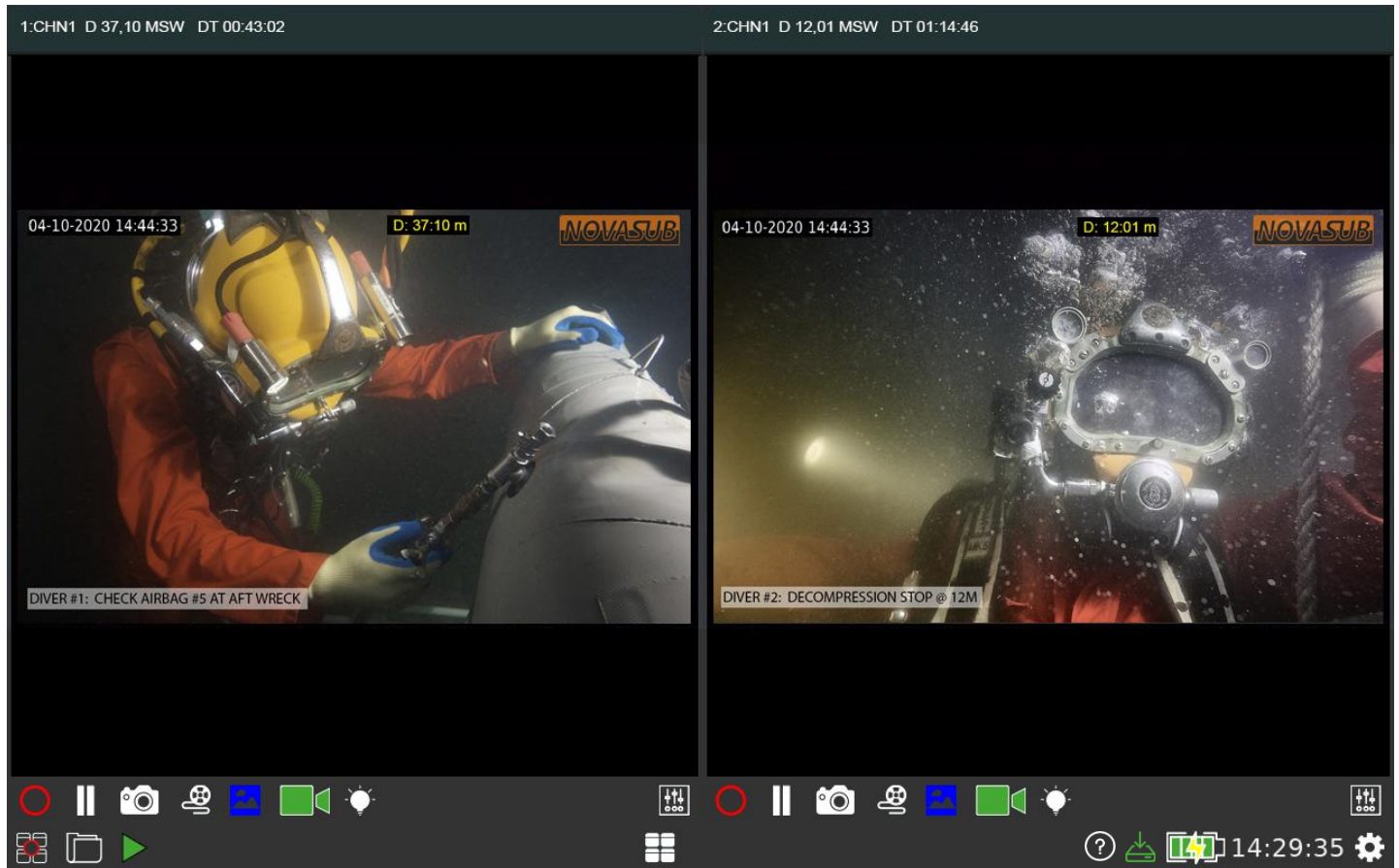




Operations Manual

DVR3 - Digital Video Recorder

Video viewing and recording software

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1 New & Fixed

In Version 1.9 Build 0

- Added choice of DHCP or Static IP settings
- Added renaming option of file and directory
- Added multiselect files for copying and deleting with checkbox
- Changed stop recording when camera is disconnected.
- Changed VU meter adjusted with red and green scale
- Added Onscreen Keyboard can be used where text typing is required
- Added Free Text buttons for use with Onscreen Keyboard
- Added for Depth sensor input option: added max. depth, high pressure in overlay
- Added for HD system added automatic camera resolution detection. SD camera is detected and set correctly
- Added deinterlace selection in channel setting for older SD cameras deinterlacing.
- Changed Teamviewer support and replaced by Rustdesk support option. Requires OS v2.6
- Fixed bug issue of 0Kb recording in channels
- Changed camera On button function, camera button activates the video stream and switches power to the camera.
- Decreased CPU load and power use of the DVR

In Version 1.7 Build 4

- Added support of using SSD hard drive larger then 2Tb
- Fixed audio record to be able to switch On or Off
- Fixed record all button

In Version 1.6 Build 0

- Added support for dual audio output
- Added scrollable update items
- Changed battery colors to match battery led
- Fixed monitor configuration for 2nd monitor
- Fixed start up crash when capture card is not found

In Version 1.4 Build 0

- Changed default start location Xpos and Ypos for overlay set to 1,1
- Changed default video settings for HD to 128, 128, 128, 100, 0
- Changed version numbering: Build number will reset every new version
- Changed maximum file size from 2GB to 4GB

In Build 39:

- Added HD support
- Added Transparency for picture in OSD
- Added orange camera button
- Added "waiting for signal" message
- Added Firmware updater
- Added Battery level percentage
- Added layout save and load on startup
- Improved Free text
- Changed name "Channel settings" to "Video settings"
- Changed maximum bitrate to 20000 kbps
- Fixed missing .xml in filename
- Fixed HD driver update
- Fixed picture file format checked

In Build 36-38:

- Fixed screen Tearing
- Added Temperature security
- Added Loop Record
- Fixed problems with long file names
- Added light voltage control

In Build 35:

- Improved Free Text typing
- Improved file copying

- Added support for multiple screen drivers

In Build 32:

- Fixed the configuration settings

In Build 31:

- Added support for new screen driver

In Build 30:

- Added a Caps lock notification
- Added <enter> support for password
- Added Support for NSCLD
- Optimized CPU usage

In Build 29:

- Added status symbol for backup recording
- Added PC server share
- Added Secure File Transfer Protocol
- Added status symbol for file sharing
- Fixed Time bug
- Fixed OS-clone bug
- Fixed USB finder bug

In Build 28:

- Set Default recording bitrate from 8 Mbps to 4 Mbps
- Added adjustable camera voltage
- Added Coax or Twisted Pair switch for camera
- Added adjustable recording bitrate
- Added recording backup to USB
- Added option to disable camera & light when shutting the system down
- Added file size while copying
- Added possibility to update via Rustdesk
- Added network info for customer service
- Added bus termination switch
- Fixed copying from the Player to USB
- Fixed the crashing of the Player when a file is clicked too fast
- Fixed the cam/light status at startup
- Fixed change date function

In Build 27:

- Added "Copy Layers" in the On-screen display
- Added support for LUX1MZ
- Added Low battery warning
- Added Stop recording for low battery
- Added visual indicator for the OS version
- Fixed too high volume in the Player
- Fixed slow closing of the Player and Browser
- Fixed the crashing of the Player when a broken file is played
- Fixed recording of files when the disk is full

2 Terminology

Term	Description
<i>Brightness</i>	The quality or state of giving out or reflecting light
<i>Build</i>	The version number of the DVR3 software
<i>Channel Bar</i>	User interface below a channel with the controls for that channel
<i>Channel Title bar</i>	User interface above a channel that displays information of the channel
<i>Contrast</i>	Differences in color, tone, or shape that contribute to the visual effect of a design or image
<i>File browser</i>	The interface to manage folders and files
<i>SD</i>	Standard Definition video signal
<i>HD</i>	Standard High-Definition video signal
<i>HD-TVI / AHD</i>	High-Definition Transport Video Interface – A video signal used for transport of HD (1920 x 1080) across long cable lengths
<i>Hue</i>	The attribute of a color by which it is discernible as red, green, and other colors. It depends on its dominant wavelength and independent of intensity or lightness.
<i>Layer Data</i>	Variable of a layer in the On-screen Display, this is the information that appears on the screen
<i>Layer Type</i>	Variable of a layer in the On-screen Display that controls the data of the layer
<i>NovaBus</i>	Novasub proprietary data bus
<i>On-Screen Display (OSD)</i>	An image superimposed on a channel to display information such as text, time, and date.
<i>Player</i>	The interface to replay recordings and view pictures
<i>Saturation</i>	The intensity of color expressed as the degree to which it differs from white
<i>Sharpness</i>	The clarity of detail in a video or photo
<i>SMB</i>	Server message block
<i>Taskbar</i>	User interface in the bottom of the screen with general controls of the software
<i>DHCP</i>	Dynamic Host Configuration Protocol (DHCP) is used to dynamically assign Internet Protocol (IP) addresses to each host on your organization's network.
<i>Static IP</i>	Permanent IP address that doesn't change
<i>Onscreen Keyboard</i>	Virtual keyboard on the screen to enter text in fields
<i>Rustdesk</i>	Rustdesk is a remote access tool to fully control & view the DVR over the internet when the DVR is connected with a LAN cable to a network with internet access.

3 Introduction

The Novasub DVR3 is the 3rd generation video recording software developed by Seascope Subsea. The software is completely redesigned from the ground up to accommodate better ease of use, new features, and better image quality. The DVR3 will be update regular with bug fixes and extra features.

The software now includes support for touchscreens apart from keyboard and mouse. It also has a new user interface with a taskbar to control all the different functions for each diver. These functions include:

- **Camera control**
- **Light control**
- **Recording**
- **Clip Recording**
- **Snapshot**
- **Quick overlay changes**
- **Network connection**
- **Data Overlay (Depth & Pressure)**
- **Onscreen keyboard**

The system got support for extensive overlay functions, such as text, images, and data. These overlay functions can be configured for each diver separately to accommodate every situation. The configurations can be saved and restored to make switching between conditions as smooth as possible. The system has an audio input for every channel, recorded within the video file.

The different channels can be displayed in various ways to ensure you have your operation's best sight. That also includes the ability to connect to an external monitor on which you can select the channels you want to view. The system has Rustdesk built into the software so you can share your code with anyone who wants to control the system remotely when connected to an network with Internet. This also makes technical support more convenient and efficient.

The systems that support the DVR3 software are available in both SD and HD systems. The SD variant supports resolutions up to 960 x 576 pixels, the HD variant also supports the TVI & AHD signal with resolutions up to 1920 x 1080 pixels. The HD variant has additional settings to manage the image quality. The HD variant can be recognized by the adjacent logo on the panel. The HD system is a Hybrid system and automatically detects HD or SD camera and sets the recording resolution correctly.



First, please read this manual thoroughly to understand all possibilities

4 Recording information

The following specifications are for the recordings of the system. Please note that the specifications change whether you have a SD or a HD system.

Recording	SD System	HD System
Image Compression	H.264, MP4 file format	H.264, MP4 file format
Audio Compression	MPEG-4 AAC	MPEG-4 AAC
Recording Mode	Manual	Manual
Recording Resolution	SD: PAL (720 x 576) SD: PAL-960H (960 x 576) SD: NTSC (720 x 480)	SD: PAL (720 x 576) SD: PAL-960H (960 x 576) SD: NTSC (720 x 480) HD: TVI (1920 x 1080) HD: AHD (1920 x 1080)
Frame rate	PAL: 25 fps NTSC: 30 fps	25 fps
Audio bitrate	125 kbps	137 kbps
Video Bitrate (adjustable)	0-20 Mbps (4 Mbps default)	0-20 Mbps (12 Mbps default)

4.1 File name

The file name of the recordings is based on the channel, date and start time. When a recording exceeds its file size or set file time, then the DVR will automatically create another file with an ascending number. For example:

Channel Start Date Start Time Extension

CH1_2020-10-28_10_55_55.mp4

If above exceeds size or time,
then the next file will be named:

Channel Start Date Start Time Extension

CH1_2020-10-28_10_55_55-1.mp4

Ascending number

If above exceeds size or time,
then the next file will be named:

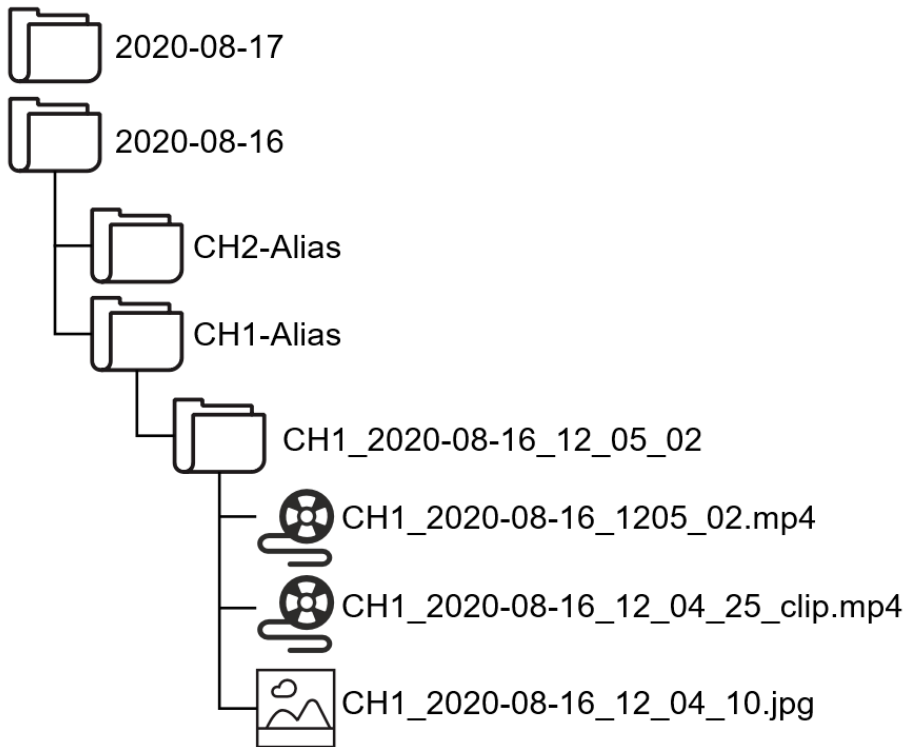
Channel Start Date Start Time Extension

CH1_2020-10-28_10_55_55-2.mp4

Ascending number

4.2 File location

Each new day a folder is created when you start recording, named to the date. In this folder, each channel has a folder named to the channel number with the channel name. Each channel folder contains a folder named to the date & start time of the recording. During recording, all snapshots and clip recordings are also stored in this folder. Each new recording makes a new folder.



4.3 File size

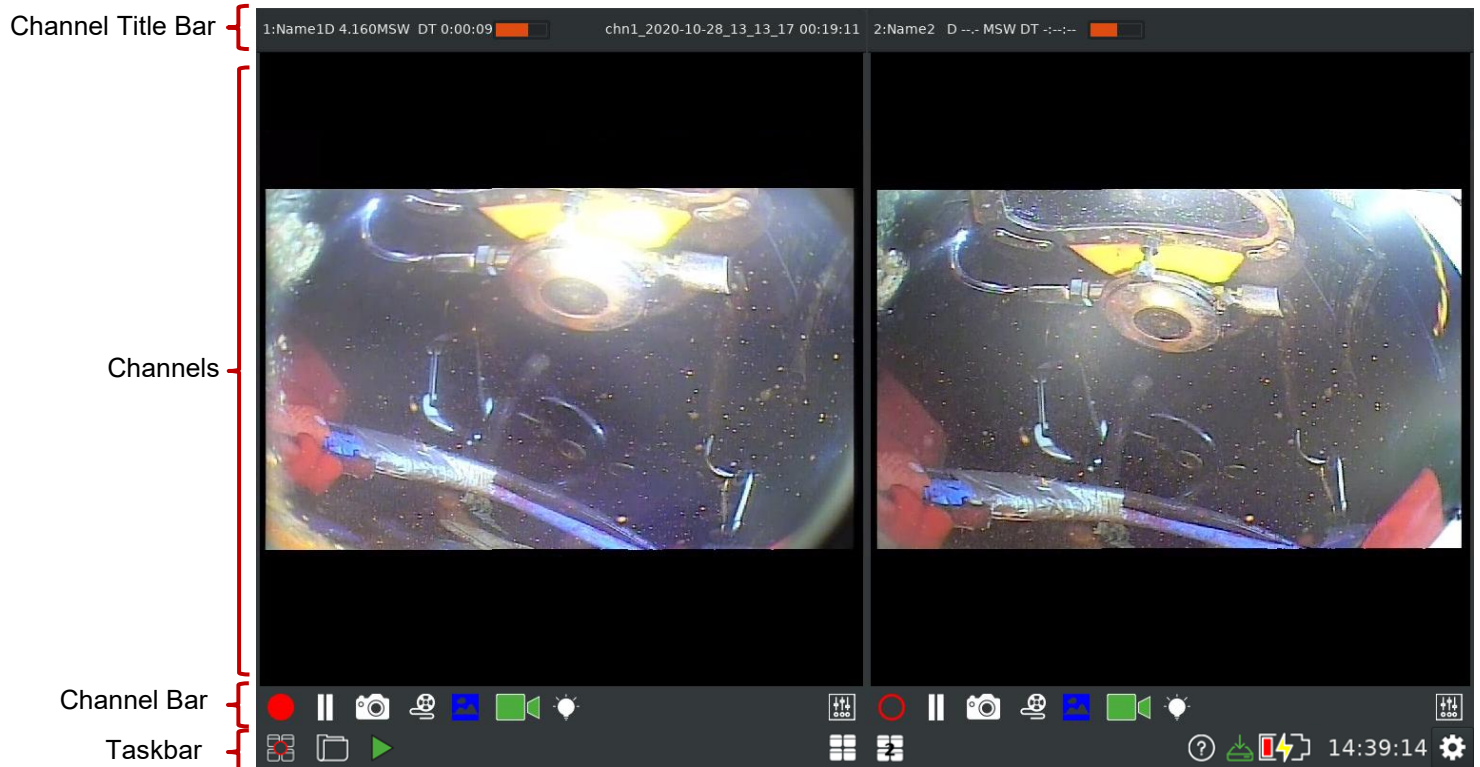
The files are automatically recorded in a maximal file size of 4GB or a set fragment time. How to set this fragment time can be found in **11 Video Settings**. If either the max file size or the time is reached, the DVR will automatically make a new file. This file will be named the same as the previous with a number at the back see **4.1 File name**.

The size per hour of the files is controlled with the channel's Bitrate. The Bitrate can be set in the channel settings. A higher Bitrate results in a higher quality recording. The files will have the following size/hour per Bitrate:

Bitrate (kbps)	Size/hour (GB / hour)
1000	0,5
2000	0,9
3000	1,4
4000	1,8 (default SD)
5000	2,3
6000	2,7
7000	3,2
8000	3,6
9000	4,1
10000	4,5
11000	5,0
12000	5,4 (default HD)
13000	5,9
14000	6,3
15000	6,8
16000	7,2
17000	7,7
18000	8,1
19000	8,6
20000	9,0

5 Controls

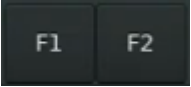
The main screen is divided into a few sections. These sections include the Channel Title Bar, Channel Bar, Taskbar, and Channels:



5.1 Taskbar

The Taskbar is a bar at the bottom of the screen. This bar is mainly used for navigation through the DVR.



Name	Button	Activated	Description
Record all			Button to start recording all channels. These recordings are saved for each channel separately. Solid red means that it is recording.
File Browser		-	Button to open the file browser. <i>See 7 File Browser</i>
Player		-	Button to open the Player. <i>See 9 Player</i>
View Layout 1		-	Button to change the Layout configuration on the main monitor to the next configuration. <i>See 5.4 View Layout Selection</i>
View Layout 2		-	Button to change the Layout configuration on the second monitor to the next configuration. <i>See 5.4 View Layout Selection</i>
Help		-	Button to open the Help function. <i>See 6 Help</i>
Temperature Warning	-		This indicator shows when the internal temperature of the system is getting too high.
Backup Recording	-		This indicator shows the status of the backup recording. You can click on the icon to see a description of the status. This indicator is only visible when the backup record is enabled in the System settings. <i>See 0</i> Backup record
Battery Status			This indicator will show the battery status of the system. Blinking and without a thunderbolt means that it operates on a battery. A thunderbolt implies that it is receiving external power.
System Time	14:23:57	-	Current system time. It can be set in the “Time” settings. <i>See 14.9 Time</i>
Main Setting		-	Button to open the Main Settings. <i>See 0 14.5.4 Backup Record Settings</i>
Free Text Buttons			When Free text overlay is selected in the overlay settings, The Buttons F1,F2,F3 and F4 are added to be used to change or add text with the Onscreen Keyboard

5.2 Channel Bar

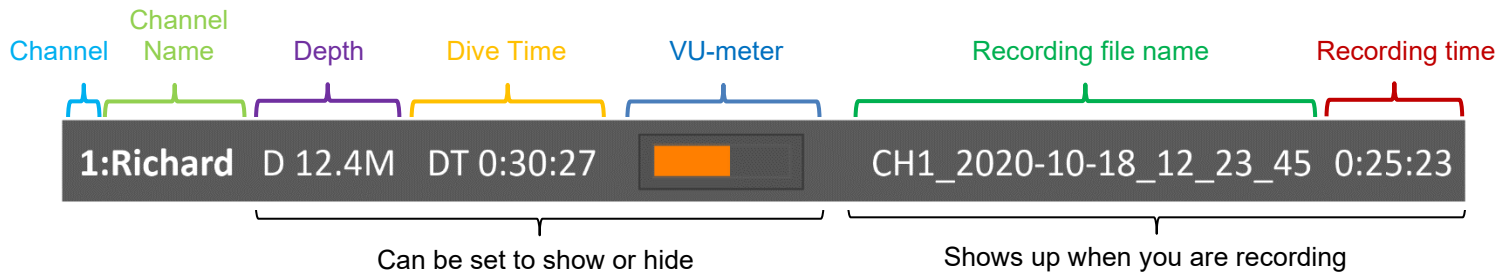
The Channel bar is a bar above the Taskbar. This bar is used for channel-specific commands and settings



Name	Button	Activated	Description
Record			Button to start recording for this channel only. Solid red means the system is recording.
Pause			Button to pause recording, the button itself changes to a play button. When you press the play button, the recording will continue <u>in the same file</u> .
Snapshot			Button to create a picture of the video. The button flashed red as it takes the picture. It can be done simultaneously with recording.
Clip Record			Button to start a clip recording; this is a recording of 10 seconds. The button will become red as it is making the clip. It can be done simultaneously with recording.
On-screen Display Settings		-	Button to open the "On-screen Display Settings." See <i>10 On-screen Display</i>
Camera			Button to switch the camera and video stream on/off. Black = the camera is OFF. Orange = the camera is ON and is waiting for a video signal. Green = the camera is ON and has a video signal. <i>This button works in combination with a Novasub camera & light control system. See 14.2 Channels</i>
Light			Button to switch the light on/off. When it is black, the light is OFF. When it is yellow, the camera is ON. When pressing the button, it will also show a brightness slider that can adjust the brightness. <i>This button only works in combination with a Novasub camera & light control system. See 14.2 Channels</i>
Video Settings		-	Button to open the Channel Settings. See <i>11 Video Settings</i>

5.3 Channel Title Bar

The channel title bar is at the top of the screen. This bar is mainly used for displaying channel information. Every channel has this bar, and all information in it only applies to that channel.



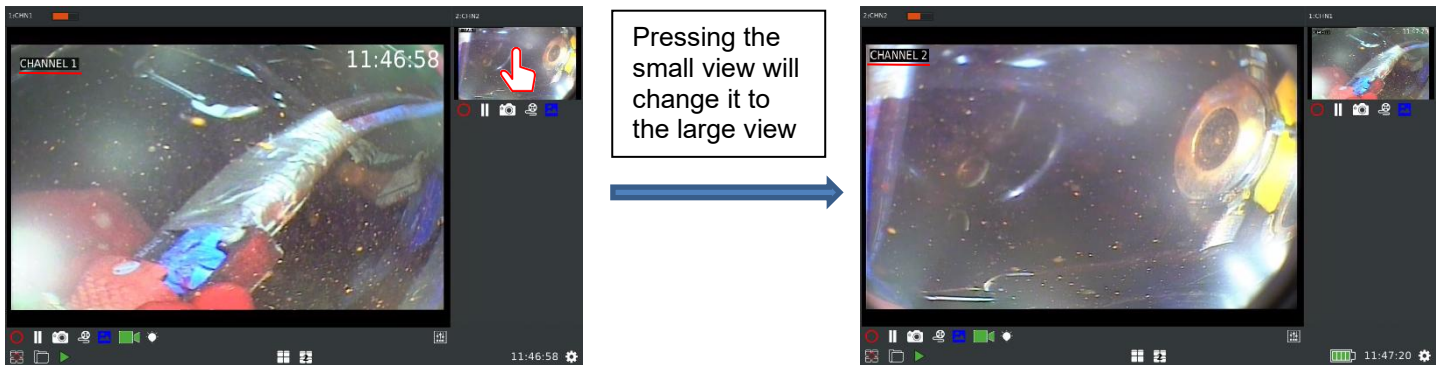
Name	Description
Channel	This displays the channel number ranging from 1-4.
Channel Name	This displays the channel name. This name can be set in the "Channels" settings. See 14.2 Channels
Depth	This displays the depth of the channel. <i>This only works with the addition of NovaBus depth data.</i> This can be set to show or hide in the "Channels" settings. See 14.2 Channels
Dive Time	This displays the dive time of the channel. <i>This only works with the addition of NovaBus depth data.</i> This can be set to show or hide in the "Channels" settings. See 14.2 Channels
VU-meter	This displays the audio input into the system. This can either be from an implemented communication system or an external audio input. Its orange bar shows how much audio is coming in. This can be set to show or hide in the "Channels" settings. See 14.2 Channels
Recording file name	This displays the file name of the recording that the system is currently recording too. The recording can later be found in the Browser under this name. See 4.1 File name
Recording Time	This displays the time the current recording is running.

5.4 View Layout Selection

There are different layouts for the channels available. These can be set up in the settings. See [14.7 Layout Configuration](#). The layout depends on the number of channels you have. For the first monitor, you can change between the layouts by pressing this button:



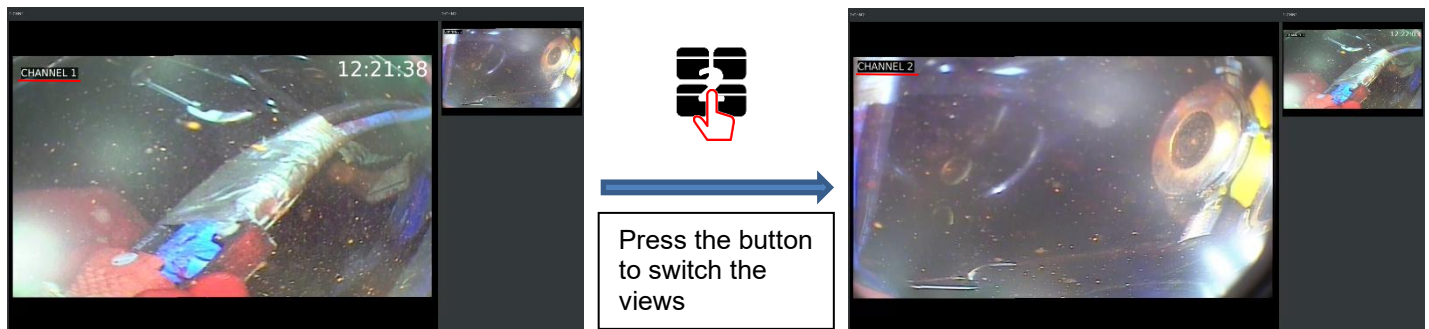
This will cycle through the different enabled layouts. For layouts with one enlarged channel, you can change the channel that is enlarged by pressing on a small channel. For example:



For the second monitor, you can change the layout by pressing this button:



This cycles through the layouts **AND** through the enlarged views. So, pressing the button can either change the layout or change the enlarged view. For example:



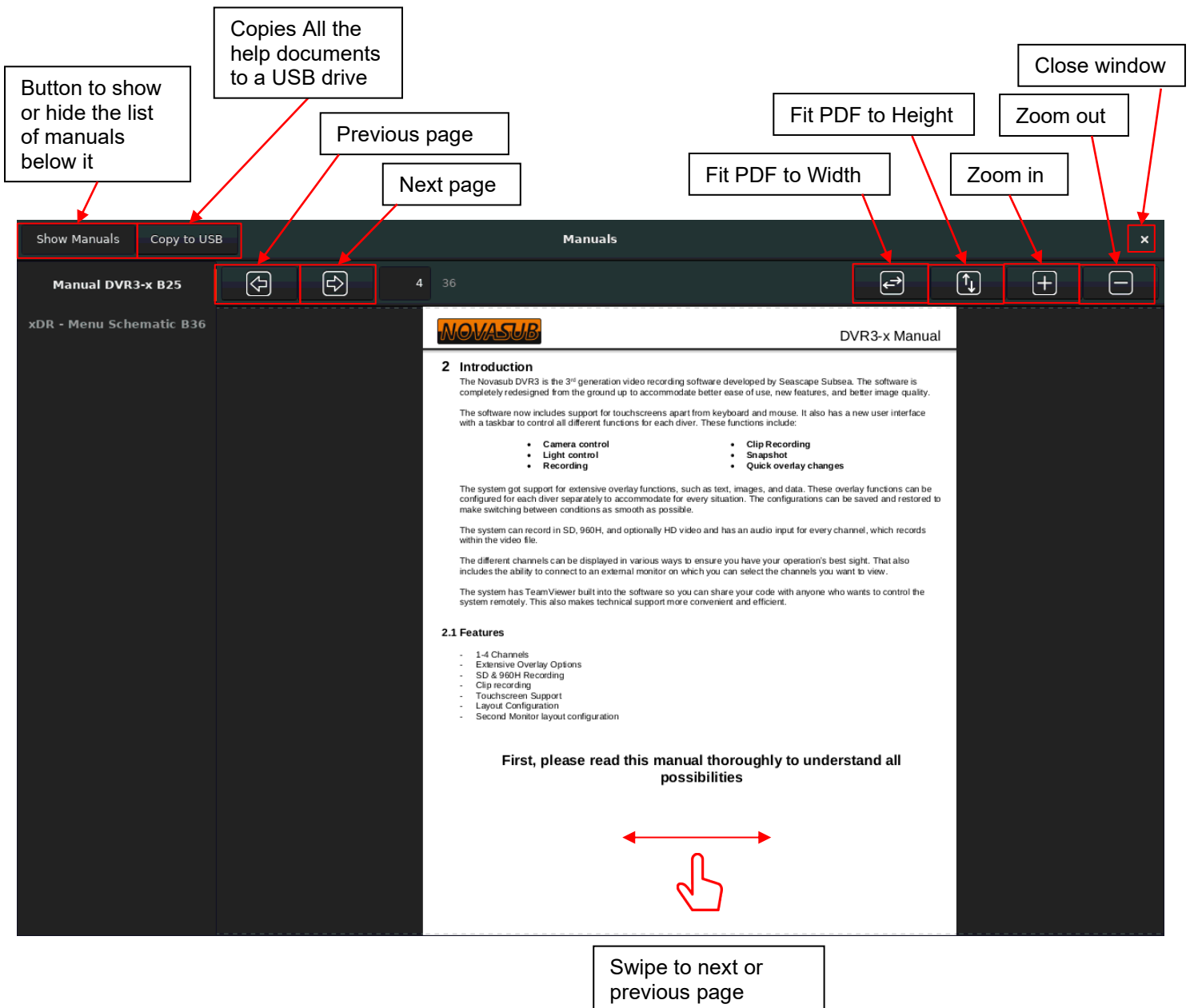
The system will remember the layout of the first monitor when it is shutdown, and it will startup with the same layout. Please note that this only applies for the first monitor.

6 Help

The help function is to see all the manuals, QuickStart's and schematics on the software. It can be opened by pressing the following button:



This will open the pdf viewer, which can be seen below. In this viewer, the manuals, QuickStart's, and schematics are listed on the left, these can be opened by clicking on them. You can also zoom in and out of the pdf. See below an explanation of all buttons.

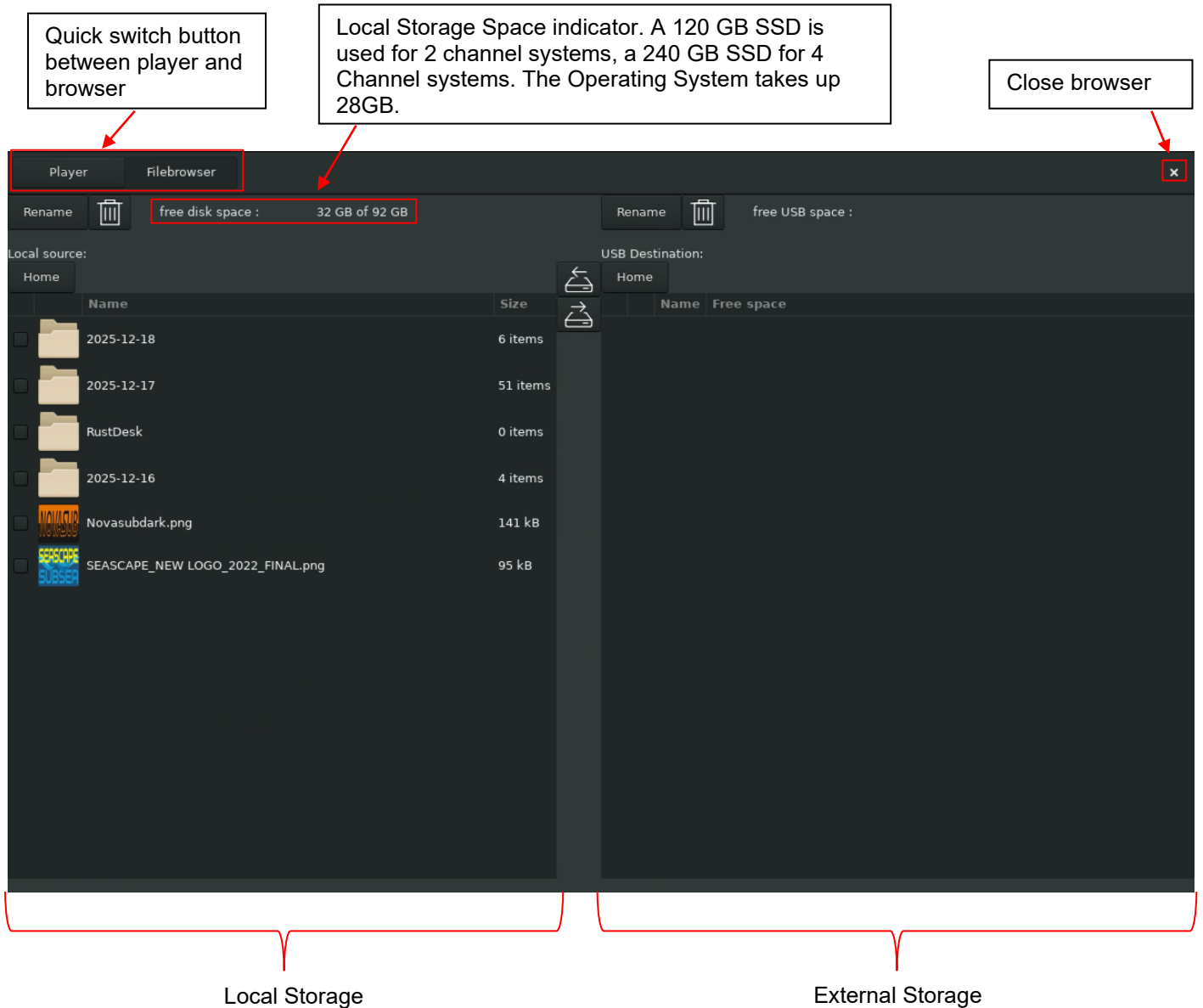


7 File Browser

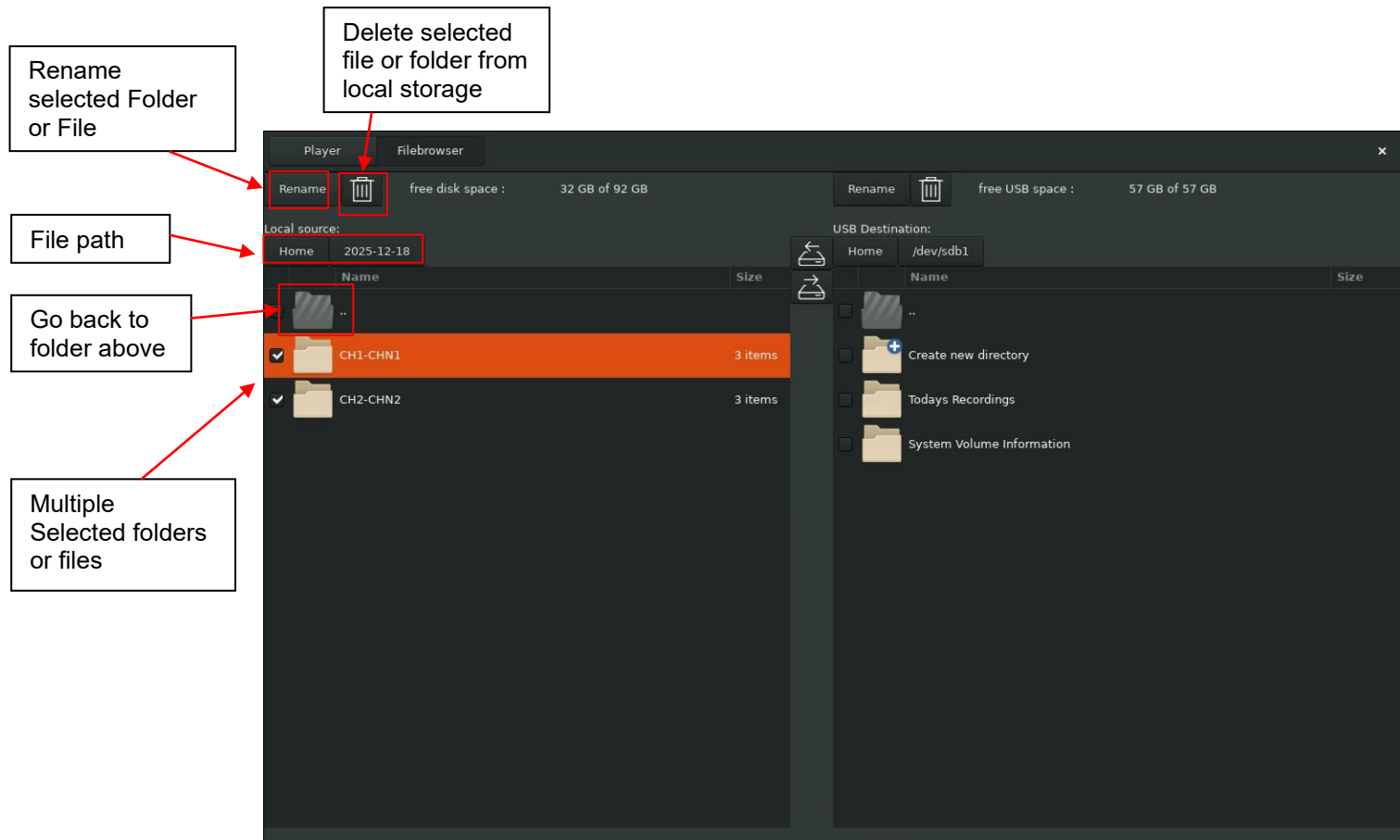
The file browser is the way to retrieve files from the system. Files can also be added using this menu. The Browser can be opened with the following button in the Taskbar:



This will open the Browser, as can be seen below. In this Browser, you can see the local storage on the left and possible external storage on the right. You also have a quick button to switch between the Player and the Browser. See 9 *Player* for more information on the Player. The Browser also shows the free storage space. This storage can be expanded on request.

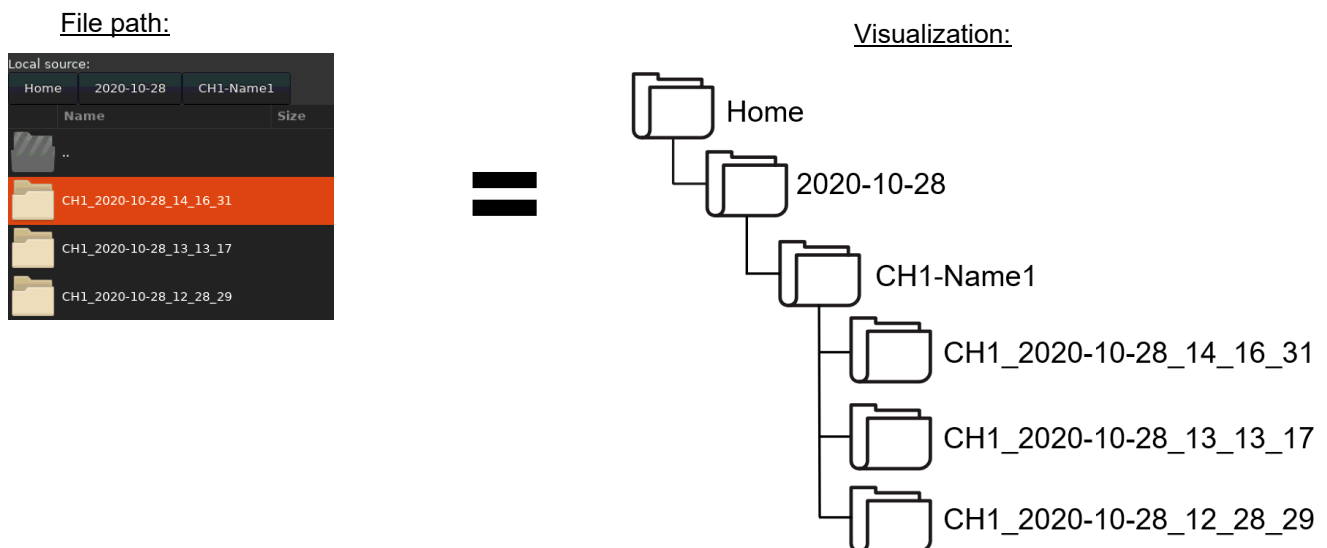


You can navigate through the Browser by clicking in the local storage part. Click once to select a folder or file; this will then become highlighted (orange) or select multiple folders or files by clicking on the check boxes. Double click to open a folder. To navigate back, you can double click the grayed-out folder on the top of the list. You can also select which folder you want to go back to in the file path. This bar shows the folder hierarchy you are currently in. To delete a folder or file, select it or multiselect using the check boxes and press the trashcan on the top left.



7.1 File path

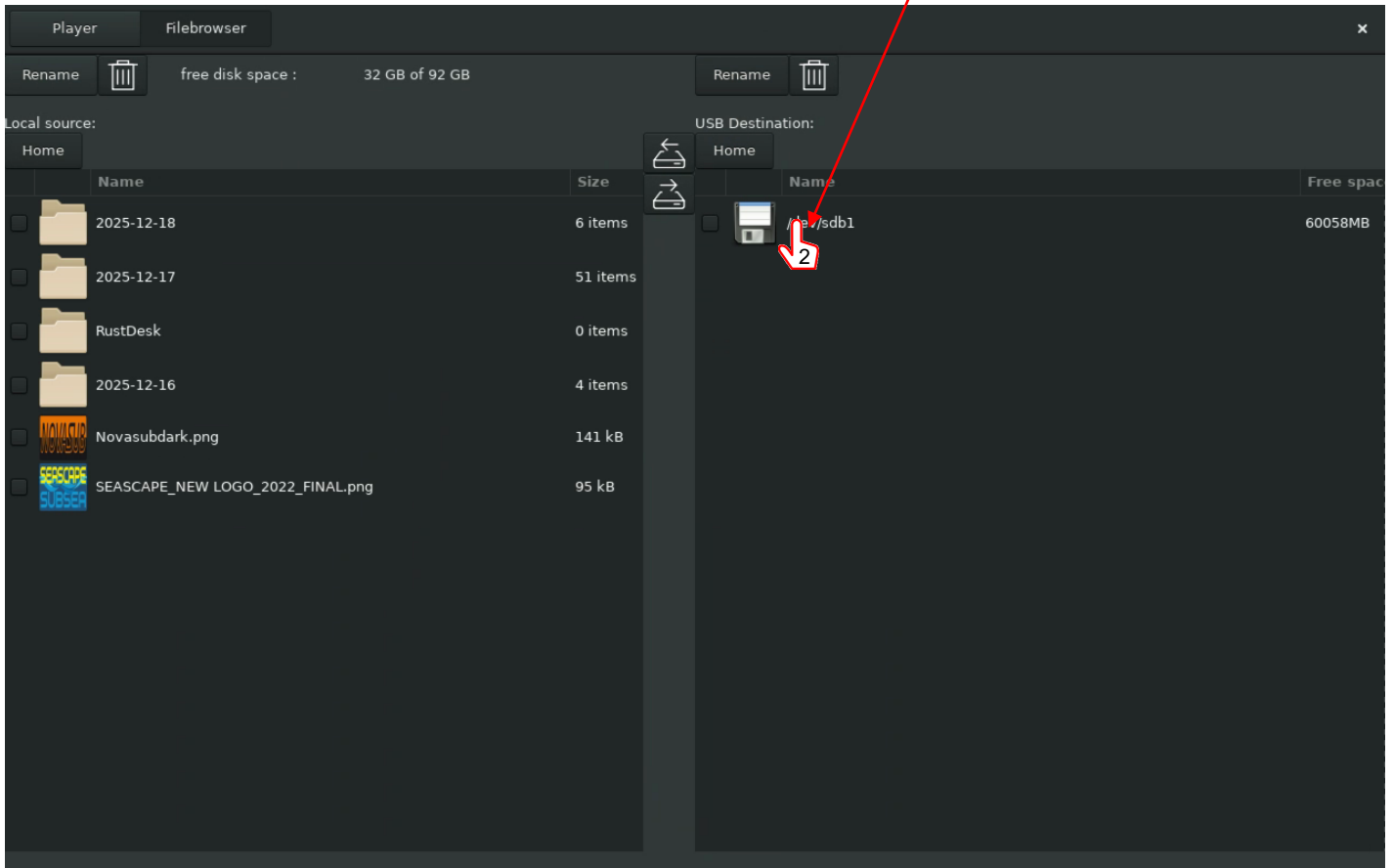
The file path is an easy way to see where you are in the Browser. It is also useful for quick navigation. It shows all the folders that are above the folder you are currently in. To navigate the folders, press the folder you want to go to in the file path. A visual representation of this can be seen below:



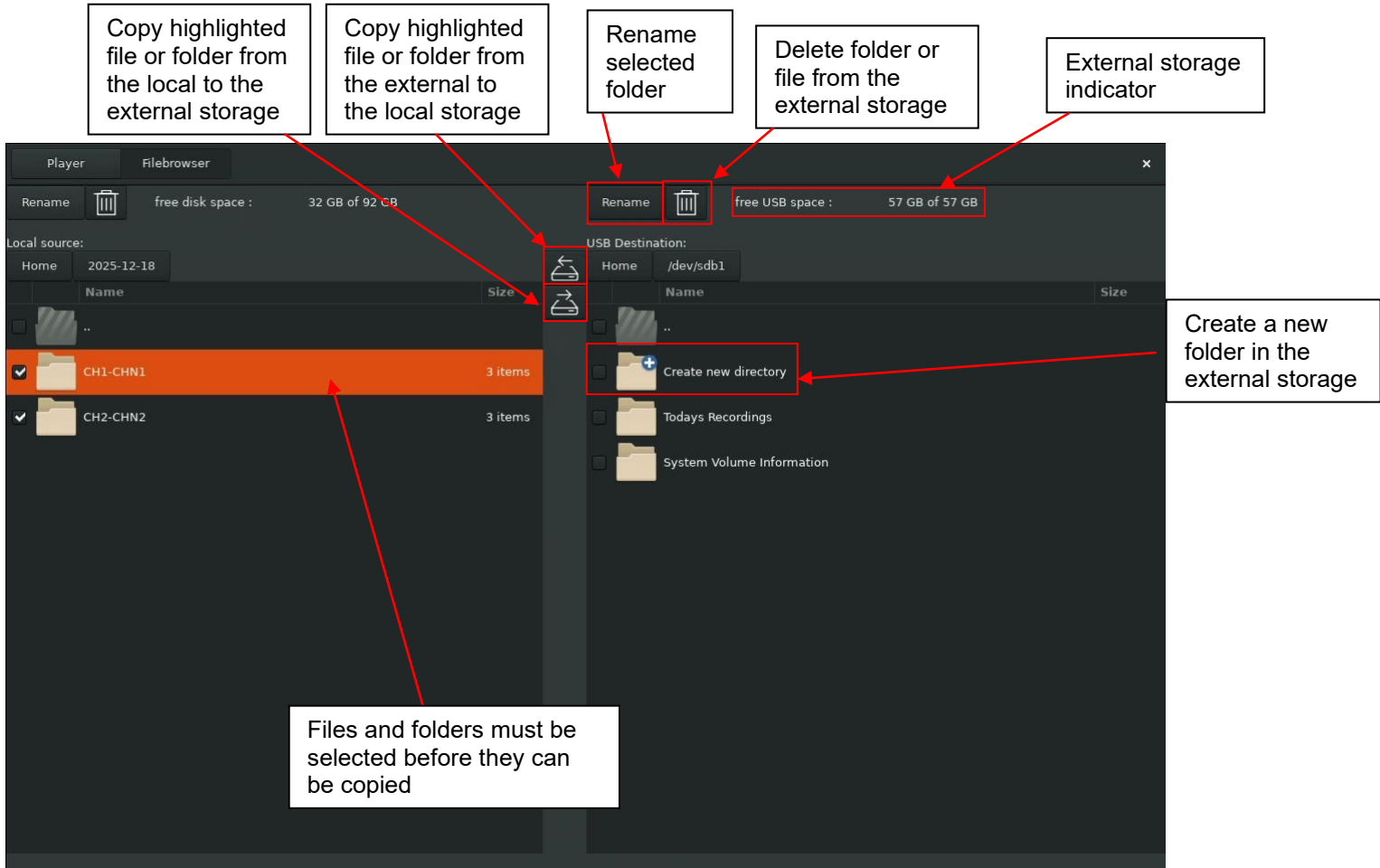
7.2 Copying files to External Storage

External storage is connected by one of the USB ports. It is used for retrieving or adding files to the system. Once you insert the storage in the USB port, it will show up on the right of the file browser. Double-clicking the drive will open it for further actions. *Please note that an external storage formatted as fat16 will not work.*

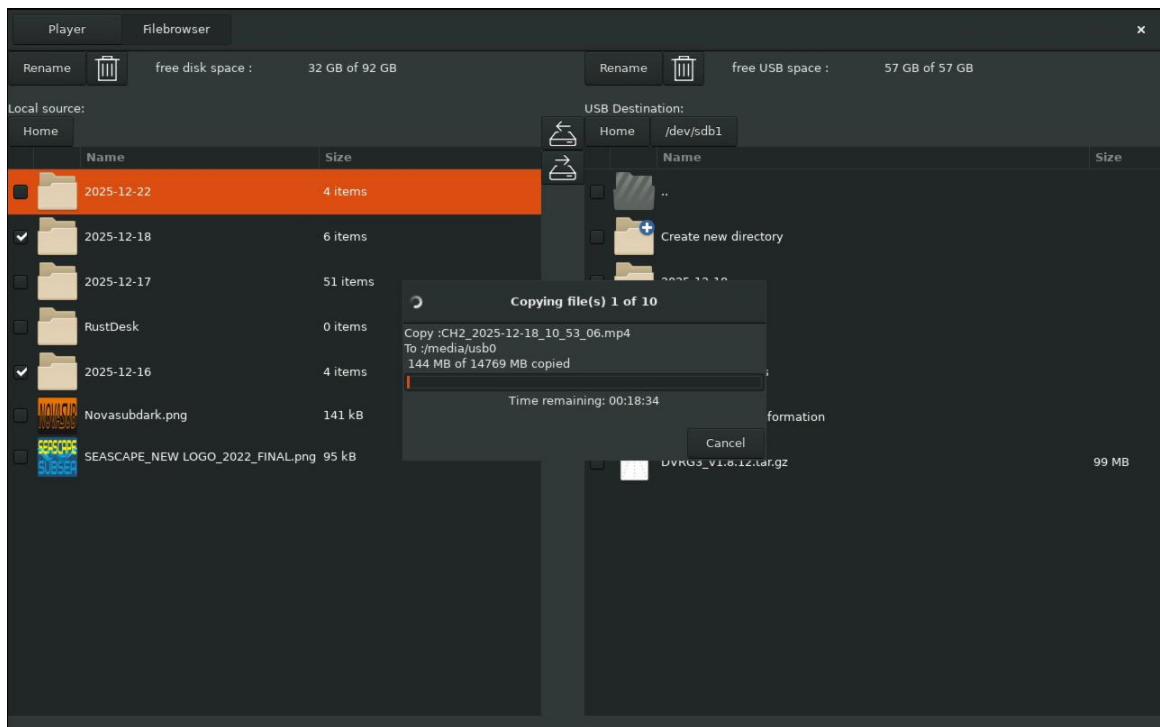
Double click the drive to open it.



Once the drive is opened, you can do some other actions. Navigation is the same as in local storage. The actions include creating a new folder in the drive, removing files from the drive, copying files to the drive, and copying a file from the drive. These buttons are specified below:

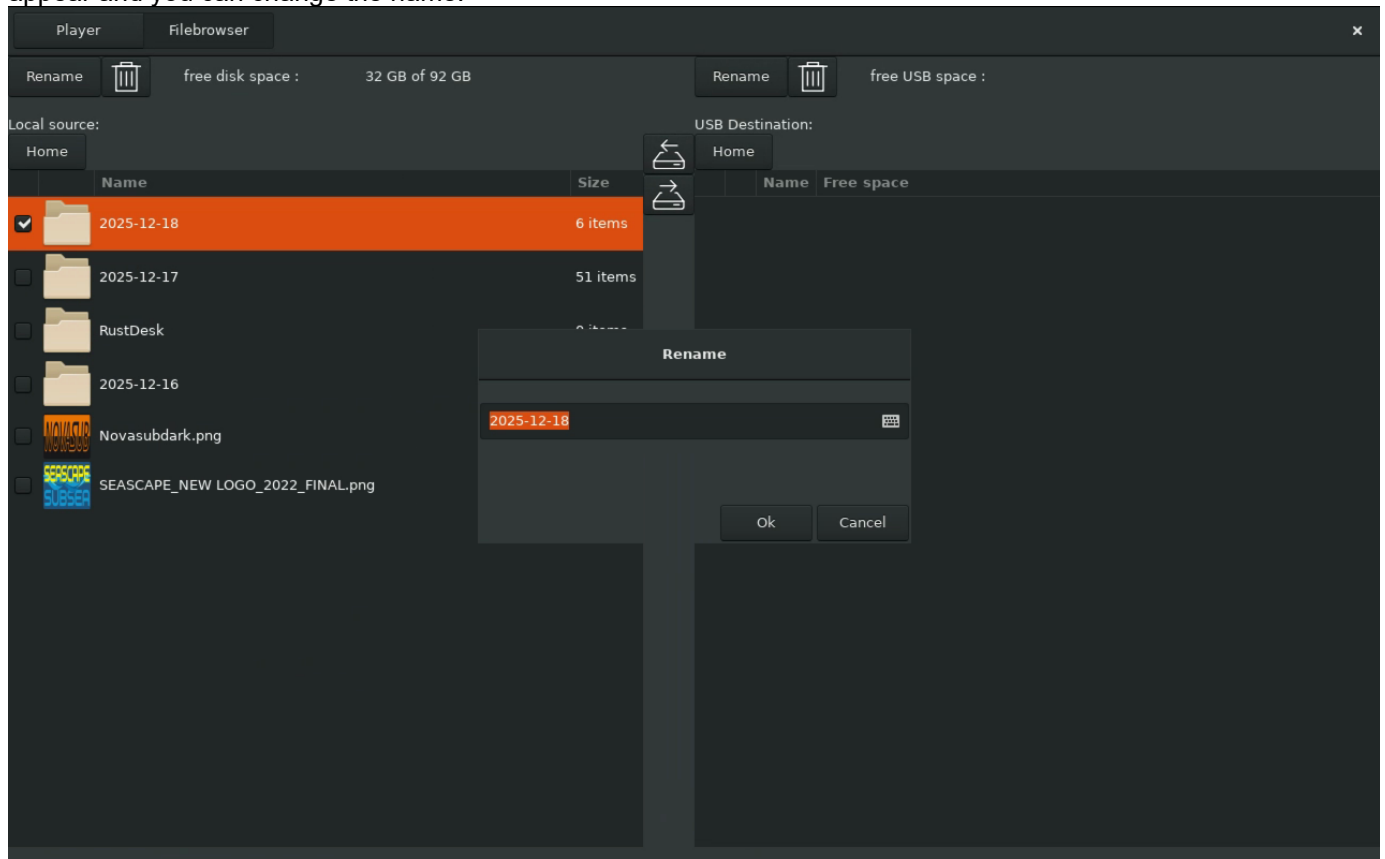


To copy files to the USB drive, select the files or folders. Op the USB drive and select a folder of destination if required. Press in the middle on the Icon with the arrow towards the USB destination de copy the files. If the folder or file is high lighted and not selected with the checkbox, it will copy on the selected highlighted file. If you have multiple checkboxes selected it will copy all the selected files.



7.3 Renaming Files

The files and folders can be renamed. Select the files or folder (highlighted in orange) and Press Rename. A pop-up will appear and you can change the name.

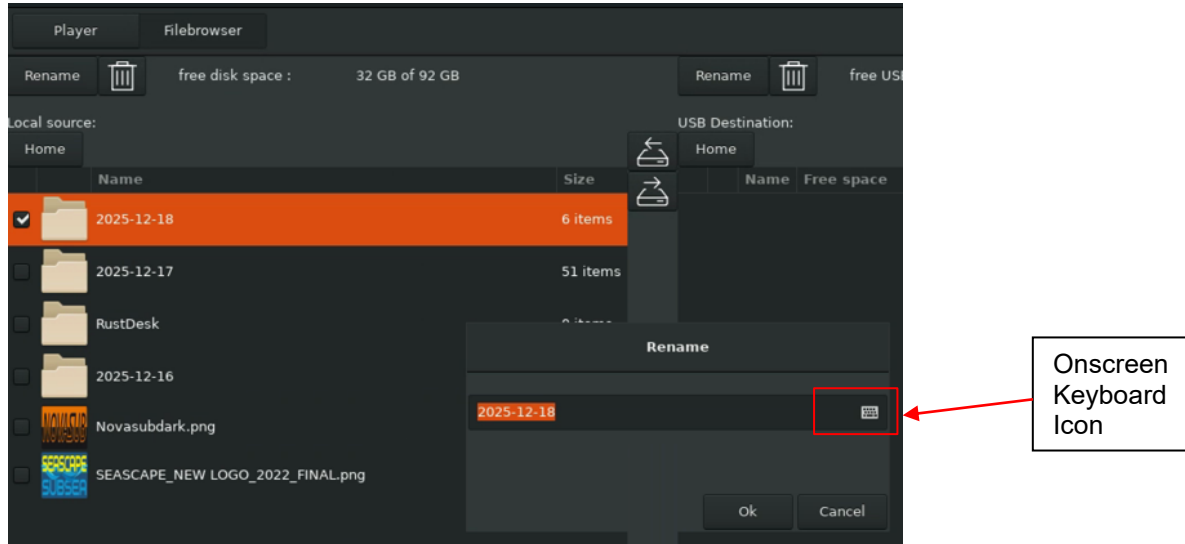


8 Onscreen Keyboard

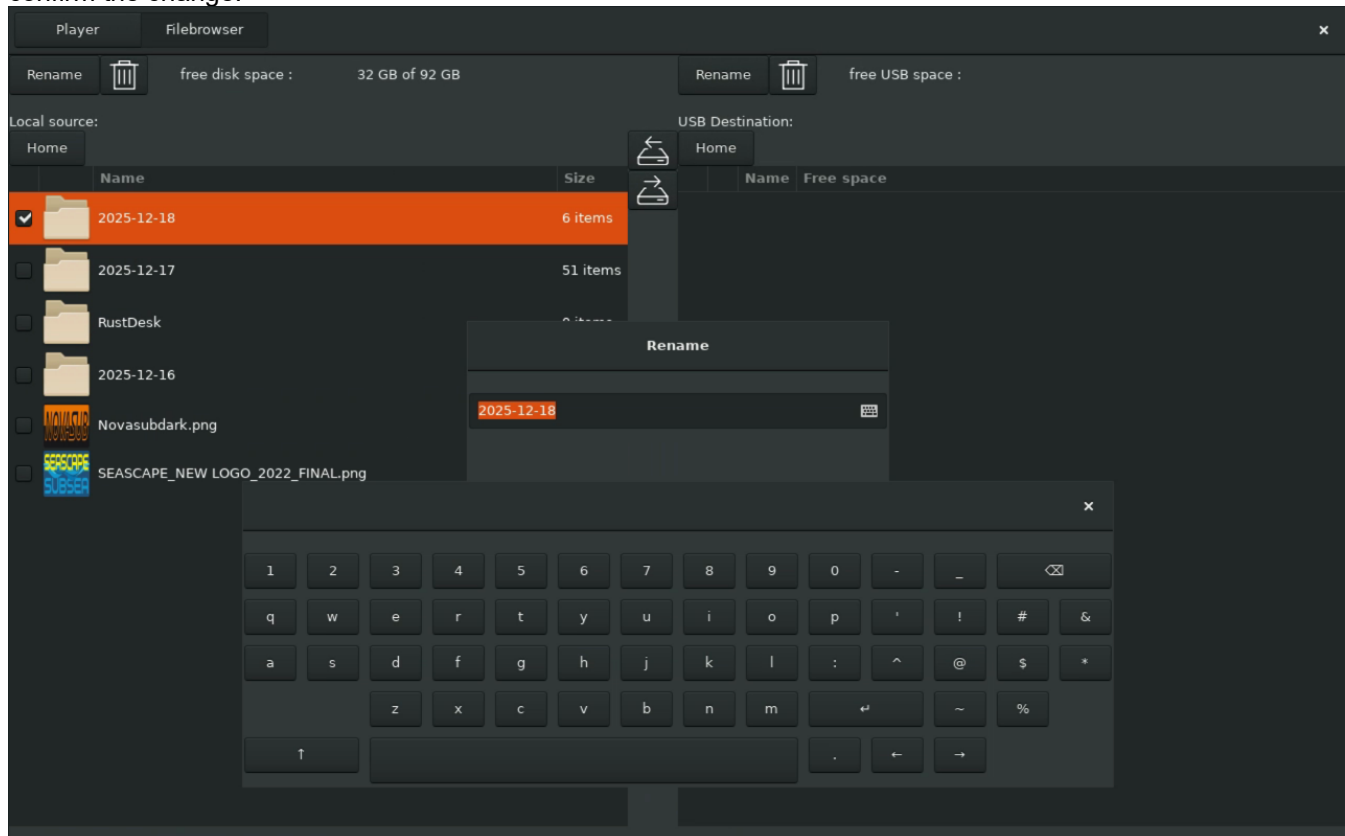
Every where in the DVR application where you can type text there is a small keyboard Icon which can be used to activate the Onscreen Keyboard pop-up to type text.



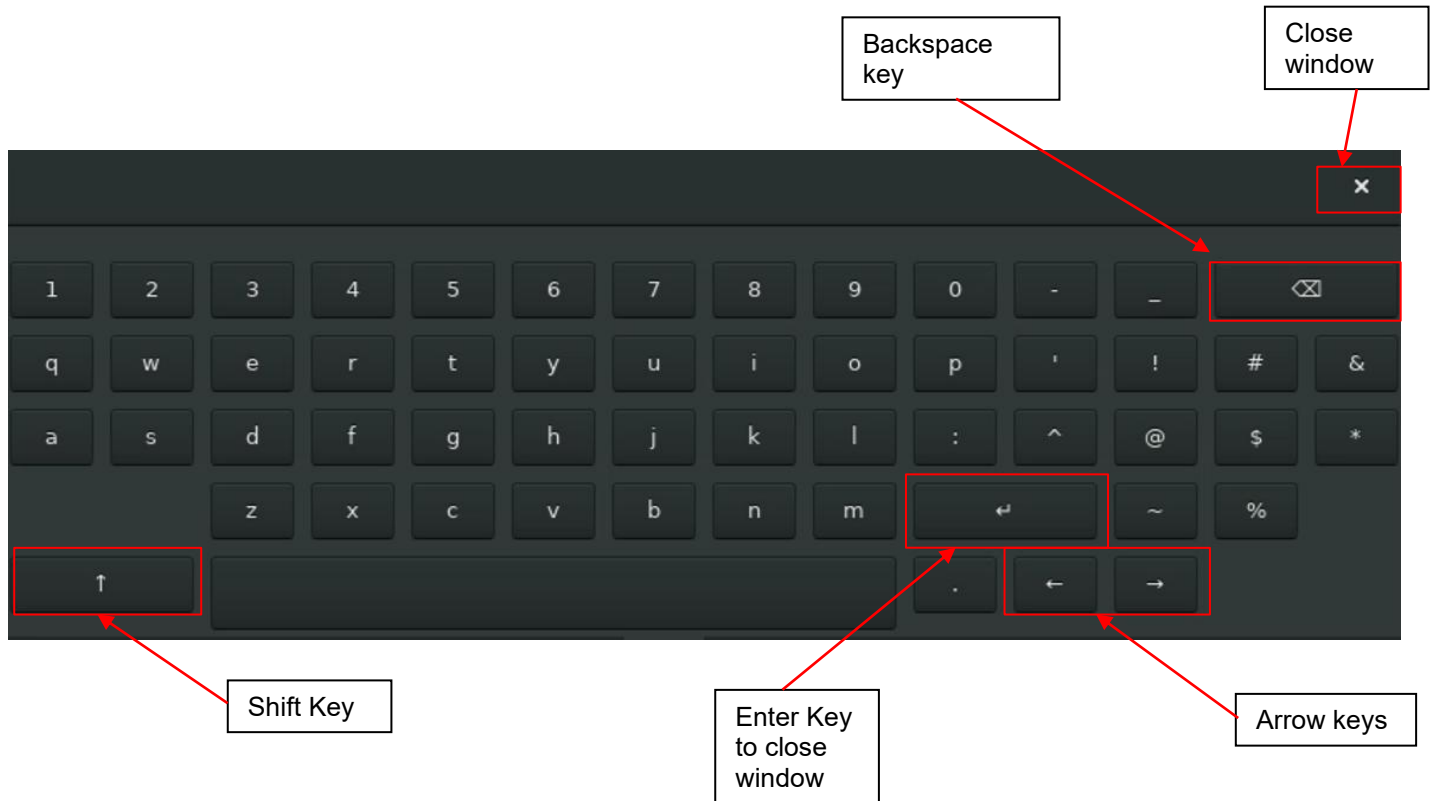
Below is a folder selected and Rename is pressed, there is a pop-up of the present name, at the right of the field name is a small keyboard icon, If you press this icon a Onscreen Keyboard pop-up will appear.



You can use the touchscreen or mouse to type the new name. Press Enter key of X to close the Pop-up and OK to confirm the change.



The keyboard is a regular qwerty keyboard.
Use the Enter Key or X to close the keyboard. Use the arrow keys to move over the text.
Use the backspace key to remove text.



9 Player

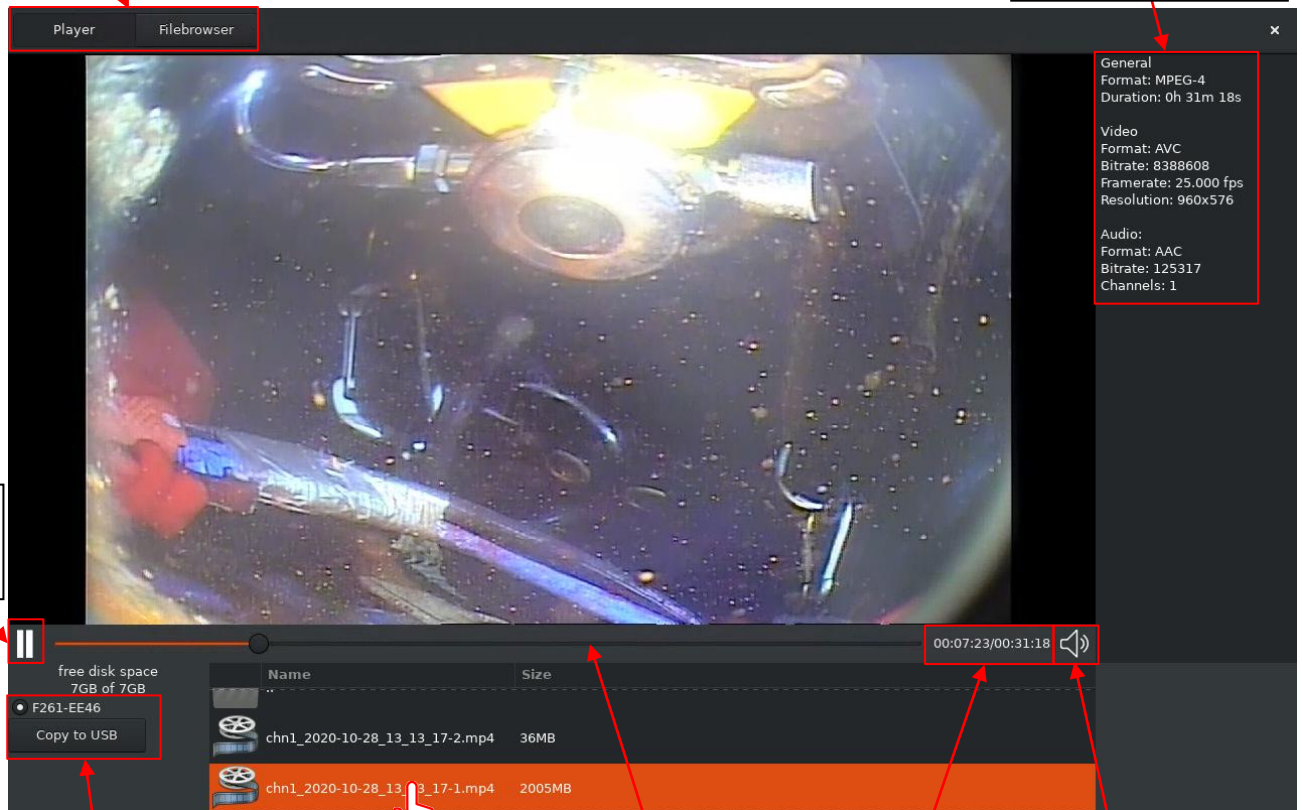
The Player is used to play back recordings that have been made. It can be opened with the following button:



This button will open the Player. Navigation in this Player is the same as in the file browser. In the Player, you can play a recording by double-clicking it. You can also see some general information about the file on the right side of the screen. There is also a button to switch to the file browser.

Quick switch button to file browser

General information of the file you selected



Pause or play the recording

Quick copy to USB button. First select the external storage you want to copy to, then select the file or folder you want to copy and then press the button. *only visible when an external storage is connected*

Double click a file to play it

Duration of the recording and current moment

Volume button to open volume slider to change Volume

The slider is used for navigating through a recording. This can also be used to find a specific part of the recording since the screen will show the video as you slide.

10 On-screen Display (Video Overlay)

The on-screen display, also known as video overlay, is used for displaying customizable information on the screen and recording. This information is channel-specific and can be set up in the on-screen display settings; this can be opened with the following button in the Channel bar. The on-screen display is shown in the way that it will be recorded in the video file.



This will open the On-screen display settings for that channel. In this menu, you can set up the on-screen display settings. At the top, you can find an easy switch to another channel. The On-screen display is made of 8 different layers that can be enabled. To change the layer, click on the layer in the layer list, so it becomes highlighted. This will open the settings for that layer in the layer settings bar.

Button to switch between channels

"Layer settings bar", all layer settings can be changed in this bar

"Layer list", is used for selecting layers

Close window

Channel 1

Channel 2

OSD Settings ✕

Nr	Enable	Type	Prefix	Text	Postfix	Xpos	Ypos	Font	Size
0	☐	Text				58	3		24

Nr	Active	Type
0	disabled	Text
1	disabled	Text
2	disabled	Text
3	disabled	Text
4	disabled	Text
5	disabled	Text
6	disabled	Text
7	disabled	Text

Copy single layer

Copy all layers

To Channel:

2

-

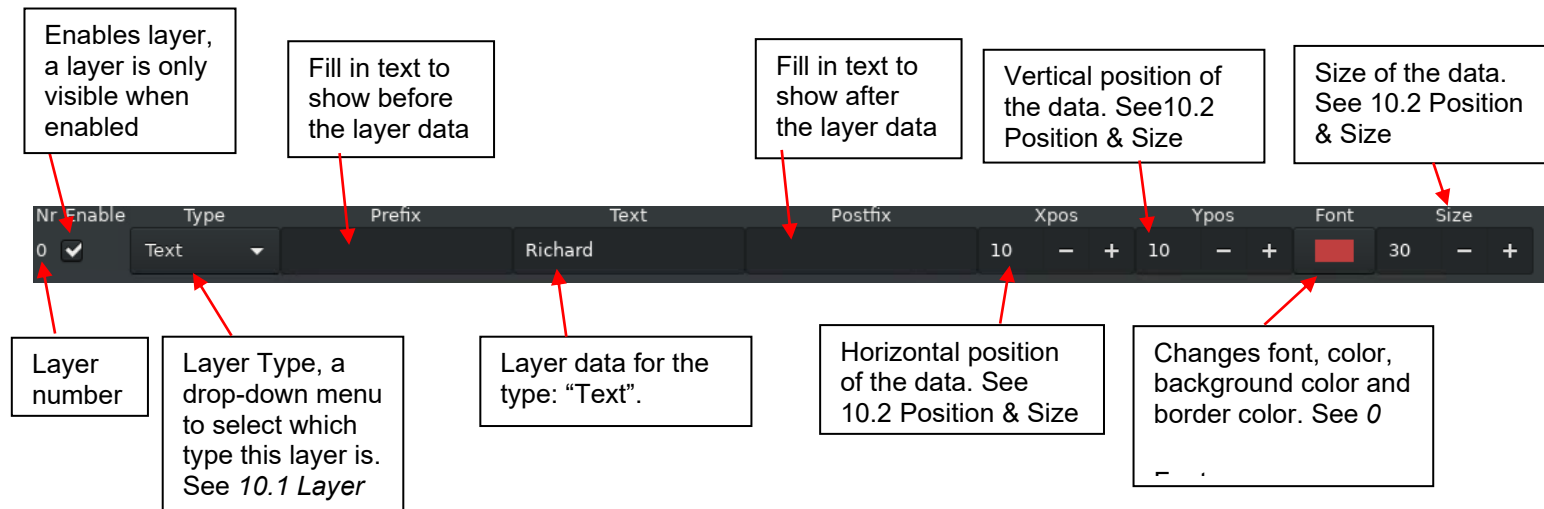
+

Copies the selected layer to the same layer number in the channel that is selected in "To Channel"

Copies all the layers to the channel that is selected in "To Channel"

Choose here to which channel you want to copy

Different types of layers can be used on the screen. These different layer types all have their own “layer data.” The layer data is summarized in the *10.1 Layer Type*. Every layer except “Graphic” has the same Layer settings bar. In this bar, you can change the settings for the selected layer. You can see an explanation for the bar below:



The screenshot shows the Layer settings bar with the following fields and callouts:

- Nr:** 0 (Layer number)
- Enable:** ☒ (Enables layer, a layer is only visible when enabled)
- Type:** Text (Layer Type, a drop-down menu to select which type this layer is. See 10.1 Layer Type)
- Prefix:** (Fill in text to show before the layer data)
- Text:** Richard (Layer data for the type: “Text”)
- Postfix:** (Fill in text to show after the layer data)
- Xpos:** 10 (Horizontal position of the data. See 10.2 Position & Size)
- Ypos:** 10 (Vertical position of the data. See 10.2 Position & Size)
- Font:** [Red color swatch] (Changes font, color, background color and border color. See 0)
- Size:** 30 (Size of the data. See 10.2 Position & Size)

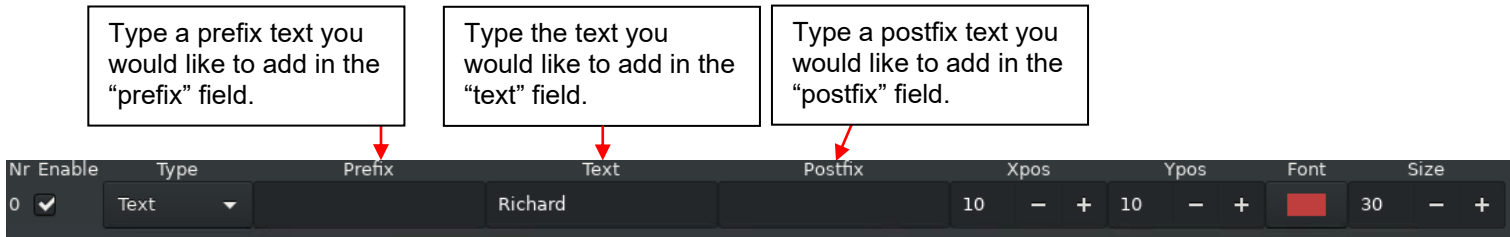
10.1 Layer Type

Every layer is a type which attached data. Below are all the types with their data and a description.

Type	Data	Description
Text	Text	This type displays a fixed text on the screen. Examples can be the name of a diver or a location.
Prefix	Text	This text is placed before the filled in text or data
Postfix	Text	This text is placed after the filled in text or data
Date	System Date	This type displays the system date
Time	System Time	This type displays the system time
Date & Time	System Date & Time	This type displays the system date & system time consecutively
Free Text	Quick Text	This type displays a text that can be changed using hotkeys.
Dive Depth	Depth Channel	This type displays the depth of the channel. <i>This only works with NovaBus depth data.</i>
Dive Time	Dive Time Channel	This type displays the dive time of the channel. <i>This only works with NovaBus depth data.</i>
Max. Depth	Maximum reached depth	This display the maximum depth reached during the dive. <i>This only works with NovaBus depth data.</i>
High pressure	Pressure channel	This displays the actual pressure of the diving cylinder. <i>This only works with NovaBus depth data.</i>
Graphic	Picture	This type displays a picture.

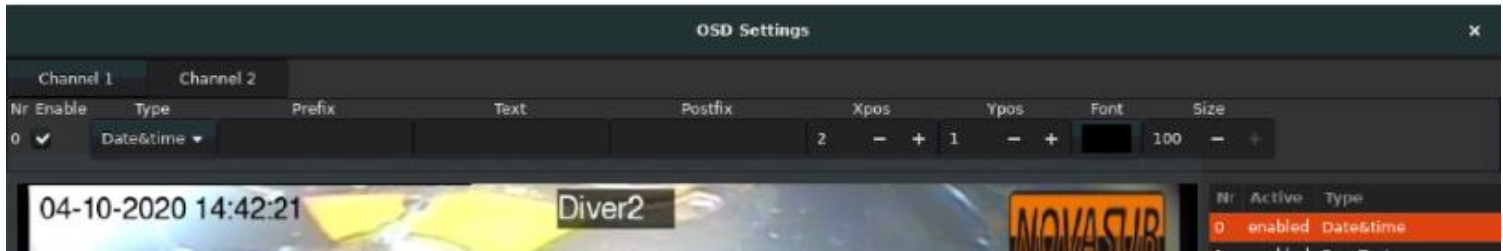
10.1.1 Text

Text is a static text on the overlay and shows the text filled in the fields Prefix, Text and Postfix.



10.1.2 Date & Time

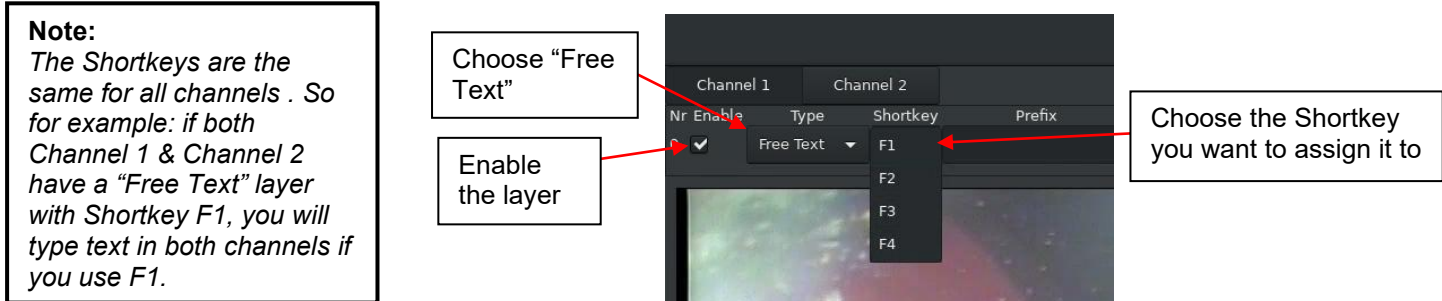
The date, time or date&time are predefined values which can be placed in the over the video image. The software will then show the system date and system time on the video image. For all you can select the position, font and size.



10.1.3 Free Text

Free text is text that can be changed while in the main screen using hotkeys. There are four possible hotkeys: F1, F2, F3, F4. These Fx (Function) keys refer to the Fx keys on your keyboard or Fx keyboard Icon on the taskbar. The Free text function give you the possibility to quickly change the text overlay while making a recording.

The free text needs to be set up first:

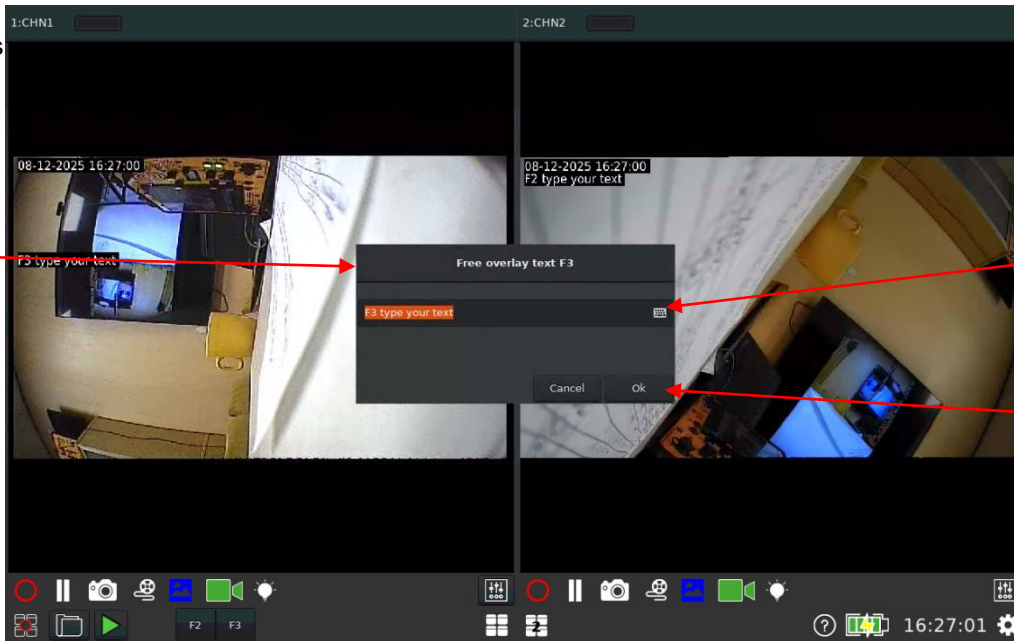


After you set your free text you need to restart your system to have also the extra free text buttons active in the tack bar.

To use the free text, you can simply press F1 in the main screen; this will then open a small window to type the text in. Press “Ok” and it will change:

Using these buttons
Keyboard.

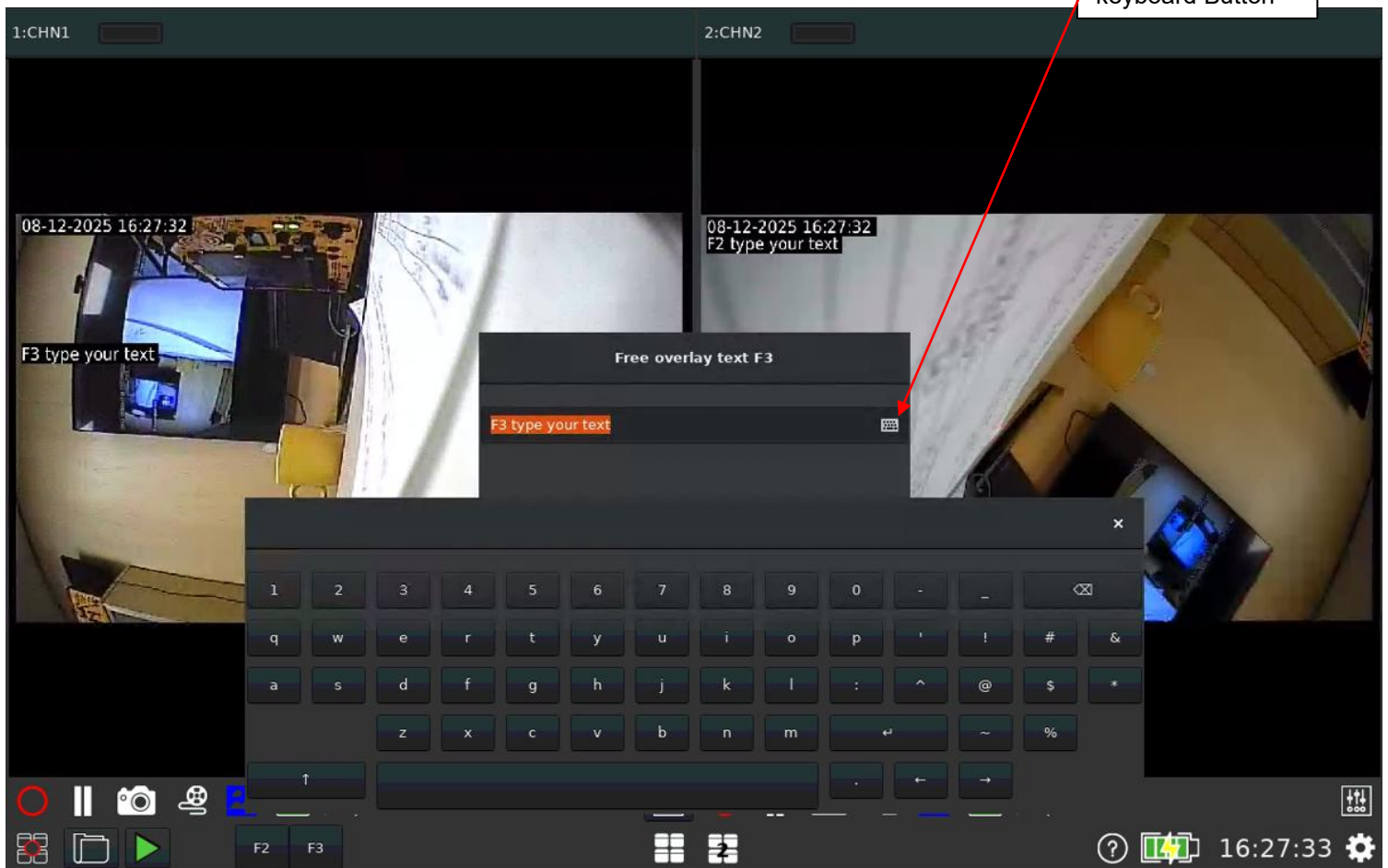
Press the
Shortkey
F1 to open
the window



Change
Text

Press OK
once you
are done

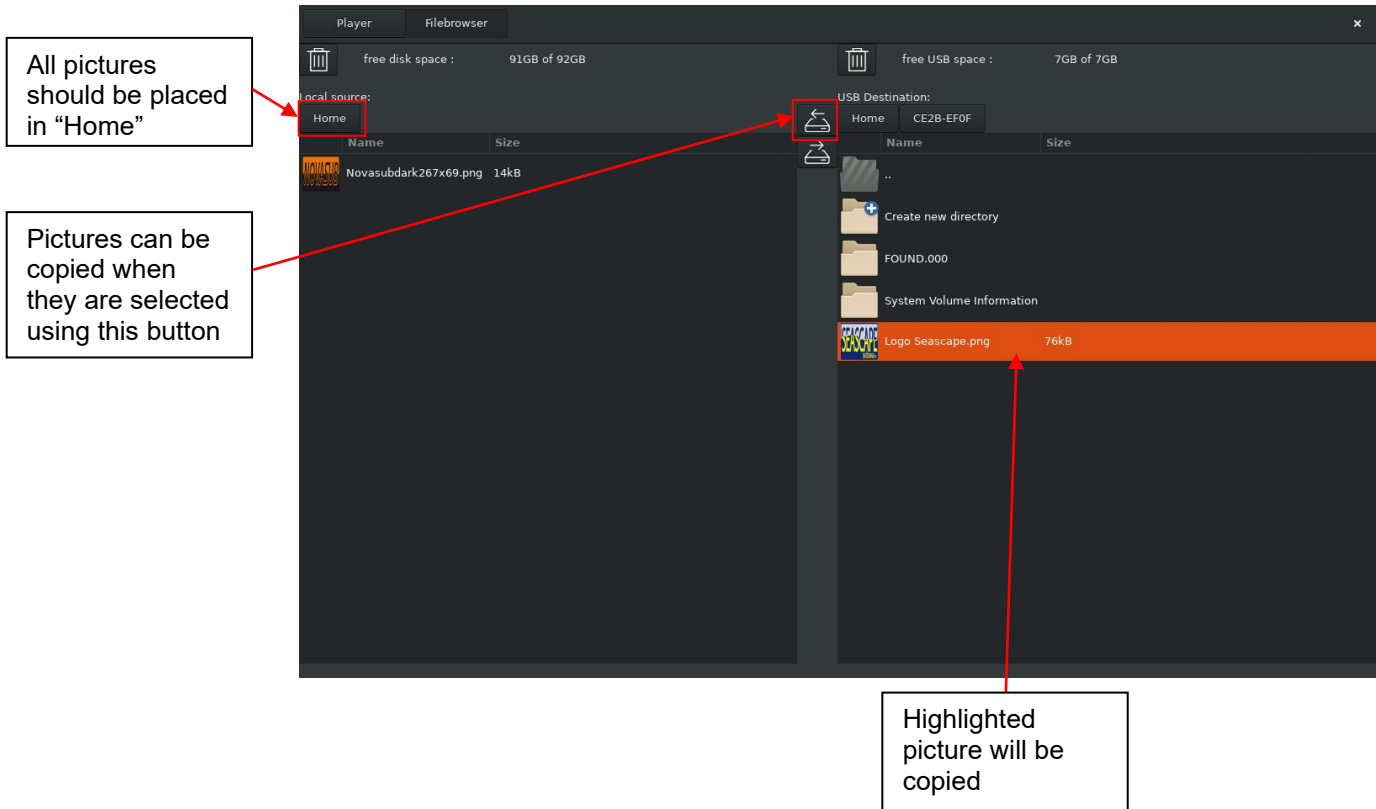
Onscreen
keyboard Button



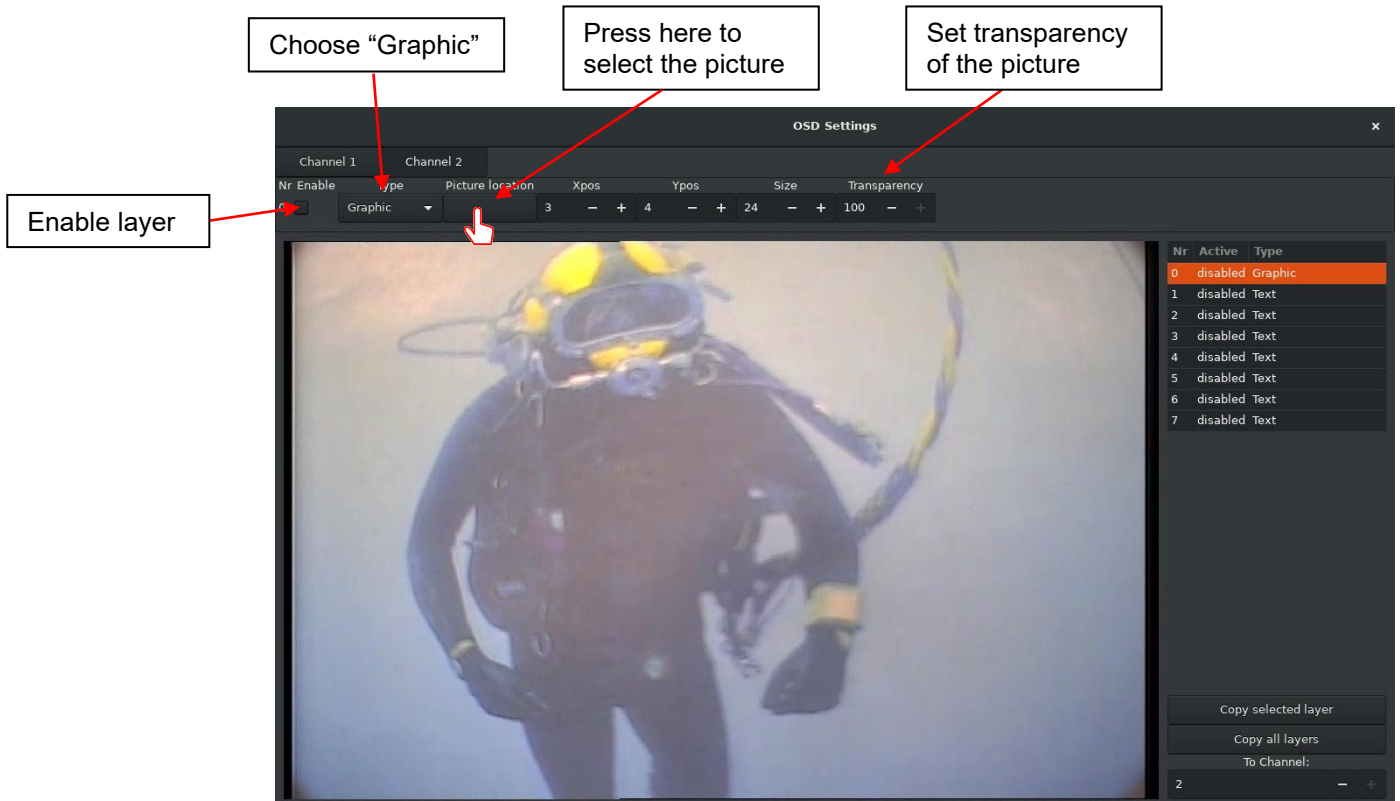
Free Text overlay
Buttons

10.1.4 Graphic

With the graphic layer, you can add a picture to the on-screen display; this can be a logo for example. To do this, you will first have to add the picture to the system. Adding this picture can be done using an external drive in the USB ports. The picture should be copied to the “Home” folder of the system.



Once the picture is on the system in the “Home” folder, it can be selected as followed:

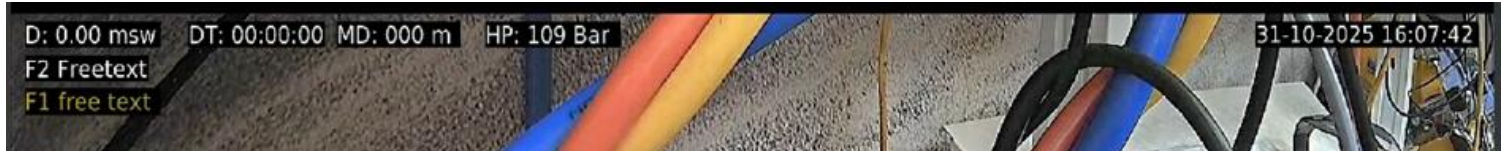


Select the Image and place it on the required position with the Xpos and Ypos, you can resize the image with Size. The transparency of the image can be adjusted from 0-100%, the lower the number the more transparent the picture is.

10.1.5 Depth, Max. Depth, Dive Time & Pressure

The depth, max. depth, dive time and High pressure values can only be displayed when the depth sensor upgrade is installed in your Novasub system or the use of a DDG or DMS connected over NovaBus. The upgrade requires a hardware upgrade in either the Triton, Thallasa or Kratos. And the connection of the UDS-3 depth sensor for the actual depth readings. Or the UDPS-60-350 depth & Pressure sensor is used to also read the diver air pressure in the breathing air main or bailout cylinder.

Both Depth, Max. Depth, Dive time & Pressure can be displayed over the video image. The dive time is based on an automatic start when the diver is below 1 meter depth and stops if the diver is above 1 meter depth. The dive time will continue if the diver goes below 1 meter depth within 15 minutes. The Dive time will reset after 15 minutes.



In the above example you see the Depth selected. The D: is type in the prefix field, the 0.00 is the actual depth and the msw is typed in the postfix field. If there is no depth data connected then it displays D--.—m

DT: 00:00:00 is de Dive time

MD: is the Max. Depth

HP: is the Pressure of the cylinder of the diver main or bailout air.

The Indication like DT:, MD:, msw, etc are prefix or postfix text that you need to add yourself according your preferences.

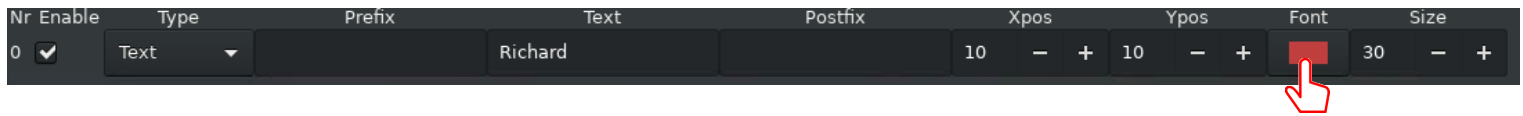
10.2 Position & Size

The layer data's position and size are controlled with the three numbers in the layers settings bar. These numbers range from 1 – 100 and can be changed with the bar's plus and minus. They can also be changed with the up/down arrows on a keyboard, which will change the value with increments of 1. Or they can be changed with the page-up/page-down keys, which will change the value with increments of 10. The position is relative to the axis as followed:

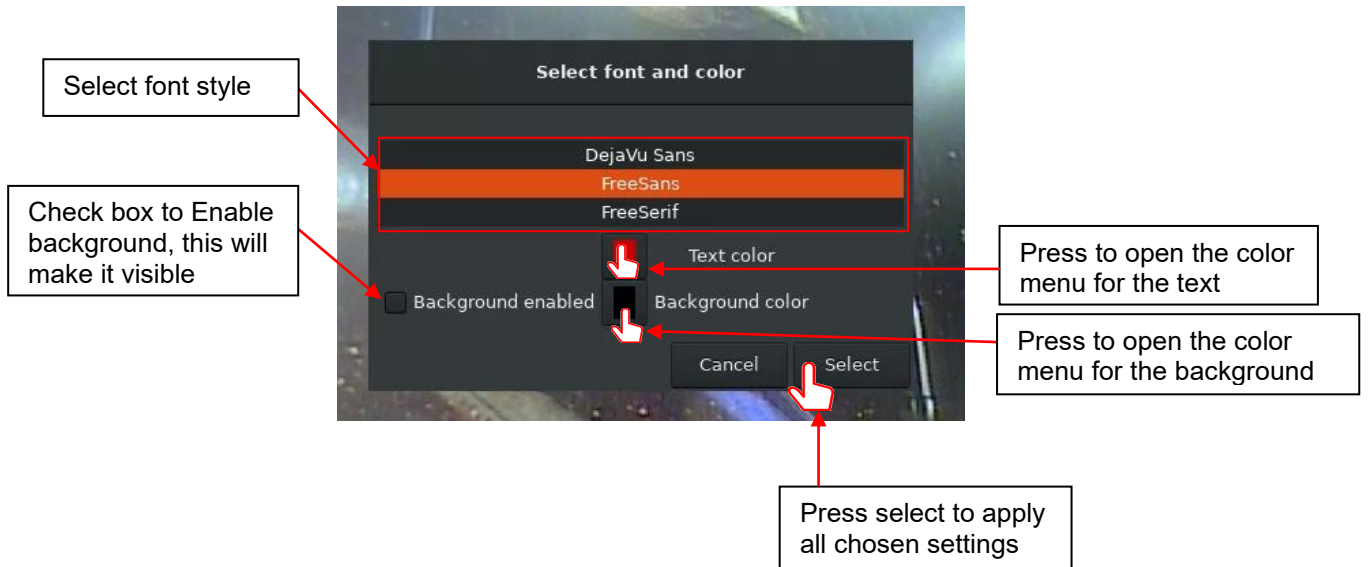


10.3 Font

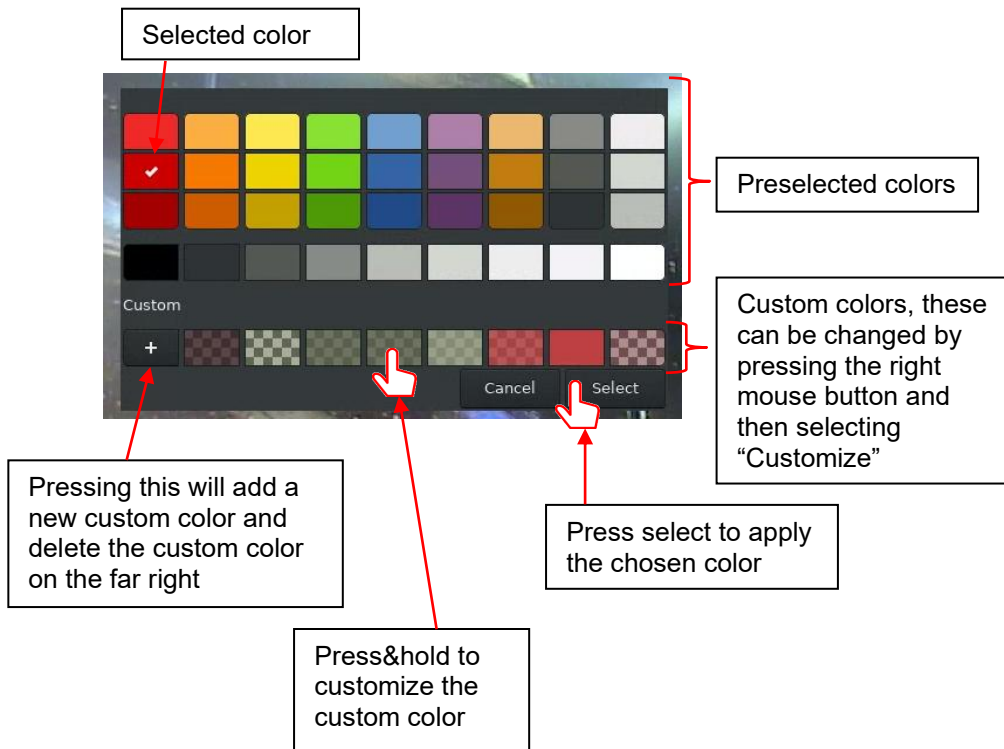
The font settings can be opened with the following button and can be applied for each layer separately. The color of the button displays the selected font:



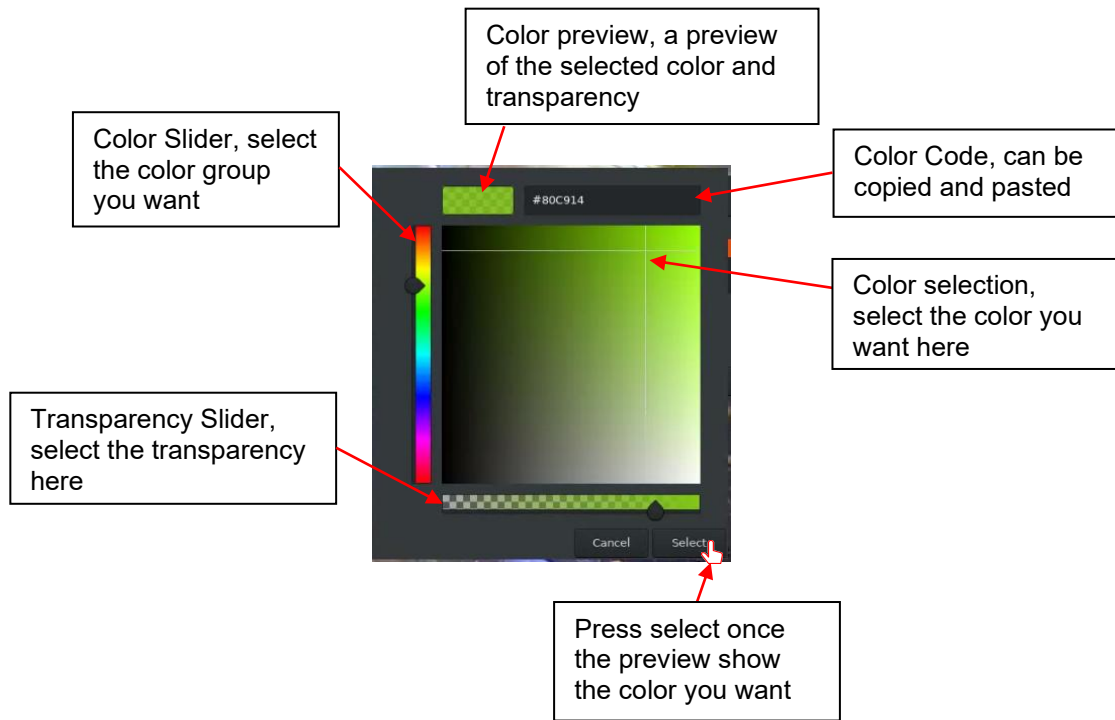
This will open the font menu with a few different options, such as text font styles, text color, and background color. The font style can be selected at the top of the menu. Then you can open the color menu for either the text or the background by pressing on the color button.



In the color menu, you can select the color and transparency. You can either select one of the preselected colors or make a custom color with potential transparency in this menu. The color with the checkmark is currently selected.



Pressing the customize button will open the customization menu. In this menu, you can change the color and transparency of a customizable color:

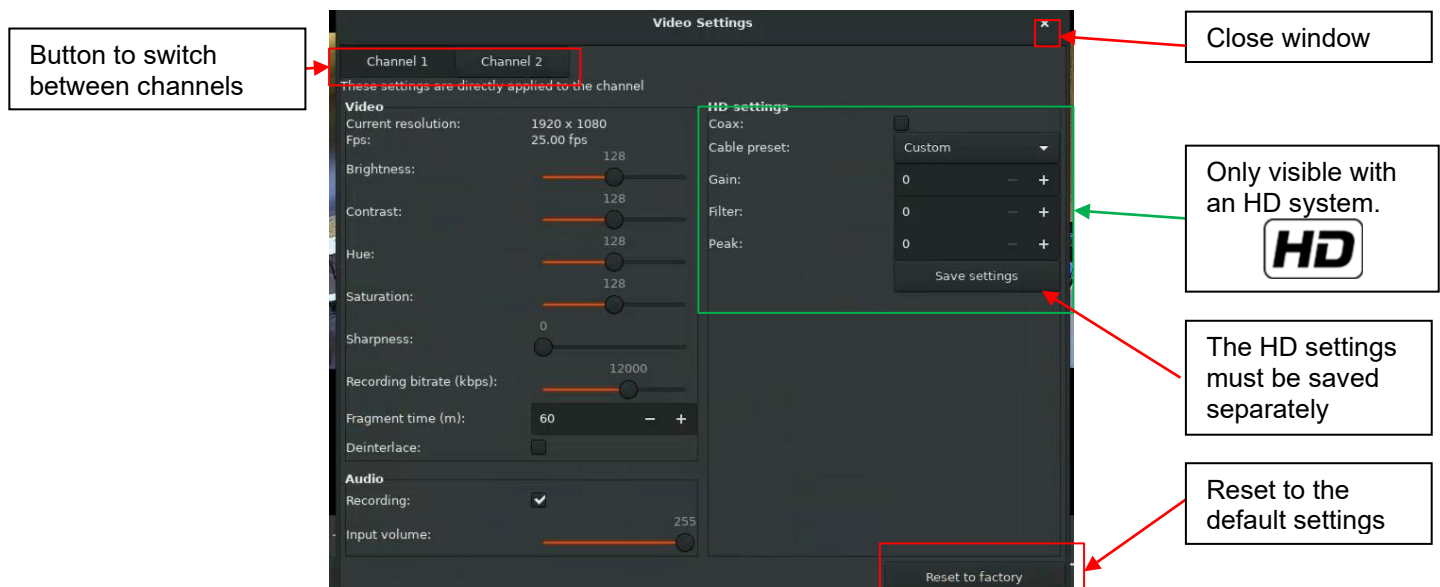


11 Video Settings

The video settings are settings that can be changed for each channel separately. This menu can be opened with the following button in the channel bar:



This will open the menu below. In this menu, you have a quick switch button on top to switch between the different channels. Below are video and audio settings for the channels and a “reset to factory” button. This button resets only the channel settings of that channel to the factory standard. All other settings are explained in the table.



Name	Type	Description
Resolution	Not changeable	Displays the resolution of the channel.
Fps	Not changeable	Displays the frames per second of the channel.
Brightness	Slider	Controls the brightness of the channel.
Contrast	Slider	Controls the contrast of the channel, this means it controls the color differences in the channel.
Hue	Slider	Controls the Hue of the channel, meaning it controls the video's wavelength the highest light output has.
Saturation	Slider	Controls the Saturation of the channel, meaning it controls the purity of the colors.
Sharpness	Slider	Controls the Sharpness of the channel, meaning the visual differences between the pixels.
Recording bitrate (kbps)	Slider	The Recording bitrate controls the compression of the recording. This setting control the quality and the size of the recording. If the bitrate is low, then the quality and the recording's file size will also be low. If the bitrate is high, then the quality and the recording's file size will also be high.
Fragment time	Number	This controls after how many minutes of recording the system automatically makes a new recording file, with a new name, see 4.1 File name
Deinterlace	Checkbox	This can be selected to deinterlace old SD cameras when connected on a HD system.
Recording	Checkbox	Checkbox to control audio recording, checked means it records the audio in the file, unchecked means it won't record any audio.
Input volume	Slider	Controls the input volume gain to the recording, which can best be seen in the VU-meter in the Channel Title bar.
HD settings		
Coax	Checkbox	Select this checkbox if you are using a Coax core for the video signal.
Cable preset	Dropdown	Choose the length of the cable, this will apply the predefined settings. Select Custom if you would like to change the settings.
Gain	Number field	Change the video signal strenght to the video capture card, will add more color and possibly some noise on the video.
Filter	Number field	Change the filter strenght of the video signal to the capture card, can remove noise and color.
Peak	Number field	Change the video signal range to the capture card, can add color and noise.

11.1 HD settings

Depending on the type of video signal and cable length the HD settings needed to be adjusted manually to get the best HD video image. In general, for coax signal, you can keep the Gain, Filter, and Peak on 0 for up to 150 meters. For a Twisted pair signal, it depends on the type of cable being used. You can select different values using the custom preset.

Please note that the custom presets are not yet optimized in this version of the software.

11.2 Using SD cameras on HD system

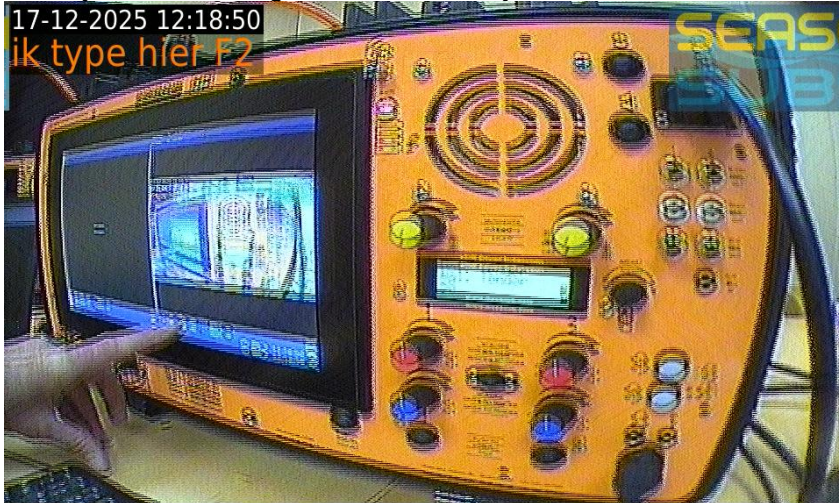
From DVR version 1.9 the HD system works as Hybrid system. That means when the channels are set to HD, you can also plug in a SD camera. The system will automatically detect the correct video resolution.

Older SD cameras do not deinterlace within the camera and needs to be done by the DVR. You need to select the Deinterlacing when a SD cameras show vertical lines when the image of the cameras moves.

- Before you connect a SD camera on the HD system, power of the system, connect the SD camera and restart the system. Switch on the camera and the system will detect it as a SD camera.
- If you see many horizontal lines when you move the camera then you need to activate the Deinterlace function.

11.2.1 Activating Deinterlace for SD camera on a HD system

When you see the image like below when you move a SD camera, then you need to activate the Deinterlace function.

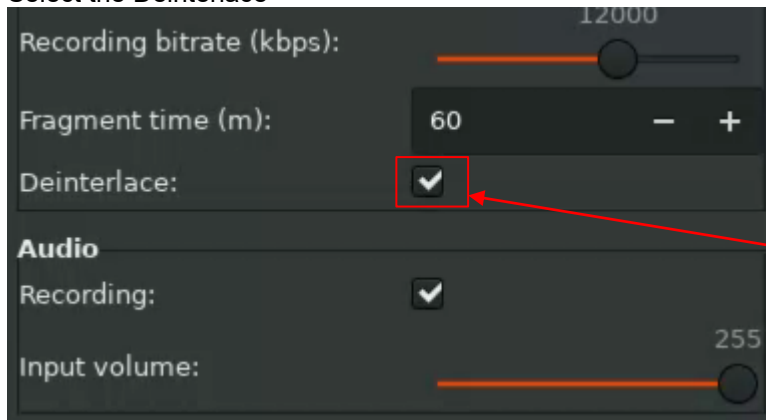


Channel settings

- Switch the camera Off
- Open the channel settings and select the Deinterlace checkbox



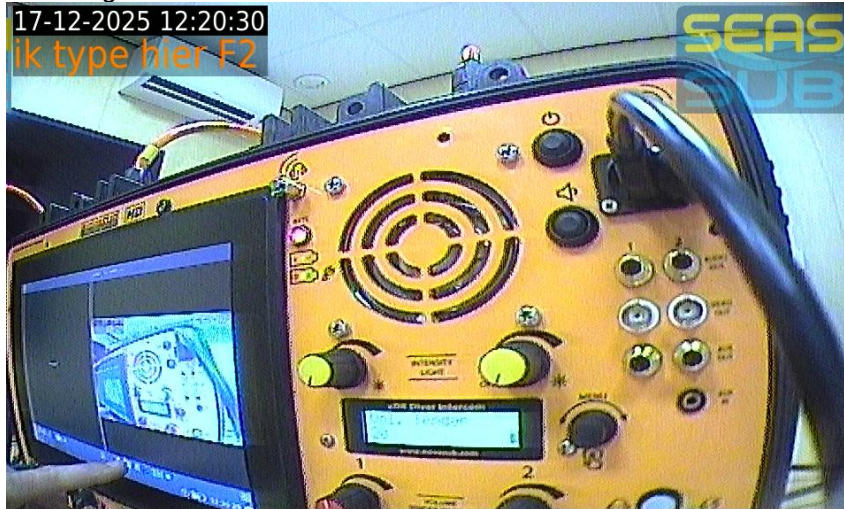
- Select the Deinterlace



Deinterlace
Checkbox

Close the window

- Restart the system and switch on the camera
The image should now be without horizontal lines.



Note: When you do not use the SD camera anymore and switch back to a HD camera, then the best is to deactivate the Deinterlace for less CPU load for the DVR. More CPU load creates more power drain and heat.

The Novasub SD Cameras Argos-1 models NSBCBxVx, with the V in the article code do not to be deinterlaced by the DVR. That are the cameras supplied after 2020.

That are the following models with serial numbers:

NSBCBSSVC2	serialnumbers: 1013 to 1270
NSBCBSSVC1	serialnumbers: 781 to 861 & 2874 to 2973
NSBCBSSVTP0	serialnumbers: 1466 to 1671 , 2074 to 2373, 2574 to 2873

12 Battery

The charge of the battery can be seen in the Taskbar of the screen. This shows how much charge is left and when the battery is on an external power source and charging. The icon to see this is next to the system time:



This icon can have different shapes depending on the charged capacity and an external power source. The meaning of these shapes can be seen below:

Charge	On Battery (<i>Blinking</i>)	External Power source
No battery connected		
0-15%		
15-50%		
50-80%		
80-100%		

When the battery has 10% of the capacity left, then the running will stop, and it will automatically start a new recording. It does this to prevent file recordings that are corrupted when the DVR3 is out of power. At 10%, a warning will also appear on the DVR3. This warning will appear every 5 minutes. If you click on the battery, you can also see the battery percentage and some system temperatures:

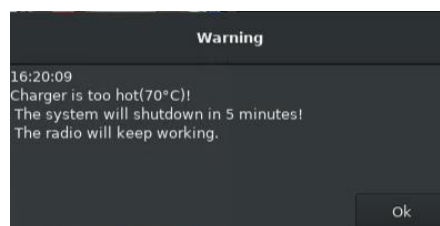


Temperature control

The system has a temperature protection protocol. This prevents the case from getting too hot and damaging components or the battery. The protocol has 2 levels: 65°C and 70°C. At 65°C a warning will appear on screen; the battery will stop charging and the following symbol will show up in the Taskbar:



At 70°C another warning will appear and the DVR3 system will shutdown 5 minutes later. Please note that only the video system will shut down, any other systems in a product such as a radio will stay on. Both the 65°C and 70°C warning:

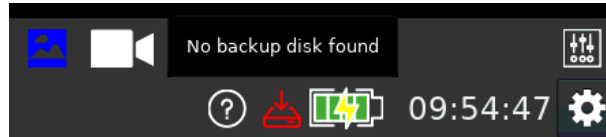


13 Backup recording Indicator

The backup record function has its indicator that displays the status of the backup. This icon can be found in the Taskbar next to the battery indicator:



You can click on the symbol to see a full description of the status:



The indicator has three different colors that indicate different statuses. They also have different descriptions possible for each status. All of these can be seen below:

Status symbol	Description	Explanation
	Ready to backup	The USB drive or SFTP server is connected and is ready to back up the recording
	Busy backup "x" Files	The system is still copying some files to the destination and still has "x" files to go. Wait for the indicator to turn green to remove the USB drive or disconnect the SFTP server.
	No backup disk found	The system cannot find a USB drive or an SFTP server as a destination for the backup.
	Not enough free disk space to backup	The system cannot backup because there is not enough space on the USB drive or the SFTP server.

To enable the Backup Recording see *14.5.4 Backup Record*

14 Settings

The settings can be opened with the following button in the Taskbar:



This will open the settings menu. This menu can be used in two different ways: Admin and User. Admin has access to all possible settings, while User is a trimmed-down version with fewer setting options. All the information in this chapter will be explained while logged in as Admin. **If you cannot find a setting shown in this chapter, make sure you are logged in as Admin.** Logging in as a different user can be done in the first tab. All tabs are explained in the following chapters. The screen has the tab list and the restart bar at the bottom:

Setting Tabs

Blue items are only visible when you are logged in as admin

This will cancel the made changes and exit the settings

This will cancel the made changes and exit the settings

This button will shut off the DVR3 as well as the operating system

This button will restart the DVR3 as well as the operating system

This button will apply the changes and restart only the DVR3,
*Restarting is necessary to apply settings with a **

This button will apply the changes and exit the settings.
*HOWEVER, Some settings will only be applied when the DVR3 is restarted, these settings are indicated with a **

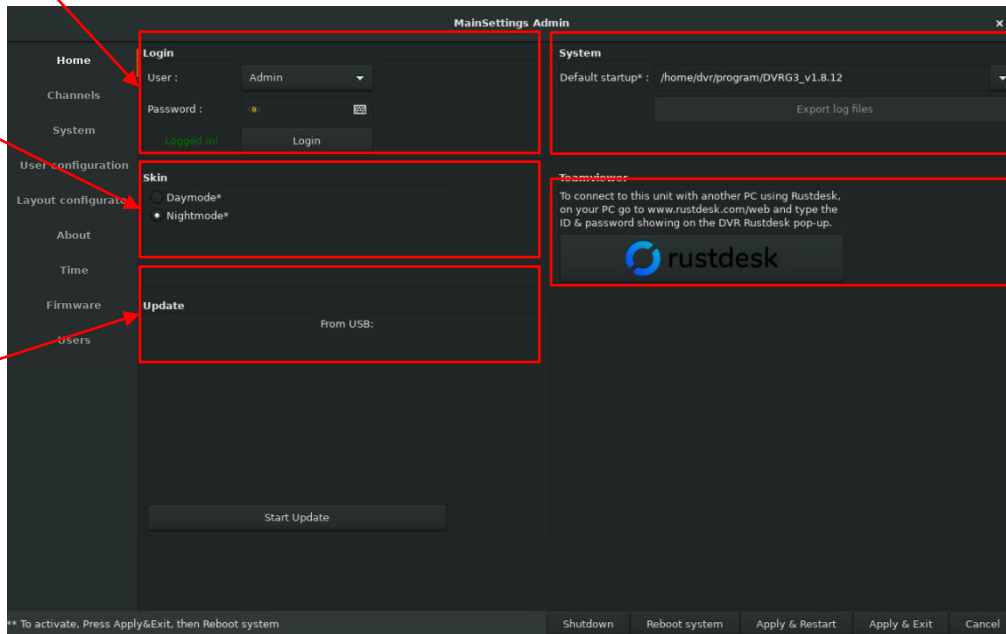
14.1 Home

The home tab has only a few settings: Login, Skin, Rustdesk, Update, and System. From these Update and System are both admin settings. Admin has, by default, no password configured. You can set a password in the User tab.

User selection, First select the user in the drop-down menu, then fill in the password if it is set up, then press login. **If there is no password set up, just select the user, and press login**

Select the skin you want to use in the software, this is either a light or a dark version

Software update, see 14.1.1 Update



Select in which version the software starts

RustDesk, See **Fout! V** **erwijzingsbro**

14.1.1 Update

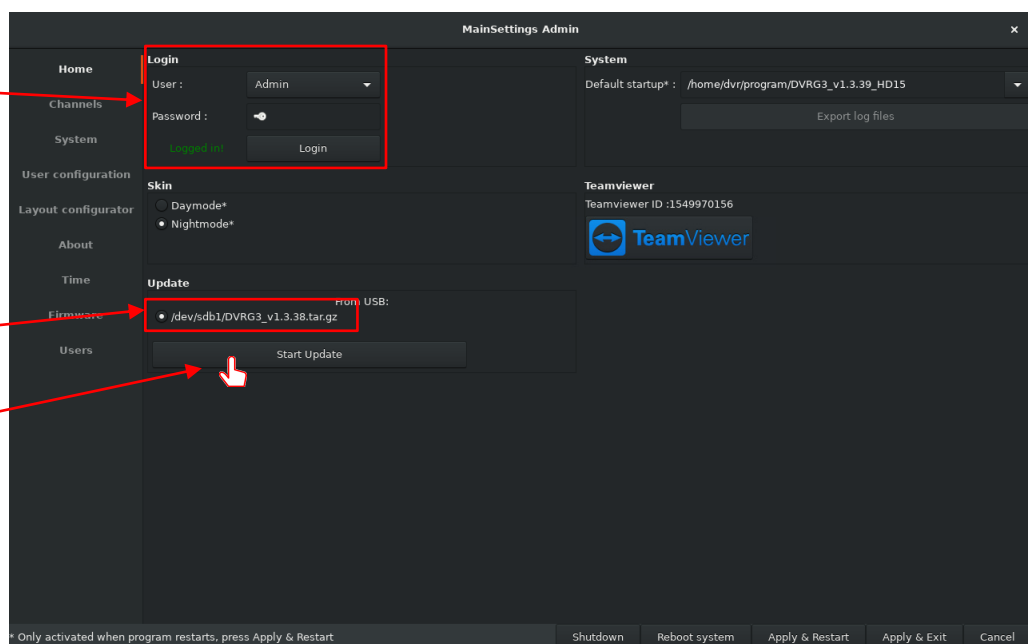
Please find an extensive update manual as a separate document.

To update the DVR3, you will need an update file on a USB drive. First, insert this drive in the system and then go to the "Home" tab. There log in as Admin. This will result in the screen below. In this menu, select the update file and then press "Start Update."

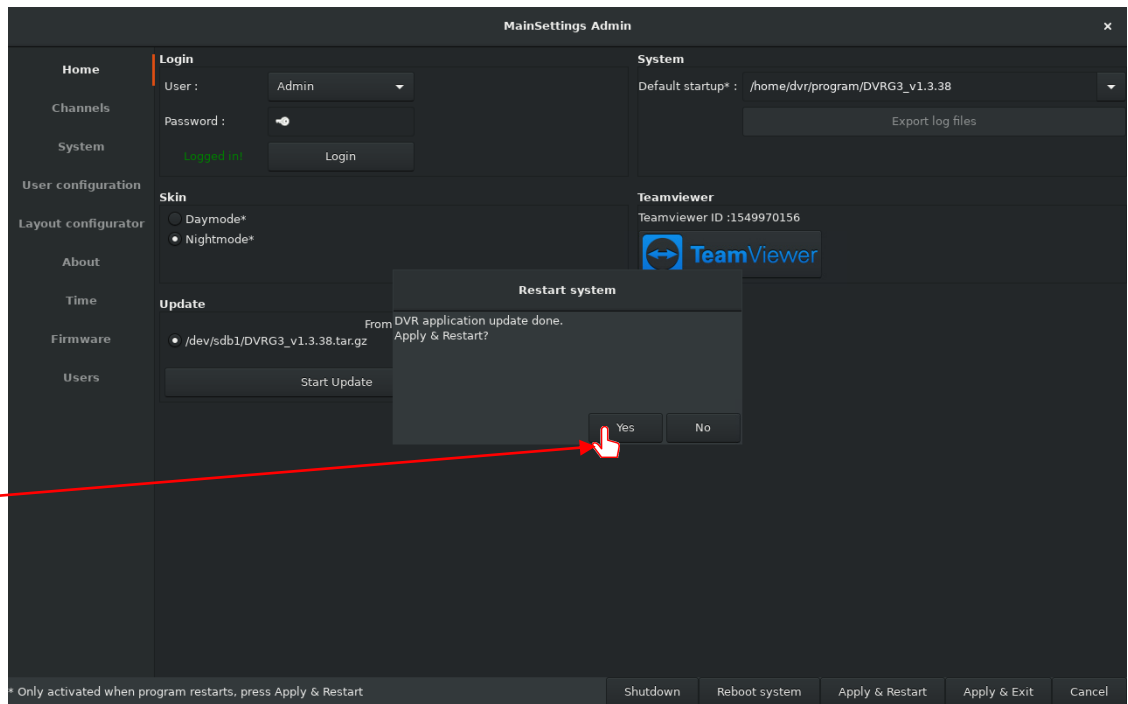
Make sure you are logged in as Admin

Select the update file

Press start update



This will start the update. Once it is done, a window will appear to restart the software. Press “Yes” in the window, and the system will restart and is updated.

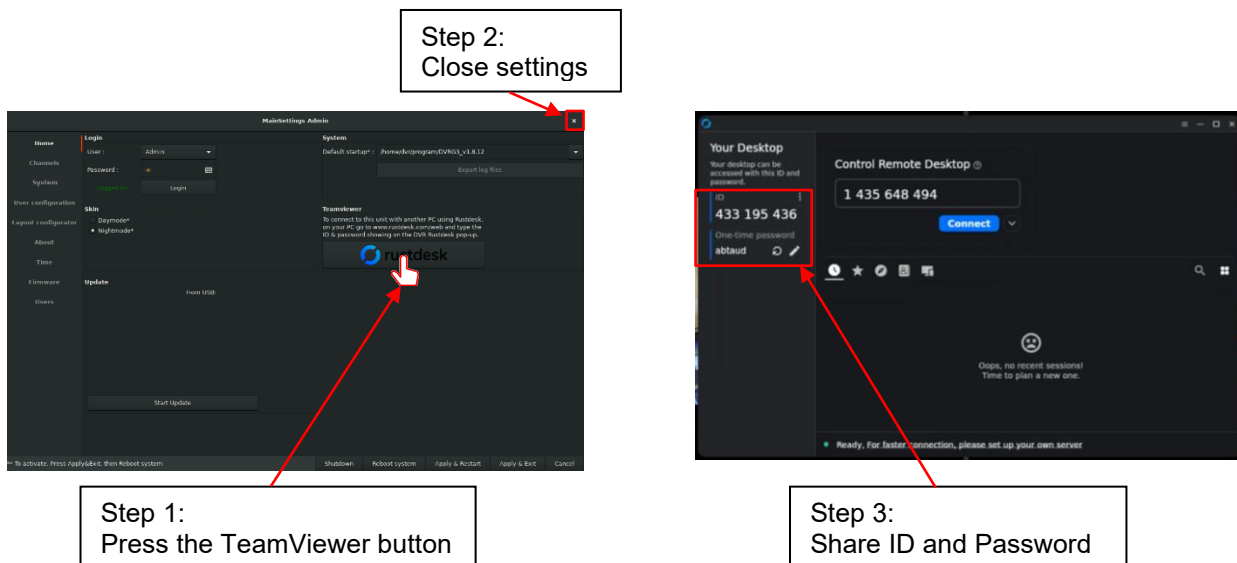


Press “Yes” to restart the software and finalize the update

14.1.2 Rustdesk

Rustdesk is a useful tool that is installed and integrated into the software by default. This can be used to share your screen with another party or for service by Seascope. To start Rustdesk, simply press the Rustdesk button. Then close the settings window, and this will show the Rustdesk window. In this window, you can find the Partner-ID and the password you need to share.

- First make sure that your system is connected with a LAN cable to a network with Internet
- If you plug in the LAN cable when the system is on, then restart the system

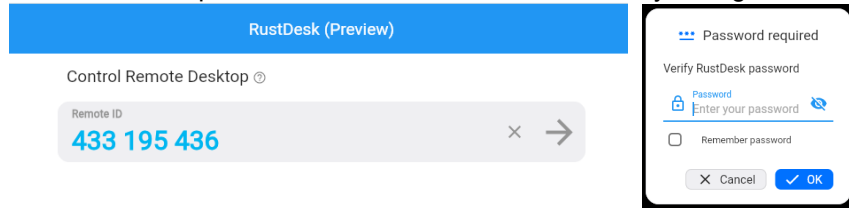


If you have an internet connection then the Rustdesk pop-up will show at the bottom a green dot with the text Ready.

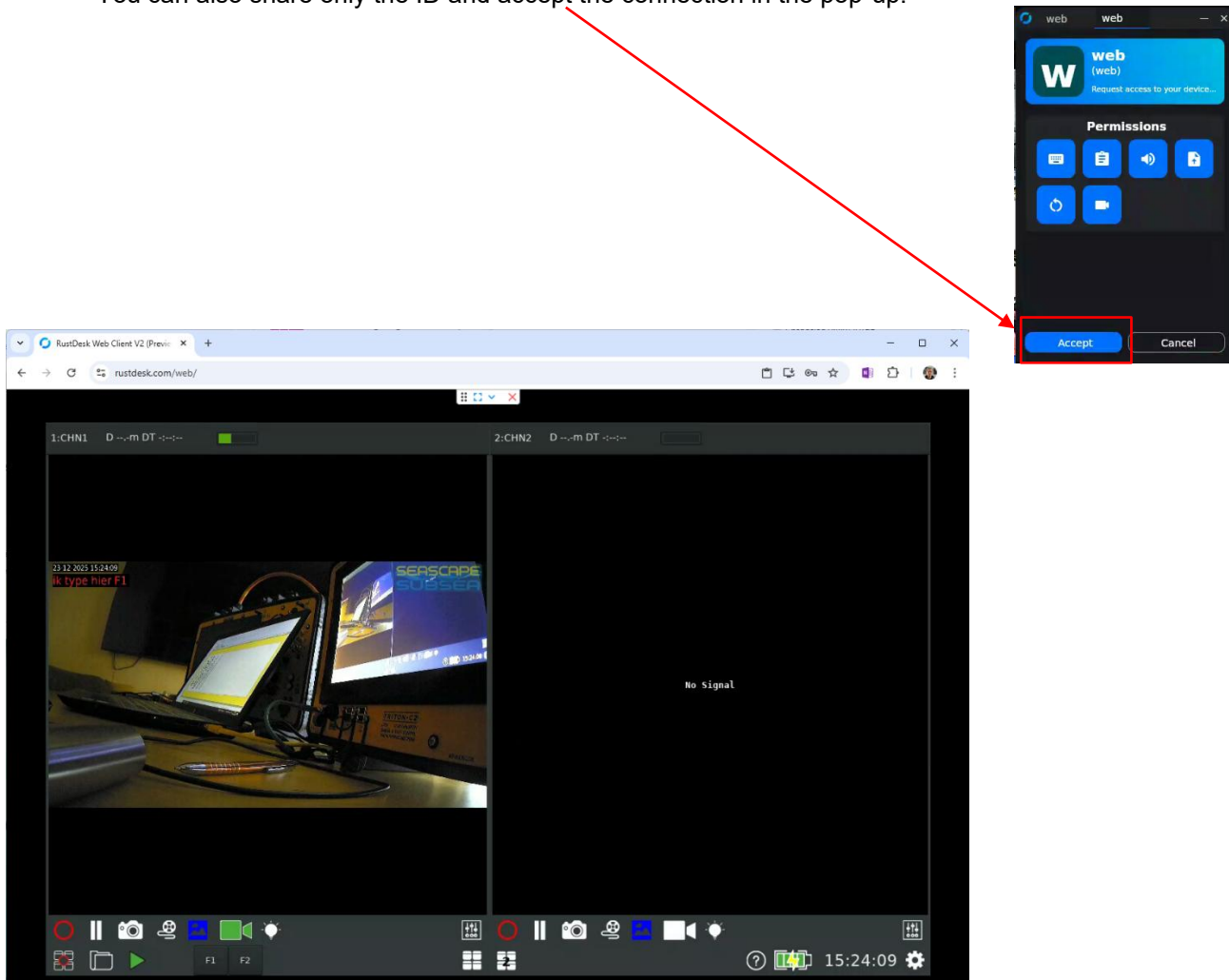
The external party to be able to connect needs to go to the website www.rustdesk.com or www.rustdesk.com/web. At the main website you can download the Rustdesk app and install on your computer. For quick access without any installation you use the web client www.rustdesk.com/web.

Here you fill in the system ID and press the arrow.

Either enter the password or wait until the user of the system granted the access.



You can also share only the ID and accept the connection in the pop-up.



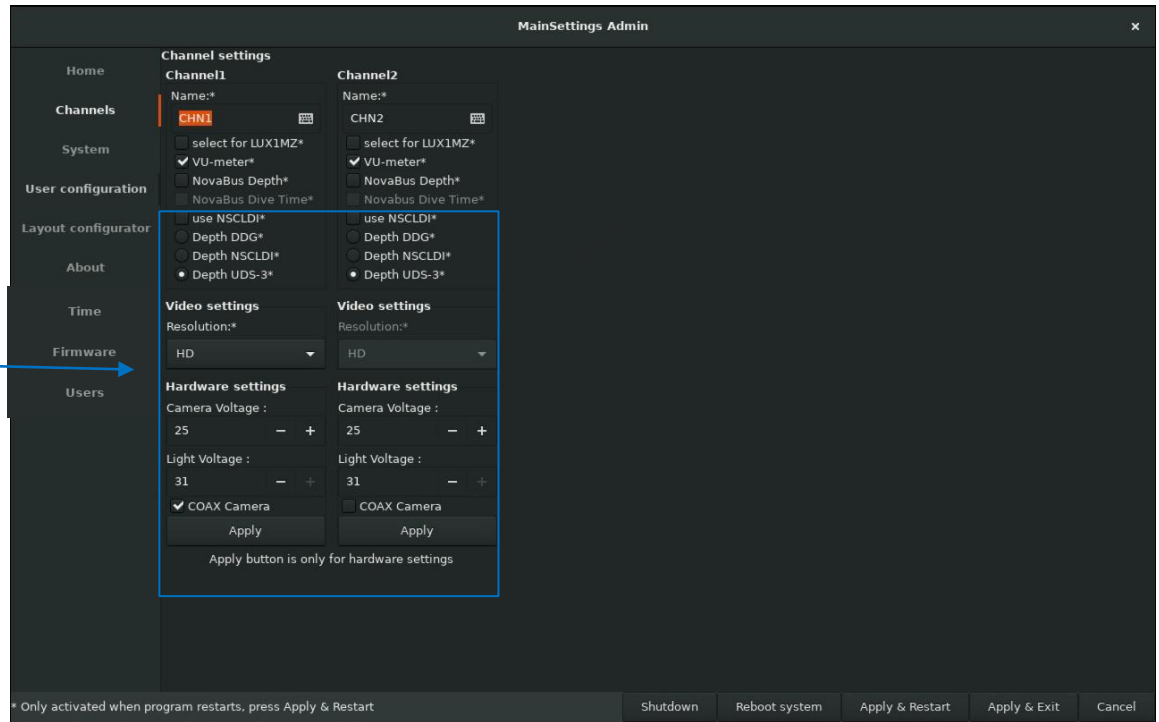
The External Party will see the systems desktop and can control it with the mouse. There is no audio in the connection.

Note: Once you know the system ID the external party can directly access the DVR unit. Rustdesk is always running on the back ground of the DVR unit. The operator at the DVR only needs to grant the access when the pop-up appears.

14.2 Channels

The Channels tab lets you change the Channel name and the information displayed in the channel title bar. The different options are displayed below and explained in the table:

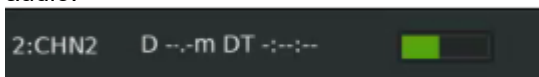
Blue items are only visible when you are logged in as admin



Name	Type	Description
Name	Text field	You can give the channel a name that will be displayed in the channel title bar.
Kratos*	Checkbox	This checkbox enables the light controls in the channel bar. This is only compatible with Novasub SCUxs-xVL Kratos video& light controller. *Kratos will only be visible using the Thallasa-Rx SCU-DVR3 rackmount video controller
Select for LUX1MZ	Checkbox	Check this box when you are using the LUX1MZ. It changes the brightness range, so it applies better to the LUX1MZ. Check this box also if you use a light of max. 10 watt.
VU-meter	Checkbox	Enables the VU-meter in the channel title bar. This VU-meter indicates the loudness of the sound in the recording. This can be controlled in the channel settings. See 11 Video Settings
NovaBus Depth	Checkbox	Enables Dive Depth in the channel title bar. This is only possible with depth data using NovaBus
NovaBus Dive Time	Checkbox	Enables Dive Time in the channel title bar. This is only possible with depth data using NovaBus <u>and</u> when NovaBus Depth is enabled.
Use NSCLDI	Checkbox	Check this box when using the Novasub Camera, light, Depth unit. This enables communication between the DVR3 and the unit.
Depth DDG Depth UDS-3 Depth NSCLDI	Radio Button	Select here from which device the system should receive the depth data. When using the internal Depth integration option, select the UDS-3 to read the depth data.
Resolution	Drop down list	Set the resolution of the channel. Please note that for SD&HD systems the resolution is the same for all channels.

14.2.1 VU-Meter

The VU-Meter can be used to see the audio recording is available at the channel and indicates the volume Loudness. The VU-Meter should indicate in Green around the middle of the total length of the Bar for correct recording volume of the audio.



14.2.2 Video resolution

In the video resolution drop down list you can select the resolution of the camera that is connected. There are four different resolutions that can be set using the drop-down list:

Resolution	Pixels	Camera Signal	Camera Models
PAL	720x576 pixels	SD PAL	SD camera with <600 TVL
PAL-960H	960x576 pixels		SD camera with >700 TVL
NTSC	720x480 pixels	SD NTSC	Any SD camera
HD	1920x1080 pixels	HD-TVI or HD-AHD	Cameras with a TVI or AHD signal

Terminology:	
SD	Standard Definition cameras which send an analog composite video signal
HD	High-definition cameras which send a high bandwidth analog signal
PAL	a SD video standard mainly used in Europe, North Africa, Middle East and Asia
NTSC	a SD video standard mainly used in the North & South America
TVI & AHD	Methods of compressing HD signals to send them over an analog cable
TVL	Television Lines

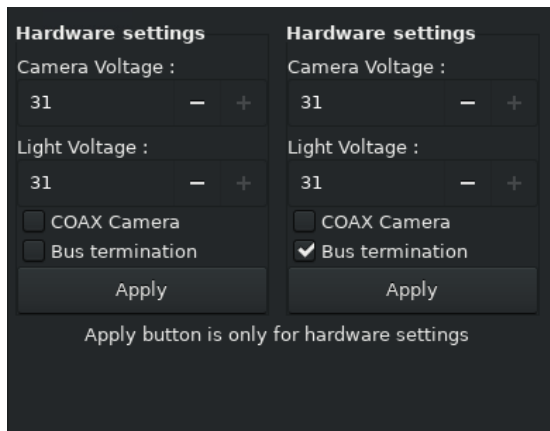
All Novasub systems support SD (PAL, PAL-960H and NTSC) signals. Novasub HD systems also support HD (TVI and AHD) signals in addition to SD signals. The HD resolution option is hidden on systems that do not support this. The different Novasub systems can be found below:

System ► Resolution ▼	TRITON-C1 THALLASA-C1 THALLASA-R1 THALLASA-W1 ALPHEUS-W1	TRITON-C2 THALLASA-C2 THALLASA-R2
PAL	✓	✓
PAL-960H	✓	✓
NTSC	✓	✓
HD	-	✓

Please note that you can not set different channels to different resolutions. This may be a feature in the future.

14.2.3 Hardware settings

It is also possible to change some of the hardware settings in a system. You can set the max. voltage for the camera and light independently from each other. The min. voltage is 12 volt, and the max. voltage is 31 volt. Take into account that a longer cable will result in a voltage drop. So, you may need to increase the voltage to get enough voltage out of the other end of the cable so that the camera or light goes on. For all Novasub cameras and lights, you can use the default settings of 31 vdc.



These settings are only applied with the apply button below the settings.

Camera Voltage	Control the voltage that is set to the camera. Press the channel "Apply" to apply these settings. Default is 31v
Light Voltage	Control the voltage that is set to the Light. Press the channel "Apply" to apply these settings. This setting is only usable for systems from G4.1 and higher. Default is 31v
COAX Camera	Set the camera control for this channel. Check the box for a COAX camera, uncheck it for a Twisted pair camera. Press the channel "Apply" to apply these settings.
Bus Termination	This setting terminates the NovaBus connection on this channel. This can be done to prevent open-ends and data reflections on the bus channel. This setting is only visible in SCU units. The last channel should only have the Bus Termination selected. So for a 2 channel system, Channel 2 and for a 4 channel system only channel 4

Warning

When you press "apply" for the hardware settings a warning will appear. This warning is to prevent you from damaging a camera or a light. If you are going to change the voltage, then please double check the voltage your camera or light can accept and double check the voltage you are setting the system to. This is to prevent any damage to your other equipment.

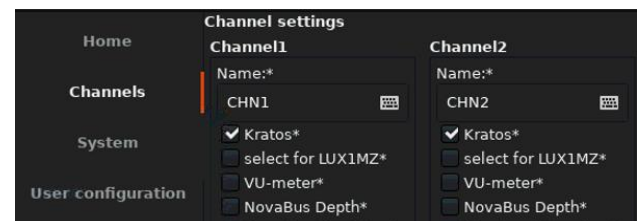
The hardware settings are standard shown in system with built in camera&light control, like the Triton-Cx, Alpheus-Cx and Thallasa-Cx. The rackmount unit (THALLASA-R1&2 / SCU-DVR3) will only show these settings when a Kratos-Rx is connected, because the hardware that you are applying these settings to is located in a different rackmount unit (KRATOS-R1&2/ SCUxs-xVL). Please see "rackmount units" below for more information.

14.2.4 Rackmount Units

The rackmount units Thallasa-Rx and Kratos-Rx can be connected together with the bus control cable Novabus. This makes it possible to control the camera & light on/off and dimming. Also hardware settings in the Kratos-Rx can be set or changed.

To be able to control the camera&light you need to select the Kratos checkbox in the Main-settings, channel settings.

1. On the Thallasa-Rx Enter the Main-settings and login in as Admin
2. Go to the channels tab
3. Check the Kratos checkbox
4. Apply and Restart the system



To change the hardware settings in a rackmount unit you will have to follow the following steps:

1. Connect both systems to each other using the NovaBus connector.
2. Power up both systems
3. Connect a display to the SCU-DVR3 (THALLASA-Rx)
4. Go to ⚙️ (Settings) in the DVR3
5. Log in as Admin
6. Go to "Channels", here you will find the "hardware settings".**
7. Now change the setting and press Apply
8. That channel is now set up with a new voltage or as a coax channel. Even if the system is used by itself.

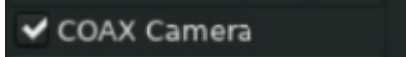
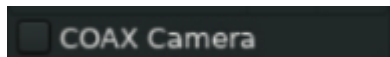
**If the hardware settings are not visible then please check the following things:

- You are logged in as "Admin" on the "Home" tab
- The SCUxs-VL (KRATOS-Rx) is connected to a power outlet
- The SCUxs-VL (KRATOS-Rx) is ON
- The systems are connected to each other using the NovaBus connector

- Make sure the DVR3 software is Build 28 or higher, see "About" in DVR3 settings

Coax setting

You also need to set whether you use a Coax or Twisted pair camera in the hardware settings. The differences and limitations of both cameras can be found in the next chapter. The following settings are correct for the Novasub cameras:

Camera Model	Settings
NSBCxVC1 NSBCxVC2 NSBCxTVIC2 NSBBxAHDC2	
NSBCxVTP0 NSBCxTVITP0 NSBBxAHDTP0	

Note: For any other brand of camera, you probably need to select coax.

14.3 Coax (Unbalanced) versus Twisted Pair (Balanced)

Coax (Unbalanced) and Twisted Pair (Balanced) signals refer to two different methods of transmitting video signals over cables. Mechanically they are very different, as can be seen in the pictures below.

Coax (Unbalanced)

Coax uses a single conductor (core) and a common ground reference (shield). The following advantages and limitations apply to a coax cable that has an unbalanced signal:



COAXIAL

Advantages:

- Bandwidth:** Coaxial cables generally have a higher bandwidth capacity than twisted pair cables, making them suitable for transmitting higher frequency signals, such as those used for high-definition video.
- Standard:** All analog cameras have a coaxial output signal, which means that you don't need to convert the signal before it is connected to a cable.

Limitations:

- Signal Quality:** Unbalanced signals are more susceptible to interference and noise, leading to potential signal degradation over longer cable lengths.
- Robustness:** Coax cables are more fragile. The core is very small and harder to solder to a connector making it break off faster and the core itself is prone to break within the cable.
- Distance:** Due to susceptibility to interference, unbalanced signals are typically limited in terms of the distance they can effectively cover without significant signal degradation.
- Ground Loops:** Unbalanced connections can be prone to ground loop issues, causing unwanted hum or noise in the audio/video signal.

Twisted Pair (Balanced)

Twisted pair uses two signals (+ and -) that are twisted around each other. (the picture shows 4 pairs, you only need 1 for video). The following advantages and limitations are true for using a twisted pair with a balanced signal:



TWISTED PAIR

Advantages:

- Noise Rejection:** Balanced signals are highly resistant to interference and noise because the receiving equipment can distinguish between the original signal and any interference picked up along the cable.
- Longer Distances:** Due to noise rejection capabilities, balanced signals can be transmitted over longer distances without significant signal degradation.
- Robustness:** Twisted pair cables are stronger and are easier to solder to a connector. This makes them more robust overall.

Limitations:

- bandwidth:** Balanced connections are less capable of sending higher bandwidth signals. This makes them less applicable to high-definition cameras.

Signal convert: Analog Camera's always send an unbalanced signal which needs to be converted to a balanced signal. This means a converter between the camera and the cable on both the topside and subsea side.

In summary, the choice between balanced and unbalanced video transmission depends on the context and requirements of the audio/video setup:

- Unbalanced signals are simple and suitable for shorter connections in setups but may suffer from interference and quality issues over longer distances. They also provide a higher bandwidth which makes them more ideal for HD cameras.
- Balanced signals are more robust and suitable for longer setups, providing higher quality and the ability to cover longer distances without significant signal degradation.

Ultimately, the decision should be based on factors such as the equipment being used, the distance the signal needs to travel, and the desired level of signal quality and noise rejection.

14.4 Camera – Cable matching

Now that you understand the differences in Coax (Unbalanced) and Twisted Pair (Balanced) and the differences between the video resolutions, we can have a look at the Novasub camera's that are available and match them with the different cables that are on the market. The camera can be selected using the desired signal type and the desired resolution:

Resolution ▼ Signal ►	Coax (Unbalanced)	Twisted Pair (Balanced)
SD	NSBCx-C1 NSBCx-C2	NSBCx-TP0
HD	NSBCx-TVIC2 NSBCx-AHDC2	NSBCx-TVITP0 NSBCx-AHDTP0

This can then be matched using the color coding to a cable/umbilical. This can also be done the other way around. Whether you have a camera and want to find a matching cable or whether you have a cable and you want to find a matching camera.

Product	Resolution	Coax (Unbalanced)		Twisted Pair (Balanced)	
		Cable	Max. Length (m)	Cable	Max. Length (m)
General Cables	SD	Coax 75 Ohm	350	Twisted pair (Shielded or unshielded)	550
	HD	Coax 75 Ohm	250	Twisted pair (Shielded or unshielded)	100
				100 Ohm CAT5 or higher (UTP/STP)	250
Novasub Cables	SD	VLR-1CO-6C-1Q CDUR05*	350	DLR-1P20-2C50 DLR-2P20-2C50 DLR-3P25-2C100 DLR-4P25-2C100 DLRB-3TP6C DLR-CAT5E-F/UTP DLR-CAT6-12C24 CDUR01 CDUR05*	550
	HD	VLR-1CO-6C-1Q CDUR05*	250	DLR-3P25-2C100 CDUR01 & CDUR06	150
				DLR-CAT5E-F/UTP DLR-CAT6-12C24	250
Novasub Umbilicals	SD	DUR05-ND* DUR06-ND*	350	DUR05-ND* DUR01-FBL DUR01-FBLT DUR01-FLT	550
	HD	DUR05-ND* DUR06-ND*	250	DUR01-FBL DUR01-FBLT DUR01-FLT DUR06-ND*	150

Fibron umbilicals	SD	DCS0014 DC0340 DCS0005 DCS0015 DCS0016 DCS0011	350	DCS0013	350
	HD	DCS0014 DC0340 DCS0005 DCS0015 DCS0016 DCS0011	250	DCS0013	?
*The CDUR05&06 and the DUR05&06-ND have both a Coax core and a Twisted Pair. This means that either one can be connected to the camera connector. Which is connected can be found in the configuration sheet of your cable/umbilical.					

Please contact us if you have any questions regarding cables or cameras!

14.5 System

The system tab has the network info displayed and File sharing, Remote storage, and backup recording options.

MainSettings Admin

System

Network info
 Hostname: DVR-718

Type**	Interface	MAC address	IP address**	Mask**	Gateway**
• DHCP	enp2s0	00:30:18:0C:70:EE	10.192.7.138	-	-
• Static ip					

File sharing
☐ Enable SMB share
 State: inactive
 Password: Connect with your Windows client by typing: "\\<hostname>\Recordings" in the search field of your taskbar. Username: user, default password: novasub

Remote storage
SFTP
☐ Enable SFTP connection
 Status:
 Host:
 User:
 Password:
 Folder:

Backup record
☐ Enable backup recording*
 Destination: * USB : 2_7_2-39-AM

Loop record
☐ Enable loop recording*

* Only activated when program restarts, press Apply & Restart

14.5.1 Network Settings

Network info shows detailed information on the DVR and its network connection. This information can be useful for remote support, file sharing of recording folder or other actions. If you connected an ethernet cable to a system while the main settings were open then you should close and reopen the main settings to update the network info.

By default the system is set for DHCP, meaning that it will get an IP address from the router of the network at which the system is connected. You can also set your own static IP address, subnet mask and gateway.

Type**	Interface	MAC address	IP address**	Mask**	Gateway**
• DHCP	eno1	A8:A1:59:D1:9E:44	10.192.7.197	-	-
• Static ip					

- Setting a static IP address.
 - Select Static IP and fill in the required IP address, the Mask (subnet) is by default 255.255.255.0, if needed you can change this. For Internet connection you need to fill in also the router/network gateway. Below example without gateway, only for local access, no Rustdesk support

Type**	Interface	MAC address	IP address**	Mask**	Gateway**
• DHCP	eno1	A8:A1:59:D1:9E:44	10.192.7.181	255.255.255.0	-
• Static ip					

Below example with gateway for Internet connection, the system can be accessed by Rustdesk

Type**	Interface	MAC address	IP address**	Mask**	Gateway**
• DHCP	eno1	A8:A1:59:D1:9E:44	10.192.7.181	255.255.255.0	10.192.7.1
• Static ip					

- To activate the Static IP settings you need to first press Apply & Exit → Then go back to the Main Settings and press Reboot system

This procedure is indicated in below left comment window with **

** To activate, Press Apply&Exit, then Reboot system	Shutdown	Reboot system	Apply & Restart	Apply & Exit	Cancel
--	---	--	--	---	---------------------------------------

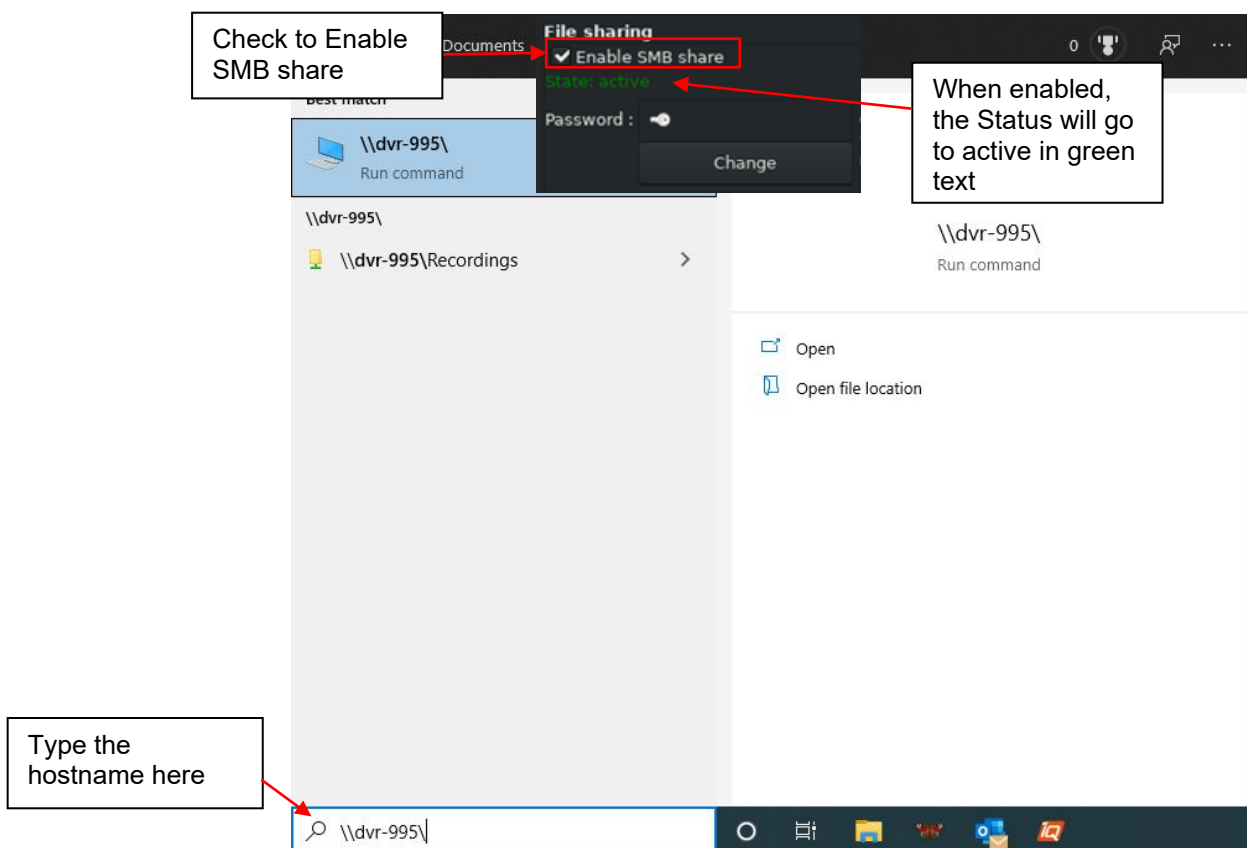
14.5.2 File Sharing

File sharing is a way to retrieve recordings from the DVR to a PC. This can be done when:

- The PC and the DVR are connected to the same network
- The PC and the DVR are connected directly to each other (only in DHCP mode) see 14.5.1 Network Settings

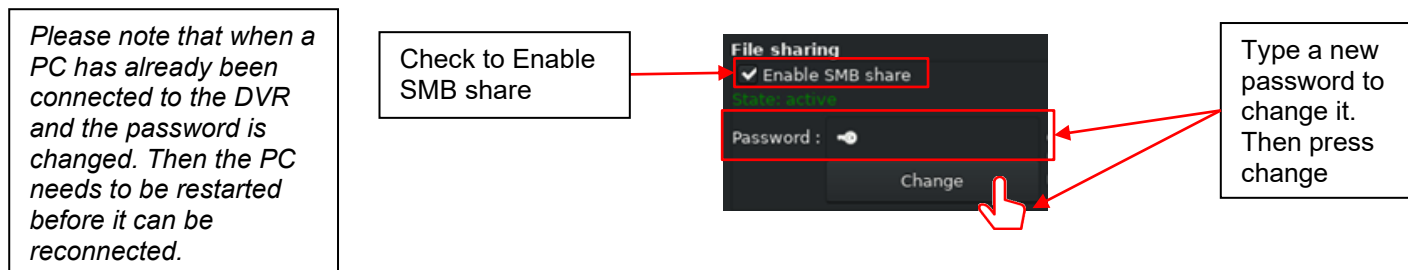
To enter the recording folder, you need to connect the DVR and PC to the same network or directly to each other. Then you can enable the SMB share, this will start activating and turn green when the File sharing is enabled. Press Apply & Exit to keep this selection activated.

Then you can type the following in your PC's taskbar's search field: `\\DVR-995\Recordings`. The Blue text is the Hostname of the DVR, which is different for every system. The Hostname can be found in the top of the system tab:



Your PC will then ask for login settings. As per default, these are username: *user* and password: *novasub*.

This password can be changed by typing it in the text field and pressing "change".



You can also add the recordings folder to your network-locations. To do this you use the File explorer on a windows OS PC.

On the Network Icon press right-mouse button and select Map new network drive.

Select this function to map the recordings folder

Type \\dvr-xxx\Recordings

For xxx fill-in the numbers which you see in your DVR Main settings system tab

What network folder would you like to map?

Specify the drive letter for the connection and the folder that you want to connect to:

Drive: N:

Folder: \\dvr-356\Recordings

Example: \\server\share

☒ Reconnect at sign-in

☐ Connect using different credentials

[Connect to a website that you can use to store your documents and pictures.](#)

Home

Channels

System

Network info

Hostname: DVR-356

Type** Interface

DHCP eno1

Static ip

Press Finish

Finish Cancel

Enter network credentials

Enter your credentials to connect to: dvr-356

user

novasub

Domain: SEASCAPE

☐ Remember my credentials

Access is denied.

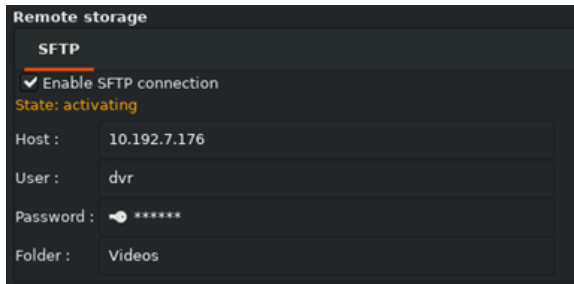
OK Cancel

Recordings (\\dvr-356) (N:)

Now you will see a lonked network drive of your Novasub video recorder

14.5.3 Remote Storage

Remote storage is an SFTP connection to a server. You can then copy files to this server or appoint this server as the backup location. To connect to the server, you need to fill in the following information:



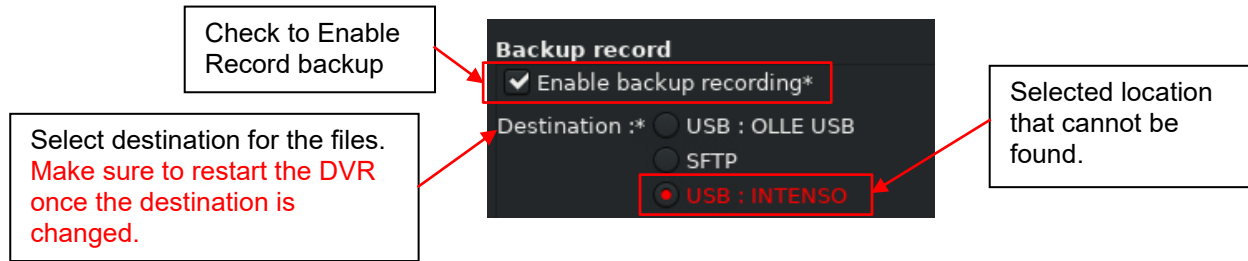
The screenshot shows a dark-themed interface for configuring SFTP remote storage. At the top, it says 'Remote storage' and 'SFTP'. Below that, there is a checkbox 'Enable SFTP connection' which is checked, and a status indicator 'State: activating'. The configuration fields are: Host (10.192.7.176), User (dvr), Password (masked with asterisks), and Folder (Videos).

Field	Input
Host	Put the IP address or Domain name of the server here
User	Put the Username account here
Password	Put the password of the account here
Folder	Here you can set a Folder where the backup recordings need to go. When this folder does not exist then it will be created.

14.5.4 Backup Record

Backup record is a feature that lets you copy the recordings to a location while you are making these recordings. The location can be a USB drive or an SFTP connection. The system will start copying the recording once a file is finished. The backup indicator will show the status of the copying. See 0

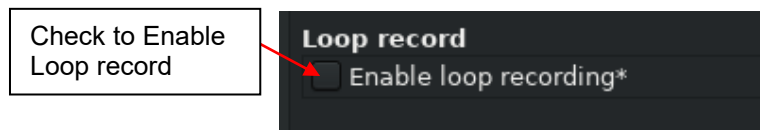
Backup recording Indicator.



To enable the backup, you can click the checkbox and select the destination of the backup. The system will then automatically copy recordings, screenshots and clip recordings to that destination. If a destination is selected that cannot be found by the system, then the location will turn red.

14.5.5 Loop Record

Loop record is a feature that automatically deletes older recordings to make room for newer recordings.

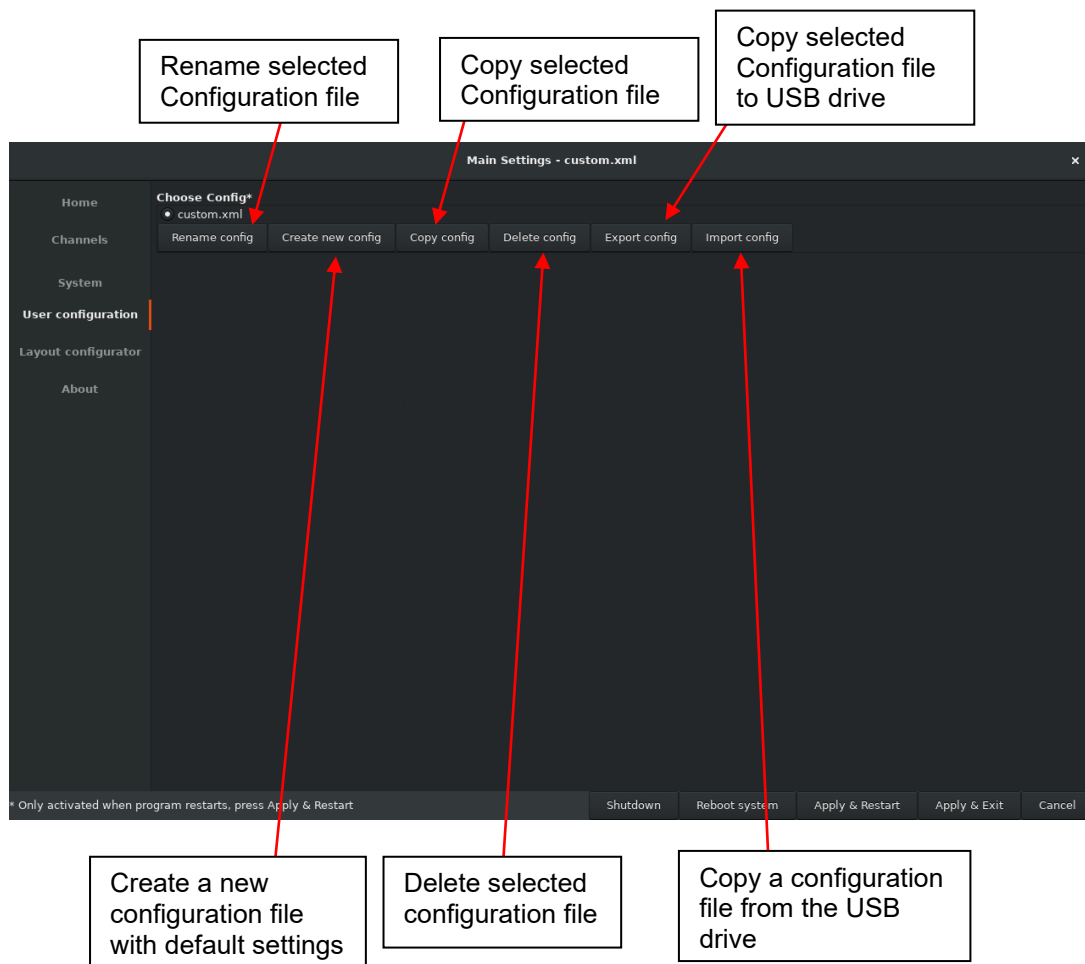


If loop record is enabled the following happens: once the system has only 2 GB of storage left during recording it will delete the oldest day in the system. It determines the oldest by the name of the folder: "YYYY-MM-DD". Please note that all channels from this day will be deleted.

14.6 User Configuration

The user configuration is a way to save different customizations that can later be switched. These customizations are saved in a configuration file that can be selected and applied. The settings that are saved and controlled by this file are:

- On-screen Display settings
- Channel Settings
- Layout Configuration
- Skin
- Channels



14.7 Layout Configuration

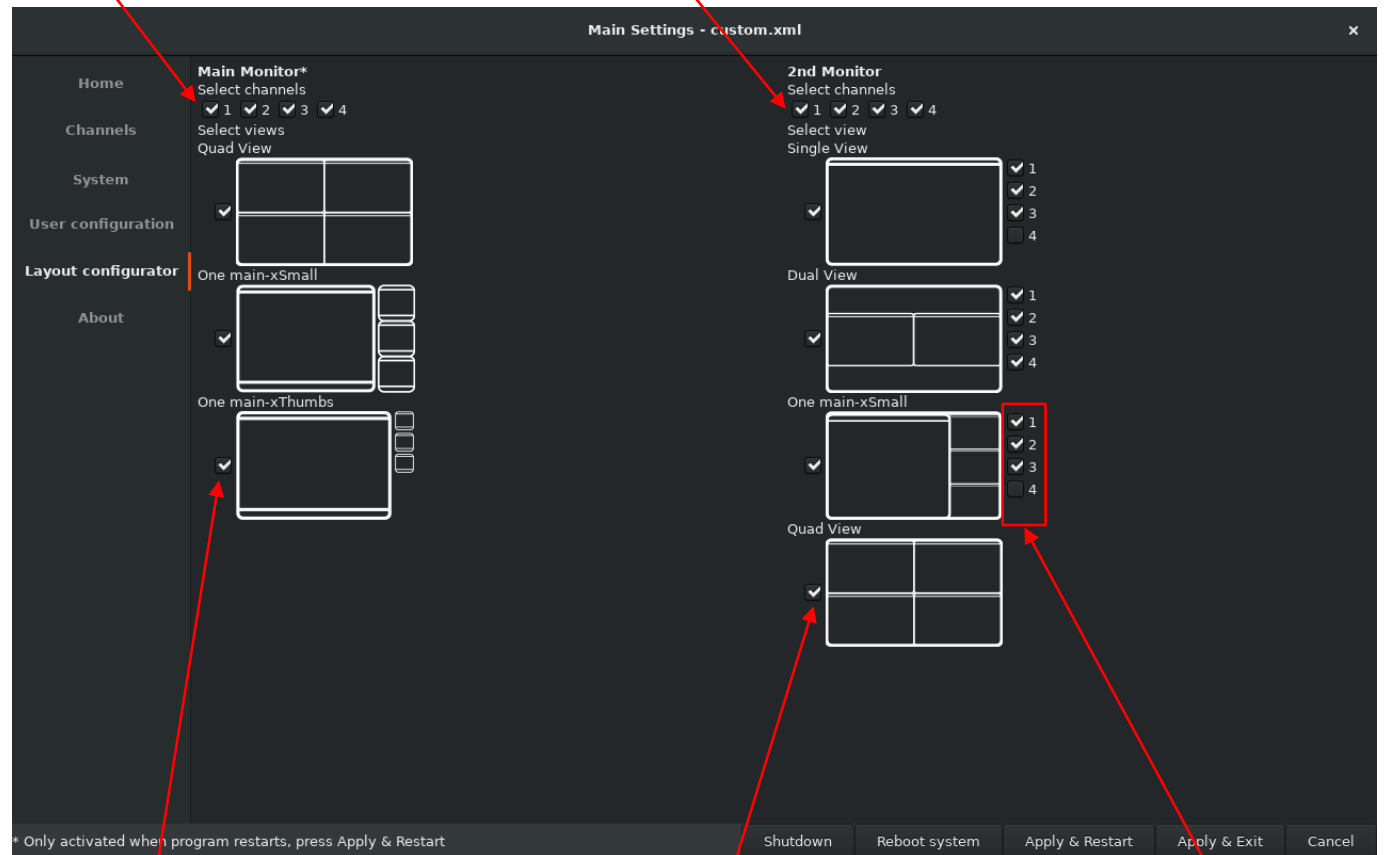
The layout configuration controls the way the different channels are displayed on the main and second monitor. This is divided into both monitors. At the top, you can select which channels you want to view on the monitor. You can then select the view layouts you want to cycle through with the button in the Taskbar.

The system will remember the layout of the first monitor when it is shutdown, and it will start up with the same layout. Please note that this only applies for the first monitor.

Select the channels that are visible on the main monitor

Select the channels that are visible on the second monitor

Channels can only be visible on the second monitor if they are visible on the main



Enable a view layout to have it available in the Layout-cycle. Cycling is done with the button:



Enable a view layout to have it available in the Layout-cycle. Cycling is done with the button:



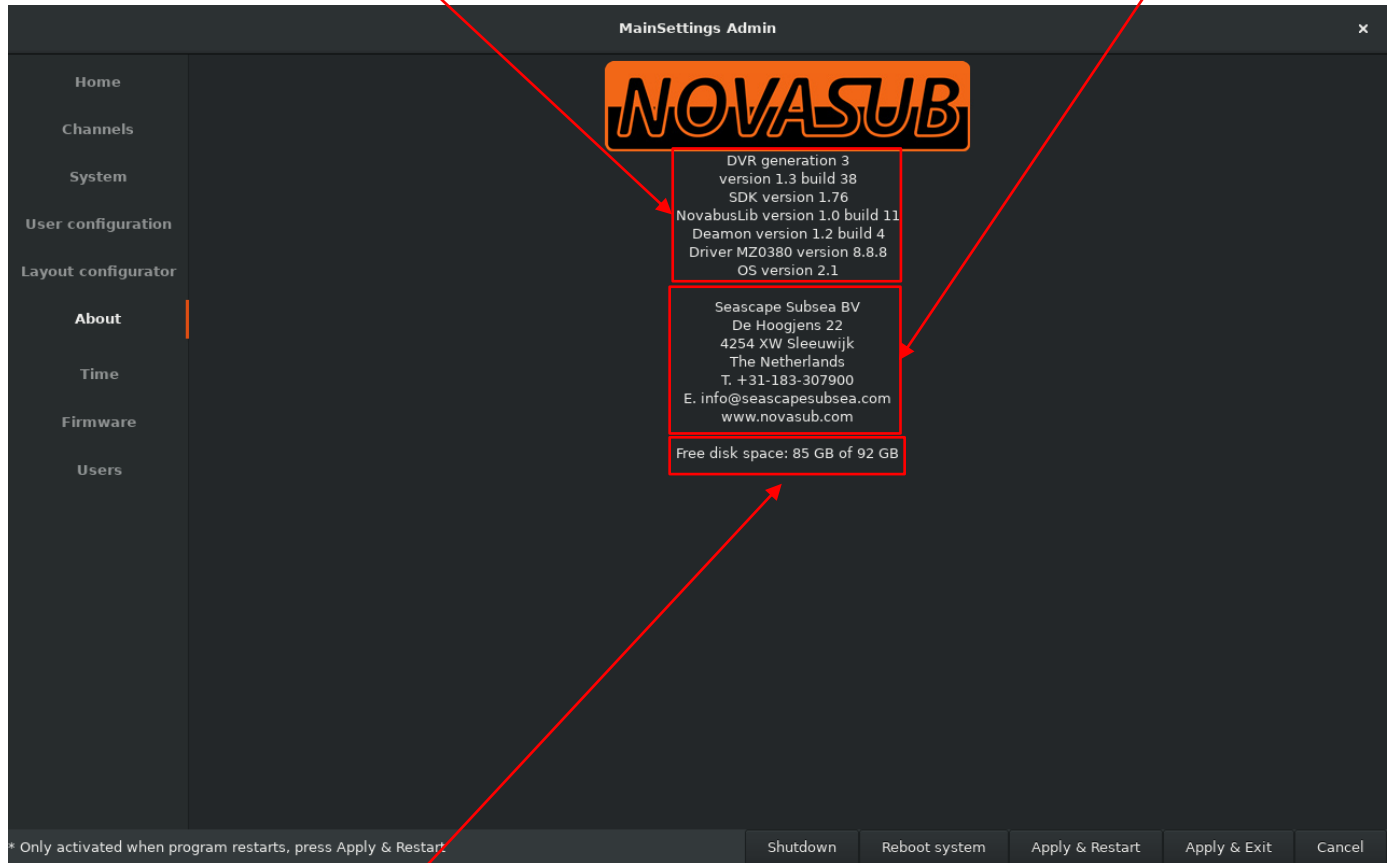
Select which channels are visible in this view layout.

14.8 About

The about tab has information about the software stored, as well as the available disk space. Information here is necessary for remote support.

Software versions, this information is necessary for remote support

Manufacturer information



Available internal storage

14.9 Time

The *Time* tab is only visible when you are logged in as Admin. In this tab, you can change the time and date of the system. This can either be done automatically via the internet or manually. The time zone needs to be selected manually to make an update via internet work.

Update Time & Date via internet. *This requires an internet connection.* Updating will take 6 seconds after pressing this button.

Select time manually

Select Date manually

Select time zone

Selecting the time zone is necessary to make "update time via internet" work

MainSettings Admin

Internet Time*

Update Time via Internet

Time

hours minutes seconds

9 4 3

Date

< February >

Sun	Mon	Tue	Wed	Thu	Fri	Sat
29	30	31	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	1	2	3	4
5	6	7	8	9	10	11

Time zone*

Europe/Amsterdam

* Only activated when program restarts, press Apply & Restart

Shutdown Reboot system Apply & Restart Apply & Exit Cancel

14.10 Firmware

The *Firmware* tab is only visible when you are logged in as Admin. The Firmware tab allows users to update firmware versions of the internal components. Each Novasub system uses PCB's to control all the different functions of that system. These PCB's use a firmware that controls the PCB. You can see the current version of the firmware and you can update the firmware using the updater on this tab.

Only use this updater if a Novasub professional has instructed you to do so and has provided the necessary files.

MainSettings Admin

Each Novasub system uses PCB's to control all the different functions of that system. These PCB's use a firmware that controls the PCB. You can see the current version of the firmware and you can update the firmware using the updater below. Only use this updater if a Novasub professional has instructed you to do so and has provided the necessary files.

PCB Firmware versions

Refresh

Flash VLSCI 1 firmware version : 0.28 PCB version: 1.15

Flash DDSI 1 firmware version : 0.14 PCB version : 13

Flash VLSCI 2 firmware version : 0.28 PCB version: 1.15

Flash xDR 1 firmware version : 0.13 build : 46 PCB version : 12

Flash DSP 1 firmware version : 0.25

Flash BCPS firmware version : 1.37 bootloader version : 3

* Only activated when program restarts, press Apply & Restart

Shutdown Reboot system Apply & Restart Apply & Exit Cancel

Press "Flash" to start the update procedure for that subsystem.

Firmware versions and PCB versions for different Novasub subsystems. The Novasub professional can request information from here

When you need to update a subsystem, you will first have to insert a USB drive with the updating files into the system. When you press "Flash" the system will open the file explorer to search for the USB drive, you will have to select the drive and select the file, the file must match the name of the subsystem. Press "Flash" to start the update.

Double click to open drive

Select update file

Press "Flash" to update

14.11 Users

The User's tab is only visible when you are logged in as Admin. In the Users tab, you can change the password for the "Admin" user. This can be done by filling it in the fields twice and pressing "Change." To remove any password, just leave these fields empty and press "Change."

Fill in new Password

Fill in new Password a second time

Press "change" to change the password

The Password can also be empty

MainSettings Admin

Change admin password

New

Confirm

Change

Home

Channels

System

User configuration

Layout configurator

About

Time

Firmware

Users

* Only activated when program restarts, press Apply & Restart

Shutdown Reboot system Apply & Restart Apply & Exit Cancel

15 Support

First, please read this manual thoroughly.

Further details about a Warranty Statement can be found in chapter 16 Warranty

For technical support, contact your local Novasub Authorized Service Center or Seascope Subsea BV. Seascope Subsea BV is the manufacturer of all Novasub branded products.

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www.seascopesubsea.com

support email: support@novasub.com



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If you have cause to use our technical support service, please ensure that you have the following details at hand before calling:

- system serial number
- firmware version and build number
- fault description
- any remedial action implemented

16 Warranty

Novasub warrants that during the Warranty Period, Novasub or a Novasub Authorized Service Center (hereinafter Service Center) will, at its sole discretion, remedy defects in materials or workmanship free of charge either by a) repairing, or b) replacing, or c) refunding, subject to the terms and conditions of this Limited Warranty. This Limited Warranty is only valid and enforceable in the country of purchase.

Warranty Period

The Limited Warranty Period starts at the date of original retail purchase. The Warranty Period is two (2) years for the product. Warranty applies only on manufacturing defaults. The Warranty Period is one (1) year for accessories, including mounting hardware and connector cables.

Exclusions and Limitations

This Limited Warranty does not cover:

1. a) normal wear and tear.
b) defects caused by rough handling or.
c) defects or damage caused by misuse contrary to intended or recommended use.
2. user manuals or any third-party items.
3. defects or alleged defects caused by the use with any product, accessory, software and/or service not manufactured or supplied by Novasub.
4. battery.

This Limited Warranty is not enforceable if the item:

1. has been opened beyond intended use.
2. has been repaired using unauthorized spare parts; modified or repaired by unauthorized Service Center.
3. has its serial number removed, altered, or made illegible in any way, as determined at the sole discretion of Novasub.
4. has been exposed to chemicals. Novasub does not warrant that the operation of the product will be uninterrupted or error free, or that the product will work with any hardware or software provided by a third party.

Limitation of Liability

To the maximum extent permitted by applicable mandatory laws, this Limited Warranty is your sole and exclusive remedy and is in lieu of all other warranties, expressed or implied. Novasub shall not be liable for special, incidental, punitive or consequential damages, including but not limited to loss of anticipated benefits, loss of data, loss of use, cost of capital, cost of any substitute equipment or facilities, claims of third parties, damage to property resulting from the purchase or use of the item or arising from breach of the warranty, breach of contract, negligence, strict tort, or any legal or equitable theory, even if Novasub knew of the likelihood of such damages. Novasub shall not be liable for delay in rendering warranty service.