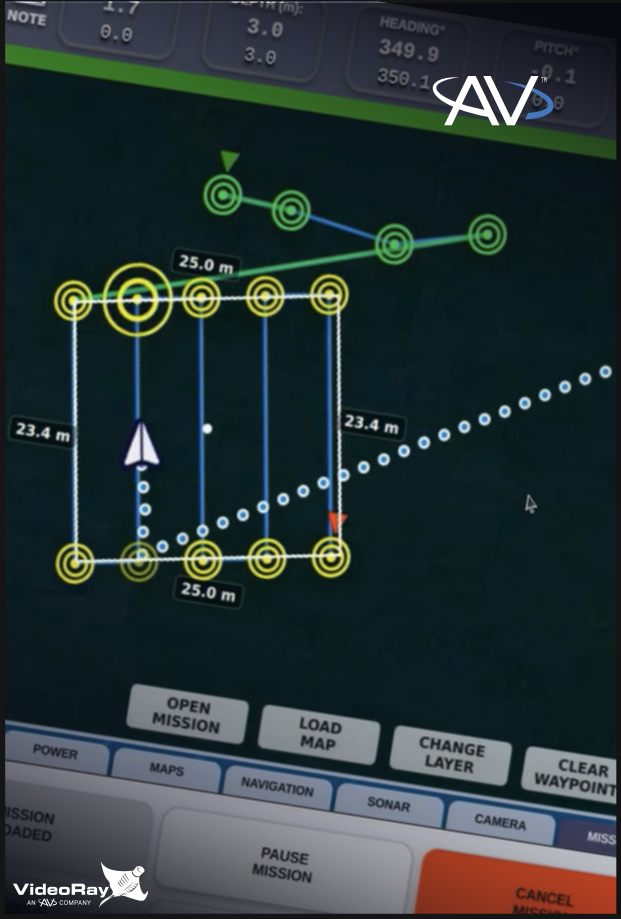
User Guide



UG-78624

MISSION SPECIALIST Command Maritime 2.1

WORKHORSE CONTROL CONSOLE

WORKHORSE SPLASHPROOF CONTROLLER

INDUSTRIAL CONTROLLER

XBOX ELITE 2 CONTROLLER

JULY 2026

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Command Maritime UI User Guide

_COMMAND MARITIME 2.1

Always complete recommended pre-dive procedures before operation

Do not leave the ROV continuously powered on in air for more than 15 minutes

This Command Maritime UI User Guide is provided as an operational reference for users already trained and familiar with their Mission Specialist ROV system.

This guide is designed to supplement an operators' general system knowledge as needed; VideoRay's recommendations for operation and maintenance are not included in this guide and can be found in the specific ROV operator manual included on the system desktop.

Addressing all aspects of safety while working in a water environment is beyond the scope of this guide. VideoRay encourages you to participate in safety training appropriate for your industry and applications, including such topics as vessel operations, first aid, survival, and other relevant topics.

Before commencing any ROV operation, complete all of the '*Pre-Dive 5*' procedures:

1. Visual Inspection - ensure all modules, components, and connectors are checked for wear, damage, and proper mating/mounting
2. Make Connections - starting at the ROV, grease and fully mate the tether along with the strain relief. Make all connections at the console/tablet, and connect to a reliable and adequate power source
3. Power On - starting at the computer/tablet, power on the system; be cognizant of the time the ROV is powered on in air
4. Function Test - launch UI; test all controller inputs and confirm sensor feeds
5. Launch ROV - enable auto controls, confirm proper ROV ballast and trim, set magnetic declination and view preferences in UI

_COMMAND MARITIME LAYOUT

Below is an overview of the Command Maritime 2.1 UI layout. General information of the menus and functions is included in this guide. For basic startup operations, refer to the *Command Maritime Quick Start* field guide; for a comprehensive operational resource, refer to the *Command Maritime Operator Manual*.



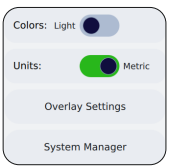
1. HEADER BAR
2. CONTROL MENU RIGHT
3. MAIN DISPLAY
4. BOTTOM DISPLAYS L/R
5. COMMAND MENU
6. CONTROL MENU LEFT

1. Header Bar

_SYSTEM MENU

In the left corner of the Header Bar is the **System Menu**, where numerous displays and controls are located. The Header Bar is perpetually displayed so the following functions are always visible:



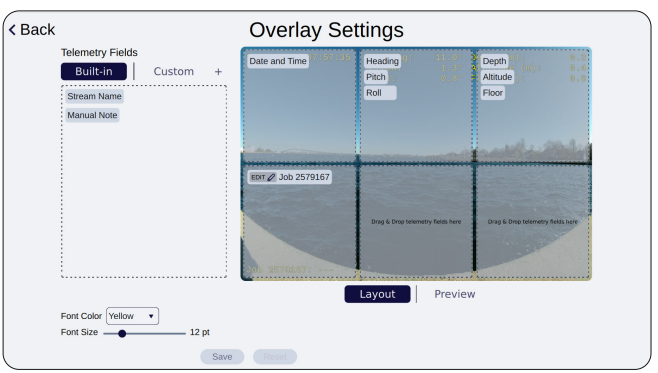


The operator has options to select either light or dark mode and either imperial or metric units.

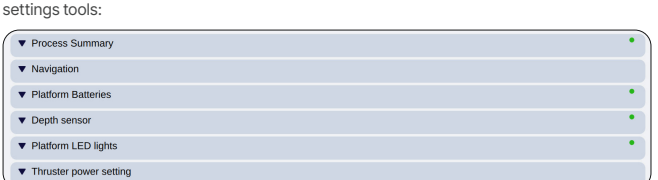
Choose video imagery overlay content with the **Overlay Settings** button. Here the operator can select/drag system and sensor information fields to the desired location and modify the overlay font color/size. Overlay preferences and display locations will be retained until modified.

By placing the 'Manual Note' field in the grid, you can create a custom entry by clicking on the 'NOTE' icon in the Header Bar.





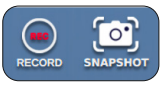
The **System Manager** button opens a dropdown list of numerous system diagnostics and settings tools:



- **Process Summary**: Displays the state of system processes, e.g., AHRS, SONAR, manipulator.
- **Navigation**: Allows for the entry of magnetic declination at the deployment location for accurate heading data.
- **Platform Batteries**: Displays Subsea Battery diagnostics to include SOC.
- **Depth Sensor**: Displays real-time AHRS information and allows for Zero depth reset.
- **Platform LED**: Displays real-time LED information and wide/narrow beam adjustment.
- **Thruster Power**: Allows for power limit (Watts) and input sensitivity adjustments.

_RECORD AND SNAPSHOT

‘Record’ and ‘Snapshot’ buttons are accessible in the Header Bar and on all available Mission Specialist hand controllers.



Record begins recording a video stream of the display and is manually started, not auto-start.

Snapshot captures two images: a standard-resolution image of the entire UI display, and a full-resolution image of the camera view without overlay content.

If a microphone button is shown in the header bar, the option to record audio with video is available. Click/tap the button to mute/unmute audio while recording. The button icon displays the current audio setting.



_AUTO CONTROLS

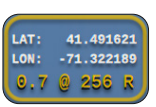


When auto controls are enabled - by clicking or tapping - they will be highlighted with a yellow bounding box and the current auto setpoint will be displayed in yellow text beneath the current state. For attitude locks (heading/pitch/roll), the controls are enabled/disabled as a group; for vertical controls (altitude or depth), only one can be enabled at a time.

Adjust the auto setpoints by input with the corresponding controller function or on-screen Precision Movement controls. *Available auto controls may vary, dependent on ROV model and system configuration.*

_ROV POSITION [WITH INTEGRATED DVL]

The ROV’s current position with a valid GPS/GNSS fix and DVL bottom lock is displayed to the right of the auto controls. Enable station-keeping by enabling autos in the Control Menu Left or click/touch of the positioning icon, which highlights a yellow bounding box.



During an active mission, the distance and bearing to the next waypoint are displayed in yellow text .

_3D PERSPECTIVE MODEL

The ROV’s current attitude is displayed via a 3D perspective model, which is relative to due north and a flat x/y plane. The model provides the operator a better understanding and quick glance of the ROV’s state.



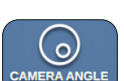
_DVL LOCK

The DVL Lock indicator is displayed to the right of the 3D perspective model. When bottom lock is achieved, the indicator will be green; when bottom lock is not active, the indicator will be red.



_CAMERA INDICATOR

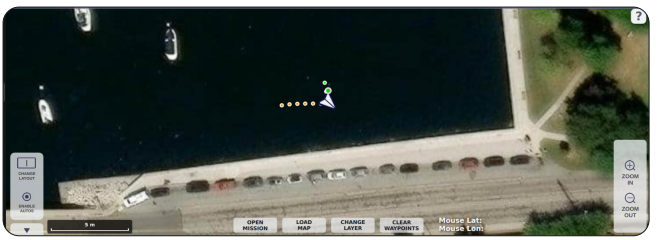
The ROV camera’s current tilt and pan is displayed with a simple FOV graphic indicator. The outside circle represents the maximum tilt/pan extents, while the inner circle represents the current view and tilt/pan angles. Zoom level is not depicted but is shown in the Control Menu Right. For example, the graphic to the right indicates slight tilt downward and slight pan to the right.



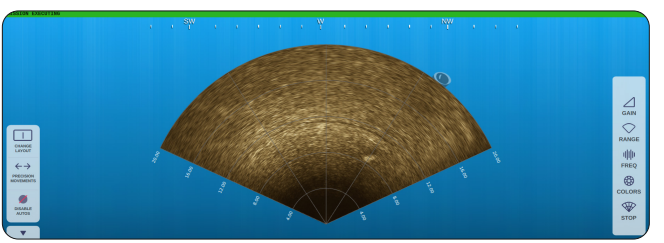
2. Control Menu Right

The functions of the **Control Menu Right** are dependent on the view (or views) in the Main Display. Each sensor - map, sonar, and camera - has a unique set of controls that allows the operator to adjust its performance and display.

If a dual view display is used, the menu will contain controls for both sensors. Arrows at the top and bottom of the menu indicate additional controls are available.



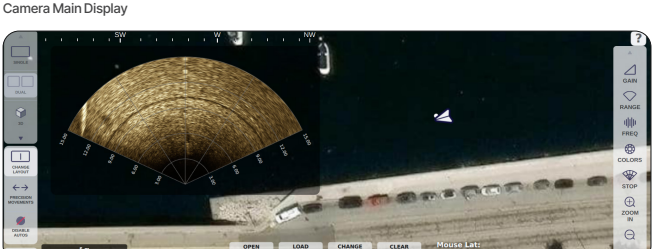
Map Main Display



Sonar Main Display



Camera Main Display



Map & Sonar Main Display

3. Main Display & Missions

Remember, it's mission-critical to establish and maintain accurate positioning!

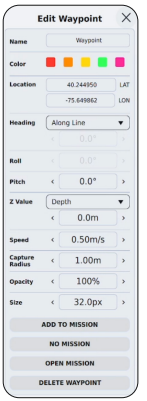
Command Maritime's **Main Display** is where the selected sensor information - map, sonar, and/or camera - are displayed. The views can be changed, combined, and toggled through using the Control Menu Left.

Right-clicking in the map display opens a menu window where waypoints, waypoint paths, search patterns, and points of interest can be added. When one of these options is selected, a menu specific to the selection appears on the left edge of the display, as shown to the right below.



After creating a *Waypoint* or *Waypoint Path*, waypoints can be selected individually via left-click, two or more waypoints via left-click/shift, or right-click and draw a box around the desired waypoints to be selected in a waypoint path. Selected waypoints can then be edited in the left edge menu; all waypoints selected will share the following parameters in the menu:

- Waypoint (Name & Color)
- Heading (Along Line or Fixed)
- Pitch (ROV +/-)
- Depth/Altitude
- Speed
- Capture Radius
- Opacity
- Size



When selecting a *Search Pattern*, a box can be drawn on the screen in the area to be searched; a chart or satellite map in the Main Display is recommended but not required - *refer to the Command Maritime Operator Manual for tips on defining search perimeters.* Select the box to enable rotation and resizing to fit and fill the search area. In the menu, the operator can enter the target size and sonar range intended for the mission, and Command Maritime software will automatically fill the box with transect spacing based on the input provided. For custom transect spacing, select the advanced menu and enter the desired values.

Once mission parameters are completed, or after making any edits to the location, size, angle, or transect spacing, click 'Load Mission'. The mission is now executable by click/tap of the 'Begin Mission' button.

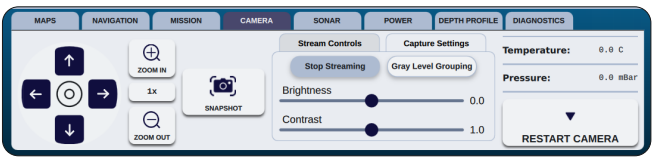
When creating a *Point of Interest*, the left edge menu will provide a menu for operator-specified characteristics, similar to a waypoint.

4. Bottom Displays Left & Right

The **Bottom Displays** are alternate locations for any of the three sensors. Click/tap on the sensor display to swap positions with the sensor in the Main Display.

5. Command Menu

The **Command Menu** tabs provide the operator with various system and display controls and can be collapsed with the arrow under the Control Menu Left for maximum display area.



The following descriptions provide general information about each tab; refer to the *Command Maritime Operator Manual* for detailed descriptions and functionality.

_MAPS

The **Maps** tab has several map functions, including centering on the ROV's position or specified coordinates, locking displayed waypoints, adding a POI (Point of Interest), and clearing navigation history tracks from the map.

_NAVIGATION

In the **Navigation** tab, the operator can reset the ROV's position to either a surface GPS fix or specified coordinates, level the ROV to 0° pitch/roll. set pitch/roll default values to either 0° or their current attitude, zero ROV depth (requires disabling auto depth and perform only when at or near the surface), and adjust the input values/control Precision Movements - also located in the Control Menu Left

_MISSION

In the **Mission** tab, the operator can access mission functions including begin, pause, resume, cancel, or reverse a mission, skip or return to a waypoint, and maintaining heading and depth/altitude.

_SONAR

The **Sonar** tab has several functions to enhance the operator's desired imagery, including display adjustments, range/gain controls, and a button to stop ping transmission.

_CAMERA

The **Camera** tab features numerous Ultra 4k Smart Camera controls, including tilt/pan, zoom, brightness, contrast and a snapshot button, which captures both a screenshot of the display and a high-resolution camera feed image without overlay content. Stream controls, capture settings, and camera temperature and pressure status are also displayed, as well as a button to restart the camera in the event of communication loss or thermal shutdown. If using the HD camera, tilt, zoom, and focus controls are displayed.

_POWER

The **Power** tab provides a power usage bar and displays bus status for 12, 24, 48, and 400 VDC. An operator can also set the maximum power level commanded to the thrusters. These maximum recommended levels are dependent on the ROV system, tether length, and availability of maximum available power (topside or subsea batteries).

_DEPTH PROFILE

The **Depth Profile** tab records recent depths and sea floor altitudes with a series of trails.

_DIAGNOSTICS

The **Diagnostics** tab displays software application status and a button to open the diagnostics. A 'Begin Capture' button is used for collecting comprehensive diagnostic data during operation and is intended for system diagnosis when requested by VideoRay Support.

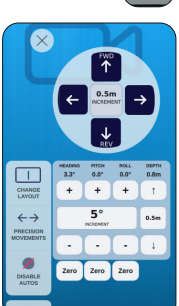
6. Control Menu Left



_LAYOUT

At the top of the **Control Menu Left** is the 'Layout' button. When the operator clicks/taps the button, a menu allowing different display options appears above, including single, dual, 3D, and separate window. When using dual display, the map, sonar, and camera views can be toggled until the desired display is achieved.

_PRECISION MOVEMENTS



With auto controls enabled, the 'Precision Movements' button is visible in the menu; click/tap to open the menu to the right, which allows for distance and degree input values for precision movements in heading, depth, pitch, and roll. DVL bottom lock is necessary to enable Precision Movements for all six degrees of freedom, adding surge (forward/reverse) and sway (lateral).

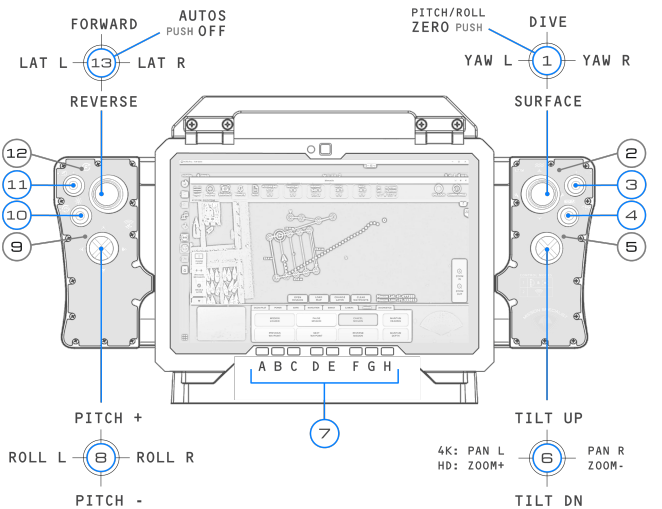
_ENABLE/DISABLE AUTOS

At the bottom of the **Control Menu Left** is the 'Enable' or 'Disable Autos' button. When the operator clicks/taps the button, all available auto controls are either enabled or disabled. This feature is beneficial to an operator when quick access to enabling auto controls or disabling them is desired , e.g., at initial launch, during ROV recovery. Below the autos button is the expand/collapse arrow for the Command Menu.

Controller Mapping

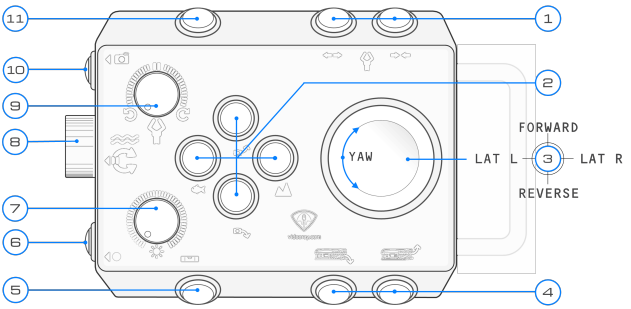
Note: All available controller functions are shown in the following diagrams; dependent on ROV model and system configuration, some controls may not be functional, e.g., lateral, pitch, roll, and manipulator controls.

_EXPEDITIONARY SPLASHPROOF CONTROLLER



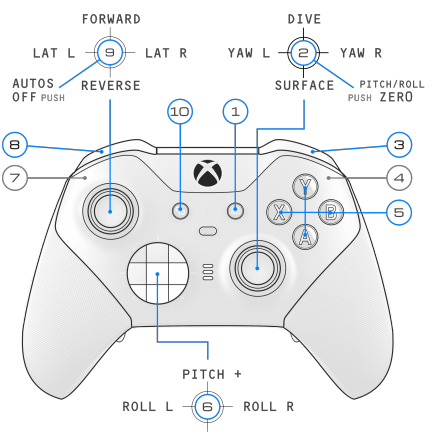
1. Right Joystick
2. Video Record [Rear]
3. Vehicle Pitch +
4. Vehicle Pitch -
5. Manip Open/Close [Rear]
6. Right Pad Camera
7. Front Display Buttons
   A. Screen Rotate Lock
   B. Brightness Decrease
   C. Brightness Increase
   D. Volume Decrease
   E. Volume Increase
   F. Programmable 1
   G. Programmable 2
   H. Programmable 3
8. Left Pad Attitude
9. Manip Rotate [Rear]
10. LED Dim -
11. LED Bright +
12. Screenshot [Rear]
13. Left Joystick

_IP65 INDUSTRIAL CONTROLLER



1. Manip Open/Close
2. Camera Controls
   - Tilt Up, Tilt Down
   - 4K: Pan Left, Pan Right
   - HD: Zoom+ Left, Zoom- Right
3. Joystick
4. Pitch +/-
5. Pitch/Roll Zero
6. Recording
7. LED Bright +/-
8. ROV Dive/Surface
9. Manip Rotate L/R
10. Screenshot
11. Auto Controls Off

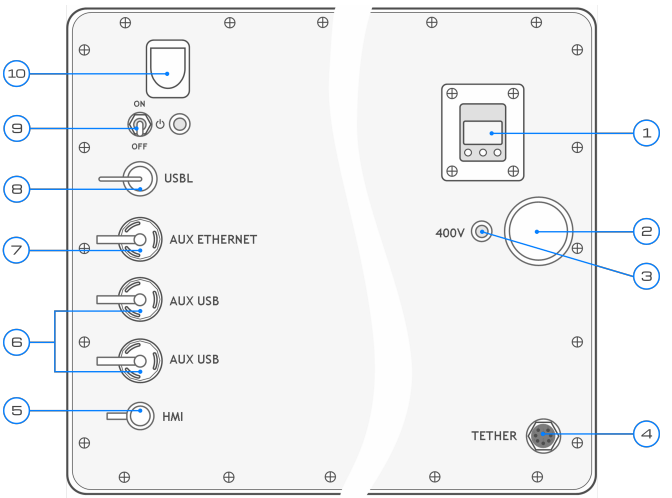
_XBOX ELITE 2 CONTROLLER



1. LED +
2. Right Stick
3. Manip Close
4. Manip Rotate R [Trigger]
5. Camera Controls
   - Y – Tilt Up, A – Tilt Down
   - 4K: X – Pan Left, B – Pan Right
   - HD: X – Zoom In, B – Zoom Out
6. Directional Pad
7. Manip Rotate L [Trigger]
8. Manip Open
9. Left Stick
10. LED -

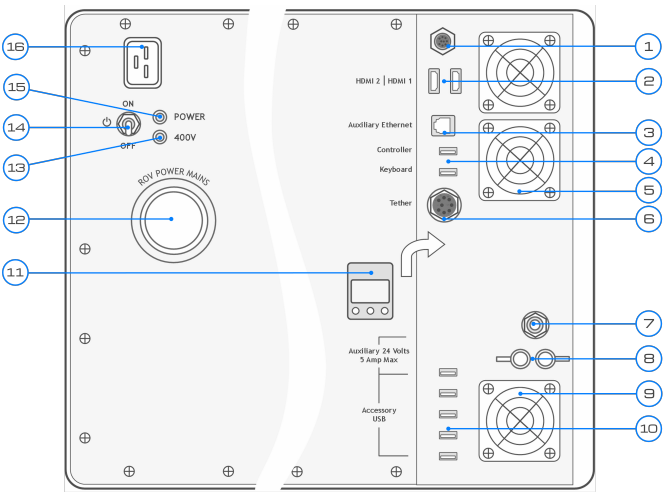
Console Panel Components

_WORKHORSE SPLASHPROOF CONTROLLER (WSC) CONSOLE



1. Line Insulation Monitor
2. ROV Power Main
3. ROV 400V Indicator
4. Tether 8-pin
5. Controller HMI
6. USB-A (2)
7. Ethernet
8. USBL Topside
9. Console Power/Indicator
10. A/C Power

_WORKHORSE CONTROL CONSOLE (WCC)



1. Monitor Out
2. HDMI (2)
3. Ethernet
4. USB-A (2)
5. Exhaust Fans (2)
6. Tether 8-pin
7. Circuit Breaker
8. 24VDC Supply (2)
9. Intake Fan
10. USB-A Hub (5)
11. Line Insulation Monitor
12. ROV Power Main
13. ROV 400V Indicator
14. Console Power
15. Console Power Indicator
16. A/C Power

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