

DQ Viewer

Video stream capturing tool user guide

Classification: Public, Author: RSA, 02.02.2021

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1. Introduction

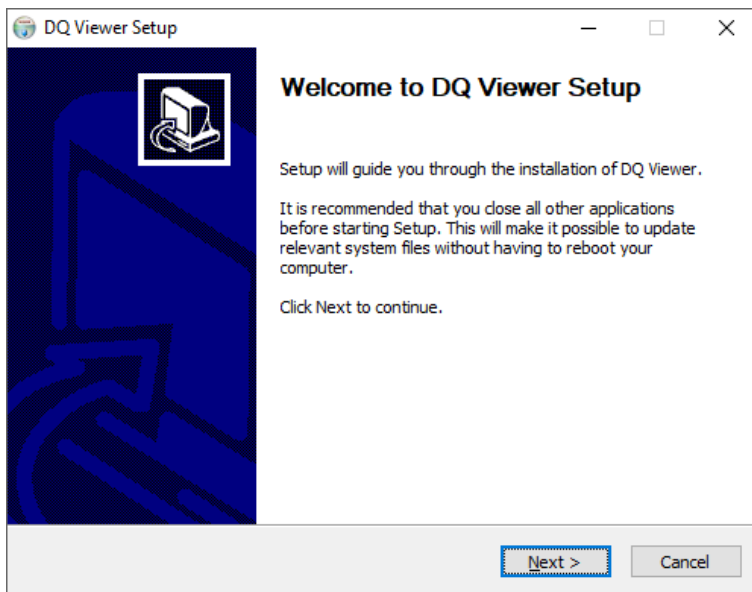
This document describes how to install and use DQ Viewer – a video stream capturing tool.

Prerequisites:

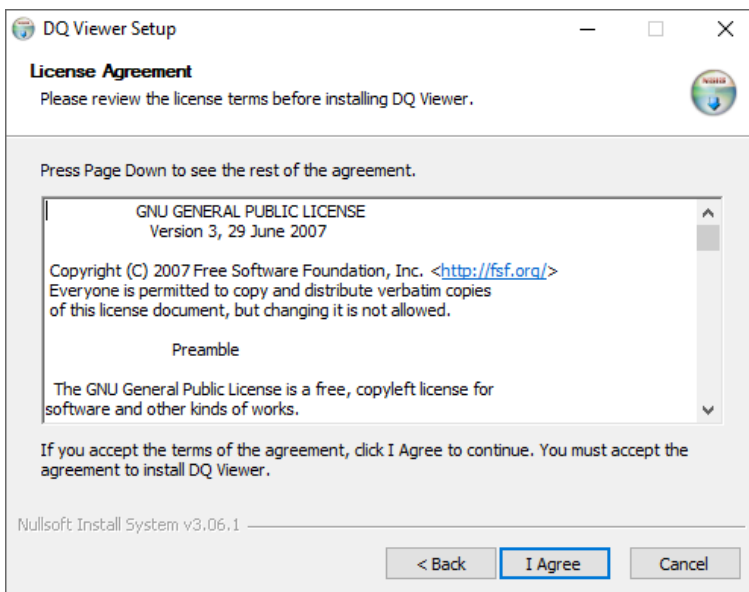
- Video stream source:
 - **DQ FG4 PCIe Card**
 - **DQ MGB**
 - **DQ FG4 Multibox One, DQ FG4 Multibox 5**
 - Any other local video stream device (camera interface)
 - Any other remote video stream device (network stream)
- **DQ FG4 PCIe Card Windows driver** (required only for DQ FG4 PCIe Card; installation is described in the document DQ FG4 PCIe WinDriver Installation Guide)
- Supported operating systems:
 - MS **Windows 11** – 64bit
 - MS **Windows 10** – 64bit
- **DQ Viewer** (available under GNU GPLv3 on <https://fg4.digiteqautomotive.com/>)
- **Approx. 165 MB of free space on hard disk**

2. Installation

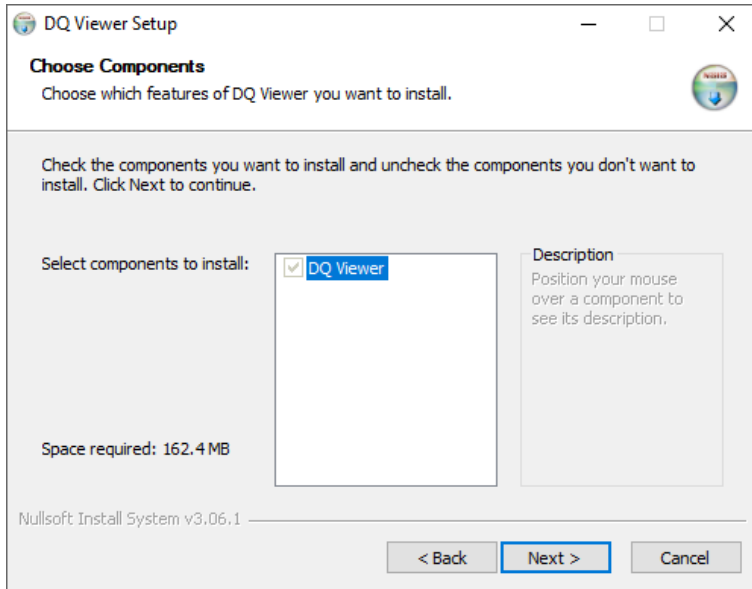
1. Download and unzip DQ Viewer installation package.
2. Run DQ Viewer installer. DQ Viewer uses standard NSIS installer.
3. The DQ Viewer Setup window opens, click **Next**.



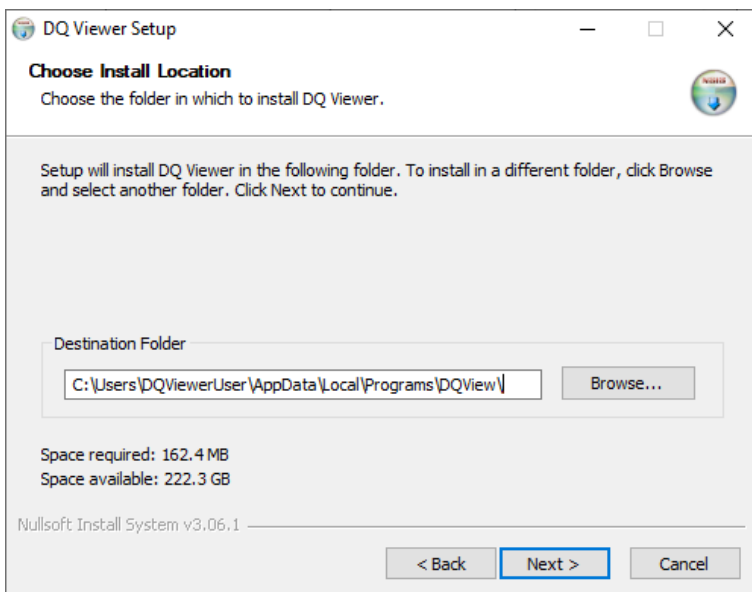
4. Read the license agreement and accept it by clicking **I Agree**.



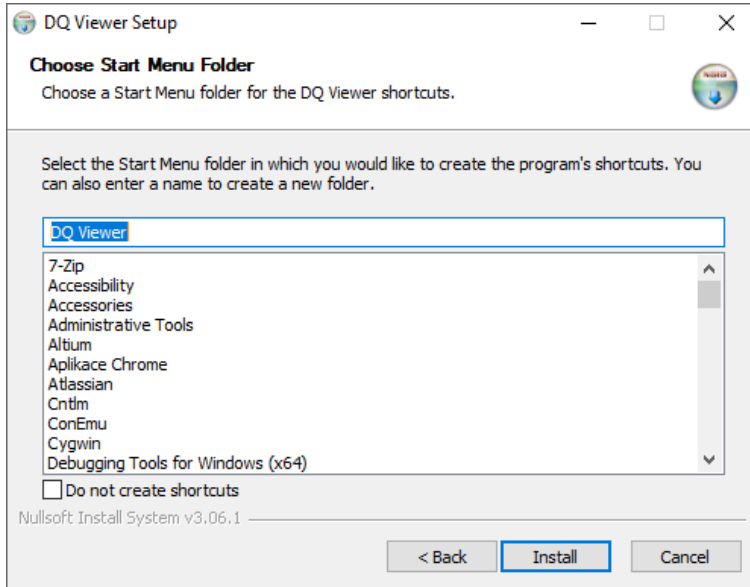
5. The “DQ Viewer” component is going to be installed. Click **Next**.



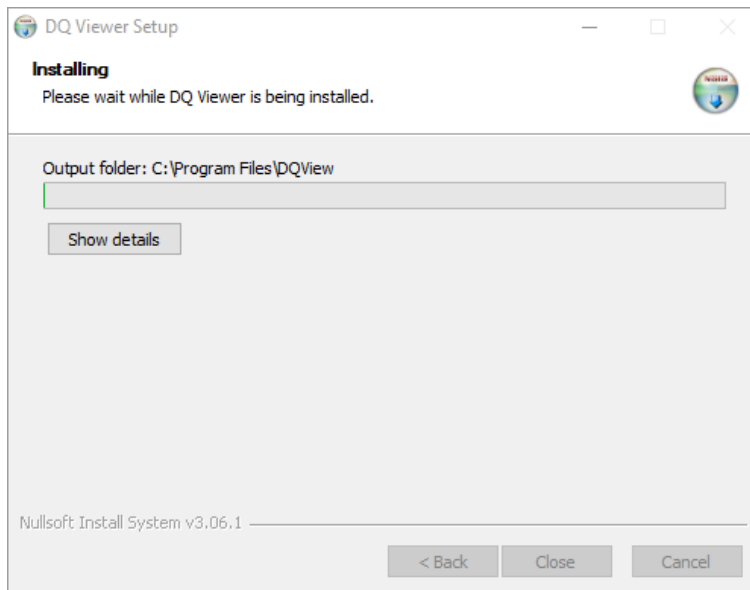
6. Choose install location. By default, the application is installed to user folder of the actual user. Installation does not require elevation of access rights. Click **Next**.



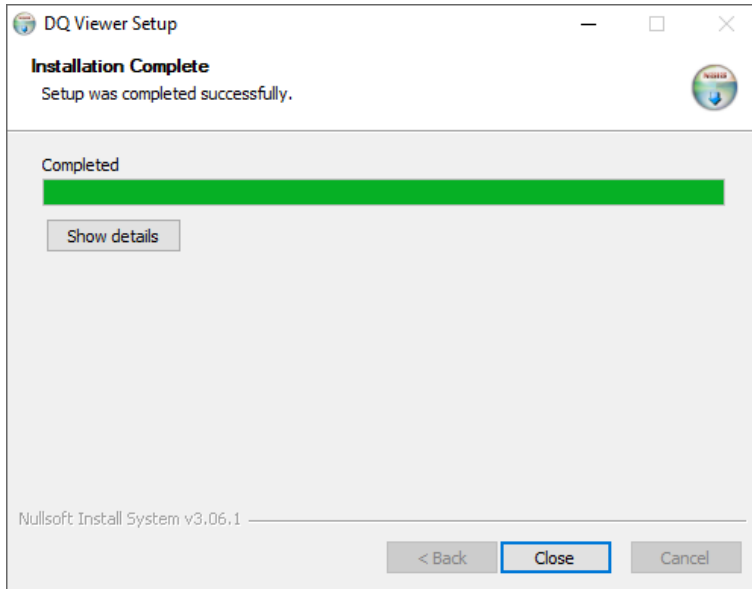
7. Choose a Start menu folder name. Default is **DQ Viewer**. You can also choose not to create Start menu record by checking **Do not create shortcuts** checkbox. Click on **Install**.



8. Installation procedure starts. Wait until completed.



9. Installation is completed. Click on **Close**.



10. To launch the program, open **Start → DQ Viewer → DQView**.

NOTE: You can launch the application from the Start menu only if you did **not** select **Do not create shortcuts** during installation.

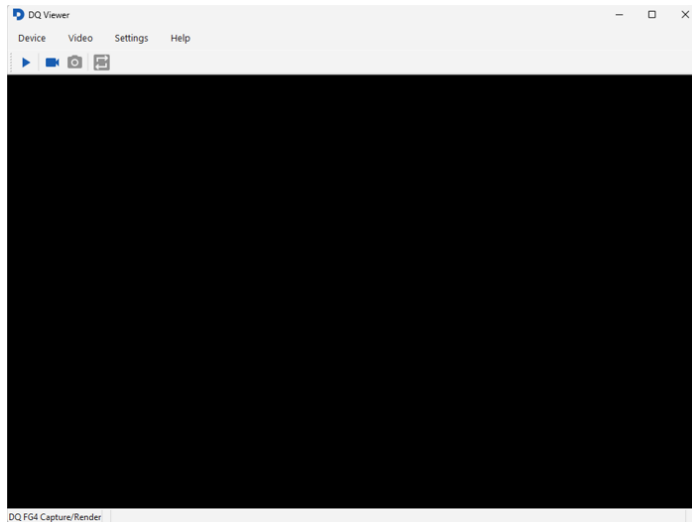
You can always launch the application by running **DQView.exe** in the installation folder.

3. User Interface

This section describes User Interface of DQ Viewer application.

3.1. Application Main Window

Application user interface consists of these sections:



- **Main menu**
- **Shortcut bar**
 - **Play** button – Starts / Stops playing of video stream
 - **Record Video** button - Starts / Stops recording of the video stream
 - **Capture Screenshot** button – Captures and saves screenshot from video stream
- **Video stream playing area**
 - Shows played video stream
- **Status bar**
 - Shows active video stream device, video stream resolution

3.2. Main Menu

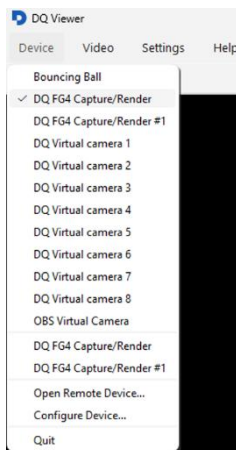
This chapter describes the structure of the main menu and the purpose of its items.



Main menu has the following structure:

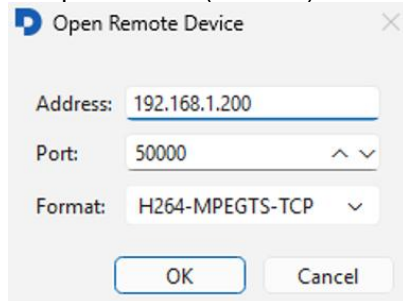
- **Device**
 - List of available Video Stream interfaces
 - Open Remote Device ...
 - Quit
- **Video**
 - Play
 - Record Video
 - Capture Screenshot
- **Settings**
 - Resize Video To Window
 - Resize Window to Video
 - Fullscreen Mode
 - Options...
- **Help**
 - Show Log File...
 - About DQ Viewer

3.2.1. Device Menu



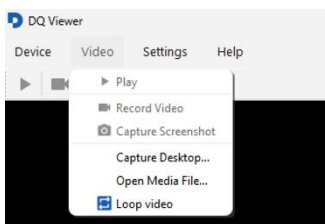
- **Device – List of available Video Stream interfaces**
 - To select a video stream source.
 - Displays all available video stream interfaces (local, remote).
 - Local interfaces are detected automatically.
 - Remote interfaces must be added manually, either:
 - Permanently: **Settings → Options... → Remote Devices**
 - Temporarily: **Device → Open Remote Device** (available only until the application is closed)

- **Device – Open Remote Device**
 - To open remote (network) video stream device



- Parameters:
 - **Address** - IP address of remote video streaming device
 - **Port** - Port of remote video streaming device
 - **Format** – Video compression and stream type:
 - **H264-MPEGTS-TCP** - MPEG Transport Stream with H.264 compression – TCP stream
 - **H264-RTP-UDP** - Real-time Transport Protocol with H.264 compression – UDP stream
 - **JPEG-MUX-TCP** - Multiplexed JPEG over TCP
 - **JPEG-RTP-UDP** - Real-time Transport Protocol with JPEG – UDP stream
- After confirmation, the remote device is added to the list of available video stream interfaces. This entry is temporary and is removed when the application is closed.
- **Device – Quit**
 - Exits the application

3.2.2. Video Menu

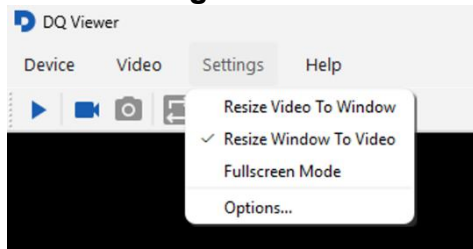


- **Video – Play**
 - Toggle Start / Stop play of selected video stream
 - Select video stream: **Device -> [List of available Video Stream interfaces]**
 - Video stream is played in the main application window
- **Video – Record Video**
 - Toggle Start / Stop recording of selected video stream
 - Select video stream: **Device -> [List of available Video Stream interfaces]**
 - The video streams are saved in user defined folder
 - Set folder to store recorder video:
 - **Settings -> Options -> Recording -> Video -> Directory**

- **Video – Capture Screenshot**
 - Create and save screenshot from selected video stream
 - Select video stream: **Device -> [List of available Video Stream interfaces]**
 - Screenshot are saved in user defined folder
 - Configure the output folder in: **Settings -> Options -> Recording -> Images -> Directory**
- **Video - Capture Desktop...**
 - Enables to capture and transmit a selected area of the user's desktop as a live video source. Stream is routed directly into the selected FG4 Card device output.
 - The user can define capture parameters including a specific region of the screen, resolution, and frame rate.
- **Video - Open Media File...**
 - Allows the user to load and transmit local video files or still images directly from the media player to the selected output of the FG4 Card device.
 - Following video formats are supported: avi, mkv, mp4, mpeg, ts, wmv, mov.
 - Following picture formats are supported: jpg, jpeg, png.
- **Video - Loop video**
 - When enabled, the selected video or image sequence is automatically restarted once playback reaches the end.

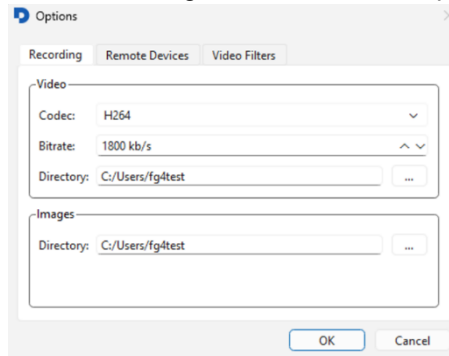
Note: (Context-aware menu options) - Menu options are enabled or disabled based on the capabilities of the currently selected device.

3.2.3. Settings Menu



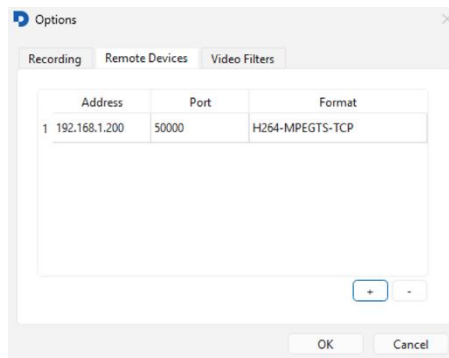
- **Settings – Resize Video To Window**
 - Video is resized according to application window size
 - Video may be deformed
- **Settings – Resize Window To Video**
 - Application window is resized according to real video size
 - Video size preserved
- **Settings – Full screen Mode**
 - Application is stretched to full screen mode and video resized according to screen resolution

- **Settings – Options**
 - **Settings – Options - Recording**
 - Video recording and screenshots capturing settings



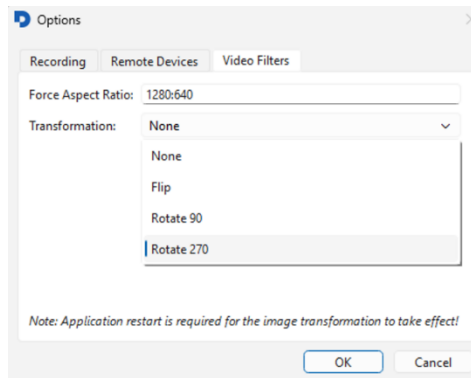
- **Video** section
 - **Codec** – codec of recorded video:
 - H264 compression
 - MPEG2 compression
 - Bitrate – bitrate of recorded video
 - Directory – path to store recorded videos
- **Images** section
 - Directory – path to store screenshots

- **Settings – Options - Remote Devices**
 - Management of remote video stream devices
 - Settings are persistent



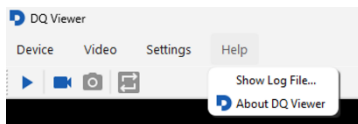
- Add the new device by clicking on + button
- **Add Remote Device** dialog appears
 - **Address** - IP address of remote video streaming device
 - **Port** - Port of remote video streaming device
 - **Format** – Video compression and stream type
 - **H264-MPEGTS-TCP** - MPEG Transport Stream with H.264 compression – TCP stream
 - **H264-RTP-UDP** - Real-time Transport Protocol with H.264 compression – UDP stream
 - **JPEG-MUX-TCP** - Multiplexed JPEG over TCP
 - **JPEG-RTP-UDP** - Real-time Transport Protocol of JPEG – UDP stream

- Remove the unused device by clicking on – button.
- **Settings – Options - Video Filters**
 - Video processing settings

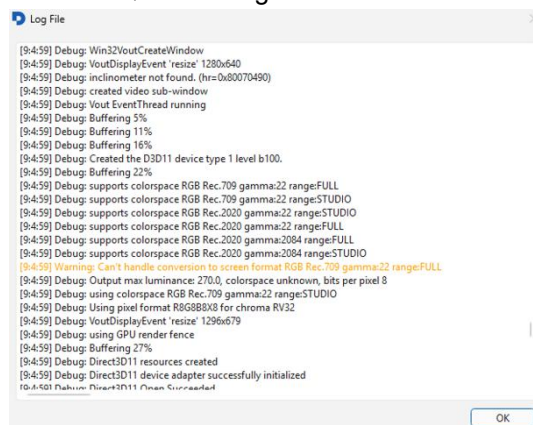


- **Force Aspect Ratio** – Enforces a custom aspect ratio (defined as Width : Height)
- **Transformation**
 - **None** – default settings (without change).
 - **Flip** - Flips image vertically.
 - **Rotate 90** – Rotate video stream by 90°
 - **Rotate 270** – Rotate video stream by 270°

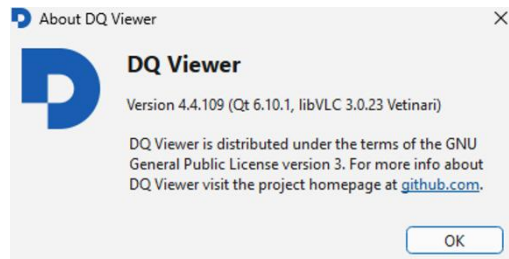
3.2.4. Menu Help



- **Help → Show Log File...**
- Shows DQ Viewer log file



- **Help → About DQ Viewer**
 - Shows information about application and application version



4. Local Video Stream Devices

This chapter describes in steps, how to configure video stream devices into DQ Viewer app.

NOTE: If you do not see an expected local device in the list, it is either not present in the system, or it is not operational (e.g. missing device driver). The devices are not reloaded during the program run, so if you add a camera after the program has started, you have to restart the program to list the device.

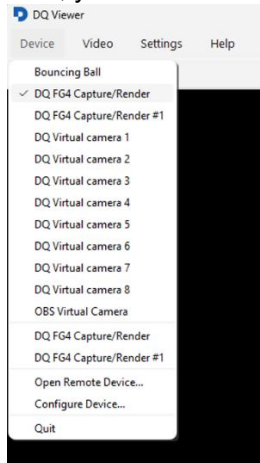
4.1. Configuring local device

You can find your local devices (any direct show device) in the **Device** menu.

For example, one FG4 PCIe Card with FPD Link III module will be represented by four entries.

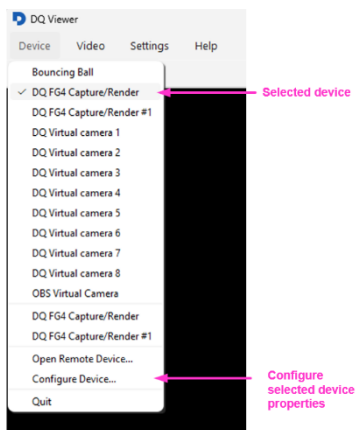
Each entry (**DQ FG4 Capture/Render**) represents one input (camera) or output (transmitter).

First, you need to identify and configure each input and output.



4.1.1 Recognizing Inputs and Outputs

1. In the **Device** menu select entry you want to identify or configure.
FG4 Cards, inputs and outputs are represented by **DQ FG4 Capture / Render** entries.
2. In the same Device menu, select **Configure device**.



- In newly opened **status** window, you can see additional information about selected device (input or output): module type, firmware type, serial number, video signal properties.
 - For the FPD-Link III module, the input and output IDs have the following meaning:
 - **Input ID: 0** – IN 1 (as marked on the hardware)
 - **Input ID: 1** – IN 2 (as marked on the hardware)
 - **Output ID: 2** – OUT 1 (as marked on the hardware)
 - **Output ID: 3** – OUT 2 (as marked on the hardware)

Fig 1. FG4 PCIe IN1 (Input ID:0) Input Property page – Status and Configuration

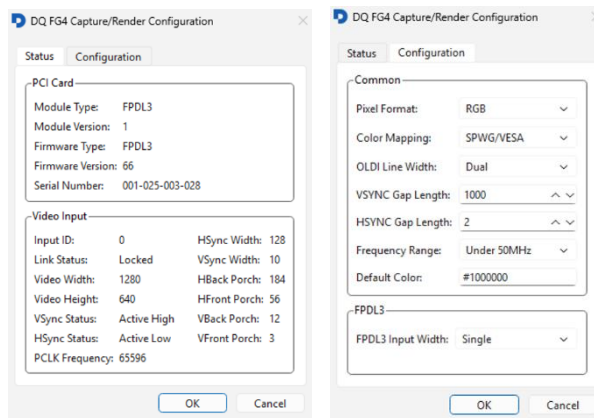
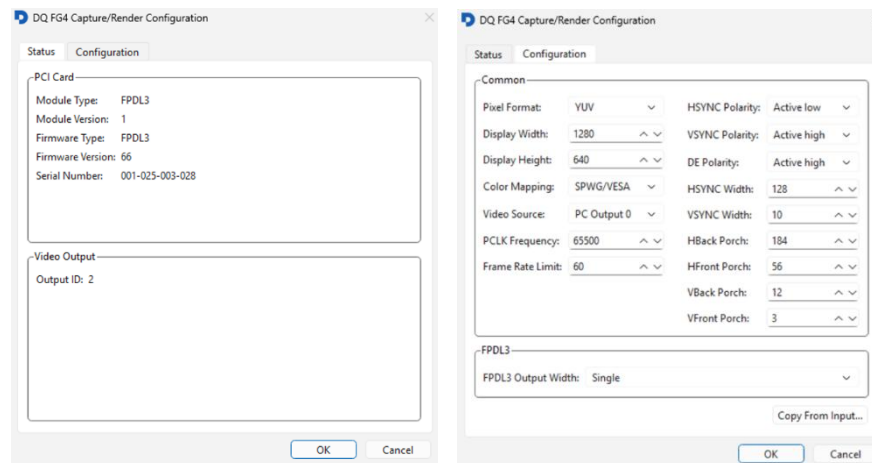
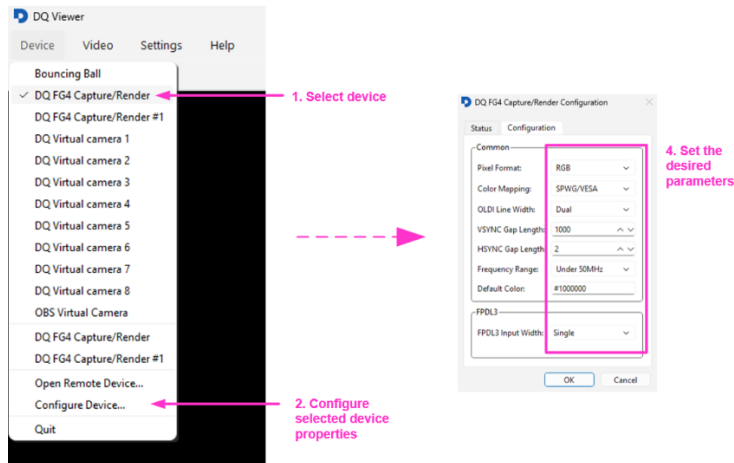


Fig 2. FG4 PCIe OUT1 (Output ID:2) Ouput Property page - Status and Configuration



4.1.2 Configuration of inputs and outputs

1. In the **Device** menu, select the entry (input or output) that you want to configure (DQ FG4 Capture/Render)



2. In the same **Device** menu, select **Configure** device.
3. The **Status** (Property page) window appears - switch to **configuration** tab.
4. Set desired values – The options available depends on used video interface. The required parameters must be adjusted according to the signal source.

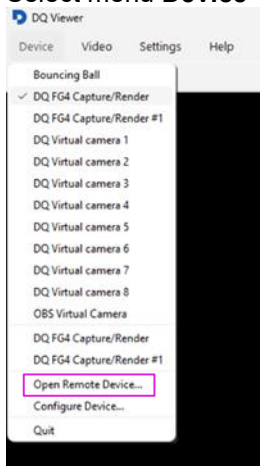
NOTE: DQ Viewer app do not allow changing device input/output or adjusting values of properties on another input/output during stream playback. You can evade it by opening up another instance of DQ Viewer in order to improve your experience with managing property values.

5. Adding Remote Video Stream Devices

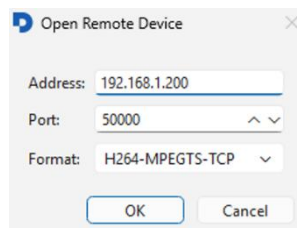
This chapter describes in steps, how to add remote video stream devices into DQ Viewer application. It is possible to add devices either temporary (until application is closed) or permanently.

5.1. Adding a Temporary Remote Device

1. Open DQ Viewer application.
2. Select menu **Device** → **Open Remote Device...**

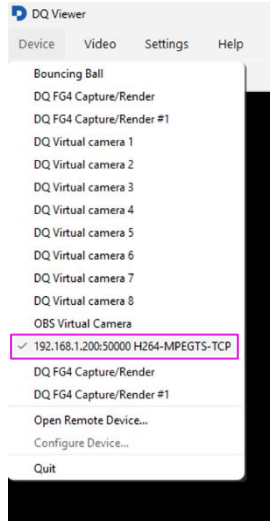


3. The **Open Remote Device** dialog appears.



4. Enter the IP address and the port of the remote device.
5. Select video stream format and compression:
 - **H264-MPEGTS-TCP** – MPEG Transport Stream in H.264 compression – TCP stream
 - **H264-RTP-UDP** – Real-time Transport Protocol in H.264 compression – UDP stream
 - **JPEG-MUX-TCP** – multiplexed JPEG over TCP
 - **JPEG-RTP-UDP** – Real-time Transport Protocol of JPEG – UDP stream
6. Click **OK** button.

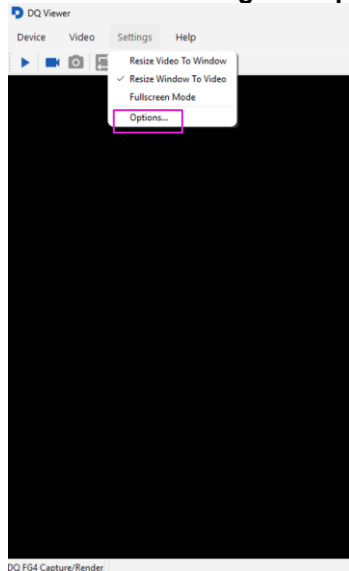
7. Remote device appears in the list **Device** -> [list of available video stream interfaces]. You can open the device by selecting it from the list.



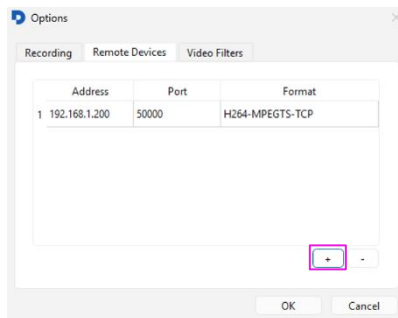
8. Remote device remains in the list only until DQ viewer application is closed.

5.2. Add remote device permanently

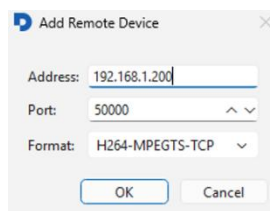
1. Open DQ Viewer Application.
2. Select menu **Settings** -> **Options...**



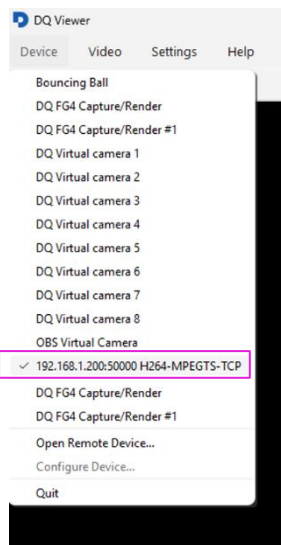
- Options dialog appears. Switch to **Remote Devices** and click on **+** to add new device.



- Add Remote Device** dialog appears.



- Enter the IP address and the port of the remote device.
- Select format of video stream and compression:
 - H264-MPEGTS-TCP** – MPEG Transport Stream in H.264 compression – TCP stream
 - H264-RTP-UDP** – Real-time Transport Protocol in H.264 compression – UDP stream
 - JPEG-MUX-TCP** – Mux of JPEG – TCP stream
 - JPEG-RTP-UDP** – Real-time Transport Protocol of JPEG – UDP stream
- Click **OK** to confirm settings in **Add Remote Device** dialog window.
- Click **OK** to confirm settings in **Options** dialog.
- The remote device now appears in **Device** -> **[list of available video stream interfaces]**. You can open the device by selecting it.



- The remote device remains in the list permanently, even after the application is closed and reopened.

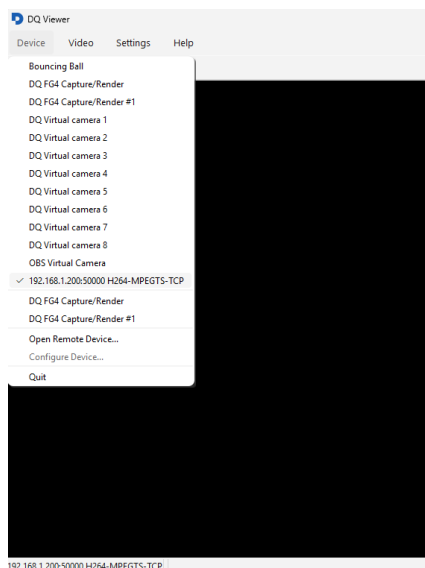
6. Opening and Playing Video Stream

This chapter describes how to play a video stream in the DQ Viewer application.

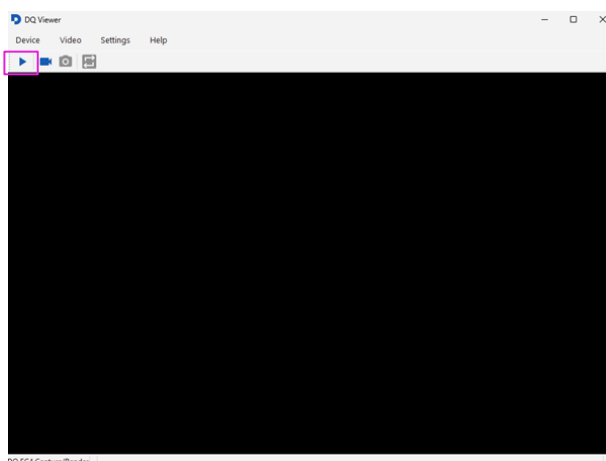
You can play a video stream from either a local device or a remote device. Local devices are detected automatically; remote devices must be added manually (see Chapter 5 – Adding Remote Video Stream Devices).

Note: If you do not see an expected local device in the list, it is either not present in the system, or it is not operational (e.g. missing device driver). The devices are not reloaded during the program run, so if you add a camera after the program has started, you have to restart the program to list the device.

1. Open DQ Viewer Application.
2. Select menu **Device – List of available Video Stream interfaces**.
3. Choose listed local or remote device.

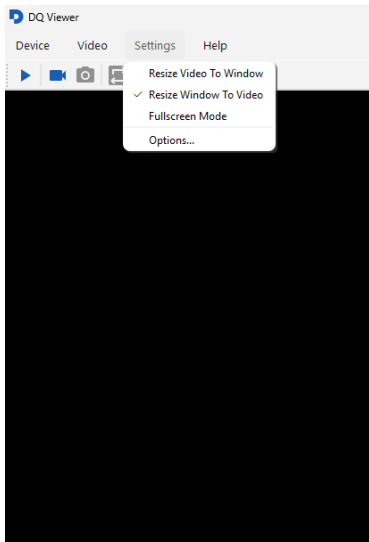


4. Start / Stop video playback by clicking on the **Play** button or selecting menu **Video – Play**.

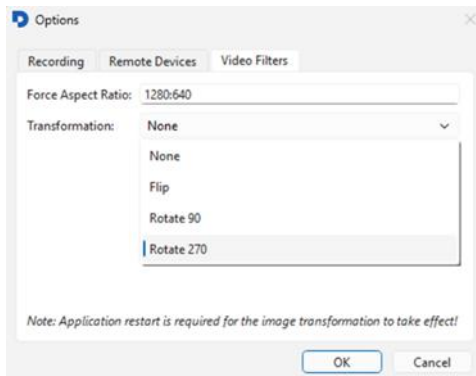


5. It is possible to modify the video by several settings. In the menu **Settings** choose:

- **Resize Video To Window** – Video is resized to actual size of application window (video resolution deformed)
- **Resize Window To Video** – Application window resizes according to resolution of video (video resolution preserved)
- **Fullscreen Mode** – Video is played on full screen and resized according to display resolution



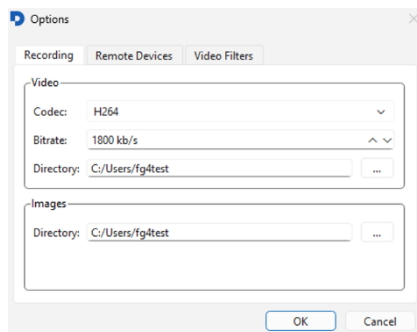
6. In case the horizontal flip of the video is needed, select menu **Settings** → **Options...** → **Video Filters** → **Transformation**. Settings are taken into effect after application is restarted.



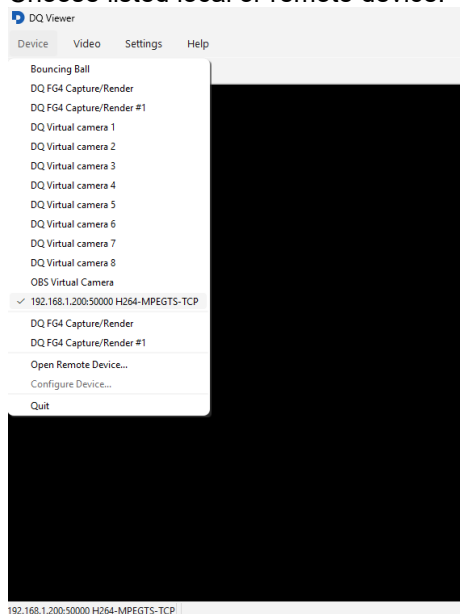
7. Record Video Stream

This chapter describes in steps, how to record a video stream in DQ Viewer application. It is possible to record a video stream either from local device or from the remote device. Local devices are detected automatically, remote devices has to be added manually (see *chapter 5 - Adding Remote Video Stream Devices*).

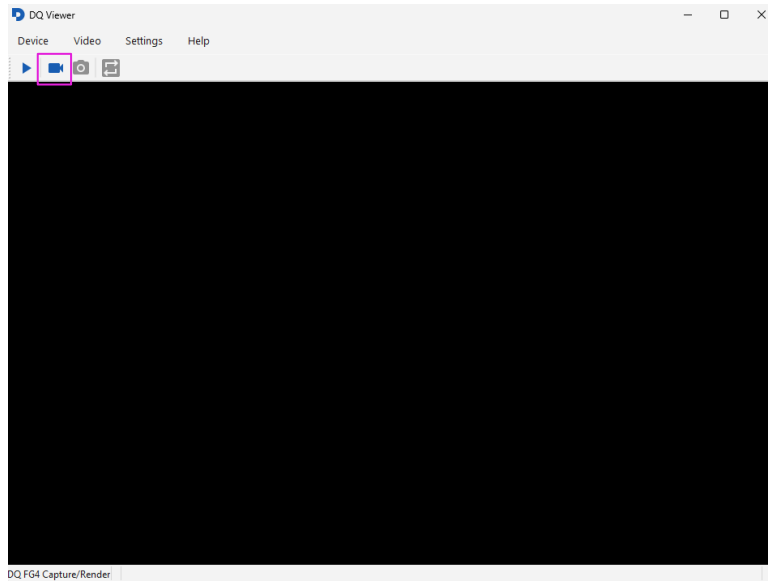
1. Open DQ Viewer Application.
2. Select a folder for storing recorded video streams. If you already set the folder, continue directly with step 8.
3. Select menu **Settings** → **Options ...** → **Recording** tab.



4. In the section **Video**, choose **Codec** (H.264 or MPEG-2).
5. In the section **Video**, enter the desired **Bitrate** for the recorded video stream.
6. In the section **Video**, select the **Directory**, where the recorded video streams will be stored.
7. Click OK to confirm settings.
8. Select menu **Device** → **[List of available Video Stream interfaces]**.
9. Choose listed local or remote device.



10. Start or stop recording by clicking Record Video (Video Camera) button, or by selecting **Video → Record Video**.

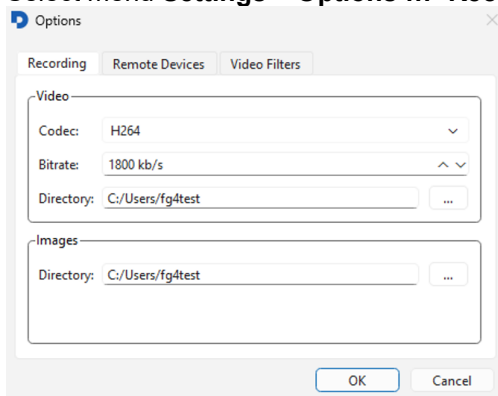


11. Recorded video files are stored in the folder defined under **Settings → Options ...-> Recording → Video → Directory**.

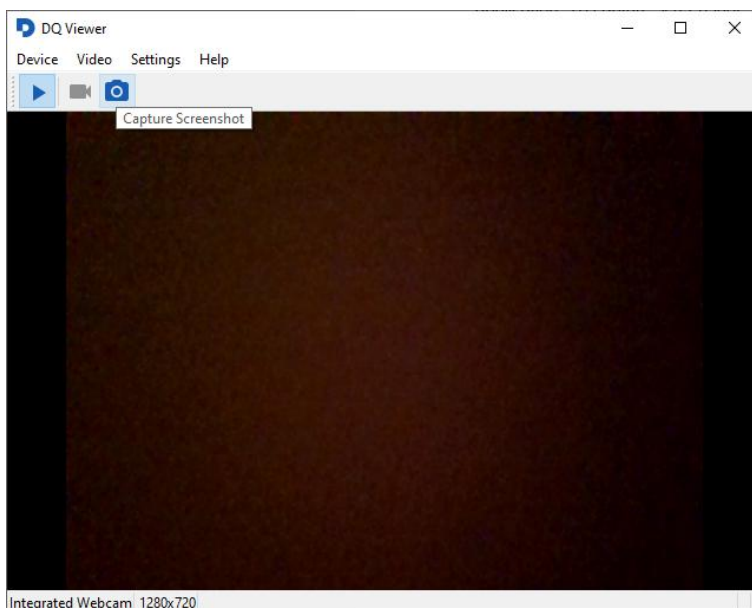
8. Capture screenshot

This chapter describes in steps, how to capture a screenshot from the video stream in DQ Viewer application. To capture a screenshot, you need firstly to open and play a video stream (see *chapter 6 - Opening and Playing Video Stream*). Screenshots are stored in PNG format.

1. Select a folder for storing screenshots. If you already set the folder, continue directly with step 8.
2. Select menu **Settings – Options ...- Recording** tab.



3. In the **Images** section, select the **Directory** where screenshots will be stored.
4. Click OK button.
5. Open remote or local device and play a video stream.
6. Capture a screenshot from video by clicking on the **Photo Camera** symbol or by selecting menu **Video – Capture Screenshot**.



7. Screenshots are stored in the folder defined under **Settings –> Options ...-> Recording –> Images-> Directory**.

Changes

Version	Date	Change description	Changed by	Approved by
1.00	02.02.2021	First release version	RSA	
1.01	27.10.2021	Added chapter 4. Local devices	MAJ	
1.02	26.11.2021	4.1.1 Updated Input ID / Output ID	MAJ	
1.03	23.4.2026	Document revision and update	MAJ	