



X-VDR



Touch Screen Console

Operation Guide

System Serial Number

Software Version

Installation Date

1. Contents

1.	Contents	2
2.	Important Warnings	3
3.	Switching On the X-VDR System	4
4.	Bridge Control Panel Overview	5
5.	Choice of Displays	6
5.1	Home Screen	6
5.2	Radar and ECDIS Image Capture	7
5.3	Audio Module	8
5.4	NMEA Module	9
5.5	Final recording medium	10
5.6	Power and system- Test	11
5.7	Event Log	12
5.8	Night Mode	13
6.	System Log Entries	14
7.	Document Issue and Revisions	20

2. Important Warnings



**DANGER: HIGH VOLTAGE!
RISK OF ELECTRICAL SHOCK!**

This unit has a high voltage source inside.
Disconnect from the power before removing protective covers.
DO NOT remove the covers while the unit is switched on.
24 Volt DC electrical power on (when fitted) peripheral units.

NOTICE

Compass safe distance is 1.8 metre.

NOTICE

No user serviceable parts inside, servicing only by properly qualified and certified technical staff.

3. Switching On the X-VDR System

The X-VDR is switched on at the Main Electronics Unit (MEU), using the system key (the key should not be left in the equipment while operational and the equipment should be switched on before any voyage starts).

To switch the X-VDR on insert the key with the key-way pointing up and then turn clockwise by 90 degrees. You will notice the POWER indicator start to flash as power is applied to the hardware modules. When the POWER indicator stops flashing and remains steady, this indicates that all hardware modules are running and the X-VDR processor is booting up.

Once the X-VDR is fully powered up and the system is functioning the RECORDING indication will illuminate to show that system boot sequence is complete and data is being recorded to the long term recording modules.



1. System On Indication – Flashing to indicate hardware boot up, steady to indicate power on.
2. Recording Indication – Lit once boot sequence complete.
3. Fault Indication – Lit if a certain hardware faults are detected.
4. USB Download (Option).
5. System on/off switch – shown in the ON position.

4. Bridge Control Panel Overview

Any reference to an 'Alert' is to be considered a 'Caution' status

Common elements

The X-VDR Bridge Control Panel (BCP) is designed with ease and efficiency in mind.
Optimal viewing distance for the display is 0.7m

Side menu

On all screens of the BCP there is the Side Menu, allowing the user to go in and out of pages with ease and speed.

Acknowledgement buttons

The BCP alerts the ship's crew to issues with the X-VDR system, the connected equipment and the signals being recorded, with the ability to show to the operator what the issue is.



The side menu buttons also act as Acknowledgement buttons.

If an Alert is raised for **VIDEO**, **AUDIO**, **NMEA**, **CAPSULE** or **POWER** then the indicator will change from **GREEN** to the **AMBER** (alert colour) and flash until the corresponding button is pressed to acknowledge the alert.

The Indicator will remain amber (but not flashing) until the fault has cleared.

The Indicator will start flashing again if a new alert is raised.

Status Information

The software can show the status of each piece of data being input to the MEU. If there is an issue with the data and it is not receiving the data it needs, the BCP will let you know.

There are three grades of status for data:



Good - this shows that the item is healthy.



Caution – If any or all items are in an incorrect state.

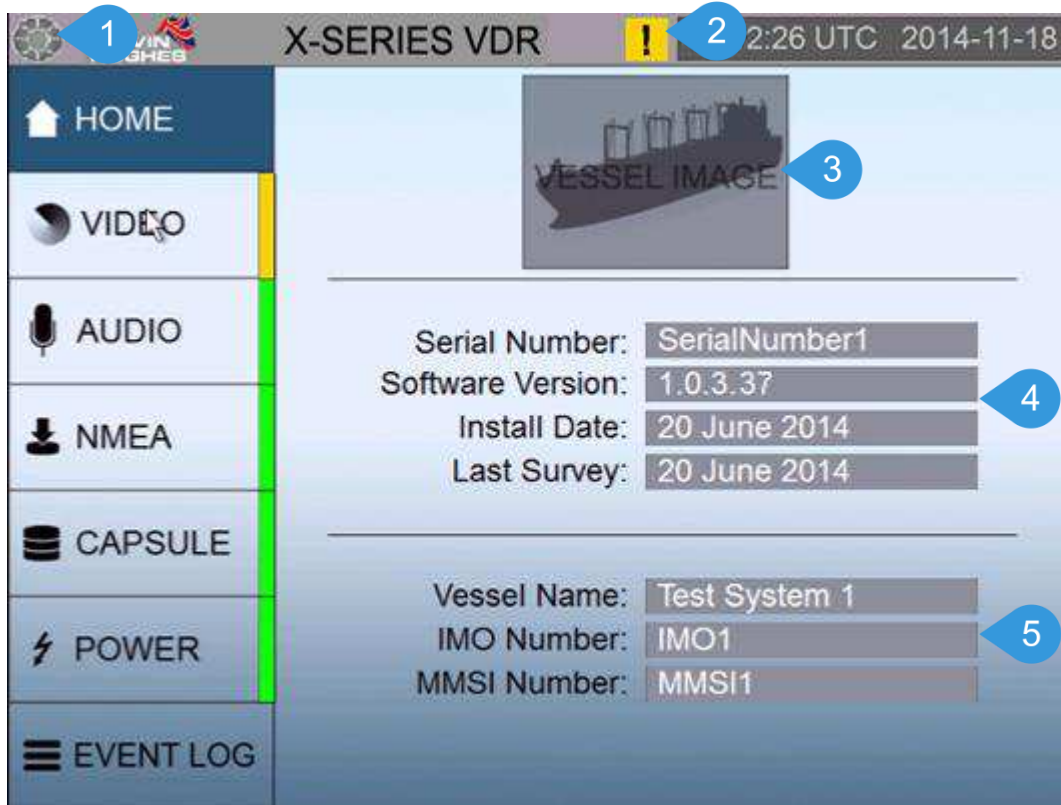


Empty - Data has not been received since system start up.

5. Choice of Displays

5.1 Home Screen

The **HOME** tab is a general information page which shows the system and vessel information. As with all other pages each of the tabs along with the UTC date and time are displayed. Unique to the HOME page are the following:



1. Night Mode and Dimming Menu button.
2. Alert Icon – Only displayed if an alert is outstanding (flashing if the alert is unacknowledged)
3. Image of the vessel (if available)
4. System Details:
 - System Serial Number
 - Currently installed software version
 - Date of system installation
 - Date of last survey
5. Vessel Details:
 - Vessel Name
 - IMO number
 - MMSI number

5.2 Radar and ECDIS Image Capture

By default two image capture cards are installed for both S-Band and X-Band Radar capture. Two more capture cards are available on request for additional image capture, such as extra radar capture or ECDIS where the ship's ECDIS does not have an option for image over Ethernet.



1. Unselected RADAR screen
2. Chosen RADAR screen
3. Alert to show lost Radar signal
4. ECDIS screens

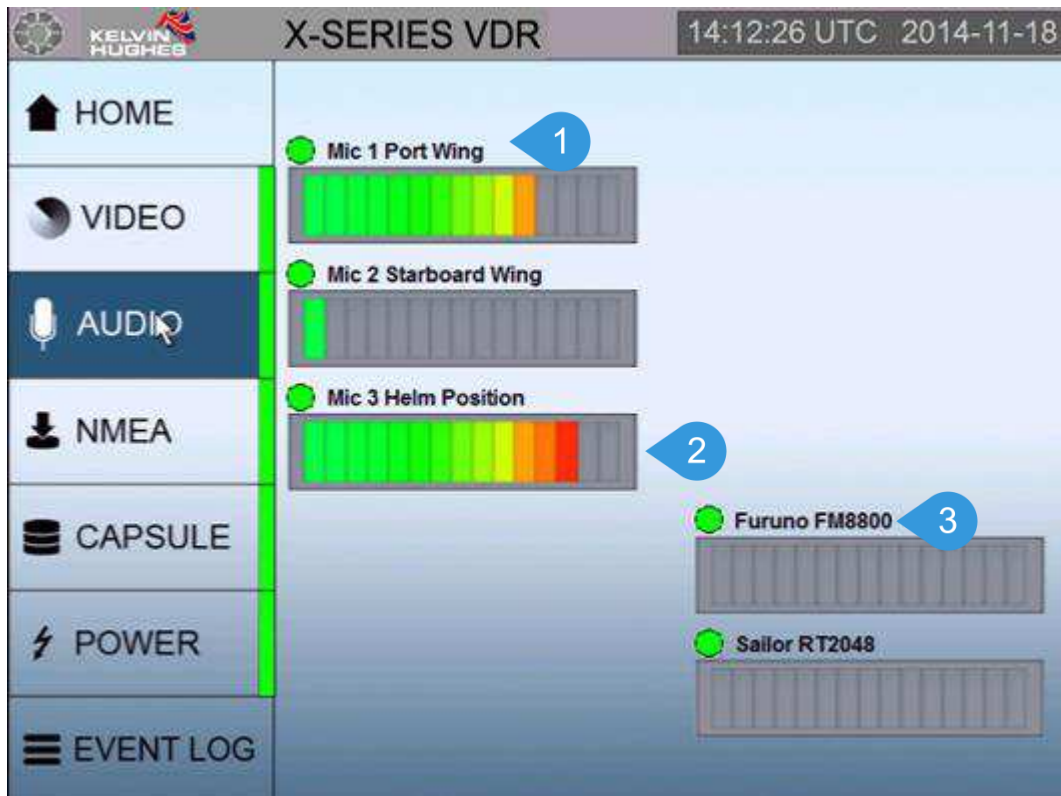
Within the software the image capture screen, titled **VIDEO**, has up to six preview boxes (one box for each Radar or ECDIS systems fitted), these show the current images being captured, four of which are viewable at any one time. The top two boxes have up to two user selectable tabs each, representing the four image capture cards. The lower two boxes show a preview of the image received from the ECDIS over Ethernet connection.

If a connected Radar signal is lost an alert will be raised, the VIDEO tab itself will turn **AMBER** and the indication on the side bar will also turn **AMBER** and flash until the VIDEO button on the side bar is pressed to acknowledge the alert. Once acknowledged the VIDEO indicator will stop flashing and remain **AMBER** until the fault clears, if there are no faults the VIDEO indicator will be green.

5.3 Audio Module

The AUDIO tab has up to ten separate input channels; each of these is pre-configured as a Microphone or VHF input channel. By default inputs 1 to 8 are microphone channels and inputs 9 and 10 are allocated to the ship's VHF radios.

The microphones have a built-in self-test which will automatically (every 12 hours), or on demand, test its own activity to ensure continued operation.



1. Microphone status and microphone location
2. Audio level indicator
3. VHF radio make and model

As shown in the image the AUDIO tab will show each channel's received audio level and the current status of each microphone. The indicator to the left of the microphone text will be **GREEN** if the microphone passed its last self-test and **AMBER** if it failed.

The AUDIO indicator on the side panel will be **GREEN** if no alerts are present, and **AMBER** if an alert has been raised for any of the microphones, the indicator will flash **AMBER** if the alert has not been acknowledged. To acknowledge an alert press the AUDIO side panel button and the indicator will stop flashing until another alert is raised.

5.4 NMEA Module

If one or more of the expected NMEA sentences has an alert then the line showing the sentence(s) will turn **AMBER** and the NMEA side panel indication will flash amber.

To acknowledge an alert (flashing side panel indicator) then simply press the NMEA side panel button. This will stop the indicator flashing and remove the **AMBER** line behind the alerted sentence so only the indicator to the left of the alerted sentence remains **AMBER**.



1. Data status and name – No Alerts.
2. Data status – alert outstanding (flashing if not acknowledged)
3. Acknowledged individual Data alert.
4. Unacknowledged individual Data alert.

5.5 Final recording medium

The X-VDR software tab **CAPSULE** is where the status of the final recording medium may be found. In the event of an error with any of these the status images will turn **AMBER** and the CAPSULE side panel indicator will flash **AMBER** until acknowledged (it will stop flashing once acknowledged).

You can acknowledge any of these alerts by pressing the CAPSULE side panel button.

Also displayed within this page is the ULB (Underwater Locator Beacon) fitted date and the float free capsule's HRU (Hydrostatic Release Unit) fitted date, these will alert if they are due for replacement or inspection.

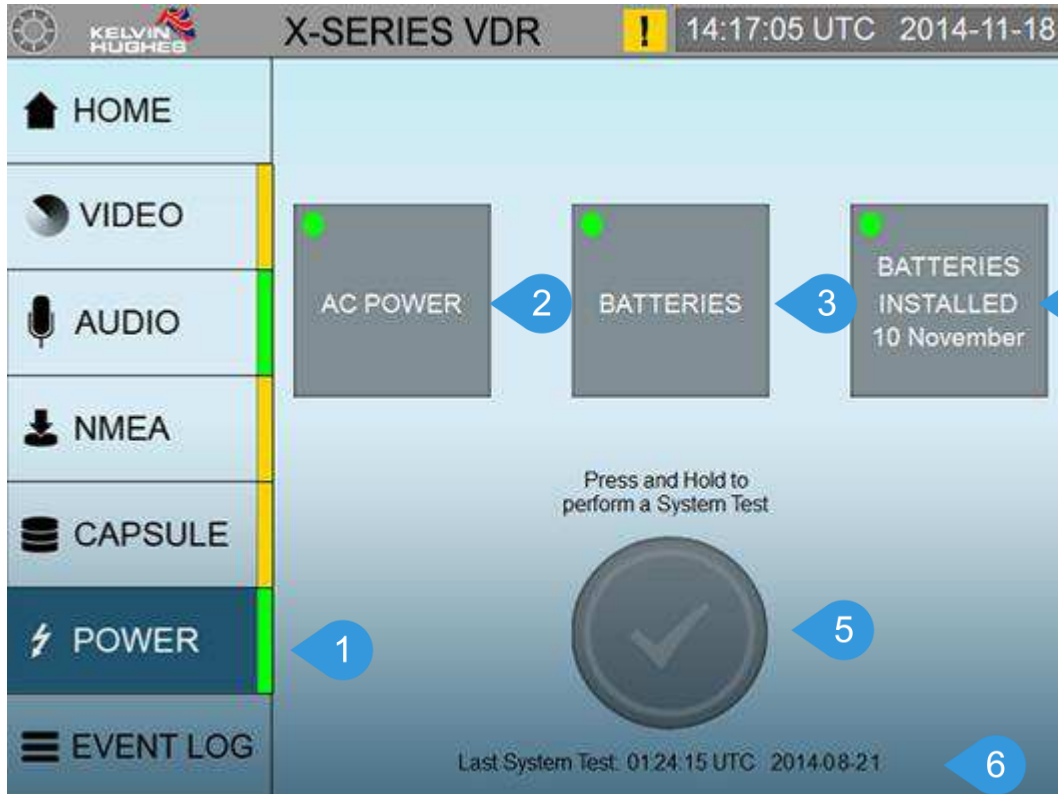


1. Capsule status – alert outstanding (flashing if not acknowledged)
2. Fixed Capsule status – Alert shown
3. ULB status – alert shown if due for replacement.
4. Float Free Capsule status – No Alerts, working within parameters.
5. Hydrostatic release status – alert shown if due for replacement.
6. LTRM status – No Alerts, working within parameters.

5.6 Power and system- Test

The X-VDR software tab **POWER** is where the status of the Mains input, Uninterruptable Power Supply and Batteries may be found. In the event of an error with any of these the status image will turn **AMBER** and the POWER side panel indicator will flash **AMBER**.

Once this has been acknowledged, by pressing the side panel POWER button the side panel indicator will stop flashing but remain **AMBER** until all alerts clear.



1. Power status – alert not outstanding.
2. Mains power status – No Alerts, working within parameters.
3. UPS status – No Alerts, working within parameters.
4. Battery status – No Alerts, working within parameters.
5. System self-test button – Press and hold for 9 seconds to activate.
6. Time details of last system test.

If The Mains Power is lost then the batteries will discharge, and a countdown will be displayed above the MAINS POWER, UPS and BATTERIES boxes on screen. If mains power is not restored within two hours then the system will shut its self down.

The System Test may be initiated by pressing and holding the System Test button (labelled '5' in the image above). Once complete the button will turn **GREEN**. The button will remain **GREEN** for a period of one minute and will revert to grey indicating that another system test may be initiated when required.

The system test will force check all aspects of the X-VDR system in that moment and will report findings in the Event Log (covered in the next section). The entries created by the System Test function will appear highlighted in blue as opposed to the standard white coloured entries.

5.7 Event Log

(Not available in Night Mode)

The X-VDR software tab **EVENT LOG** will show any events that have been raised over the last 30 days (if not filtered). An event could be an 'Alert' depicted as a yellow warning triangle icon, or for 'Information' this is depicted as a circular blue information icon.

The Incident Marker button is used to add a marker to the log file for future reference, to assist any investigation or to mark a particular time or event.

This button should be held for 5 seconds to avoid any accidental markers being set.

Entries highlighted **LIGHT BLUE** in colour are the result of the System Test button.

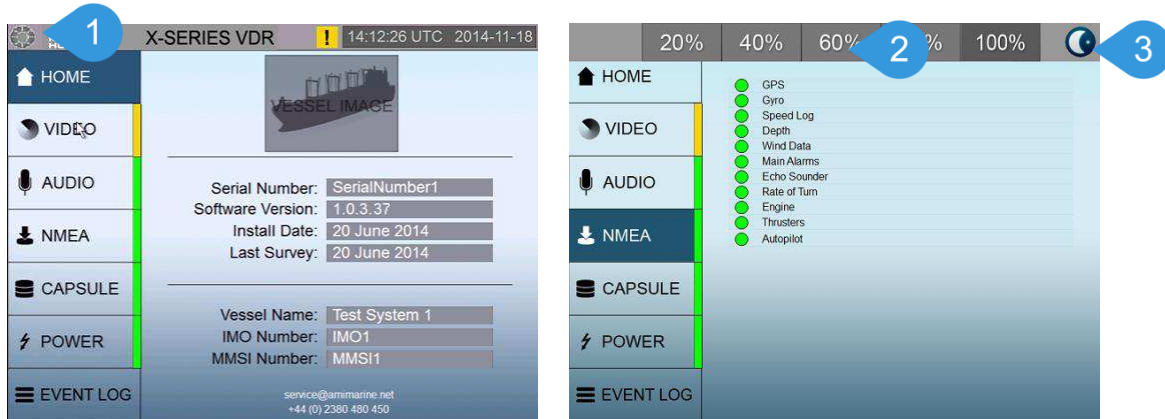
Date	Time UTC	Priority	Reporting System	Details
2014-10-28	16:16:26	Alert	System	Files in Local file corrupt. - copied from ba...
2014-10-28	16:16:26	Alert	System	Files in Float Free Capsule file corrupt. - c...
2014-10-28	16:16:25	Information	System	System Start Up
2014-10-28	16:18:01	Alert	System	System Config files were either missing or ...
2014-10-28	16:18:01	Information	System	System Running
2014-10-28	16:18:01	Information	System	Time Synchronised with GPS
2014-10-28	16:18:02	Information	System	Internal System Temperature: 33.79 C
2014-10-28	16:18:10	Alert	Screen Capture Card	Card 2 No Video Detected
2014-10-28	16:18:16	Alert	Serial Data	\$PAMIV.001 has not been received for 1...
2014-10-28	16:18:16	Alert	Serial Data	\$PAMIV.001 Checksum Incorrect
2014-10-28	16:18:16	Alert	Serial Data	\$PAMI.XDR.2 has not been received for ...
2014-10-28	16:18:16	Alert	Serial Data	\$PAMI.XDR.2 Checksum Incorrect
2014-10-28	16:18:20	Alert	Screen Capture Card	Card 1 No Video Detected
2014-10-28	16:22:41	Information	Serial Data	NMEA Alarms Acknowledged
2014-10-28	16:22:42	Information	Screen Capture Card	VIDEO Alarms Acknowledged

1. Event log button.
2. Filter Panel – select the day, hour, alert type and click search to filter the log.
3. An Information event log entry.
4. An alert event log entry.
5. Incident marker button – Press and hold for 5 seconds to add a marker into the log file.
6. Total time the system has been running since last reset/restart.

When the X-VDR is in night mode, the filter ability is removed and only the last 15 log entries are displayed.

5.8 Night Mode

The X-VDR has a night mode and brightness function to prevent the vision of the bridge personnel being compromised during the night watch. To display the night mode and brightness menu press the brightness icon in the top left of the BCP (Labelled '1' below).



This will make the night mode and brightness menu visible at the top of the screen. One of five brightness levels may be selected (20%, 40%, 60%, 80% and 100% brightness) by pressing the corresponding brightness level (Labelled '2' above).

If you want to toggle between day and night mode then press the icon to the very right of the night mode and brightness menu (labelled '3' on the right hand image above).

When night mode is active the screen colours will change (see images below).



After a time if the BCP is not touched the night mode and brightness menu will disappear, or if one of the side menu buttons are pressed. Once in night mode the brightness can still be changed in the same way as stated above.

Returning to Day Mode – Quick Reference

If the screen brightness is set to the minimum night mode setting this may be difficult to see in bright sunlight. To bring the display back into day mode then the following should be followed:

Press location '1' (as per above image) – This will open the Brightness Bar

Press location '2' (as per above image) – This will set the display to Day Mode

This will put the display into Day Mode at its lowest brightness.

6. System Log Entries

System Log Entries		
Log entry	Description	Recommended action
Audio Recording Stopped!	Audio Recording has been stopped ready for shutting down the X-VDR	Nil
Batteries are past replacement date (FITTED DATE)	Batteries fitted in the UPS have passed their replacement date	Contact manufacturer to organise replacement of the batteries
CAPSULE Alerts (?) Acknowledged	All outstanding Capsule page alerts have been acknowledged by the user	Nil
Fixed Capsule Communications Lost	Communications over the Network have failed to the Fixed Capsule	Restart the VDR using the key. If the alert is still present after 10 minutes please contact the manufacturer for technical assistance.
Fixed Capsule Communications Re-established	Communications with the Fixed capsule have been re-established after a failure	Nil
Float Free Capsule Communications Lost	Communications over the Network have failed to the Float Free Capsule	Restarting the VDR using the key. If the alert is still present after 10 minutes please contact the manufacturer for technical assistance.
Float Free Capsule Communications Re-established	Communications with the float Free capsule have been re-established after a failure	Nil
Hydrostatic Release is past replacement date (FITTED DATE)	The hydrostatic release fitted to the Float Free Capsule has passed its replacement date	Contact manufacturer to organise replacement of the Hydrostatic release.
Internal 24V Failure Detected	24V battery output has failed in the UPS	If alert persists for greater than 10 minutes contact the manufacturer. The UPS batteries may be defective.
Internal 24V Restored	24V battery output has been re-established	Nil
Local Recording Module Communications Lost	The local recording module (hard drive) can no longer be recorded too	Restart the VDR using the key. If the alert is still present after 10 minutes please contact the manufacturer for technical assistance.
Local Recording Module Communications Re-established	The local recording module (hard drive) can be written to once again after a failure	Nil
Local shutdown requested by (USER NAME)	System was shut down by the {person named} locally	Nil
Mains Input to 24v has been restored	24 volts mains has been re-established	Nil

KH-2076 X-VDR Touch screen console operation
Chapter 6: System Log Entries

System Log Entries		
Log entry	Description	Recommended action
Mains Input to 24v has failed	24 volts mains input to the X-VDR has failed - system will use UPS batteries for 2 hours	Check AC power is available from ships supply, if AC power is not restored the X-VDR will shut down after 2 hours has elapsed.
No Serial Data Received for (TOTAL SECONDS) Seconds	No NMEA data has been received for the indicated time	Check the source equipment is transmitting data correctly. Check all connections at source equipment and at VDR
POWER Alerts (?) Acknowledged	All POWER page alerts have been acknowledged by the user.	Nil
Remote Shutdown requested by (USER NAME)	System was shut down by the person named by remote using the X-VDR companion software	Nil
Serial Data now being received again	NMEA serial data is now being received again after nothing had been received for a set time	Nil
Serial Data Port Closed - Trying to Open Port	There was an error trying to open the serial data connection - X-VDR is trying to establish communications to the serial data port	Restart the VDR using the key. If the alert is still present after 10 minutes please contact the manufacturer for technical assistance.
Serial Recording Stopped!	Serial Data Recording has been stopped ready for shutting down the X-VDR	Nil
Still no Serial Data Received for (TOTAL SECONDS) Seconds	No NMEA data has been received for a further amount of indicated time	Check the source equipment is transmitting data correctly. Check all connections at source equipment and at VDR
System Config files were either missing or different from back up. The backup files have been copied to the boot drive	System Configuration files on the boot drive were missing or differ from the backup versions and have been replaced with the backup versions	Nil
System Running	X-VDR system is running and recording	Nil
System Shut Down (Local Shutdown Initiated)	Local system shutdown has been initiated (using the system key)	Nil
System Shut Down (Remote Shutdown Initiated)	Remote system shutdown has been initiated (using the Companion software)	Nil
System Start Up	X-VDR system start up time - system is not recording until System Running log entry is seen	Nil
There was an undetermined error when checking System Config files	There was a problem with original configuration and back up configuration files	If system doesn't boot or displays multiple errors, try restarting the system, if fault persists contact manufacturer.

KH-2076 X-VDR Touch screen console operation
Chapter 6: System Log Entries

System Log Entries		
Log entry	Description	Recommended action
Time Synchronised with GPS	The X-VDR system time has been resynchronised with GPS time (this occurs every 12 hours once synchronised)	Nil
Time Synchronised with GPS (RMC)	If GPS time (GPZDA) is unavailable then the X-VDR will use GPRMC to synchronise system time.	Nil
Time Unavailable from GPS source VDR using System time	If no GPS is available or both GPZDA and GPRMC are not received then the X-VDR cannot synchronise with system time and will use the current X-VDR system time.	Check GPS is on and working correctly, enable GPZDA or GPRMC at the GPS
ULB is past replacement date (FITTED DATE)	The Underwater Locator Beacon fitted to the Float Free Capsule has passed its replacement date	Contact manufacturer to organise replacing the Beacon.
UPS has been restored	UPS battery power is available again after a failure	Nil
UPS has failed	UPS battery power is unavailable -If the AC power fails then the batteries will not be able to power the X-VDR system	Check power and UPS, if problem persists contact the manufacturer
USB Download Complete	Download of USB data is complete (Future Option)	Nil
USB Download Initiated	USB data download has been started (Future Option)	Nil
User Initiated Incident Marker Button Pressed	The user pressed and held the Incident Marker button for 5 seconds, another marker cannot be added for a further 60 seconds	Nil
VDR Electronics Case Opened	Someone has removed the front panel of the X-VDR MEU Enclosure	Nil
VDR Electronics Case Closed	X-VDR MEU enclosure front panel has been replaced after being removed	Nil
Video Capture Stopped!	VIDEO Capture Recording has been stopped ready for shutting down the X-VDR	Nil
INI FILENAME backup file missing	The Named X-VDR Configuration backup file is missing	Contact manufacturer
INI FILENAME Both INI files missing	The Named X-VDR Configuration backup file and main files are missing	Contact manufacturer
INI FILENAME file corrupt - copied from backup	The Named X-VDR Configuration file is different from backup, backup version has been copied to the boot location	If this error occurs after every boot contact manufacturer

System Log Entries		
Log entry	Description	Recommended action
INI FILENAME file missing - copied from backup	The Named X-VDR Configuration file is missing from the boot location, backup version has been copied to the boot location	If this error occurs after every boot contact service manufacturer
INI FILENAME Fixed Capsule file corrupt - copied from backup	The Named X-VDR Configuration file held on the fixed capsule is different from the backup copy, backup version has been copied to the fixed capsule	If this error occurs after every boot contact service manufacturer
INI FILENAME Fixed Capsule file missing - copied from backup	The Named X-VDR Configuration file held on the fixed capsule is missing; backup version has been copied to the fixed capsule.	If this error occurs after every boot contact manufacturer
INI FILENAME Float Free Capsule file corrupt - copied from backup	The Named X-VDR Configuration file held on the float free capsule is different from the backup copy, backup version has been copied to the float free capsule.	If this error occurs after every boot contact manufacturer
INI FILENAME Float Free Capsule file missing - copied from backup	The Named X-VDR Configuration file held on the float free capsule is missing; backup version has been copied to the float free capsule.	If this error occurs after every boot contact manufacturer
INI FILENAME Local file corrupt - copied from backup	The Named X-VDR Configuration file held on the local recording medium is different from the backup copy, backup version has been copied to the local recording medium.	If this error occurs after every boot contact manufacturer
INI FILENAME Local file missing - copied from backup	The Named X-VDR Configuration file held on the local recording medium is missing; backup version has been copied to the local recording medium.	If this error occurs after every boot contact manufacturer
Internal System Temperature: TEMPERATURE READING	Displays internal system temperature (shown every 6 hours if below 30°C, every 30 minutes if between 30°C and 40°C, every 10 minutes if between 40°C and 50°C, every 5 minutes if between 50°C and 55°C and every 1 minute if over 55°C)	Nil
All Microphones Correct	All microphones have passed test	Nil
Annual Survey Due	The Annual Survey date has passed	Contact manufacturer to arrange annual survey
Batteries are past replacement date (FITTED DATE)	Batteries fitted in the UPS have passed their replacement date	Contact manufacturer to organise replacing the batteries.
End of System Test	System test has complete	Nil
Fixed Module Correct	Fixed Capsule if connected and functioning correctly	Nil

KH-2076 X-VDR Touch screen console operation
Chapter 6: System Log Entries

System Log Entries		
Log entry	Description	Recommended action
Fixed Module Failed	Fixed Capsule communications have failed - X-VDR unable to record to the fixed capsule	Check fixed capsule is connected and configured correctly, if error persists after restart contact manufacturer
Float Free Module Correct	Float free Capsule if connected and functioning correctly	Nil
Float Free Module Failed	Float free Capsule communications have failed - X-VDR unable to record to the float free capsule	Check float free capsule is connected and configured correctly, if error persists after restart contact manufacturer.
Hydrostatic Release is past replacement date (FITTED DATE)	The hydrostatic release fitted to the Float Free Capsule has passed its replacement date	Contact manufacturer to organise replacing the Hydrostatic release.
Local Fixed and Float Free Modules Correct	All recording mediums are functioning correctly (Local, Fixed and Float free capsules)	Nil
LTRM Modules Correct	Local recording medium if connected and functioning correctly	Nil
LTRM Modules Failed	Local recording medium communications have failed - X-VDR unable to record to the local recording medium	Restart the X-VDR. If error persists after restart contact manufacturer
Microphone (MICROPONE NAME) Correct	Named microphone is functioning correctly	Nil
Microphone (MICROPONE NAME) Failed	Named microphone failed its self-test	Nil
Tamper Alarm Activated	System Case is open.	Nil
Tamper Alarm Correct	System Case is closed.	Nil
FF Battery is past replacement date (FITTED DATE)	The battery fitted to the Float Free Capsule has passed its replacement date	Contact manufacturer to organise replacement Float Free battery
All Capture Cards Correct	All video capture cards have passed self-test	Nil
Automated System Test Started	An Automated system test has been started (occurs every 12 hours)	Nil
CAPTURE CARD Card functioning correctly but failed the last capture due to unspecified error	Named VIDEO capture card is functioning but was unable to capture an image	if fault remains after 5 minutes restart the system, if fault remains after restart contact manufacturer
CAPTURE CARD Correct	Named Capture Card is functioning correctly	Nil
CAPTURE CARD No Capture card has been detected - card defective	Named VIDEO capture card is not available to X-VDR system	restart required, if fault remains contact manufacturer

System Log Entries		
Log entry	Description	Recommended action
CAPTURE CARD No video signal is has been detected by the card but the card is functioning correctly	Named VIDEO capture card is not detecting any video	Video source equipment may be switched off If the source RADAR/ECDIS is on and available then check the connectivity between the X-VDR and source equipment. If problem persists contact manufacturer
Mains Input Correct	Mains power is on and providing power correctly	Nil
NMEA SENTANCE Not received within the last 20 seconds	Named NMEA sentence has not been received for the indicated time	Check source equipment is on and operating correctly
NMEA SENTANCE Received within the last 20 seconds	Named NMEA sentence has been received within the indicated time	Nil
Serial Data Correct	All Serial Data is being received correctly	Nil
UPS Correct	UPS is functioning correctly	Nil
UPS has Failed	UPS battery power is unavailable - if mains fails X-VDR will cease functioning until power is restored	Check power and UPS, if problem persists contact manufacturer
User Initiated System Test Started	A user initiated system test has been started, another test cannot be started for 60 seconds	Nil

7. Document Issue and Revisions

Document Issue	Date	Modification Number (where applicable) Brief Record of Change and Reason for Change
Iss01 Rev00	23.01.13	Original Issue
Iss01 Rev01	28.10.14	Updated images and text.
Iss01 Rev02	30.10.14	Updated text and document name (ex. Display Panel Guide)
Iss01 Rev03	18.11.14	Updated images to latest version.
Iss01 Rev04	30.10.14	Added System Log Entries
Iss01 Rev05	08.12.14	Added information for aspects of the display

NOTICE

This manual is for informational use only. Kelvin Hughes Ltd continually strives to improve their products and therefor may be changed without prior notice. This manual should not be construed as a commitment of Kelvin Hughes Ltd. Under no circumstances does Kelvin Hughes Ltd assume any responsibility or liability for any errors or inaccuracies that may appear in this document. The equipment should only be used for the purposes intended by the manufacturer; any deviation from this will void the warranty of the product.

NOTE: All alterations must be verified by re-authorisation and approval of the complete document.

Kelvin Hughes contact information and website:

Service phone line: +44 (0) 1992 805 301

Service email: service@kelvinhughes.co.uk

FAX: +44 (0) 1992 805 310

Address: Kelvin Hughes Limited
Voltage
Mollison Avenue
Enfield
EN3 7XQ

Website: www.kelvinhughes.com