

PROTEUS-UHD-VSS

Advanced Video Survey System

User Manual (UM)

*This addendum supplements the Ultra High-Definition Video Overlay User Manual
and covers
Video Survey System features.*

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GENERAL OVERVIEW

PROTEUS-UHD-VSS is an addendum to the main PROTEUS-UHD User Manual and specifically covers the **Video Survey System** features and functionality. For all other operations and features, please refer to the standard PROTEUS-UHD User Manual.

PROTEUS-UHD-VSS Video Survey System is a state-of-the-art solution designed to compete with some of the most advanced and costly video survey systems available on the market for applications such as:

- ROV and diver-assisted surveys
- Pipeline and structure assessments
- Riser Inspections
- Subsea/Marine
- Aerial/Geospatial
- Bridge/Road inspection
- Critical Infrastructure Inspection

PROTEUS-UHD-VSS



HyperDeck Studio HD (Optional accessory; sold separately)

PROTEUS-UHD-VSS Video Survey System consists of three primary components:

Components	Purpose
Proteus-UHD-VSS	Powerful Real-Time Video Overlay Put critical mission data directly on your video in real time. Proteus lets you overlay project name, time, date, GPS coordinates, dive number, ROV heading, bearing, roll, depth, temperature, logos, and virtually any other information you need. Connect. Capture. Display. Bring your data together in one place. Proteus can acquire data directly from a wide range of sensors or receive user supplied data through Ethernet or RS-232, allowing critical information to be displayed and recorded alongside your video. Mark Findings as You Survey Capture important findings the moment you see them. Generate KML waypoints and annotate your video during the inspection to identify anomalies such as excessive movement, corrosion, exposed or bare metal, through-wall defects, metallic debris, marine growth, and more. Your marked events and locations can then be <u>quickly</u> reviewed and analyzed after the mission using the ProteusVSS App. One Click. Total Control. Keep your display clean and focused. Easily turn any overlay object ON or OFF with a single click, giving you complete control over exactly what appears on your video.
Blackmagic HyperDeck Studio	• Blackmagic HyperDeck records 2K or 4K videos (<i>Sold separately. Purchase from any authorized Blackmagic distributor</i>) • <u>For 2K videos</u>, we recommend the HyperDeck Studio 4K Pro, HyperDeck Studio HD Plus, and HyperDeck Studio HD Mini, as they all support the H.264 codec • <u>For 4K video</u>, we only recommend the HyperDeck Studio 4K Pro, as it supports the H.264 codec • The Blackmagic recorder is <i>not required</i> when performing <i>KML-only</i> recording
ProteusVSS App	• View recorded video • View recorded events • View the survey path on an integrated Google Map • View Marked event locations on an integrated Google Map • Instantly jump to the video frame associated with any recorded event for quick inspection • Generate photos and detailed reports of recorded events

How IT WORKS

GEODATA AND VIDEO TIMECODE RECORDING

Proteus-UHD-VSS continuously logs precise GPS coordinates along with other mission-relevant data, including time, date, altitude, speed, and *video timecode*. All geographic data are automatically stored on a microSD card or USB flash drive connected to the Proteus-UHD-VSS, providing a synchronized record of your mission for post-mission analysis and documentation.

VIDEO OVERLAY

Proteus-UHD-VSS overlays real-time geographic data and augmented reality objects created by *ProteusWizard* directly onto your video feed.

VIDEO RECORDING

Your 2K or 4K video, along with all overlay objects, is recorded using Blackmagic HyperDeck

MARKING POINTS OF INTEREST

Operators can mark points of interest with detailed descriptions, generating geotagged bookmarks for rapid post-mission analysis

DIRECTION FOR USE – DURING MISSION

Keyboard	Purpose	Description
F1	Start mission (Record KML + Video)	Start recording video and Geographic data. Flashing  indicates KML + VIDEO recording is in progress. Press Alt-F1 for Geographic recording only. Flashing  indicates KML recording is in progress. <i>The system prompts the user to enter a file name, which is used for both the video and KML data files</i>
F2	Mark Points of Interest	Enter a detailed description for each <u>marked point</u> (e.g. pipe leak, corrosion, marine growth, bridge cracks ...) <i>Press F2 <u>repeatedly</u> to create additional mark points.</i>
F3	Terminate or Pause mission	Terminate or Pause recording video and Geographic data. Flashing  or  will be removed. To resume recording, press F1 and choose either the same file name (to append) or a new file name.

DIRECTION FOR USE – POST MISSION

Copy the video files (from the Blackmagic recorder) and the geographic data file (from the Proteus-UHD-VSS) into the folder **VideoLogix\survey** on your PC. Launch the **ProteusVSS** App and [load the KML file](#); the video will load automatically:

- **Marked Points** — List of all the recorded events throughout the mission.
- **Survey Path** – Yellow pushpins indicate the geographic location where each event was recorded.
- Click any **Marked Point** to jump directly to the exact video frame and corresponding Google Map location associated with that event
- Click any **pushpin** or point along the map path to jump directly to the corresponding video frame

ProteusVSS App : *Picture below shows the result of clicking on the marked point “Check Leak”*

The screenshot displays the ProteusVSS App interface with three main panels:

- Video Survey**: Shows a live video feed of an underwater survey. A red circle highlights a specific point on the video. A green callout box points to this circle with the text: "2. The video jumps to the corresponding video frame." The video title is "Survey #12". On the right, coordinates are listed: Northing: 7062018.79, Easting: 466478.43, Latitude: 20.322283°E, Longitude: 63.684349°N. A timestamp "16:31:41" and date "09/29/26" are visible in the bottom left.
- Survey Path**: Shows a map with a yellow line representing the survey path and yellow pushpins indicating event locations. A green callout box points to a specific point on the path with the text: "3. The Google Map jumps to the corresponding location".
- Marked Points**: A list of events recorded during the mission. The events listed are: Cracks and Fractures, Corrosion and Rust, Check Bolt, Check Leak, Marine Growth, and Root Intrusion. A green callout box points to the "Check Leak" entry with the text: "1: Click on any Marked Point."

At the bottom, there is a **Geographic Data** section with the following information:

- Lon: 20.321966
- Lat: 63.684685
- Elevation: 0
- Time: 00:01:05
- Date: 1/9/2026 4:31:43 PM
- DTC: 01:43:05:15
- TG: 01:43:05:15
- TC REF: DTC
- Clip duration: 00:01

Buttons at the bottom include "Open Survey", "Take Picture", "Create Report", and a settings icon.

SYSTEM INTERCONNECT

HyperDeck Studio HD Rear Panel



Proteus-UHD-VSS Front Panel



Proteus-UHD-VSS Rear Panel



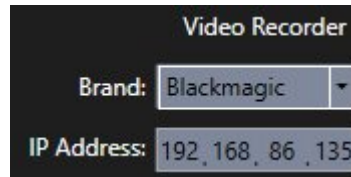
Optional:
Ports for adding additional
sensor such as IMU, Altimeter,
Depth sensor, etc



SYSTEM CONFIGURATION

PROTEUSAPP

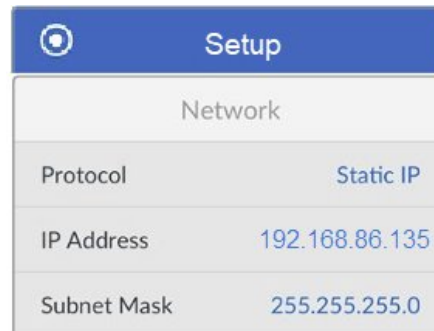
- Follow the setup shown in [Figure 1 on Page 19](#) and follow the instructions provided on that page to complete the preparation.
- Press the **Config** button and set Video Recorder **Brand** and **IP Address**. Example:



- When finished, press **OK** to save and exit.
- Press the **Sync** button. When prompted, select your ProteusWizard file.
- All your configuration settings have been now loaded into Proteus-UHD

BLACKMAGIC HYPERDECK STUDIO

Network configuration can be performed by pressing the **Menu** button on the front panel to access the LCD settings menu, then adjusting the network parameters as shown below:



- Insert a formatted **SD card** (Angelbird, ProGrade Digital, or Wise — as recommended in the Blackmagic Design User Manual) into **Slot 1**.
- Insert a formatted **SD Card** (Class 10, 32 GB microSD card) into the **microSD-LOG slot** on the front panel of the Proteus-UHD-VSS. Alternatively, you may insert a **USB flash drive** into the USB port for log storage. You may use a **USB splitter cable** to connect both the keyboard and USB flash drive.

The system is now ready for operation. Refer to the [Direction for use](#) to begin operating the system.