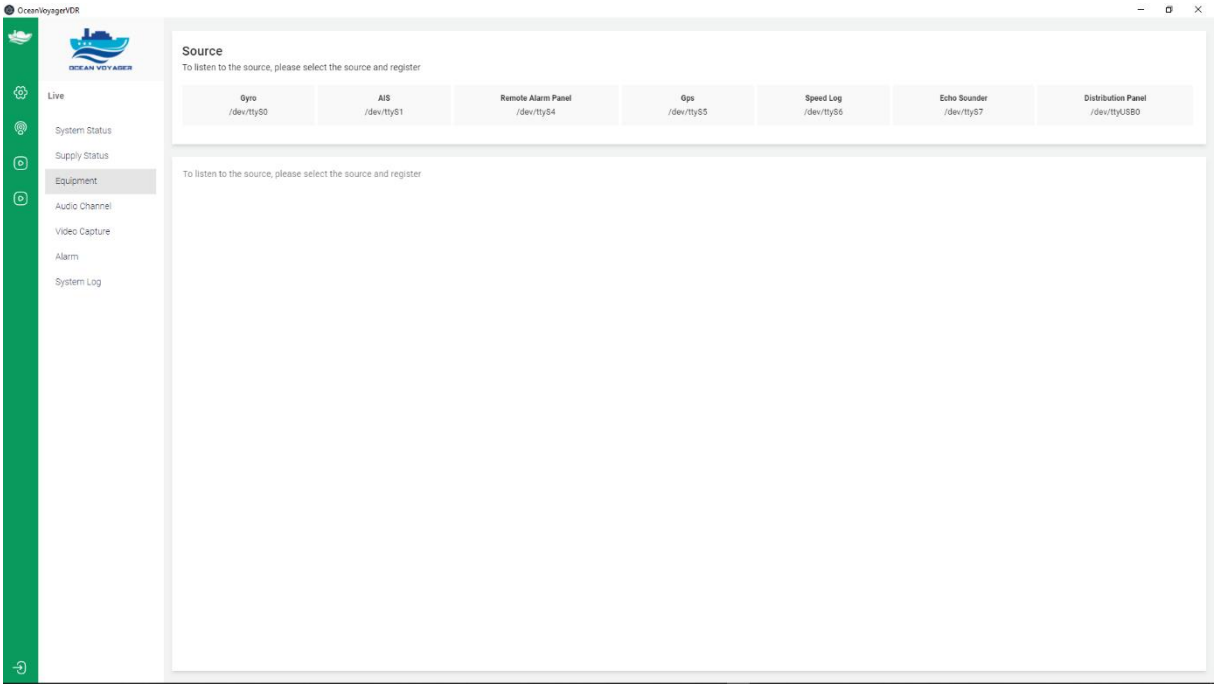


In case any error occurs, there will be fail sign as showed below. In this case there is no AC supply power and system is running by the batteries. Batteries discharging and no external power supplied. The time that AC power failure occurred, indicated below the failure icon.

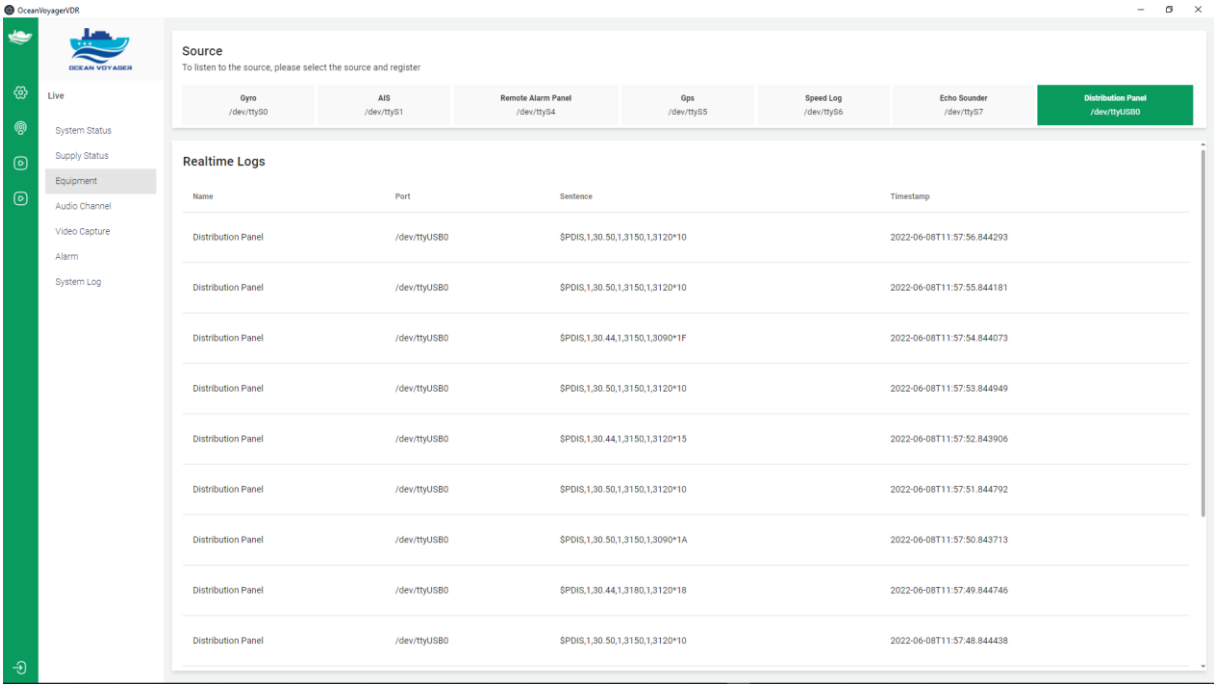


2.3.2.3 Equipment

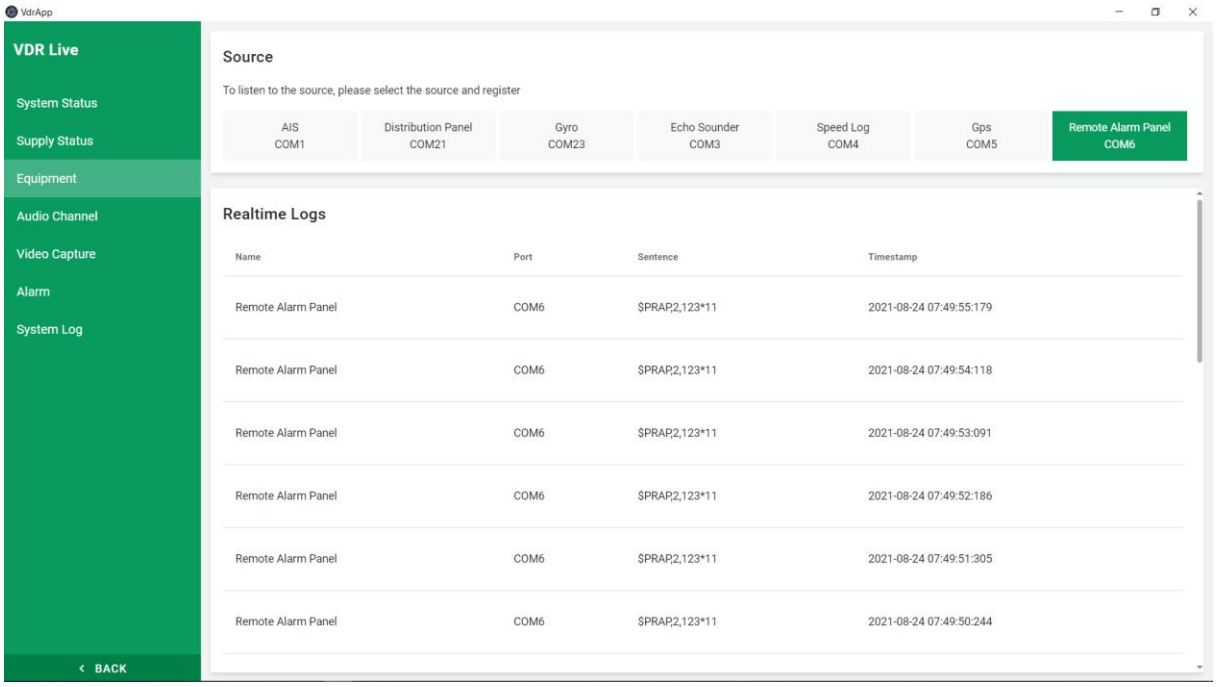
This page shows real time data flow received from connected equipment's. To see the data flows, click on each specified tab. Be aware that data displays here are simultaneously. Use this tab after installation to see whether data received correctly or not. Check this data flow after every equipment connection.



When clicked on the specified tab, window below displays. On distribution panel (DISPAN) tab, logs received from DISPAN can be viewed. Flowing sentences indicates that connection is stable with the processor.

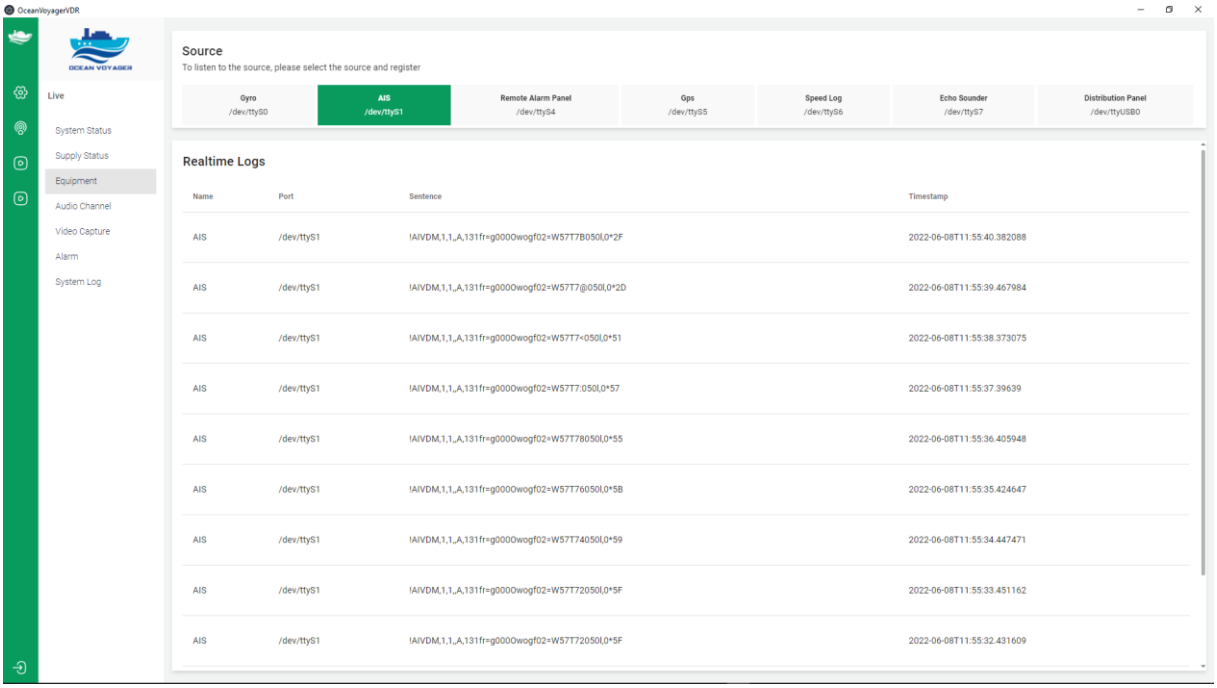


In this tab remote alarm panel and DAU communication sentences are displaying. No alarm displays here. These sentences indicates that RAP connection with DAU running properly.

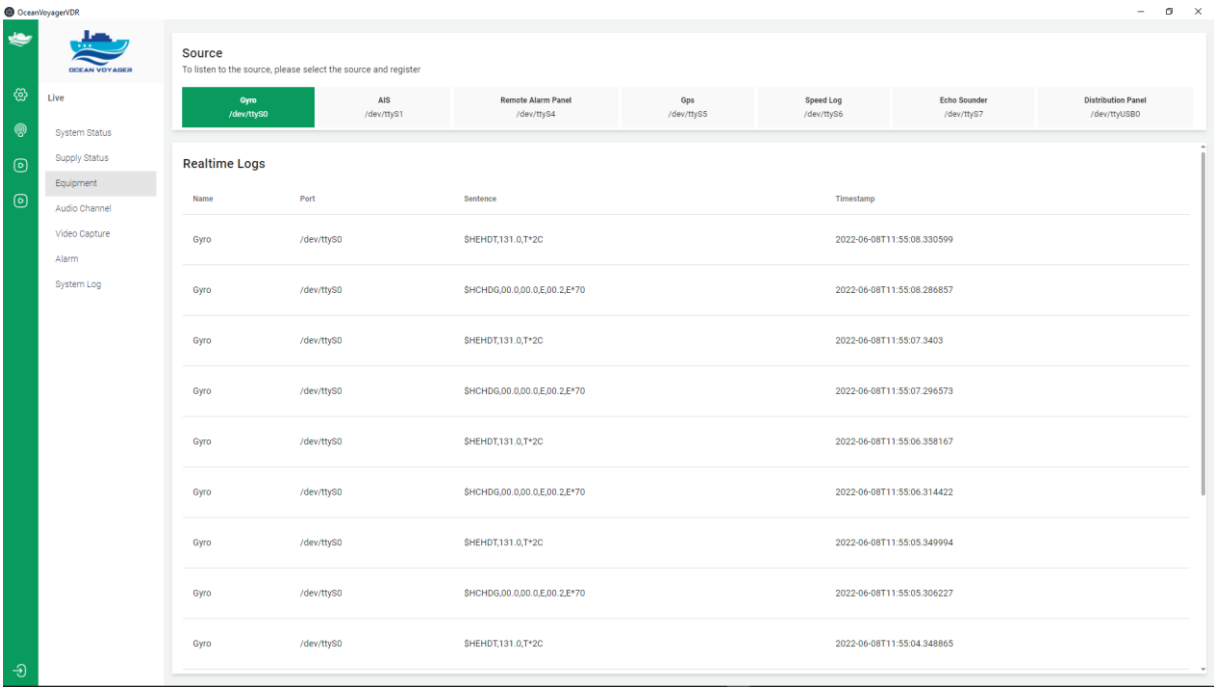


AIS data sentences flow simultaneously in this tab. Realtime data from AIS displays here as sentences.

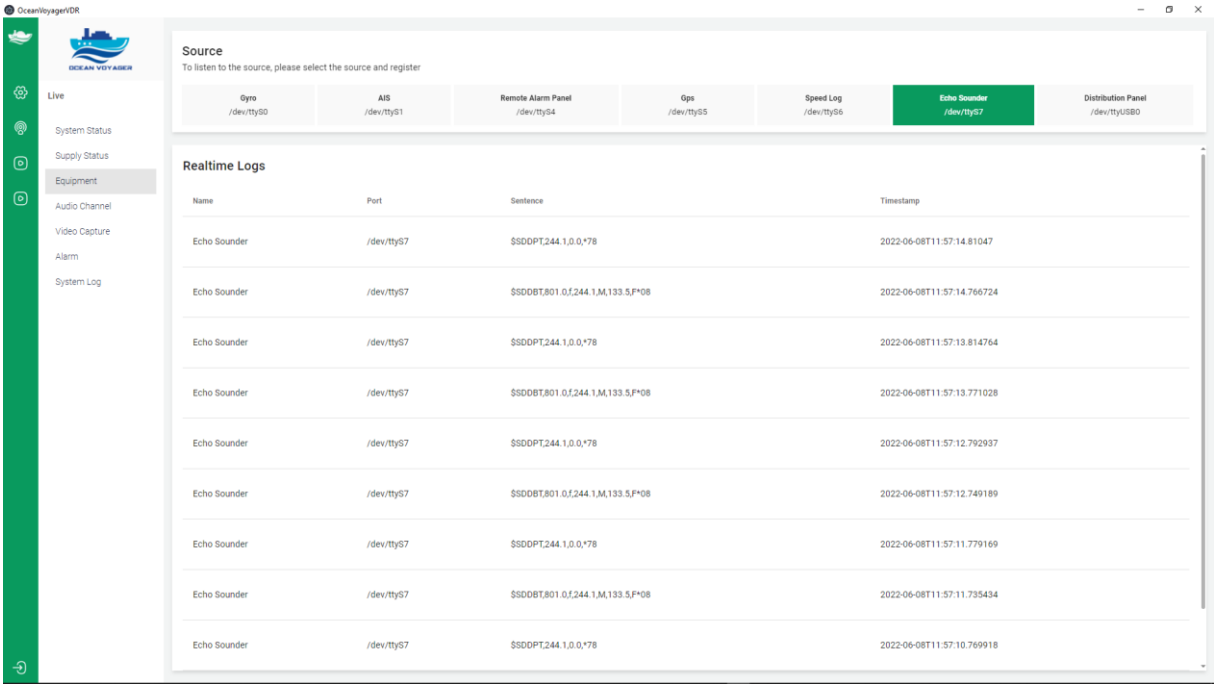
If there are no sentence here, check serial data cable connections and related device output settings. The sentences here are also can be used to determine the NMEA version of the output sentences.



Gyrocompass data sentences flows simultaneously in this tab. Realtime heading data sentences displays here. These sentences indicates that gyrocompass running properly and transmits data to L-VDR. If there are no sentence here, check serial data cable connections and related device. Flowing sentences must be at least NMEA V.2.0 version. Any of the HDG or HDT sentences must be seen here.



Echo sounder data sentences flows simultaneously in this tab. Realtime echo sounder data sentences displays here. If the device connected to any other device, it also transmits that devices data. If there are no sentence here, check serial data cable connections and related device output settings.



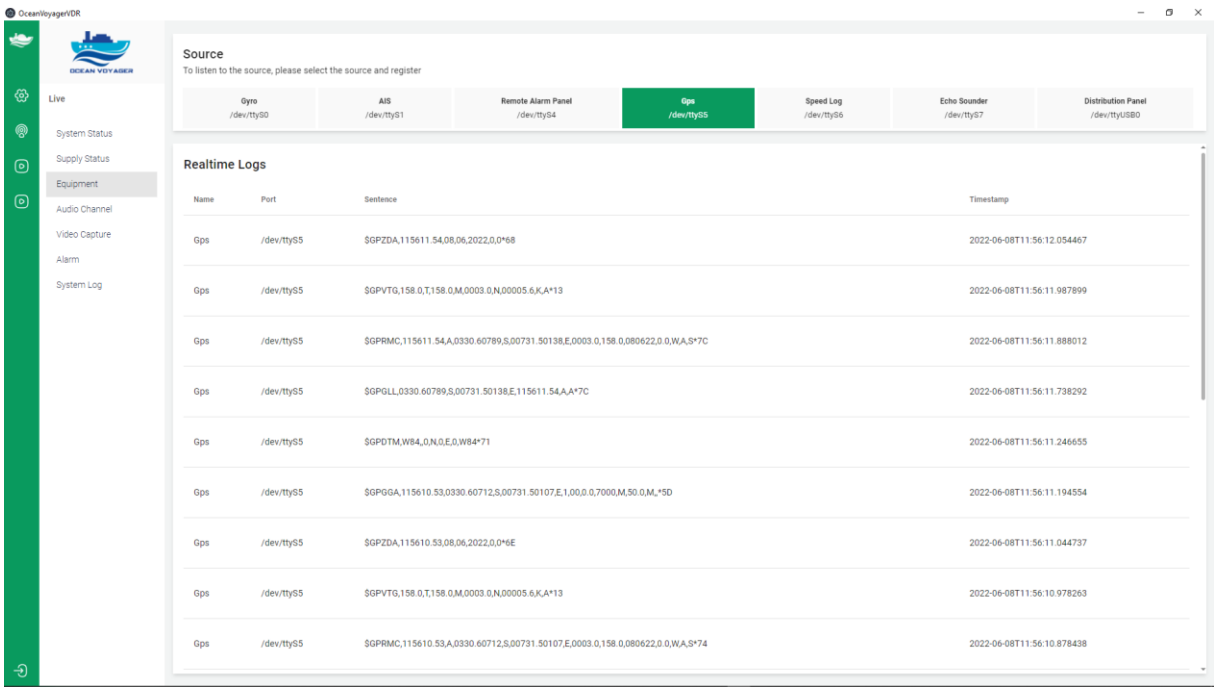
GPS data sentences flows simultaneously in this tab. Realtime GPS data sentences displays here. These sentences indicates that GPS running properly and transmits data to L-VDR. If there are no sentences check serial cable connections and related device output setting. NMEA sentence output of the device must be selected as V.2.0. To make sure the system is working properly, apply below setting to the main GPS device of the vessel.

NMEA version = V 2.0

Least sentences to be recorded = RMC, ZDA, GGA, GLL, VTG

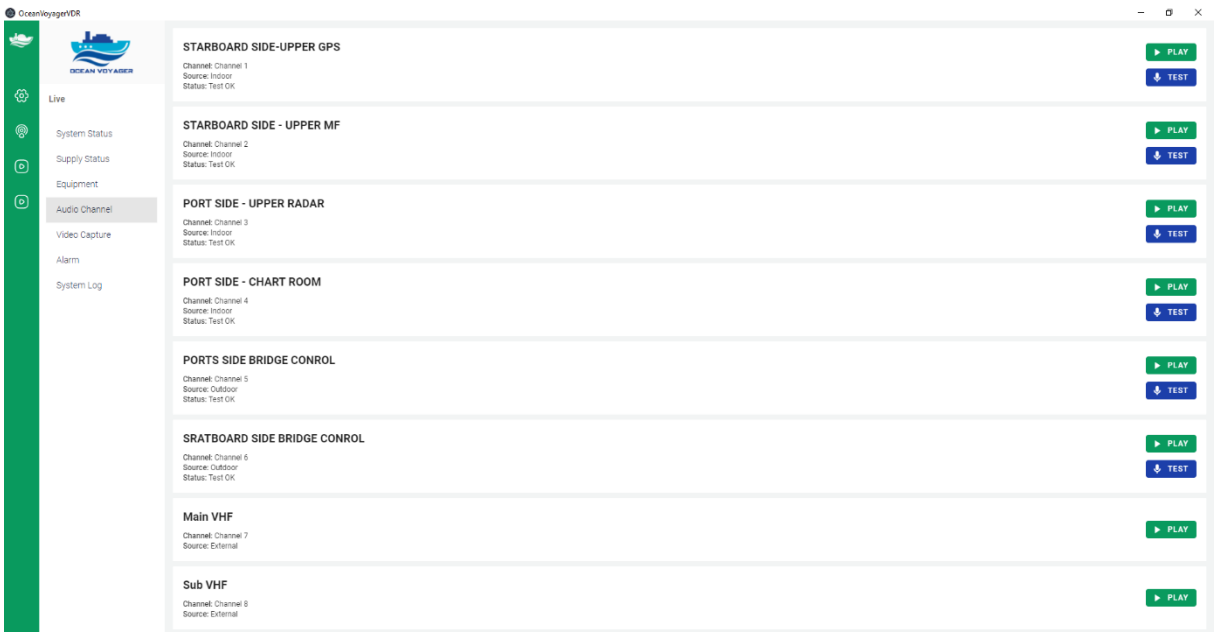
Baud rate = 4800

If the time of the GPS is wrong, system generates an alarm.



2.3.2.4 Audio Channel

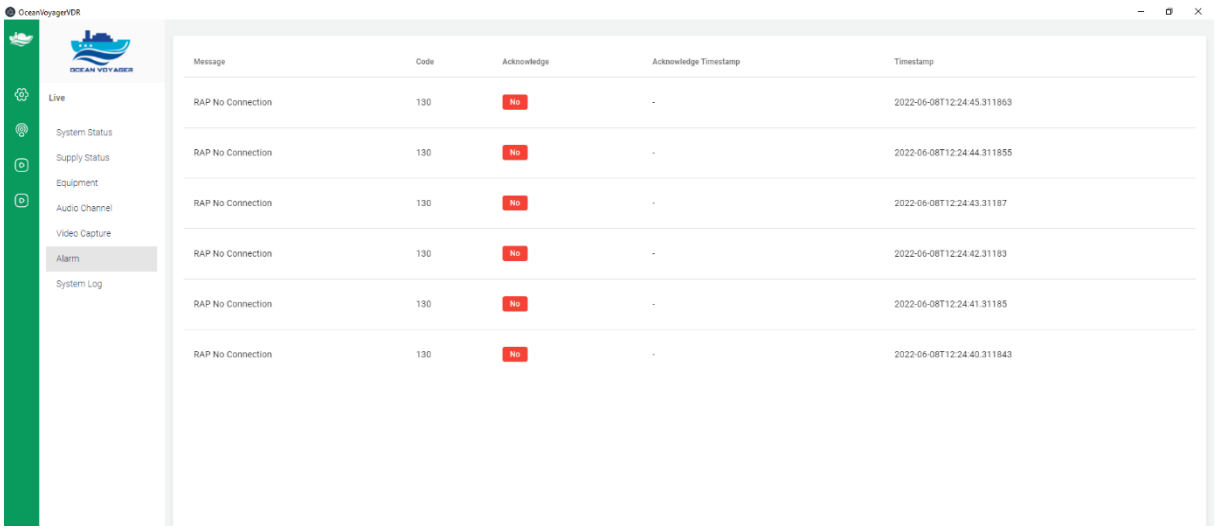
Audio tab can be used to listen live audio channels simultaneously. Microphone tests can be run, and results will be showed in a second. If there is an error in any audio channel, there will be an error sign right bottom corner of each tab and manual audio channel alarm displays on RAP. Microphones and VHF audio channels listed as displays on the screen below. Name of the channels can be changed on the configuration window.



To listen any channel simultaneously click on the play button located on each tab. To finish listening click on the stop button. In the picture below 'STARBOARD SIDE-UPPER GPS' audio channel is in listening position. Green microphone sign means that this channel is in listening mode, but it does not mean that there is voice in this channel. Channels must be listened to confirm if the microphones recording audio.

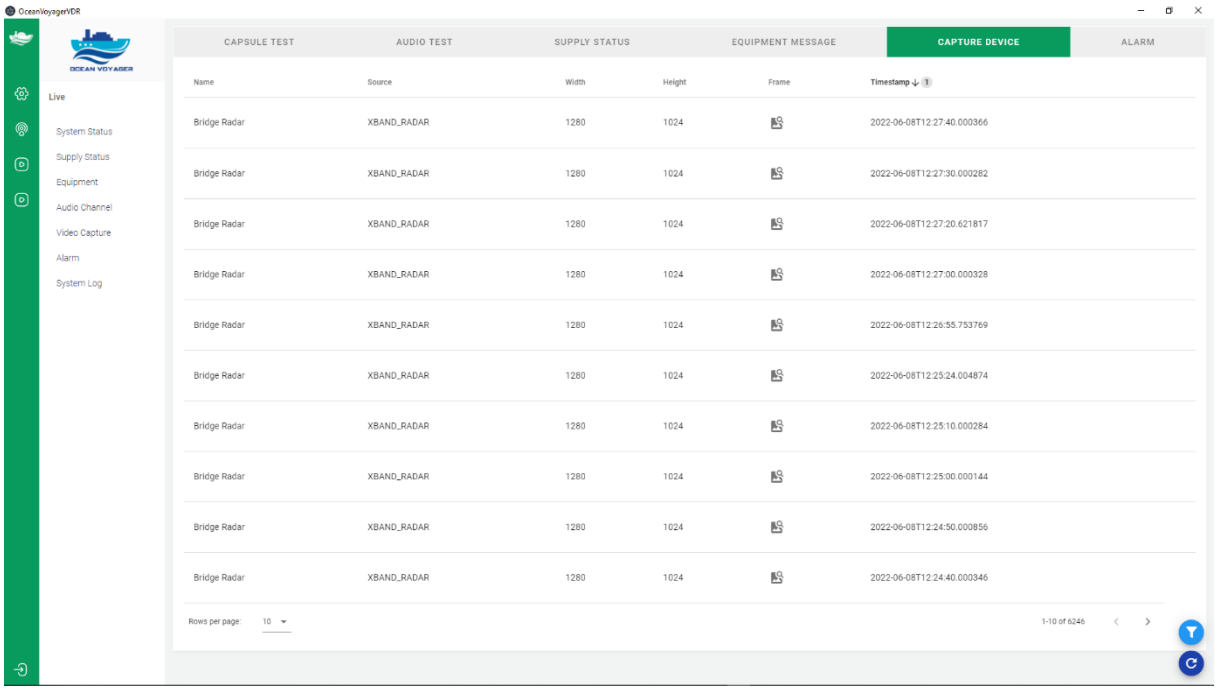
2.3.2.5 Alarm

In alarm tab the alarms that created by RAP are displaying. After RAP successfully connected to L-VDR, alarms seen here will be shown on RAP. If the alarms on RAP acknowledged on RAP by pushing ACK button, there will be YES sign on the acknowledge tab.

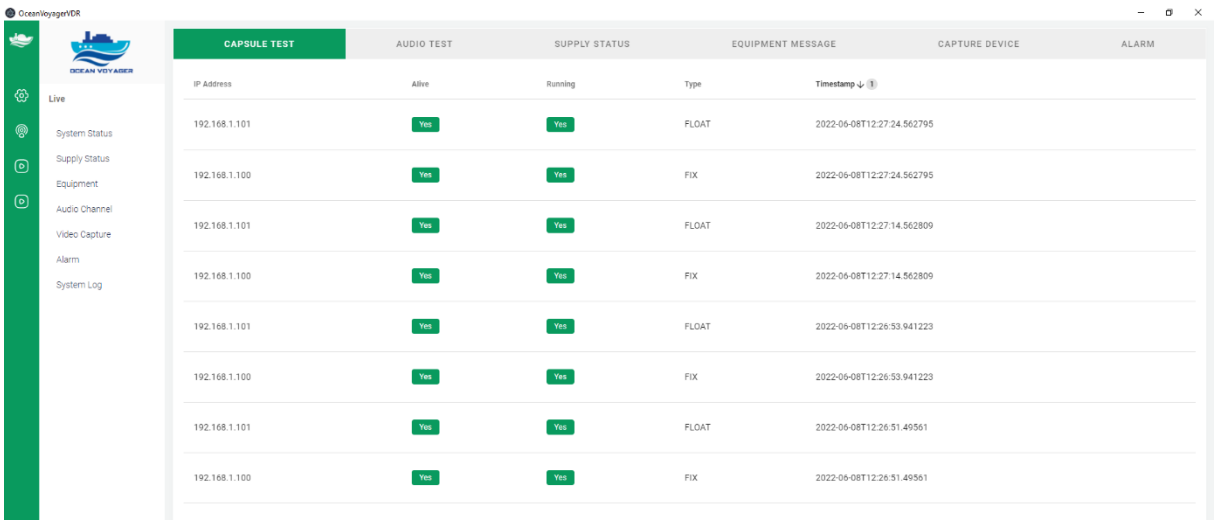


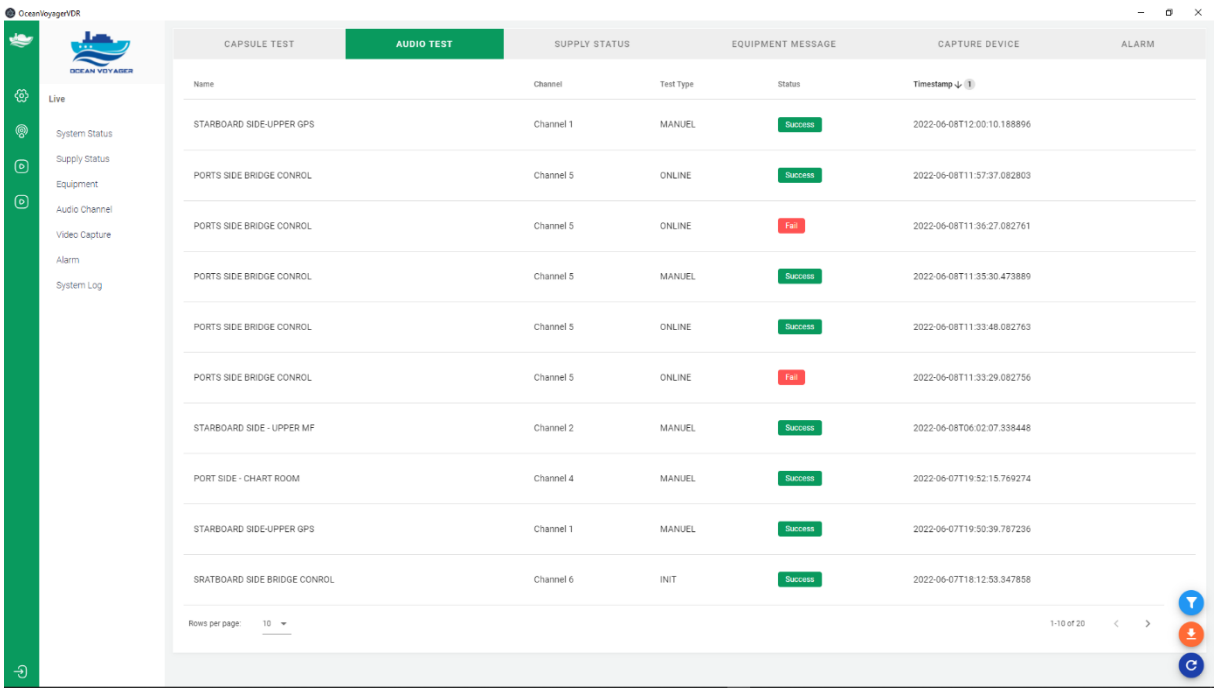
2.3.2.6 System Log

In system log tab all sentences received from any equipment can be viewed. All logs can be downloaded even capture device screenshots. In this pace screenshots captured from capture device can be downloaded separately and one by one. To download all screenshots, go to player and select date and time period to download.



All other data can be filtered and downloaded by using the buttons. If there are new logs refresh the page to see them all. The page below shows the capsule connection. After mounting capsules, make proper cable connection with DAU. Check this page if capsules started running or use this page for connection diagnostics.





All tests ran by user and the tests that system itself ran while starting the system can be seen and downloaded from this page.

In capsule tab Alive-True means; DAU system successfully connected to the capsule.

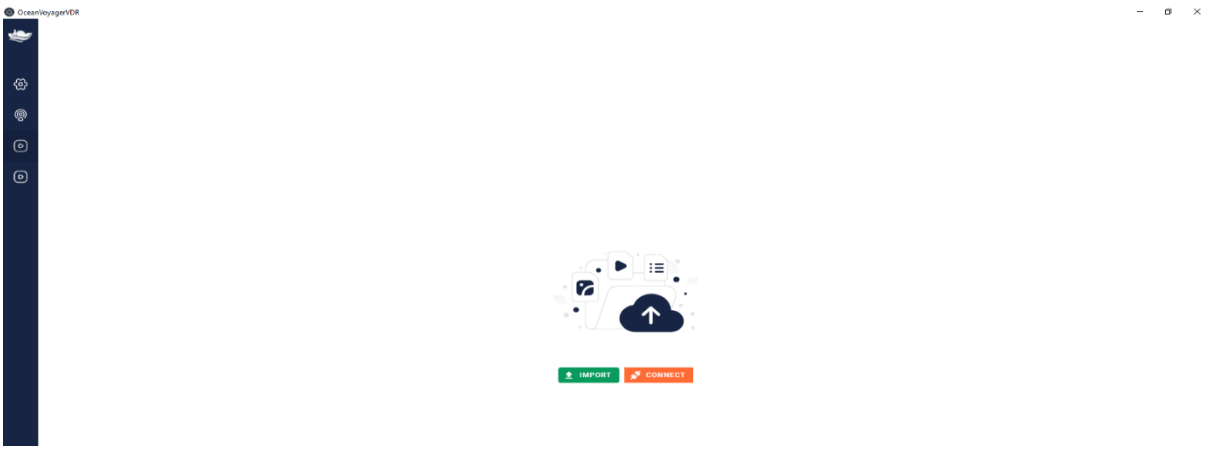
Running-Yes means; the operating system in capsule is running.

In audio test tab Status-Success means; microphone is recording successfully.

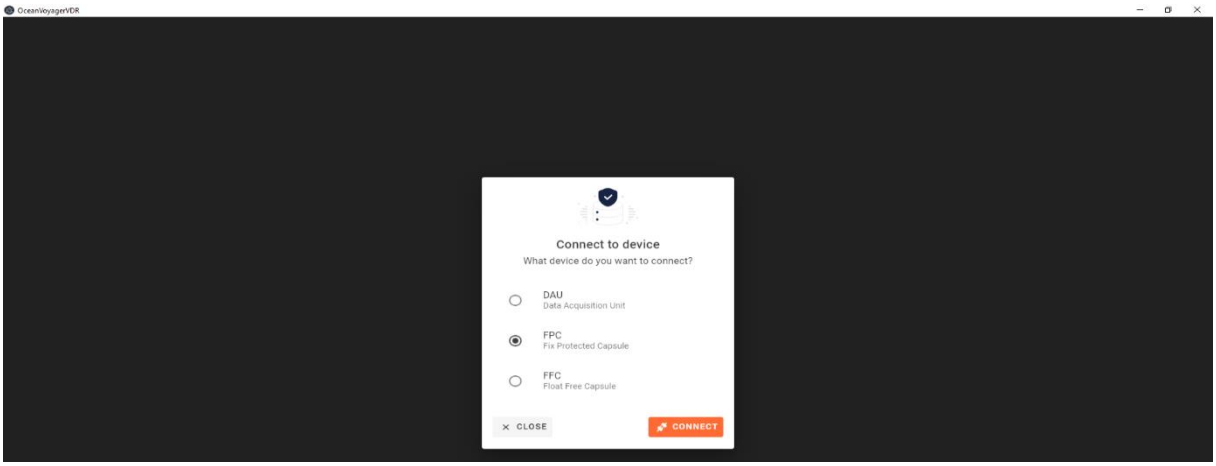
2.3.3 Player

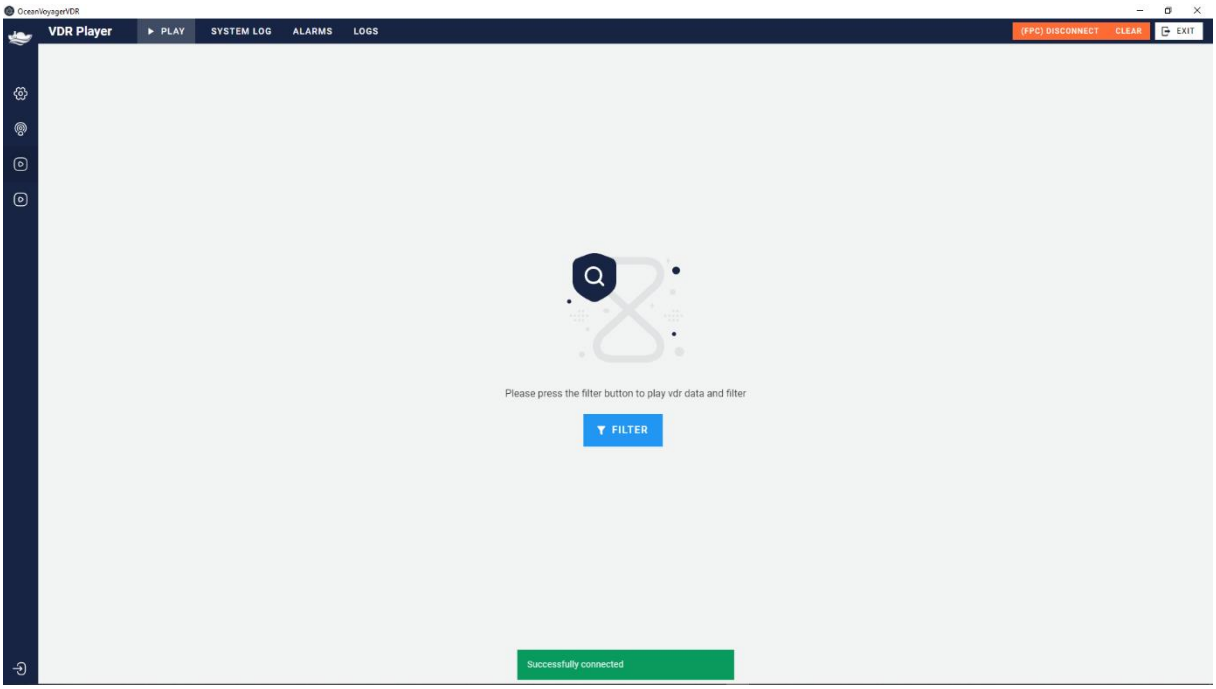
This section is for to view and download the stored data in capsules and DAU. To view all data, click on the player tab first. Choose an option, import a downloaded file, or connect any recording medium.

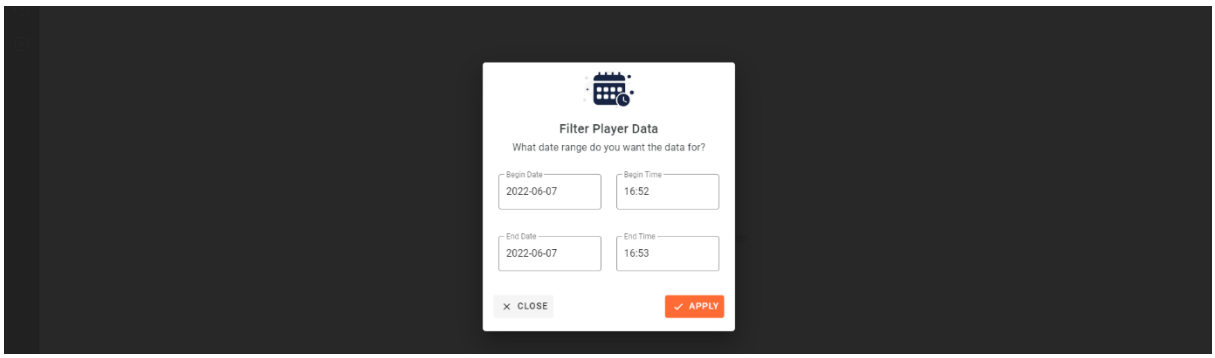
For to play downloaded data from USB backup disc, DAU, FPC, or FFC click import and choose the downloaded file to play. To open player tab, click on player icon located on the left top of the window.



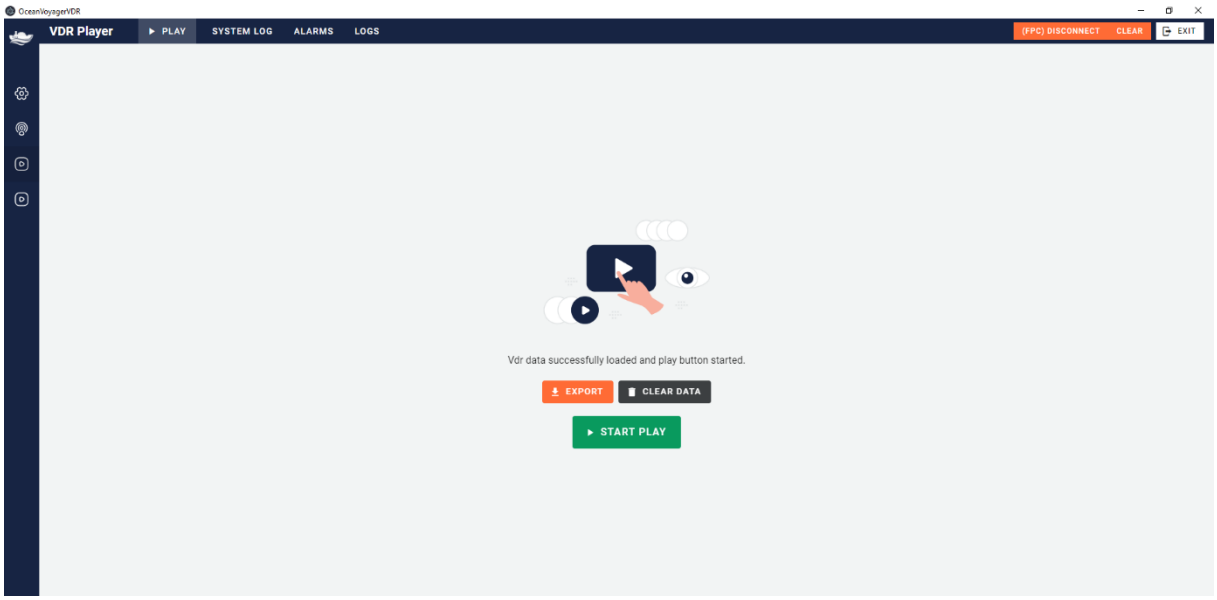
The page above displays on the screen. Click on the connect button to display or download the recorded data. Choose any storage to connect. When any capsule selected make sure LAN cable plugged in the port under the DAU. Live data and VDR app player connection available from same port under the DAU panel. Check LAN cable first to successfully connect to DAU.



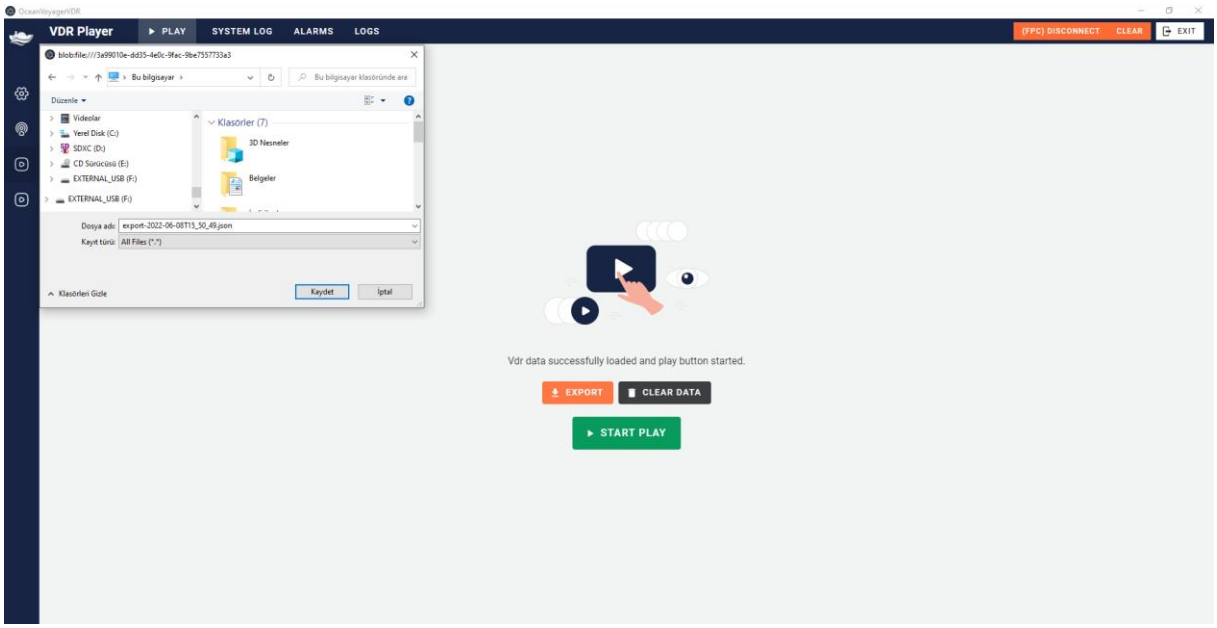




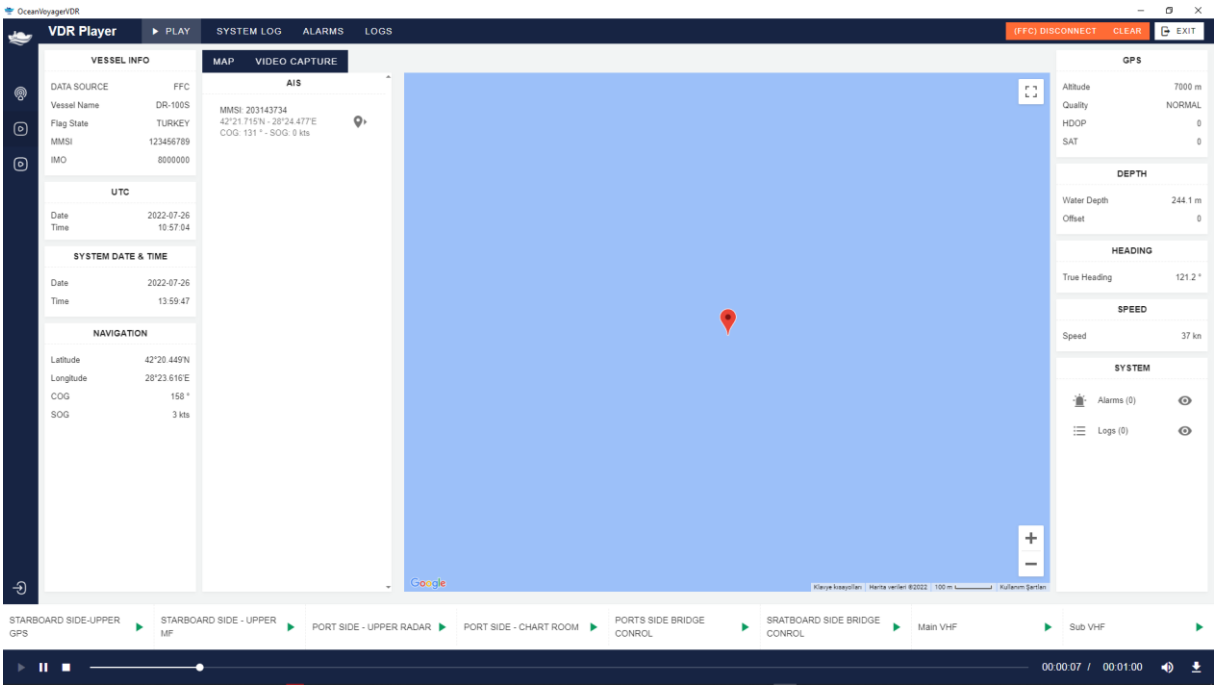
After clicking on the connect button the date and time selecting window displays. Select the exact date and time to listen, view and download. After selecting the date and time screen below pops up. To download the data, click on the export button and save the data. It takes about few seconds to connect to the storage. Wait until all data downloaded then unplug LAN connection.



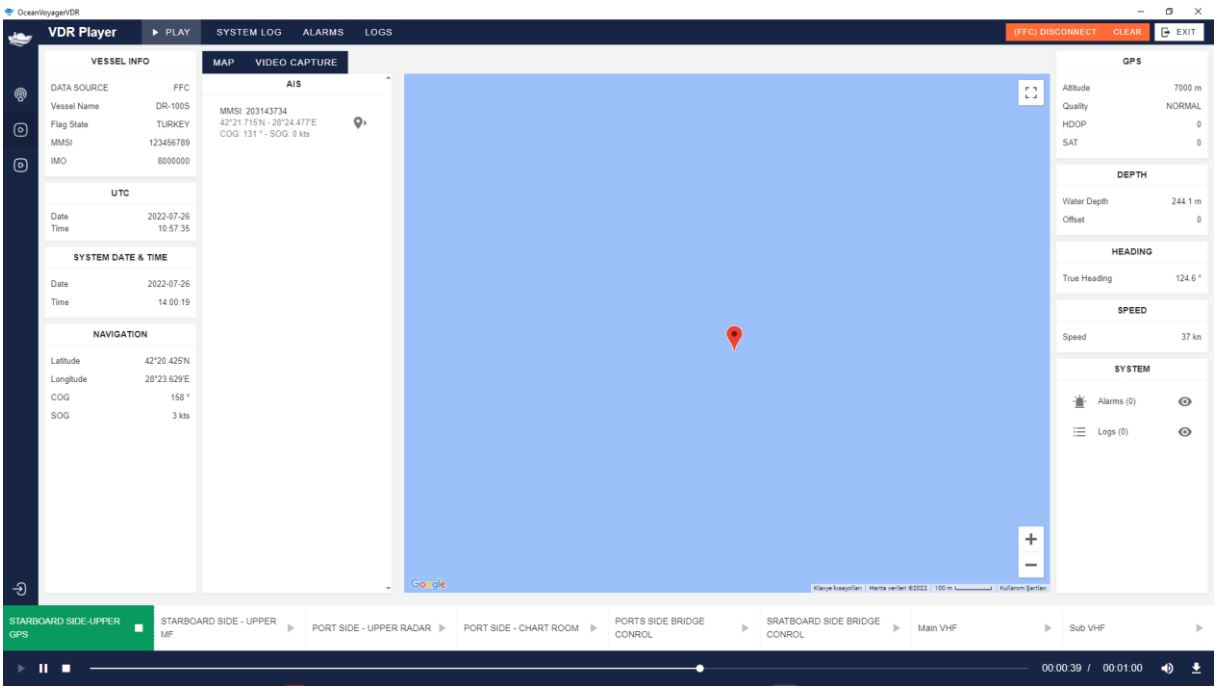
If all data wish to be viewed click on the start play button. After clicking the start play button the page below displays. If 12 hours data will be downloaded, make sure to download maximum 4 hours periods. Make sure data exported with no error. Carefully choose the folder to save the 4 hours data periods on PC. Do not change the original name of the downloaded data.



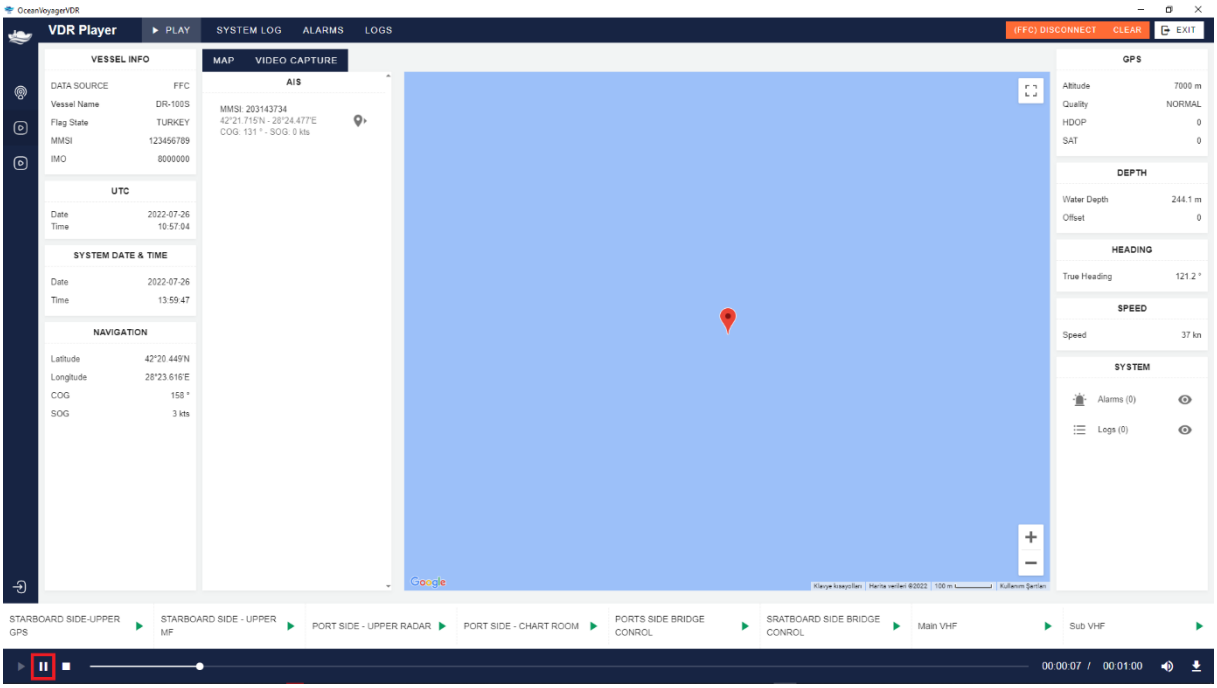
If start play tab clicked scroll down the page, channel player buttons display. When connected to the storage audio channel player automatically starts. Skip to the exact time by using player cursor. To see logs recorded at that time click on the system log tab.



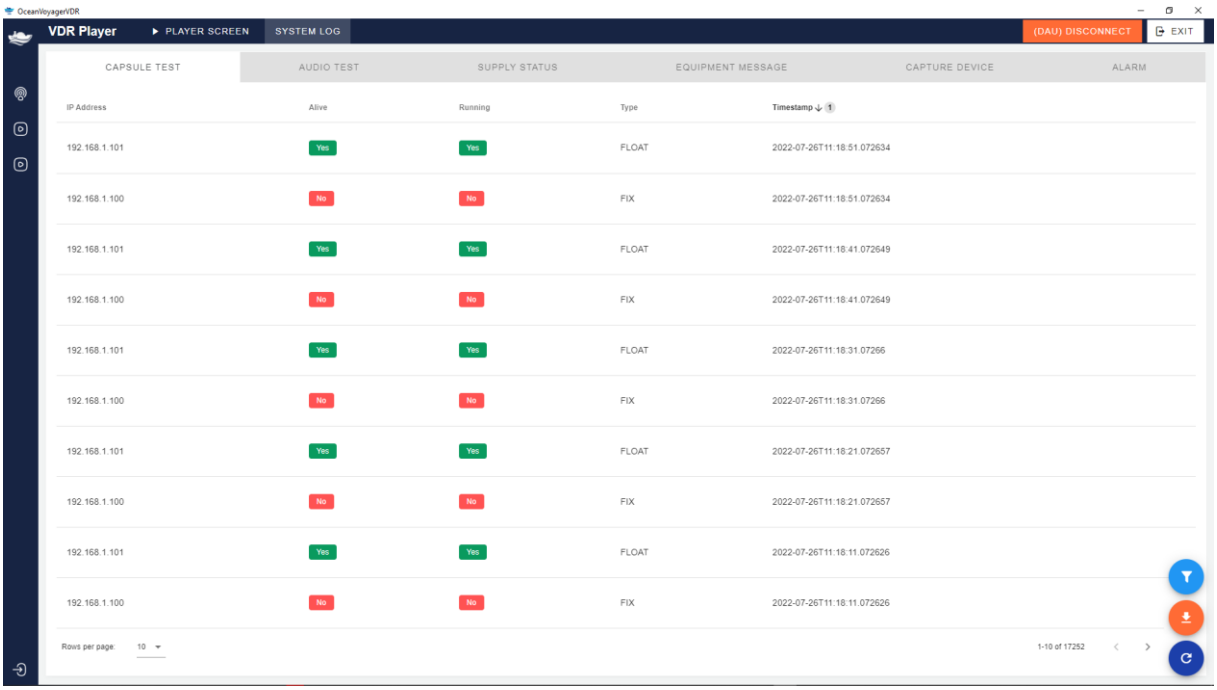
Click on the channel play button and it starts playing simultaneously.



For to stop playing downloaded data click on the pause button.



Click on the system log tab for to view system logs. In this window screenshots from radar and ECDIS are displaying. Date, time, longitude, latitude, course over ground and speed over ground can be inspected. By using AIS map other vessels can be viewed. Vessels can be seen by MMSI numbers.



Notes

OCEAN VOYAGER

www.oceanvoyagermarine.com

Güzelyalı Mah. Sahil Blv. Cad. No:88/2

Pendik / İstanbul / Turkiye