USER GUIDE FOR NETmc MARINE ***X-Ops***

Rev.2.3
Firmware v.1.2.32 X-Ops, 1.2.9 Pipeline
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Contents

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1. Introduction

The ***X-Ops*** is a 19" rack mountable, multi-channel video acquisition system and is available as a 1, 2, 3 or 4-channel recorder. Each video channel has its own individual module; so if one channel goes down it does not take down the whole system.

The ***X-Ops*** is supplied with an intuitive user interface that displays each of the video streams in a live view. Clicking on any of the live views expands the image to full screen. The set-up screen allows for manually configuring store paths and other configurable parameters.

The ***X-Ops*** can be used in 2 ways:
- multi-channel video recording
- synchronised pipeline recording.

1.1 Multi-channel video recording

The ***X-Ops*** has been designed with built-in flexibility: eg if a 4-channel recorder is purchased, four camera signals can be connected, that may or may not be associated with each other but are not necessarily synchronised. Each channel can be operated independently, or two or more channels can be operated together with a single set of controls, and the other single channels can still be used independently.

1.2 Synchronised pipeline recording

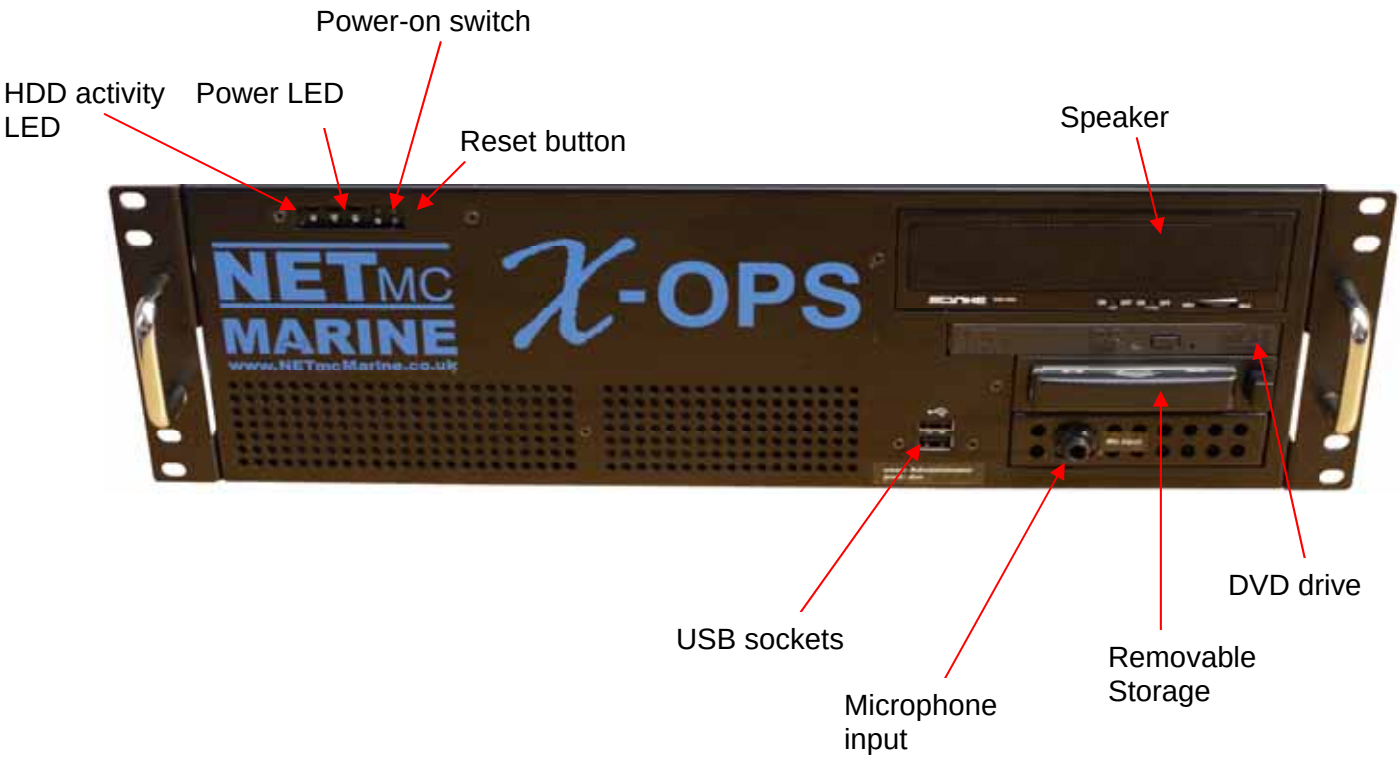
In this mode, there is only one start and stop – all channels are started at the same time and synchronised. Each video file is stored as a separate entity, though by using NETmc Marine filters, media players know that there are associated files and so multiple files can be launched simultaneously. Furthermore, as no special viewer is required, the files can also be viewed in Windows Media Player.

To enhance the operation of the system in this mode, NETmc Marine has partnered with EIVA A/S of Denmark to interface the ***X-Ops*** with EIVA's suite of software including their NaviEvent package.

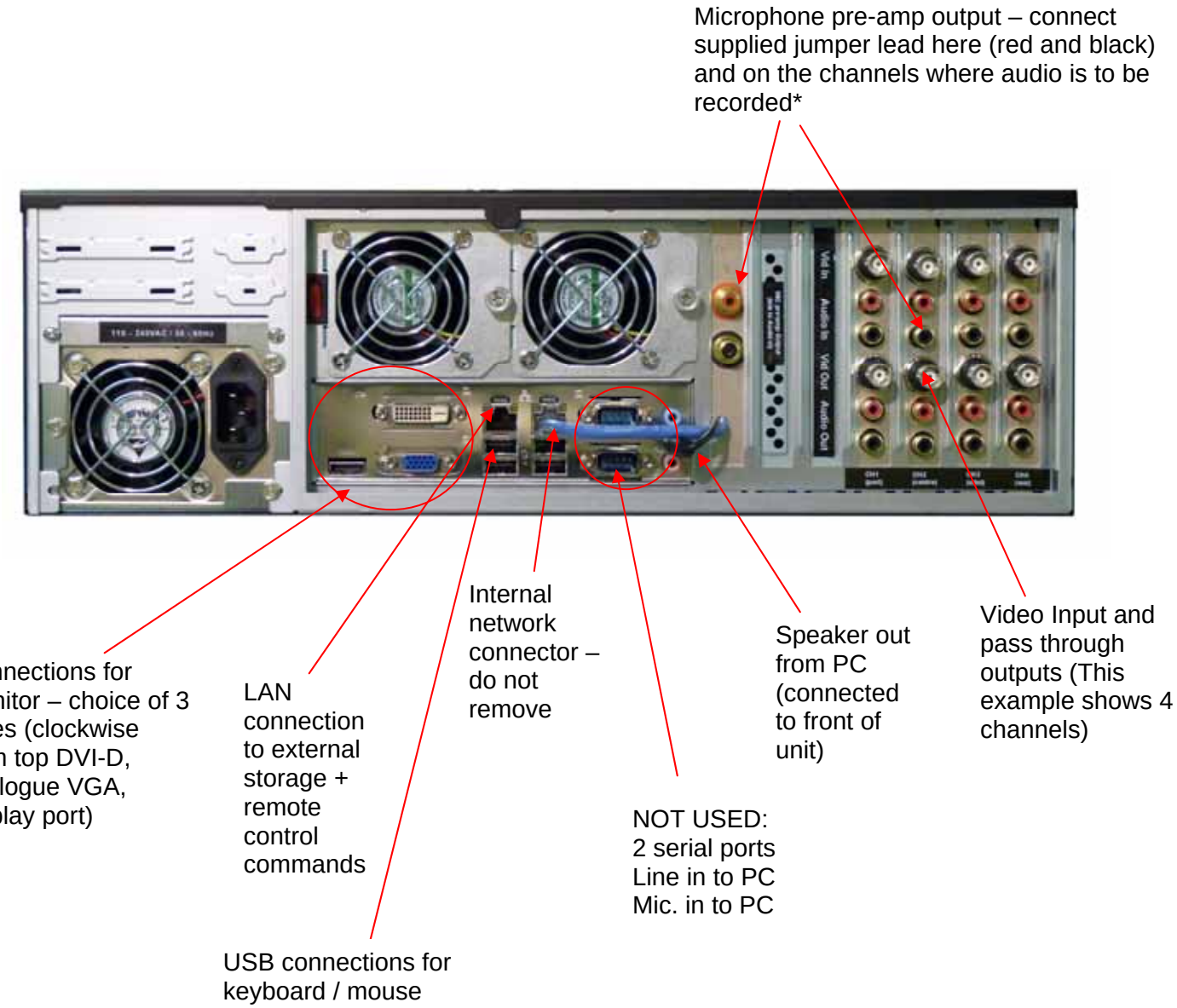
NETmc Marine can supply filters and SDKs to enable other eventing packages to interface to the ***X-Ops*** for associating video to events.

2. Hardware Description and Connections

2.1 Front of the unit



2.2 Back of the unit



* The example below shows the connections for a 4-channel ***X-Ops*** where the same audio is to be recorded on all channels.

3. Set-up

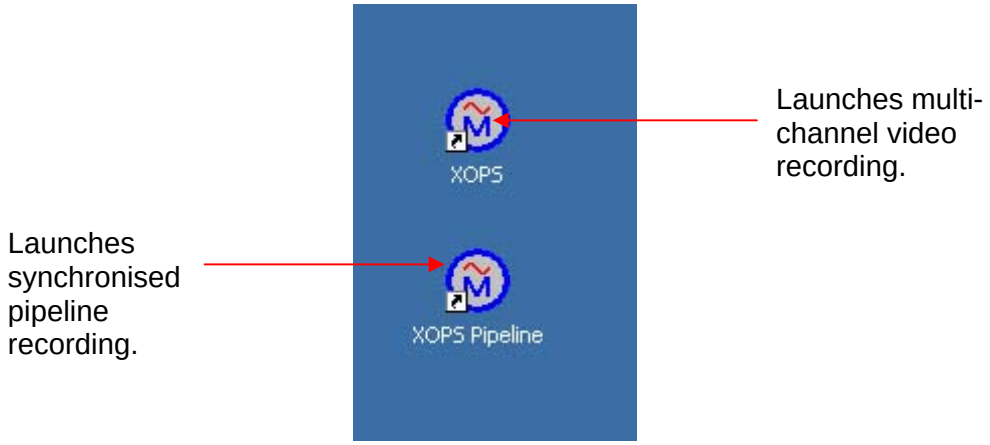
It is important to plug in all video connections before switching on the *X-X-Ops*.

THIS EQUIPMENT MUST BE EARTHED.

9. Mount the ***X-Ops*** in a suitable rack mount system.
10. Connect the power supply. **Note: this unit must be earthed**. Note (2): we highly recommend connection to a UPS (uninterruptible power supply) to prevent data loss.
11. Connect keyboard / mouse / monitor
12. Connect video / audio signals.
13. Power up the unit
14. Launch ***X-Ops*** software from desktop icon.
15. Live video images should be displayed on screen.

4. Software Settings

There are 2 shortcuts on the desktop which launch the 2 modes of operation for an X-Ops:



Once the X-Ops software has been loaded click on the Setup icon

In the set-up page the user can select:

- the video input source (PAL/NTSC)
- video quality (by experiment / customer specification
- where files are to be saved
- what the file names should be.

4.1 Multi-channel video recording

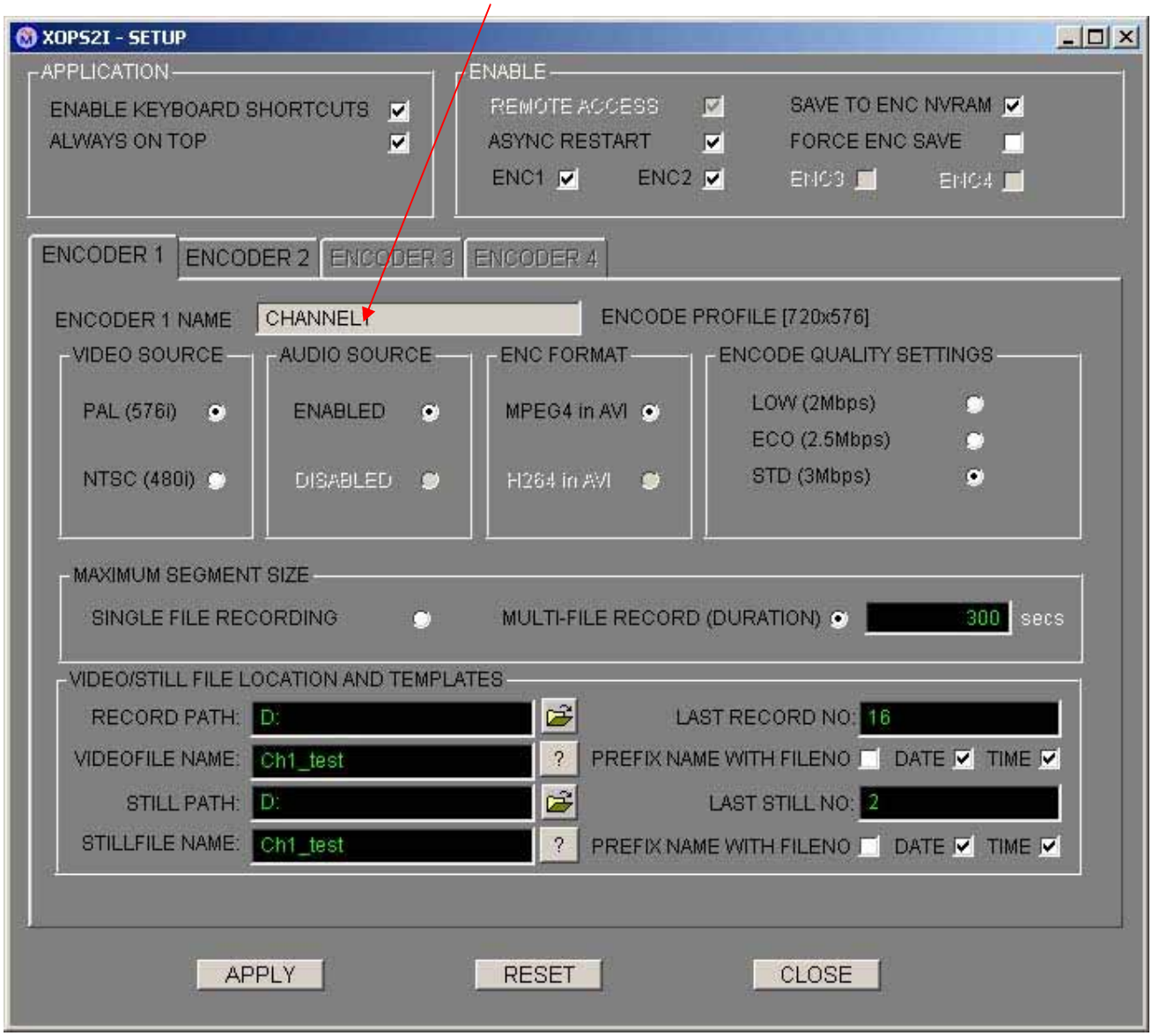
An example of the set-up screen for a 2-channel X-Ops is shown below.

The user should enter the relevant details for each channel by clicking on “Encoder 1” and “Encoder 2” in turn.

A friendly name can be given to each encoder to facilitate identification of the images shown on the screen – in this example we have chosen Channel1 and Channel2.

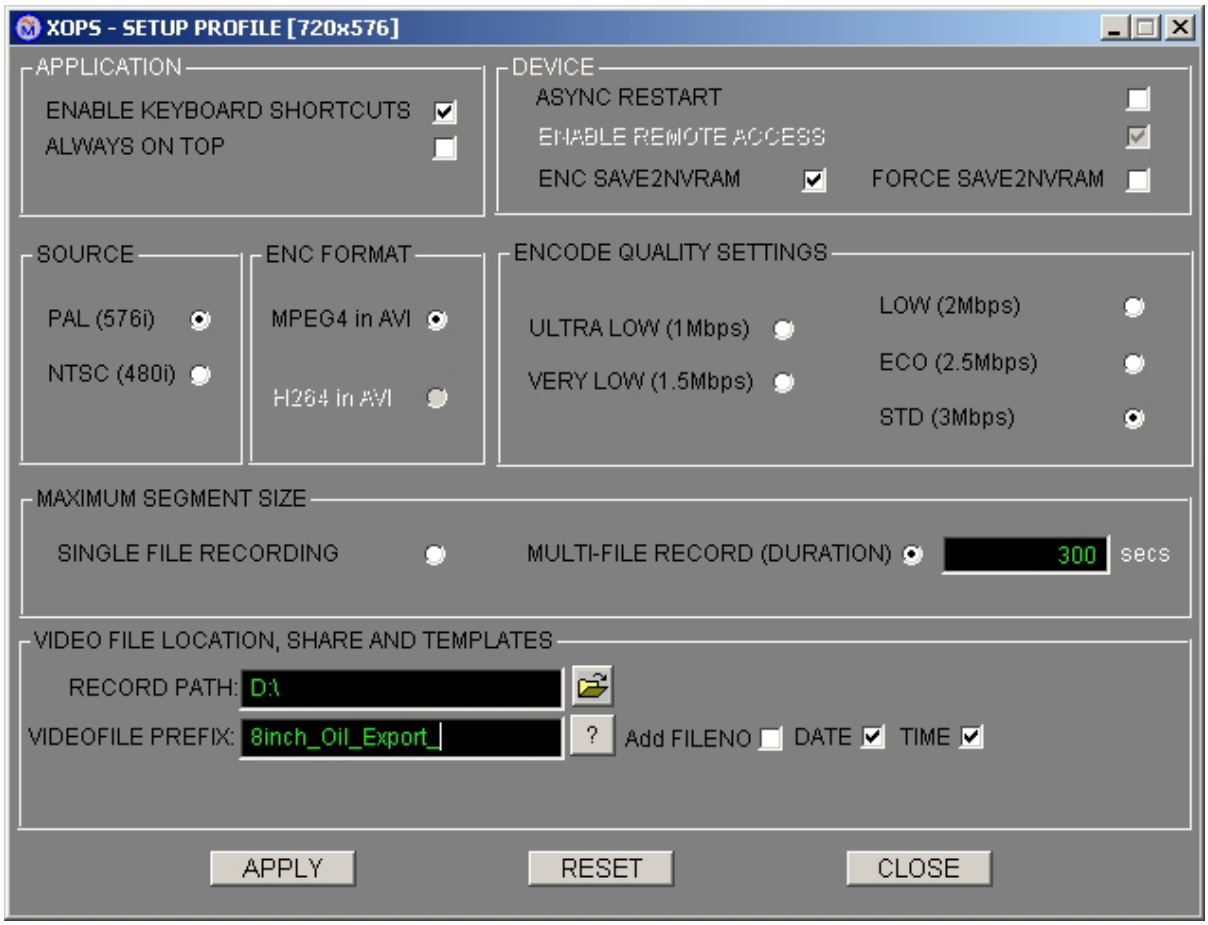
Note: All of the information is completely independent for each of the channels, so for example, the video and stills for Channel 1 can be saved to a different location from those for Channel 2.

Set name for each Channel here



4.2 Synchronised pipeline recording

The set-up page for this mode of recording looks slightly different:

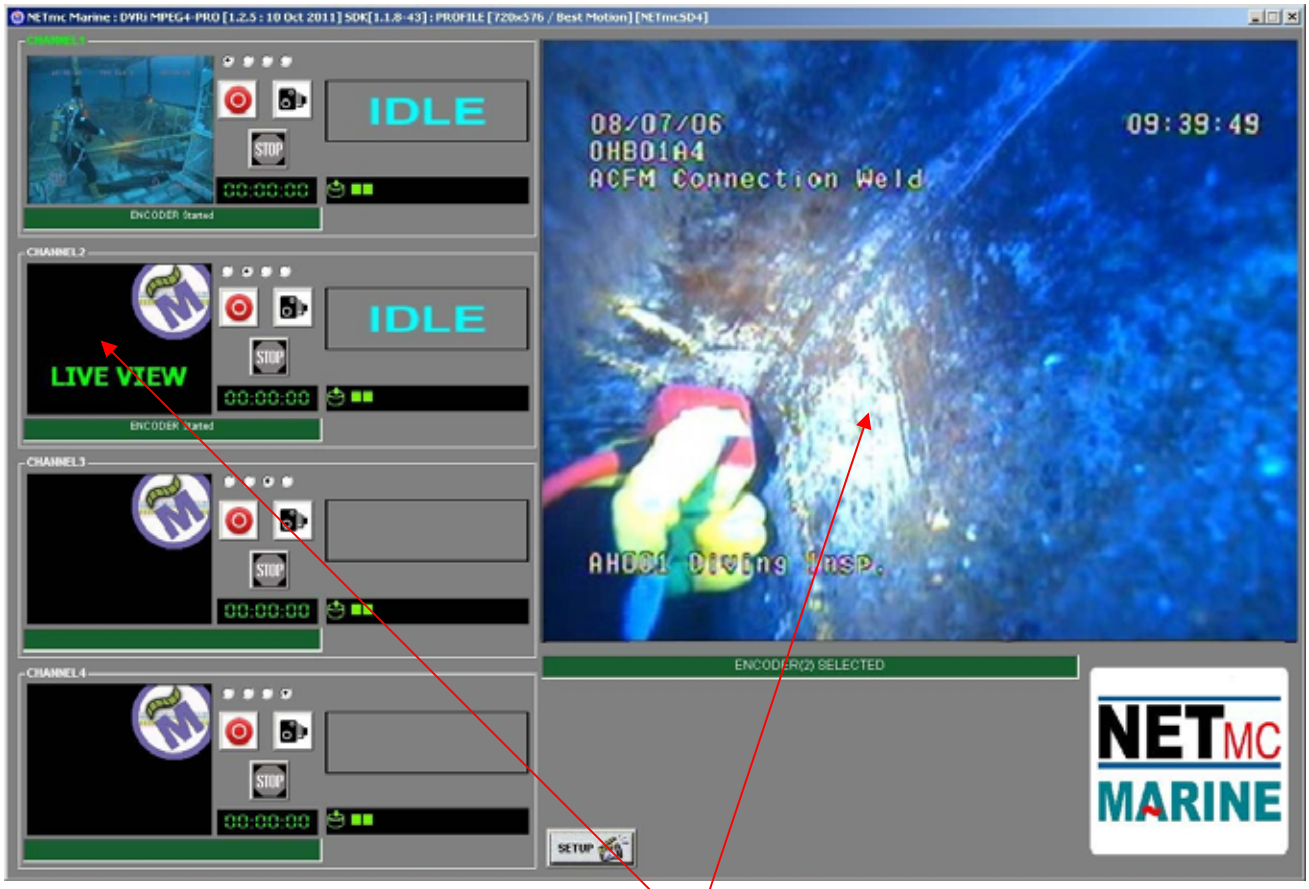


The filenames are in a fixed format, so as to be compatible with EIVA.
e.g. 2010-0604-092718-000-videofileprefix-centre.avi
2010-0604-092718-000-videofileprefix-port.avi
2010-0604-092718-000-videofileprefix-stbd.avi
2010-0604-092718-000-videofileprefix-aux.avi

So with the set-up details as entered in the above example, the filenames will be
2010-0604-092718-000-8inch_Oil_Export_-centre.avi
and so on.

5. Live View

The image below shows a 2-channel X-ops where the signals are being recorded independently. (which is why there Is a blank screen and no text in the Channel 3 and 4 spaces)

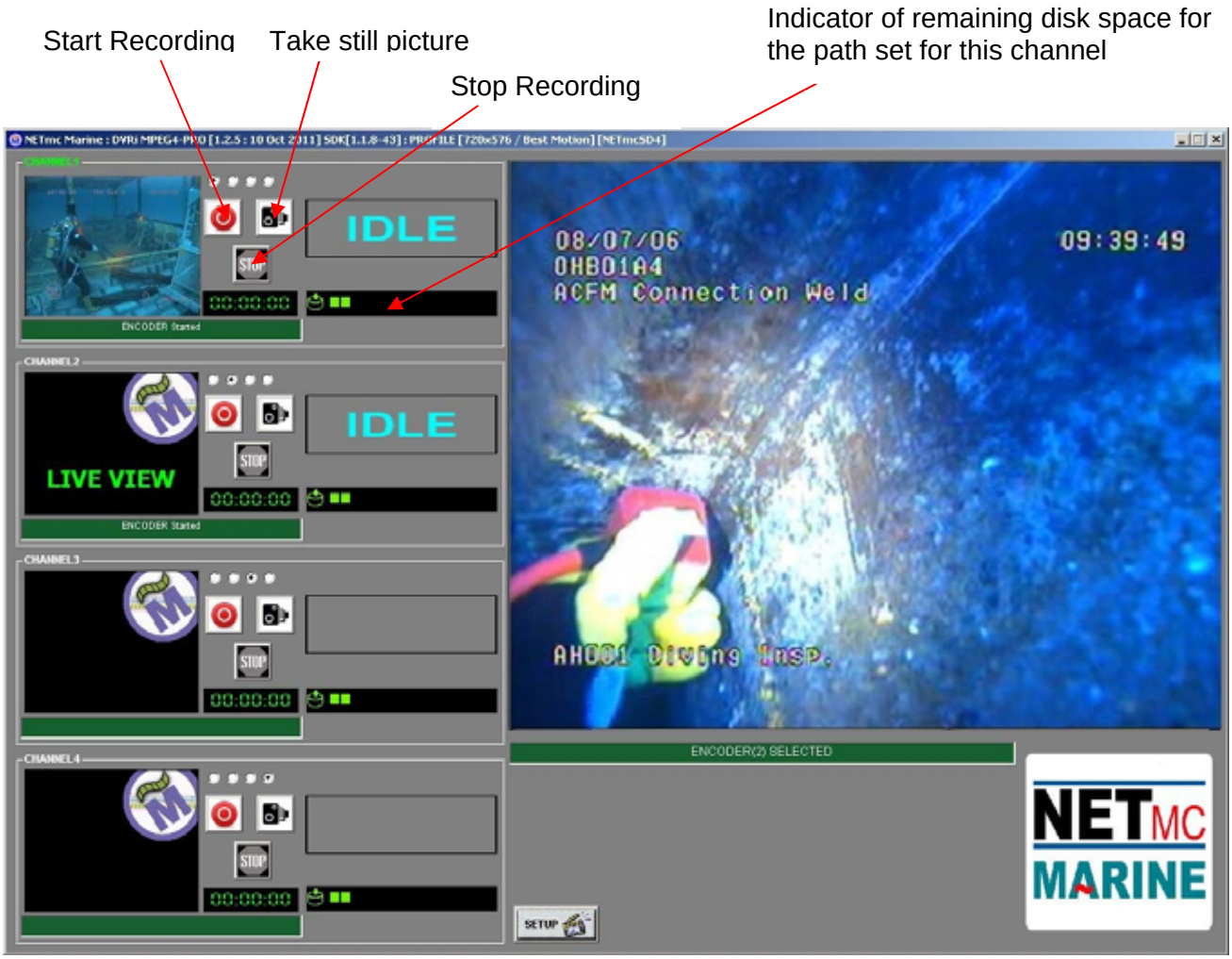


The live view from channel 2 is currently displayed in the large preview screen

- A single click on any of the small preview screens, moves the image to the larger preview window.
- A single click on the large preview window takes it back to the appropriate small window.
- Double-click on any of the small preview screens to get a full screen image.
- Press ESC to go back to the normal preview screens as shown above.

6. Recording

6.1 Multi-channel video recording – independent channels



To start recording any channel, simply click on the RECORD button for that channel.

When recording has started, the status indicator changes to “REC” instead of “IDLE”, the REC button will become depressed and the minute counter will start to increment:

The image on the screen shows the video signal that is being input to the DVR.

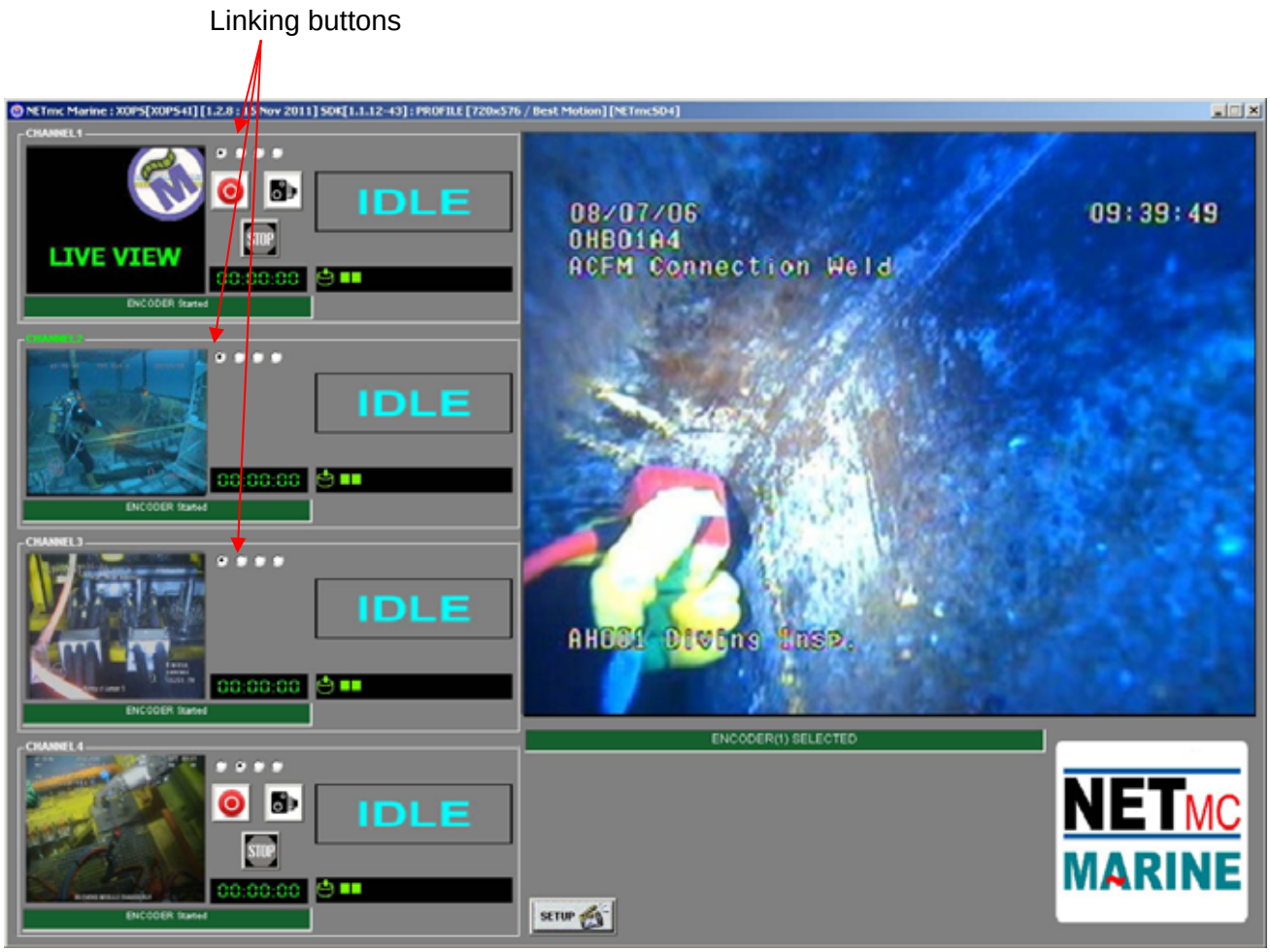
Once the desired footage has been recorded, simply click on the STOP button to end recording.

To resume logging, simply click the RECORD button again.
The system will automatically create a new file, automatically named as per the configuration in the SETUP page.

6.2 Multi-channel video recording – some linked channels

The example below shows a 4-channel X-Ops where Channels 1 to 3 are linked together and Channel 4 is operating independently.

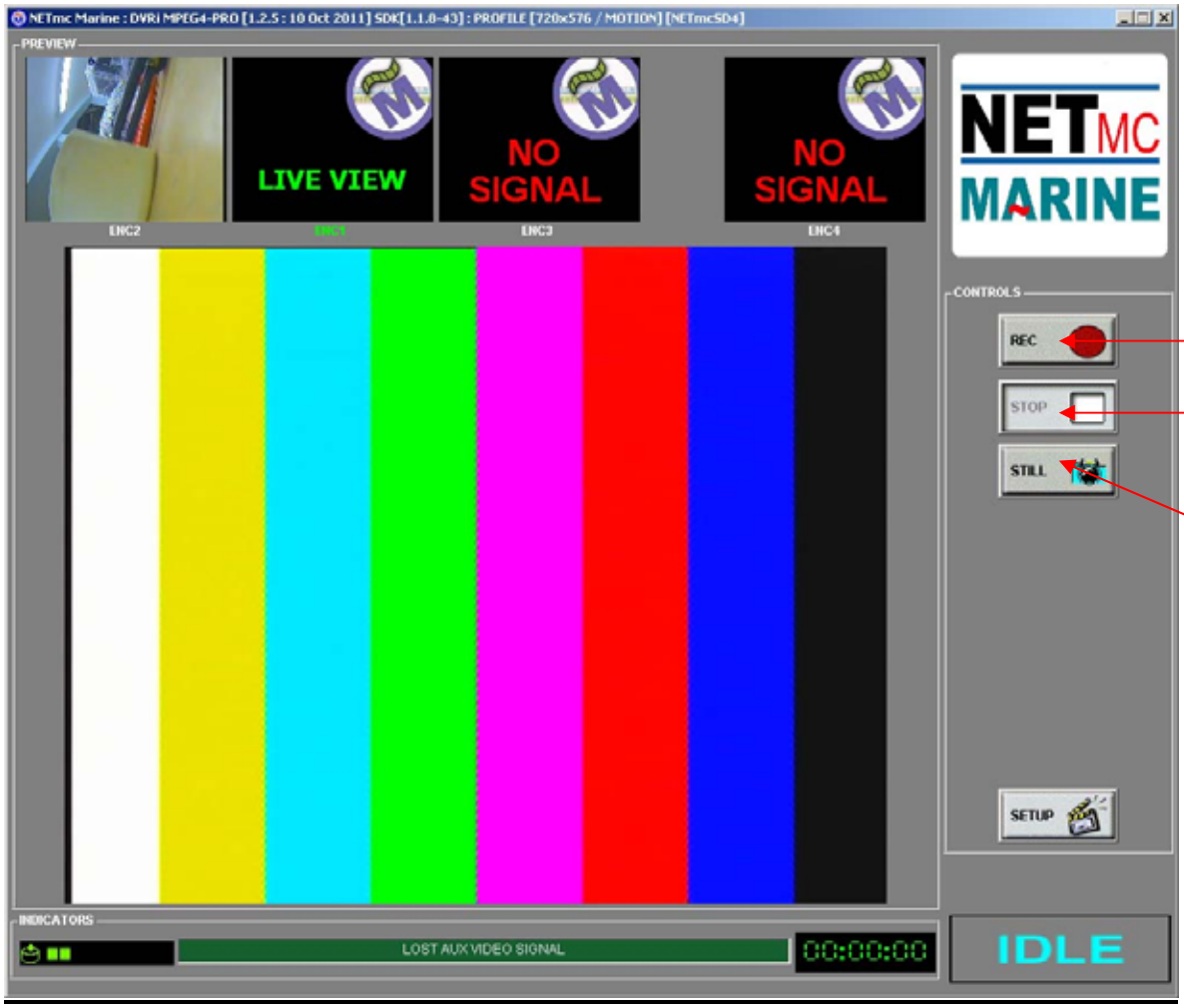
The user has selected this mode of operation by clicking in the first of the “linking buttons” for each of the first three channels.



Note: There is now only one set of controls (Record, Stop, Stills Grab) which controls the recording for all of the first three Channels.

The image being recorded for each channel is displayed – and can be taken to full-screen by double-clicking on that image.

6.3 Synchronised pipeline recording



To start recording, simply click on the RECORD button and all the channels will be recorded at once.

When recording has started, the status indicator changes to “REC” instead of “IDLE”, the REC button will become depressed and the minute counter will start to increment:

The image on the screen shows the video signal that is being input to the DVR.
Once the desired footage has been recorded, simply click on the STOP button to end recording.

To resume logging, simply click the RECORD button again.

The system will automatically create a new file, automatically named as per the configuration in the SETUP page.

Double-clicking on any video image will take that image to full screen.
Press ESC to take the display back to normal.

7. Playback of files

To replay individual files on the *X-Ops*

Open the drive where the video files have been stored (e.g. c: video\). Simply double-click on any file and the media player will open and the video file will play.

To replay triple video files on the *X-Ops*

Right-click on any file, select the three related files, click on “send to” , and choose “mps file.”

Then double-click the mps file and triple video launches and is synchronised.

To replay video files on another PC

You will need to install a codec pack from our website: www.netmcmarine.co.uk

Select “File Downloads” from the Links menu on the right, click on “File download archive” and choose “HD / XOPS / Triops Codec Pack”.

8. Compatibility with EIVA software

To enhance the operation of the system, NETmc Marine has partnered with EIVA A/S of Denmark, developers of marine navigation software, to interface the ***X-Ops*** with EIVA's suite of software including their NaviEvent package. NaviEvent allows for both online and offline eventing of pipeline inspections, with video being associated by time, thus enabling a jump to video facility when used with the NETmc Marine ***X-Ops*** system.

9. How to contact NETmc Marine Support

Should any problems occur with your ***X-Ops*** that are not addressed by this manual please contact our Support Team:

Email: support@netmcmarine.co.uk.

Tel: +44 1771 644001

Should your call be outside office hours, please leave a message on the answering machine, which will be forwarded to one of the support engineers. Although we cannot guarantee 24/7 availability, we endeavour to respond as quickly as possible to any query – regardless of when the support call is made.

Notes:

1. Whilst every effort has been made to ensure that the information contained in this manual is accurate, no liability can be accepted for errors and omissions.

2. Should this product be modified in any way by anyone other than a qualified NETmc Marine employee, then NETmc Marine cannot be held liable for any consequences.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Appendix 1

Technical Specifications

Power Requirements	85-264 Vac, 50-60 Hz
Power Consumption	120 w
Operating Temperature	10 - 35 Degrees
Non-operating Temperature	-10 - 60 Degrees
Operating Humidity	5-95% RH non-condensing
Non-operating Humidity	5-95% RH non-condensing
Operating Shock	65G, 2ms
Non-operating Shock	250G, 2ms
Operating Altitude	-305m – 3,050m
Non-operating Altitude	-305m – 12.200m
Operating Vibration	Linear 20-300Hz, 0.75G (0 to peak) Random 10-300 Hz, 0.004g2/Hz
Non-operating Vibration	Low frequency 5-20 Hz, 0.195 inches (double amplitude) High frequency 10-300Hz, 5.0G (0 to peak)
Dimensions	482(W) x135(H) x 435(D)
Weight	13.95 kg
Network Support	10/100 & 10/100/1000 Base T
Video Input	Composite (BNC) PAL / NTSC
Video Rate	MPEG4 1-3 Mbps
Audio	Analog stereo line input
Microphone	Mono ¼” Jack
Internal hard drive	1TB
External connections	USB 2 (2 front, 4 rear)

Storage and shipping

After overnight road freight the units should be left at room temperature for 24 hours before powering on.

After air freighting the units should be left at room temperature for 48 hours before powering on.