DigiDVR

User Manual (BETA TEST release)

Software version 1.2.4 - (2024-12-01)

The current version (1.2.4) is distributed for BETA TEST. Please send feedback to gittodaniele@gmail.com, (WhatsApp +39 3473887097)

Getting Started

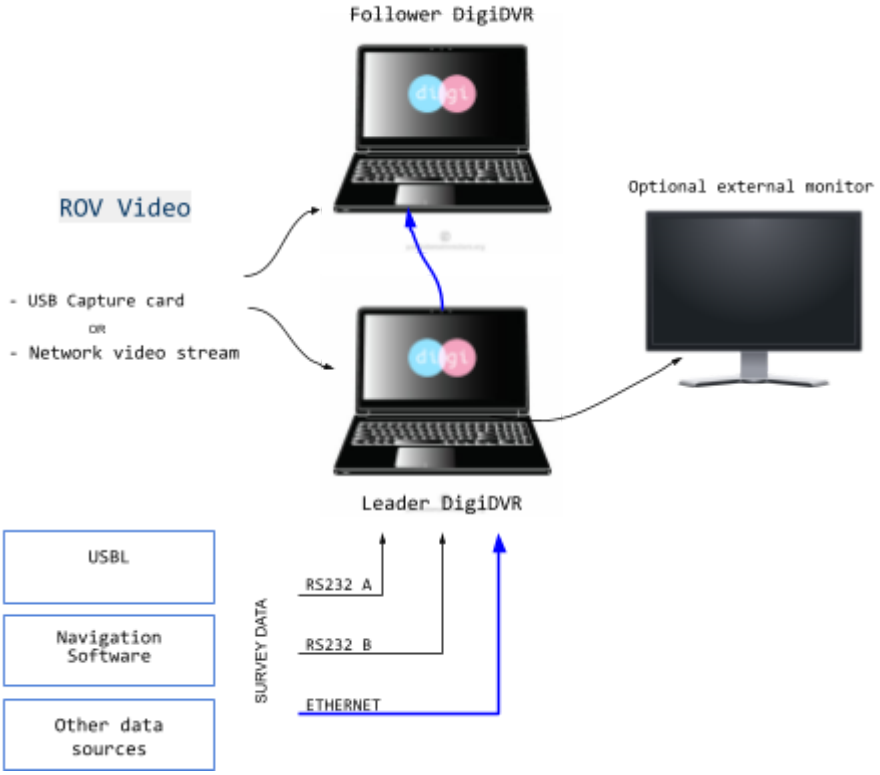
Installation

Run the Setup. By default the program will be installed in a user path. If you change the path, make sure you have write permission.

License

The license is not included in the setup. The program will run in Trial mode. At the moment it is possible to request a timed license by sending an email to gittodaniele@gmail.com.

Connections

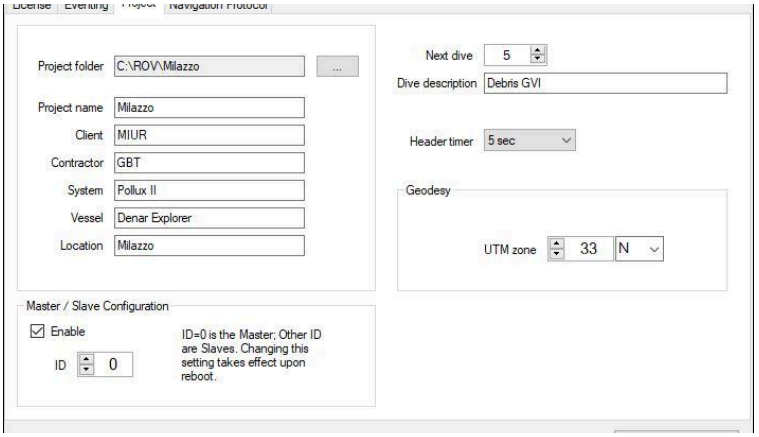


Main view

The main operations involve the sidebar located to the right of the video window. The sidebar contains the following:
The Start Recording button starts (and stops) the video recording.
The Snapshot button takes a still picture of the video window, and saves it in the dive folder. This button is enabled only if a **dive** is in progress.
The central part of the sidebar contains 5 tabs, the use of which is explained better in the following paragraphs. (for normal use, the tabs are chronologically ordered from top to bottom).
However these tabs are only enabled if a **project** is loaded. For this reason, when the software is started for the first time, or if the last project has been removed, a message will warn of the need to define a new **project folder**.

Project

Project settings are accessed from *Settings->Project.*



Once the project folder has been chosen, the relative *project.xls* file will be created and you can start working.
In addition to defining the variables valid for the project, the number and comment relating to the next dive can be set in this window. The dive number will be incremented with each successive dive.

The information entered in this form will be stored in the project file and will be presented in the **Header screen.**.
The Header is a screen that will appear every time a recording is started. It is possible to set the display time using the Header Time combobox.

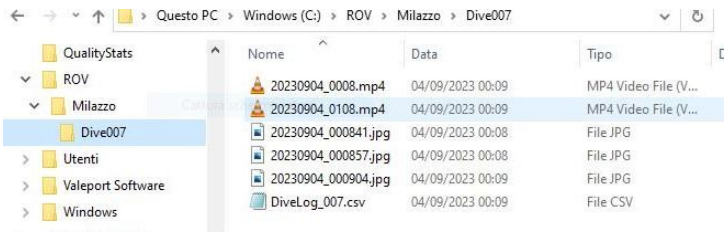
The Header screen

Geodesy allows to specify the UTM zone. This is needed if you feed the software with projected coordinates (UTM). Because georeferenced snapshots and GPX recording need geographic coordinates only.
Furthermore, it is possible to display the projected coordinates in overlay even if geographical coordinates are received, and vice versa.

Leader/Follower configuration (aka master/slave) allows to specify the role as leader or follower, ID 0 is for the leader.
Uncheck the box if this is the only instance of DigiDVR.
Once you leave the setting dialog pressing OK, you can start your work.

Dive

A project will be divided into Dives. For each Dive the software creates a folder in which the video recordings, snapshots, divelog and tracklog will be stored.

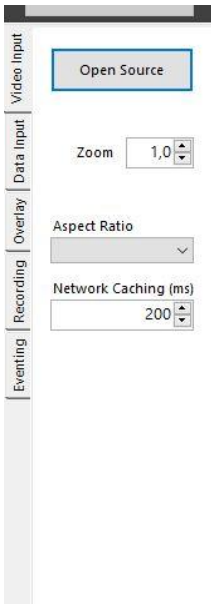


The numbering of the dives will be progressive. You can manually set the dive number in the *Setting->Project* dialog.
A dive begins by pressing the related EventButton Start dive or by starting the recording with Start Recording

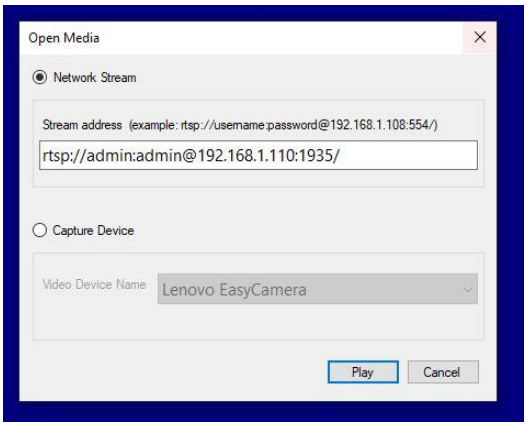
The dive ends when you press End dive.

For each dive, a divelog will be generated, and also a GPX file.

Video Input



Open Source will open the window for choosing the source to display.



Here you can choose a network stream or an input from a video capture device installed on your system.

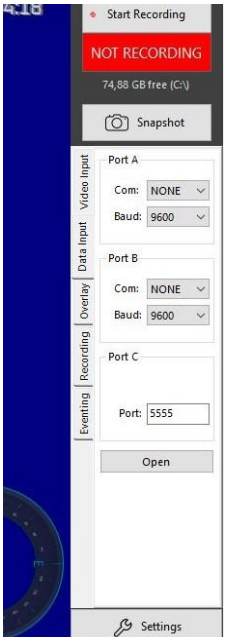
Zoom: digital zoom control

Aspect Ratio: drop-down box to change the screen ratio (usually IP Cams work with 16:9 and older CVI capture cards work with 4:3).

Network Caching: Set the network cache size. Low values minimize latency but may cause dropped frames. Use the lowest possible value that allows for smooth video.

Hint: To solve problems with streaming, it is advisable to test your input with *VLC media player*.
If you can see your camera with *VLC Media Player*, it will also be visible in DigiDVR. And the address syntax is the very same in the two software.

Data Input

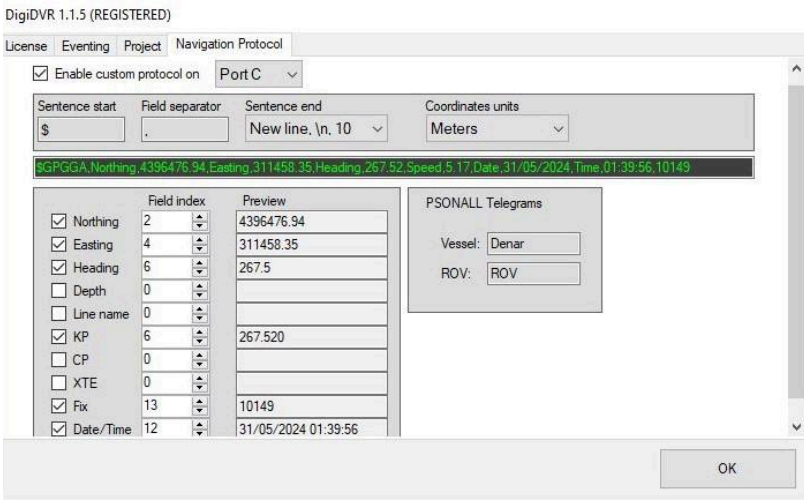


The serial inputs and the UDP input are configured from this tab.
Up to two serial ports can be used.
DigiDVR comes fully compatible with the NMEA 0183 standard protocol. The following sentences are recognized:

GGA	position, nsat, HDOP, altitude, geoid.separ.
RMC	position, time, SOG, COG
GLL	Position, time
VTG	SOG, COG
HDT / HDM	heading
DPT	depth
DBT	depth
DBS	depth
ZDA	time
PSONALL	position (proj.), depth, COG, SOG, heading
PSIMSSB	position (proj.), depth

NOTE: To use proprietary USBL telegrams you need to set USBL transponder code (ROV) in *Settings->Navigation protocol*.

Moreover, it is possible to select the option Enable custom protocol in the *Setting->Navigation protocol* form, and set the custom navigation string parameters available in the list.



Set the custom navigation string

Provide the string format of the navigation datagram to parse information: sentence start, separator, sentence end, coordinate units and fields selection.

Note: Only one data port can be used as “custom”. The others will remain enabled to receive standard NMEA only.

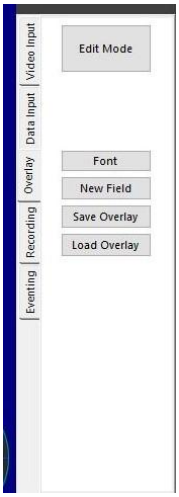
Note: Currently, it is only possible to use customized strings with UTM coordinates, and therefore only the METERS choice is available.
However, it is always possible to use a port to receive geographical coordinates (NMEA RMC, GGA, GLL) and a custom one for additional data, and display the UTM coordinates in overlay thanks to the internal conversion (remember to set UTM zone in *Settings->Project*)

Below is a list of available fields which can be displayed on the overlay screen:

```
System Time          [PC time]
Easting              [received or calculated]
Northing             [received or calculated]
Depth
Latitude             [received or calculated]
Longitude            [received or calculated]
Heading
Speed
Line Name
UTC Time             [received]
KP
FixNumber
Dive Number
Dive description
CP
XTE
Altitude
Latitude (deg)       [received or calculated]
Longitude (deg)      [received or calculated]
Raw string A
Raw string B
Raw string C
```

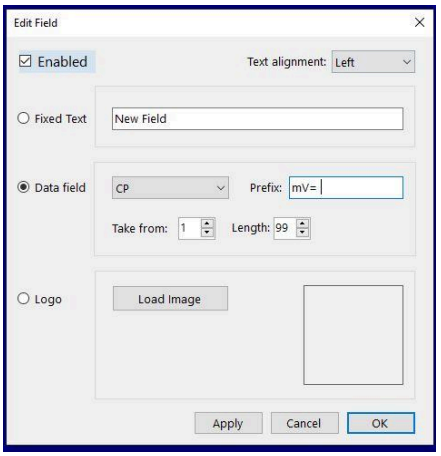
In the rare cases where you are dealing with other types of information and measurements, you can always display the *raw string* "as received" on the port (A, B or C)

Overlay



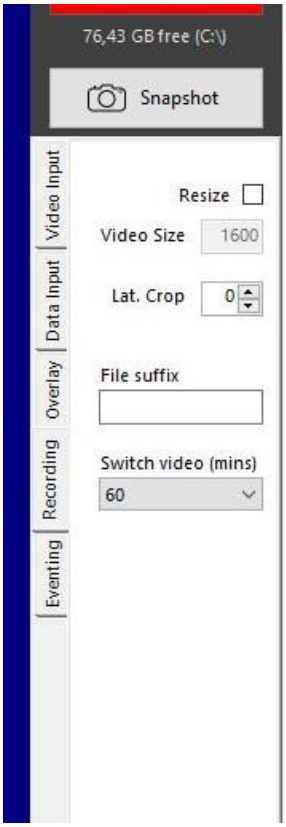
This tab is used to edit the Overlay on screen.
Edit toggles *Edit mode* on/off.
In Edit mode the fields are highlighted in green, they can be moved (magenta grip at top left) and resized (magenta grip at bottom right).
Font lets you choose the font and size used for the overlay.
New Field creates a new field.
Save Overlay saves the overlay page.
Load Overlay loads a previously saved overlay page.

The active overlay page is still automatically saved in the project folder and persists between sessions. The manual save feature is only needed if you need to use different overlay pages in different situations.



In EDIT mode, right-clicking on a field displays a context menu from which you can select Edit.
From the dialog that opens, you can choose the type of content (fixed text, data field, logo)
The data fields will only actually be available if a suitable sentence is received through the data ports. Otherwise the fields will be empty.

Recording



This tab is related to video recording.
If Resize is not selected, the resolution of the final video will be equal to that of the video window of the program (i.e. depending on the resolution of the monitor used).
By selecting Resize, you can specify the resolution of the final video (indicating the pixel size of the horizontal side).

With Lat. Crop (Lateral crop), you can crop the final video to the sides. This is typically necessary when a source is acquired in 4:3 format and you want to prevent the final video from showing lateral “black bars”.

The final video file will have the name taken from the recording start date (YYYYMMDD_HHMM.mp4).
You can prepend your own suffix to the file name by specifying it in the File Suffix box.

Through a drop-down box it is possible to choose the maximum duration of the individual files, between 5 and 60 minutes.

The files will be saved in the dive folder

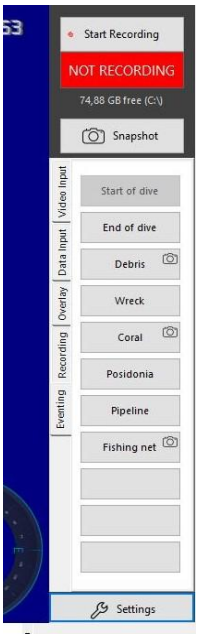
Snapshots

A *snapshot* captures the video window image and produces a jpeg file, saved in the dive folder. Together with the snapshot, an event is written in the divelog (snapshot taken) with the relative information of position, time, video file being recorded.

In any case, the jpeg file will be exif-tagged with dive comment, event description, location and heading information, if available.

For example, jpeg files can be loaded directly into GIS products such as GlobalMapper etc, as shown in the figure

Eventing



The last tab contains 15 fully configurable “EventButtons”, to flag **events** during the dive.
Each event is recorded on the divelog and also into the GPX file.

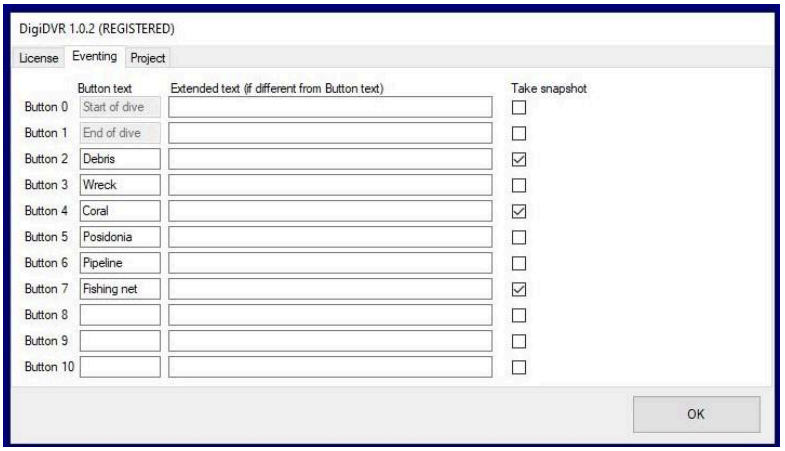
The dive begins by pressing the relative EventButton Start dive or by starting the recording with Start Recording

The dive ends when you press End dive

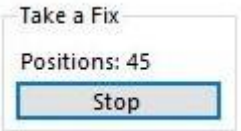
EventButtons showing the camera icon will also produce a snapshot.

When an EventButton is pressed, the associated event is not immediately written to the file, but presented in the buffer (in the toolbar below).
it is therefore possible to **edit the event** as desired, which will be written on the divelog when the next EventButton is pressed (or when the divelog is closed)

EventButtons can be configured via *Settings->Eventing*.
Note that you can also add to each EventButton the ability to take a snapshot.



It is possible to record a precise position using the button Take a fix, located below the EventButtons.



Click Start to start the acquisition. The number of positions acquired is displayed.
When you click Stop the recording ends and the averaged position is written to the divelog, and a waypoint is added to the GPX file.

Leader-Follower mode

The software has the ability to record only one video channel.
However, it is possible to launch multiple instances of DigiDVR in **leader-follower** mode. On the same PC or on two PCs connected over the network.
In this scenario one instance will be configured as *Leader*, and the others as *Followers*.
The user interaction will take place with the leader (start/stop, events, etc), and the followers will be synchronized with the leader.
This configuration allows you not to have to split the navigation inputs etc, and to obtain videos of the different channels with synchronized start and duration (the timing for splitting the videos will be set by the leader only)
Leader and follower can run on the same machine (provided you have the necessary computing power). Or they can be run on networked PCs.

If leader and follower run on the same PC, they must use two separate folders for their projects.

1) Start the Leader normally (verify *Follower ID* setting (must be 0) and enabled).

2) Start *DigiDVR_Follower* (you can find the link in the start menu). Select a folder for the Follower's project (not the same as the Leader). Choose an ID and click on Run.

Keyboard shortcut

Ctrl + *S*	Snapshot
Ctrl + *R*	Start & Stop Recording

PROBLEMI CONOSCIUTI

Il software compie fondamentalmente uno screen capture, per cui tutto ciò che accade a monitor durante la registrazione sarà registrato. (ovvero non si deve mai minimizzare la finestra del programma o utilizzare altri software). è necessario inoltre disattivare le modalità che spengono lo schermo etc.