

# DQ Viewer

## Video stream capturing tool user guide

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# 1. Introduction

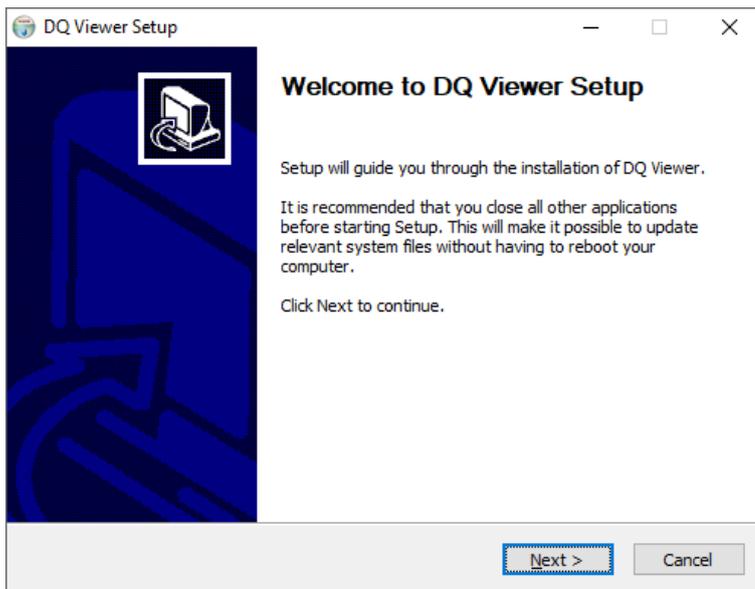
This document describes steps how to install and how to use DQ Viewer – a Video stream capturing tool.

Prerequisites:

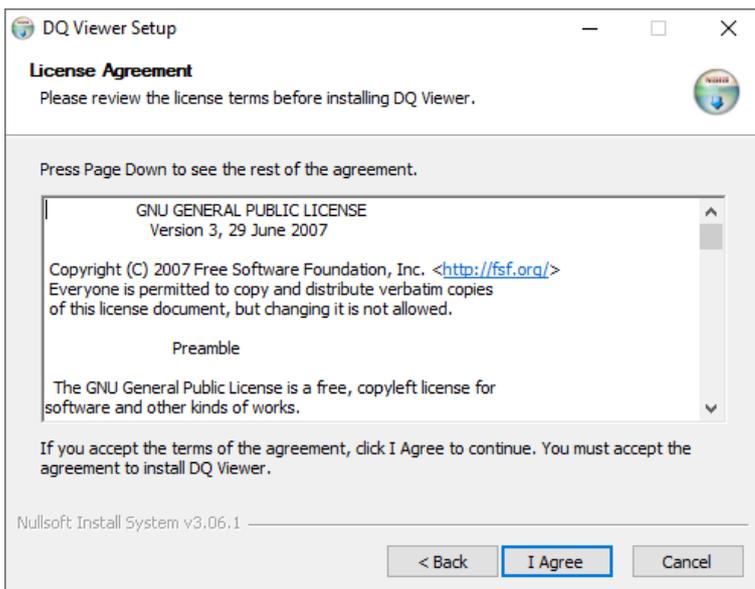
- Video stream source:
  - **DQ FG4 PCIe Card**
  - **DQ MGB**
  - Any other local video stream device – camera interface
  - Any other remote video stream device – network stream
- **DQ FG4 PCIe Card Windows Driver – for DQ FG4 PCIe Card only** (installation described in “DQ FG4 PCIe WinDriver Installation Guide” document)
- **MS Windows OS**, these versions are currently supported:
  - **MS Windows 10 – 64bit**
  - **MS Windows 10 – 32bit**
  - **MS Windows 8 – 64bit**
  - **MS Windows 8 – 32bit**
  - **MS Windows 7 – 64bit**
  - **MS Windows 7 – 32bit**
- **DQ Viewer** (available under GNU GPLv3 on <https://fg4.digiteqautomotive.com/>)
- **Approx. 165 MB of free space on hard disk**

## 2. Installation

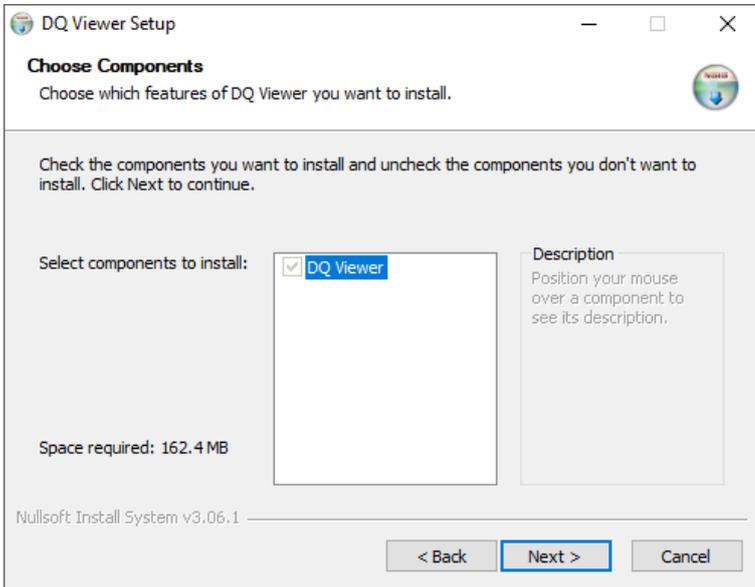
1. Download and unzip DQ Viewer.
2. Run DQ Viewer installer. DQ Viewer uses standard NSIS installer.
3. DQ Viewer Setup windows opens, click “Next”.



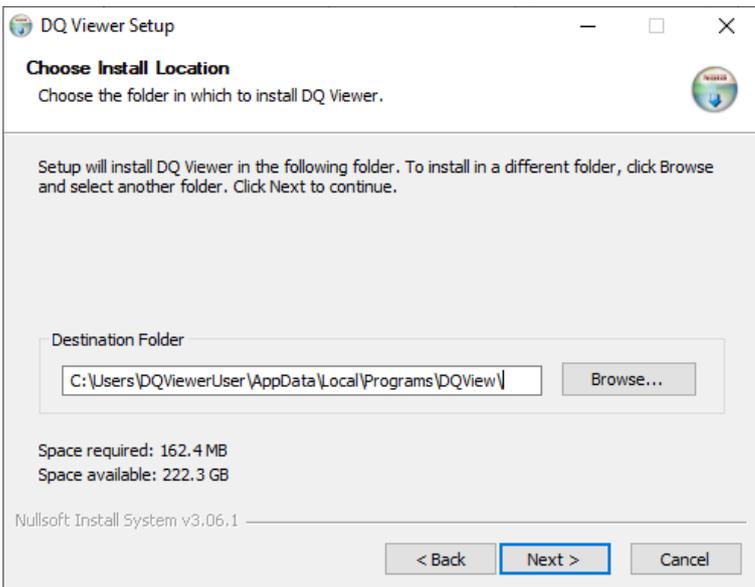
4. Agree with Licence agreement by clicking on “I Agree” button.



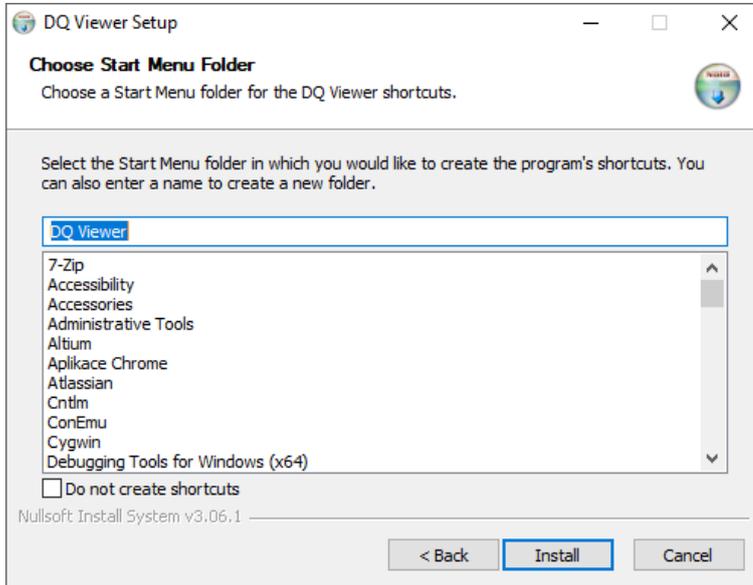
5. The “DQ Viewer” component is going to be installed. Click on “Next”.



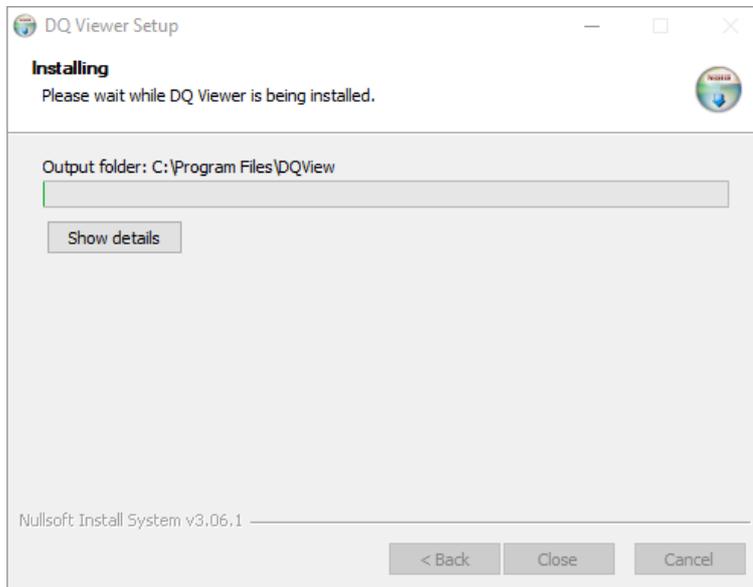
6. Choose install location. By default, the application is installed to user folder of the actual user. Installation does not require elevation of access rights. Click on “Next”.



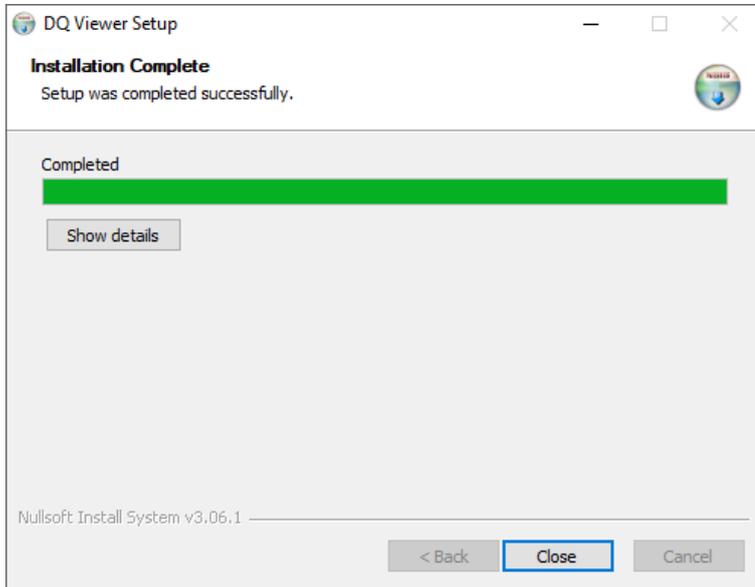
7. Choose a Start menu folder name. Default is “DQ Viewer”. You can also choose not to create Start menu record by checking “Do not create shortcuts” checkbox. Click on “Install”.



8. Installation procedure starts. Wait until completed.



- Installation is completed. Click on “Close”.



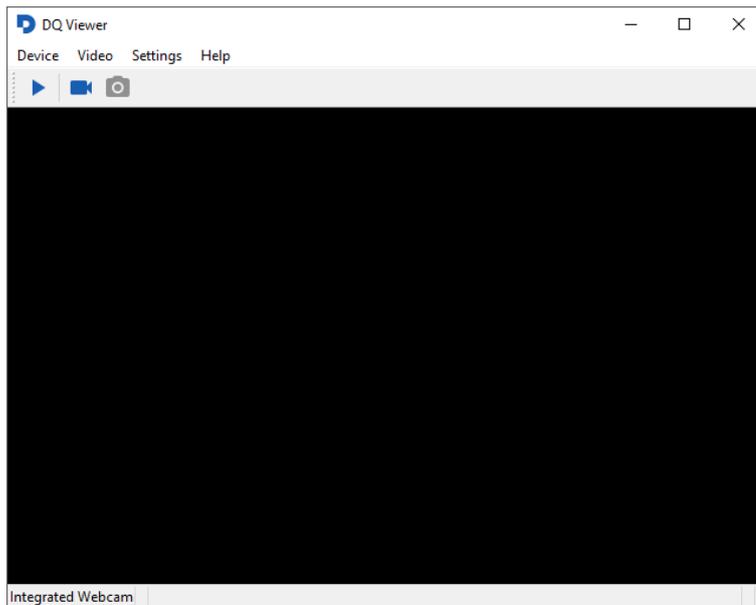
- To launch the program open Start – DQ Viewer – DQView.

**NOTE:** You can launch application via Start menu only if you did NOT checked the “Do not create shortcuts” during installation. You can also launch the application by locating “DQView.exe” file in 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 video
  - **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

## 3.2. Main Menu

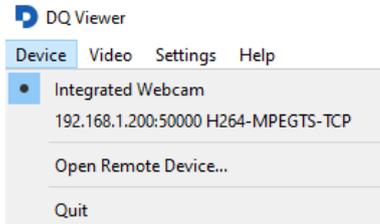
This chapter describes structure and items present in main menu and their meaning.

Device Video Settings Help

Main menu is has following structure:

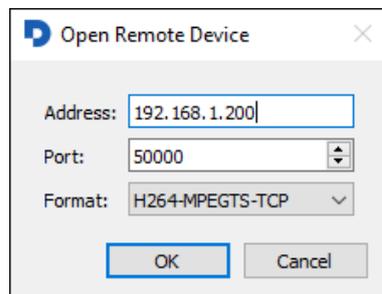
- **Device**
  - List of available Video Stream interfaces
  - Open Remote Device ...
  - Quit
- **Video**
  - Play
  - Record Video
  - Capture Screenshot
- **Settings**
  - Resize Video To Window
  - Resize Window to Video
  - Fullscreen Mode
  - Options...
- **Help**
  - Show Log File...
  - About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

### 3.2.1. Menu Device



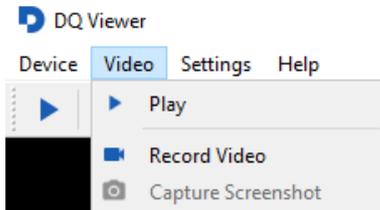
- **Device – List of available Video Stream interfaces**
    - To select a video stream source.
    - Displays all available video stream interfaces (local, remote).
    - Local interfaces are detected automatically.
    - Remote interfaces are added manually.
      - Menu Settings – Options... – Remote Devices (added permanently)
- OR
- Device – Open Remote Device (added temporary, does not persist after application is closed)

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



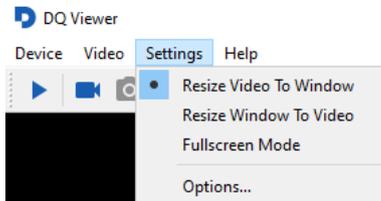
- Address: IP address of remote video streaming device
  - Port: Port of remote video streaming device
  - Format – Video compression and stream type
    - H264-MPEGTS-TCP
      - MPEG Transport Stream in H.264 compression – TCP stream
    - H264-RTP-UDP
      - Real-time Transport Protocol in H.264 compression – UDP stream
    - JPEG-MUX-TCP
      - Mux of JPEG – TCP stream
    - JPEG-RTP-UDP
      - Real-time Transport Protocol of JPEG – UDP stream
  - Remote device is added automatically to the List of available Video Stream interfaces (added temporary, does not persist after application is closed)
- **Device – Quit**
    - Exit the application

### 3.2.2. Menu Video

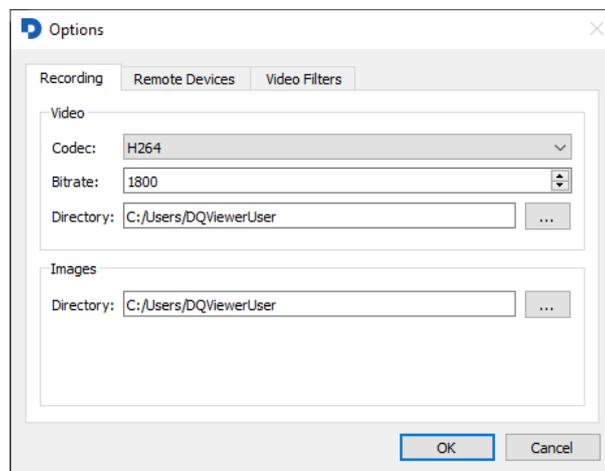


- **Video – Play**
  - Toggle Start / Stop play of selected video stream
    - Select video stream:
      - Device - List of available Video Stream interfaces
  - Video stream is played in the main application window
- **Video – Record Video**
  - Toggle Start / Stop recording of selected video stream
    - Select video stream: Device - List of available Video Stream interfaces
  - 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
    - Set folder to store recorder video:
      - Settings – Options – Recording – Images – Directory

### 3.2.3. Menu Settings

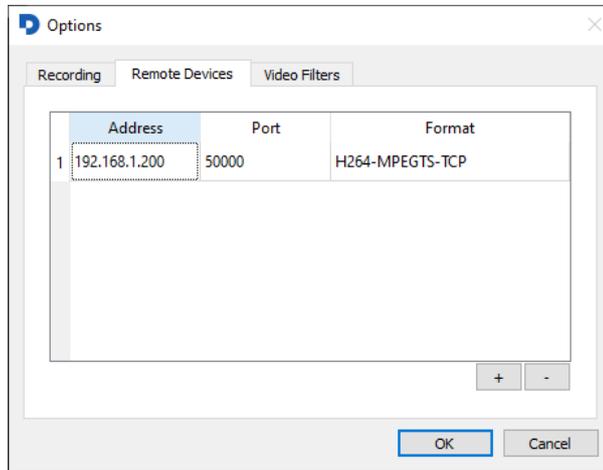


- **Settings – Resize Video To Window**
  - Video is resized according to application window size
    - Video may be deformed
- **Settings – Resize Window To Video**
  - Application window is resized according to real video size
    - Video size preserved
- **Settings – Full screen Mode**
  - Application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

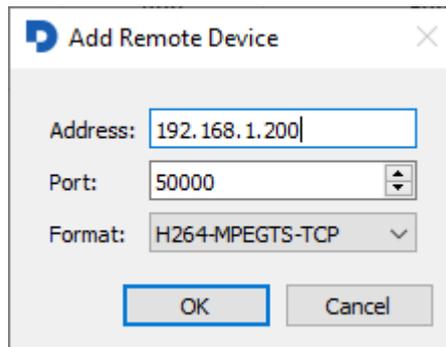


- **Video** section
  - **Codec** – codec of recorded video:
    - H264 compression
    - MPEG2 compression
  - Bitrate – bitrate of recorded video
  - Directory – path to store recorded videos
- **Images** section
  - Directory – path to store screenshots

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

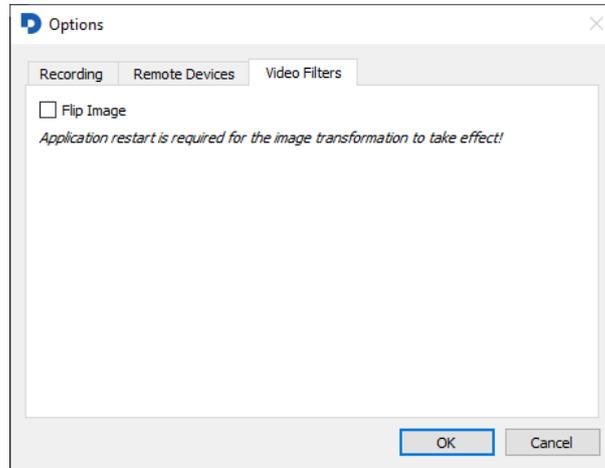


- Add the new device by clicking on “+”
- **Add Remote Device** dialog appears



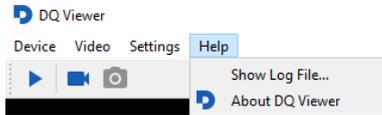
- Address: IP address of remote video streaming device
- Port: Port of remote video streaming device
- Format – Video compression and stream type
  - H264-MPEGTS-TCP
    - MPEG Transport Stream in H.264 compression – TCP stream
  - H264-RTP-UDP
    - Real-time Transport Protocol in H.264 compression – UDP stream
  - JPEG-MUX-TCP
    - Mux of JPEG – TCP stream
  - JPEG-RTP-UDP
    - Real-time Transport Protocol of JPEG – UDP stream
- Remove the unused device by clicking on “-”

- **Settings – Options - Video Filters**
  - Video processing settings

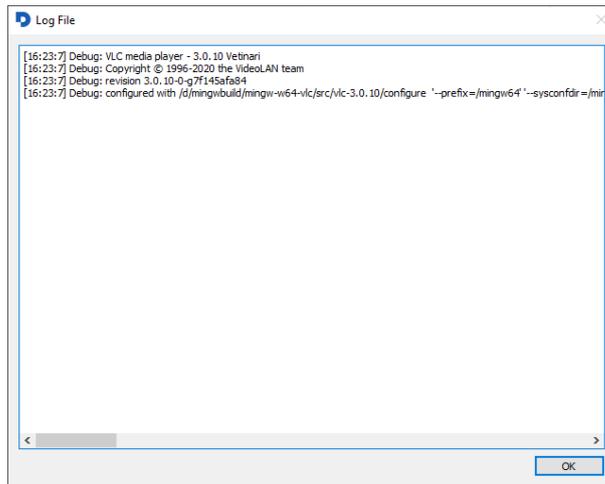


- **Flip Image** checkbox
  - Flips image vertically if checked
  - Application restart needed

### 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

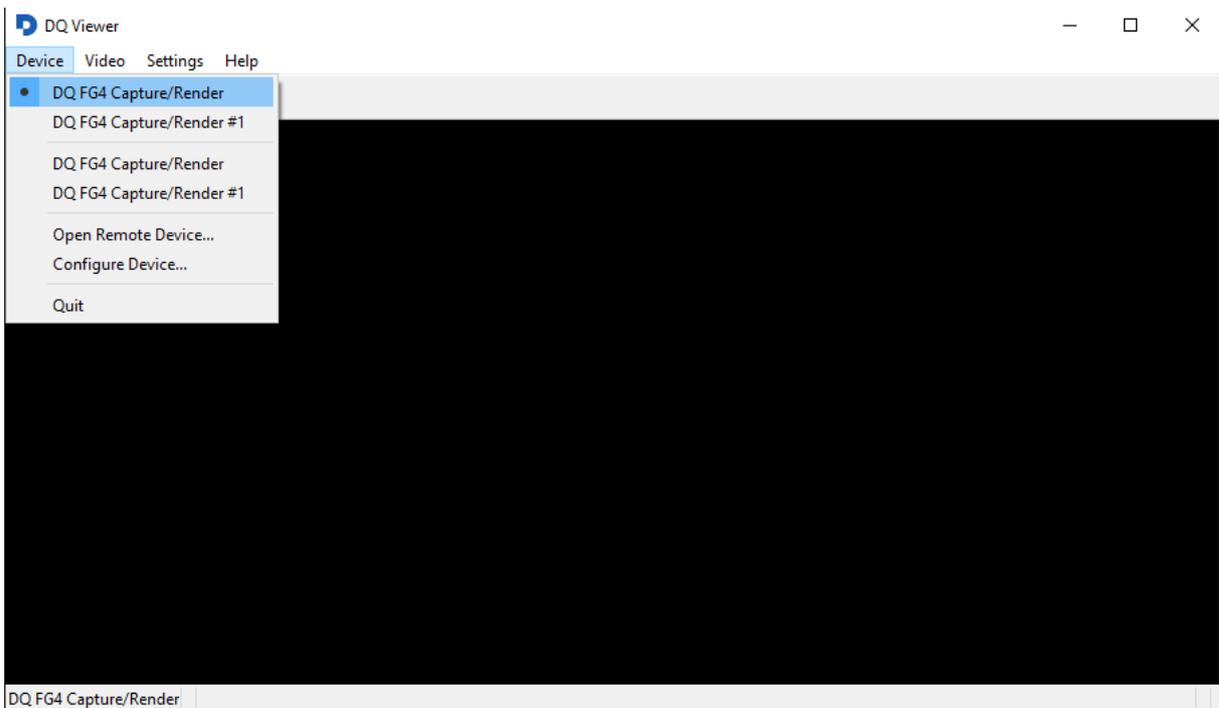
This chapter describes in steps, how to configure video stream devices into DQ Viewer app.

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

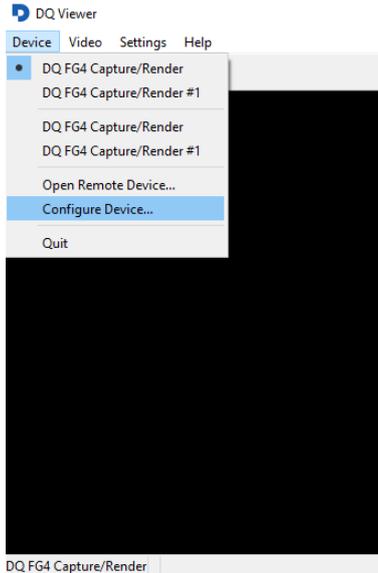
You can find your local devices (any direct show device) in the **Device tab**. For example one FG4 PCIe with FPD Link3 module will be represented by four records. Each record (DQ FG4 Capture/Render) represents one input (camera) or output.

Firstly, you have to recognize and configure each input and output.



### 4.1.1 Recognizing inputs/outputs

1. In section **Device** select record you want to recognize/set  
FG4 Card inputs and outputs are here represented by **DQ FG4 Capture/Render** records.
2. Then In same section select Configure device.



3. In newly opened window “**status**” you can see additional information about device (input/output): Module type, firmware type, serial number, video signal properties.
  - a. Meaning of input IDs (FPDL3 module):
    - i. Input ID: 0 - IN 1 (marked on the hardware)
    - ii. Input ID: 1 - IN 2 (marked on the hardware)
    - iii. Output ID: 2 - OUT1 (marked on the hardware)
    - iv. Output ID: 3 - OUT2 (marked on the hardware)

Fig 1. FG4 PCIe IN1 (Input ID:0)  
Input Property page

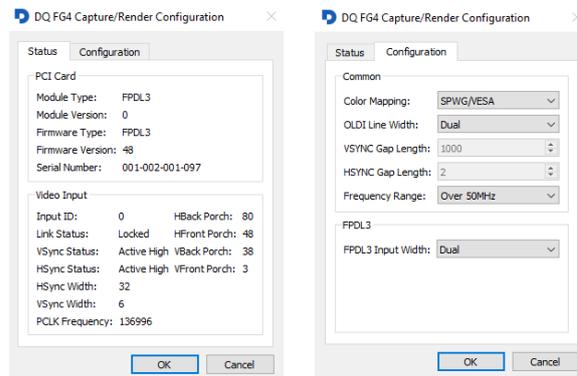
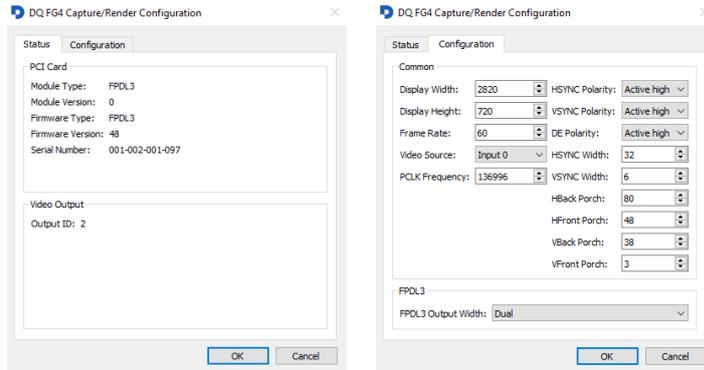


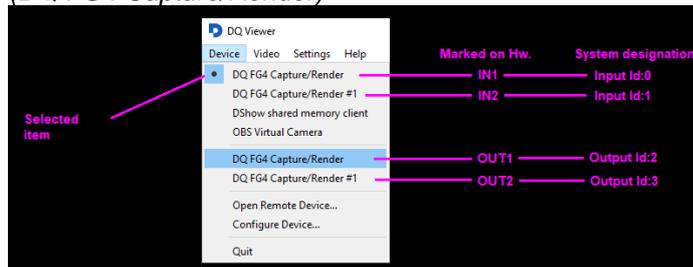
Fig 2. FG4 PCIe OUT1 (Output ID:2)  
Output Property page



## 4.1.2 Configuration of the inputs and outputs

### Configuration of the inputs and outputs

1. In section Device select record (input/output) you want to set (*DQ FG4 Capture/Render*)



2. Then In same section select **Configure** device.
3. **Status** (Property page window) appears - move to **configuration** tab.
4. Now you can set desired values – Values depends on used hardware (car units)

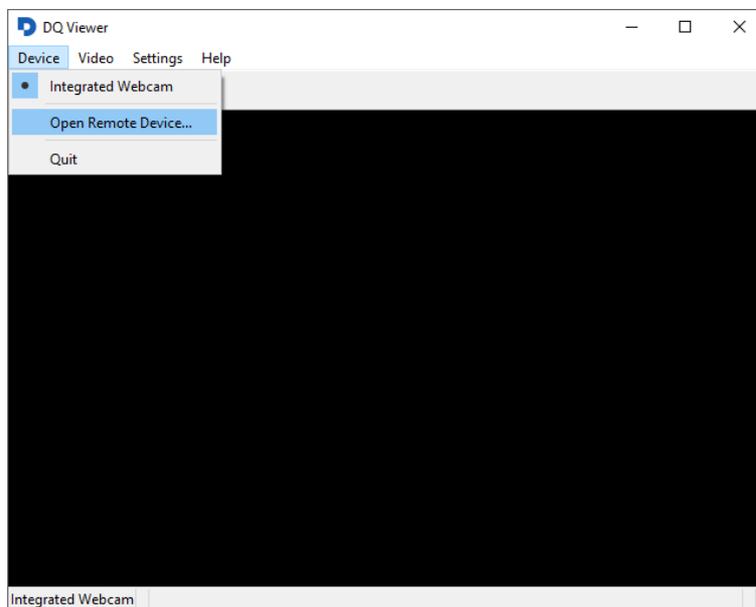
**NOTE:** DQ Viewer app do not allow changing device input/output or adjusting values of properties on another input/output during stream playback. You can evade it by opening up another instance of DQ Viewer in order to improve your experience with managing property values.

## 5. Add Remote Video Stream Devices

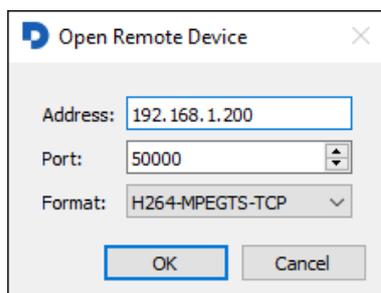
This chapter describes in steps, how to add remote video stream devices into DQ Viewer application. It is possible to add devices either temporary (until application is closed) or permanently.

### 5.1. Add remote device temporary

1. Open DQ Viewer Application.
2. Select menu Device – Open Remote Device...

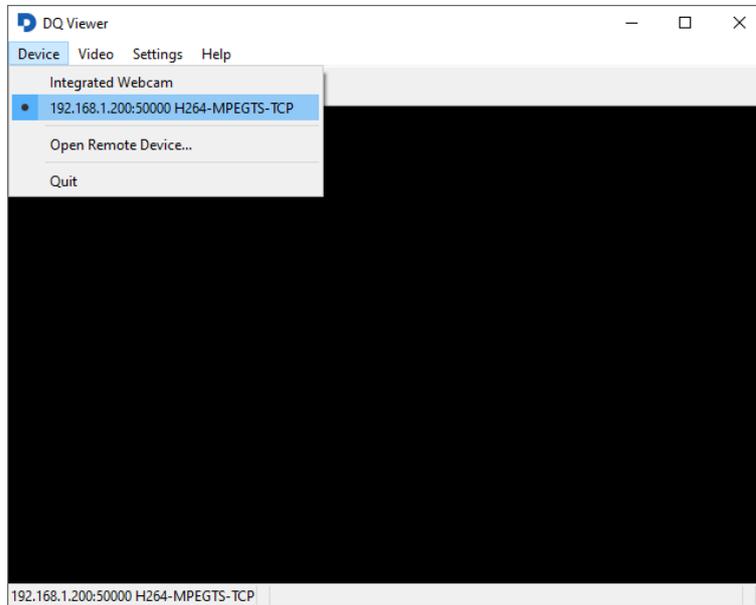


3. Open Remote Device dialog window appears.



4. Type in the IP address and the port of the remote device.
5. 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
6. Click OK.

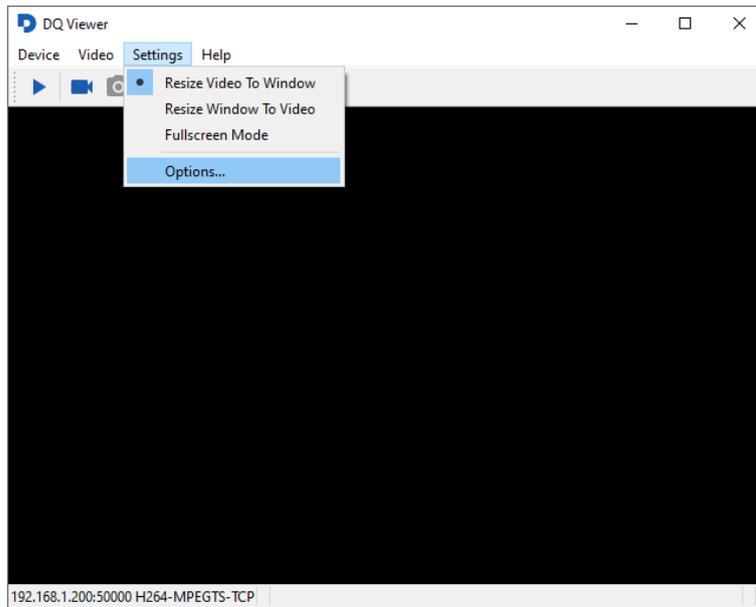
7. Remote device appears in menu Device - List of available Video Stream interfaces. You can open the device by selecting it.



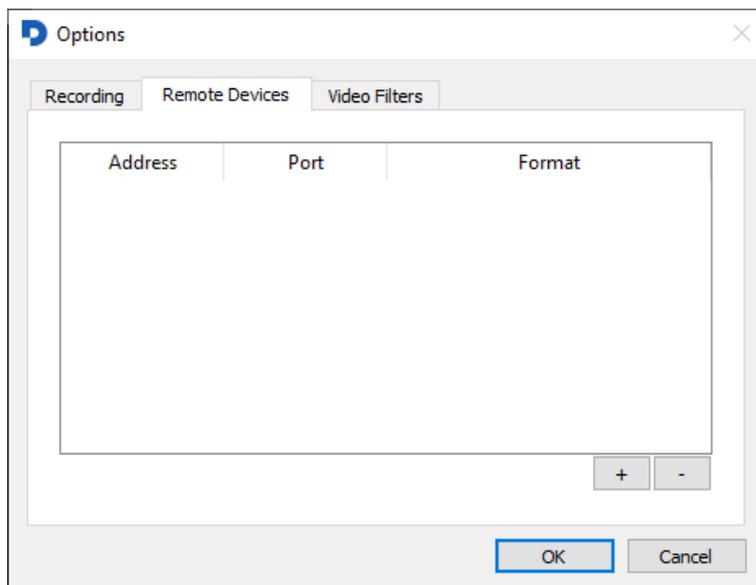
8. Remote device remains in the list until DQ viewer application is closed.

## 5.2. Add remote device permanently

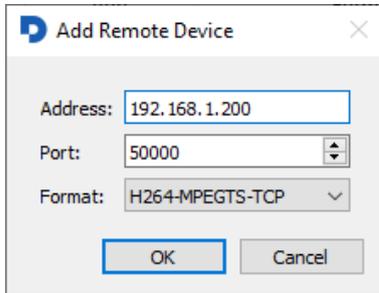
1. Open DQ Viewer Application.
2. Select menu Settings – Options...



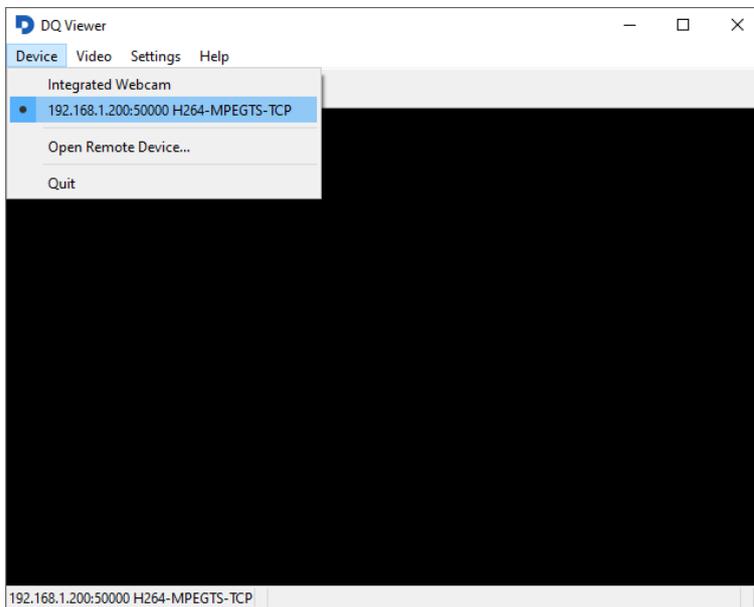
3. Options dialog appears. Switch to Remote Devices tab and click on + to add new device.



4. Add Remote Device dialog window appears.



5. Type in the IP address and the port of the remote device.
6. 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\
7. Click OK to confirm settings in Add Remote Device dialog window
8. Click OK to confirm settings in Options dialog window
9. Remote device appears in the menu Device - List of available Video Stream interfaces. You can open the device by selecting it.



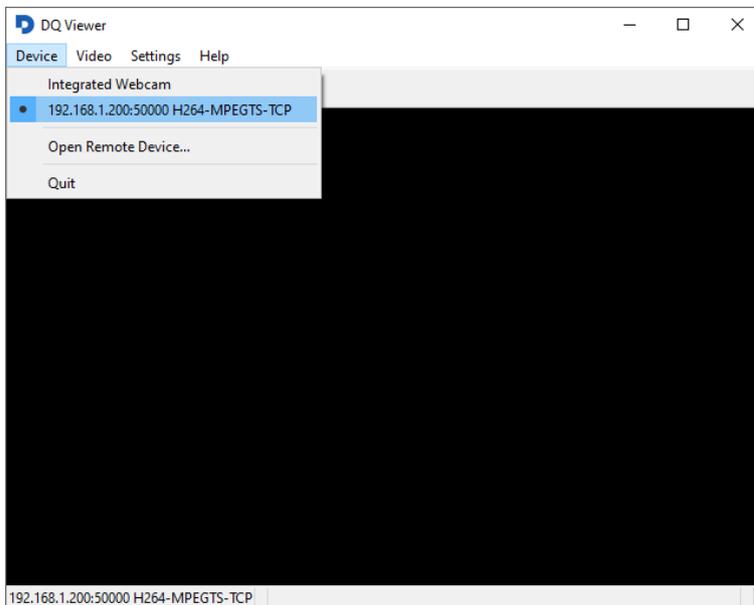
10. Remote device remains in the list permanently even after application is closed.

## 6. Open and Play Video Stream

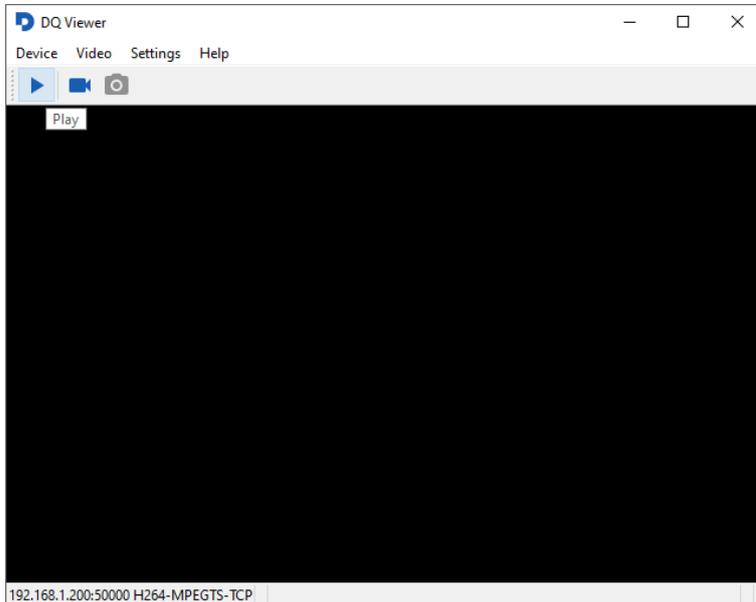
This chapter describes in steps, how to a play video stream in DQ Viewer application. It is possible to play a video stream either from local device or from the remote device. Local devices are detected automatically, remote devices has to be added manually (see chapter 5 - Add Remote Video Stream Devices).

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.

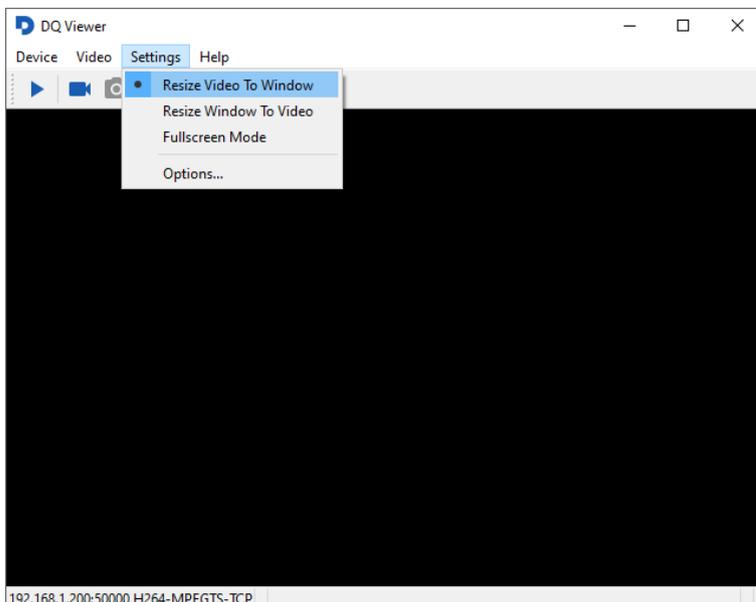
1. Open DQ Viewer Application.
2. Select menu **Device – List of available Video Stream interfaces**.
3. Choose listed local or remote device.



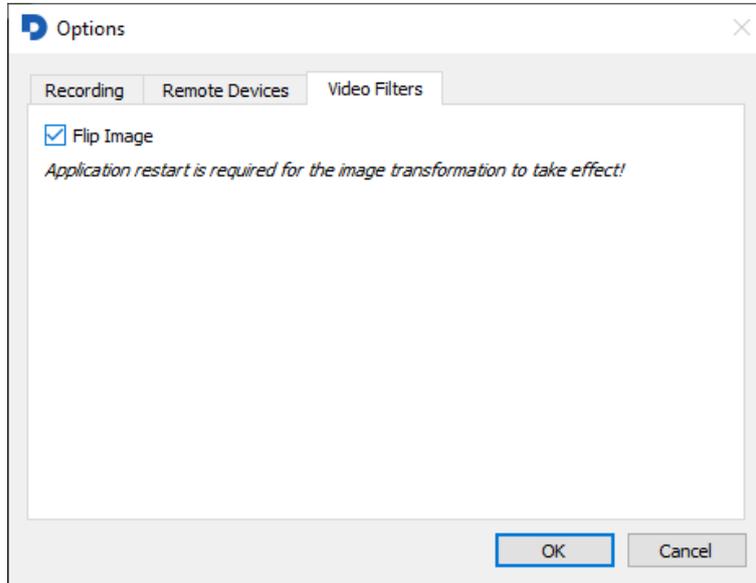
4. Start / Stop video playback by clicking on the **Play** symbol or selecting menu **Video – Play**.



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 is resized according to resolution of video (video resolution preserved)  
**Fullscreen Mode** – Video is played on full screen and resized according to display resolution



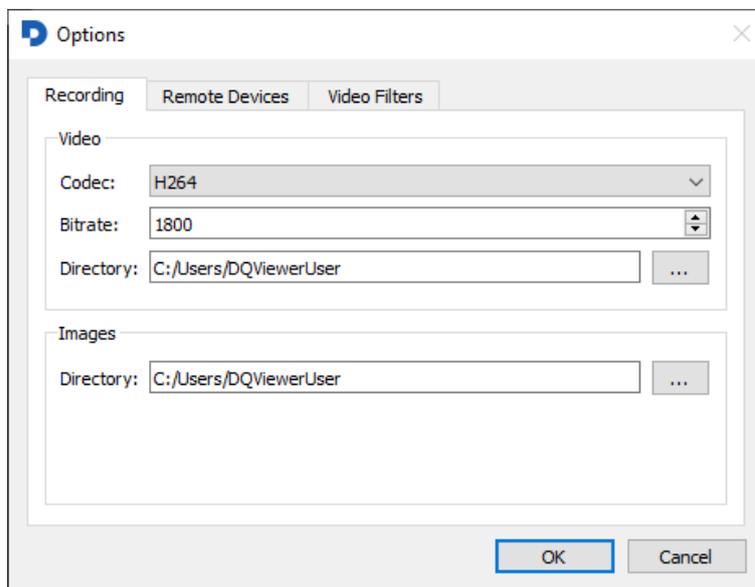
6. In case the horizontal flip of the video is needed, select menu **Settings – Options... - Video Filters** tab. Select **Flip Image** checkbox. Setting are taken into effect after application is restarted.



## 7. Record Video Stream

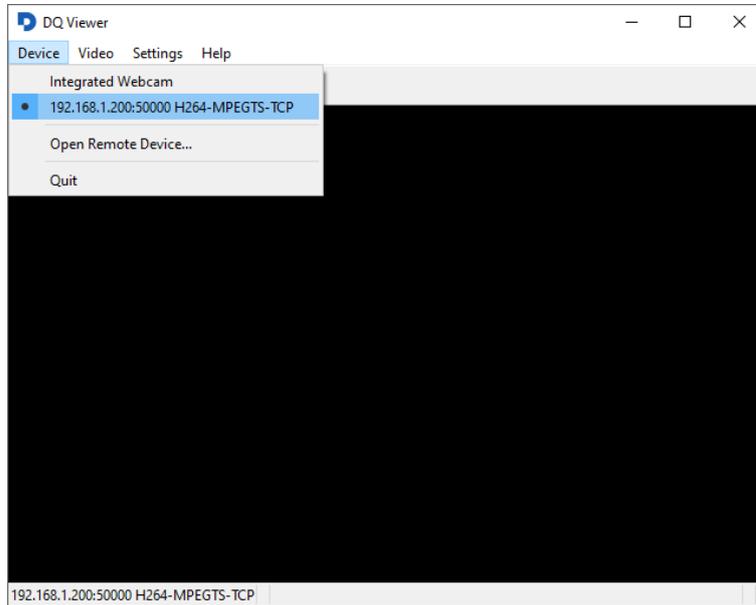
This chapter describes in steps, how to record a video stream in DQ Viewer application. It is possible to record a video stream either from local device or from the remote device. Local devices are detected automatically, remote devices has to be added manually (see chapter 5 - Add Remote Video Stream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

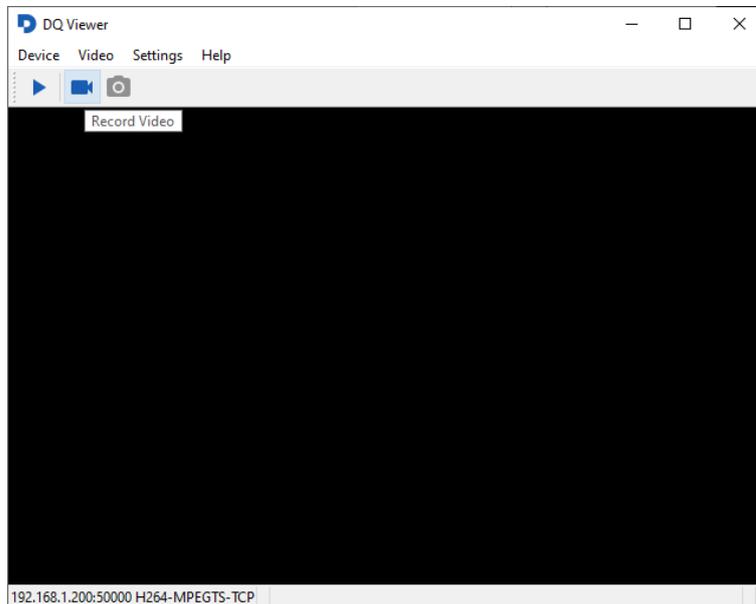


4. In section **Video**, choose **Codec** – H264 and MPEG-2 compressions are available.
5. In section **Video**, enter **Bitrate** of recorded video stream.
6. In section **Video**, browse **Directory**, where the recorded video streams will be stored.
7. Click OK.
8. Select menu Device – List of available Video Stream interfaces.

9. Choose listed local or remote device.



10. Start / Stop recording of video by clicking on the **Video Camera** symbol or by selecting menu **Video – Record Video**.

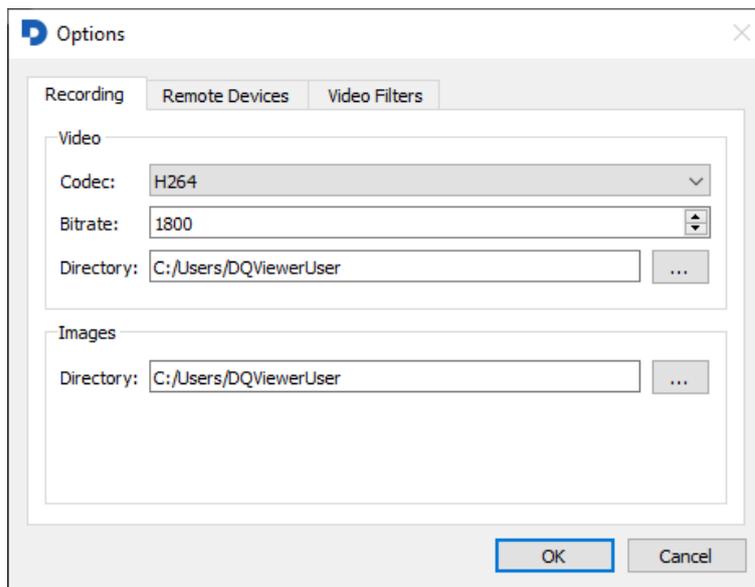


11. Video is stored in the folder defined in menu **Settings – Options ...- Recording tab – Video** section – **Directory**.

## 8. Capture screenshot

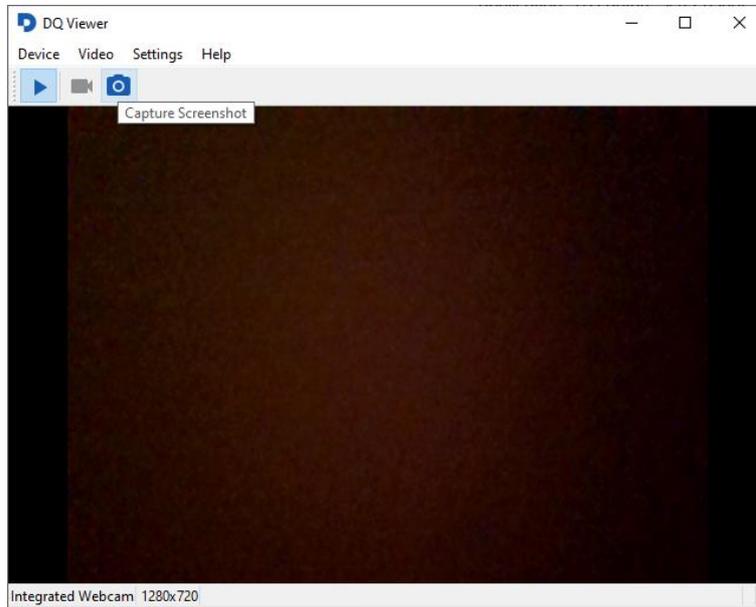
This chapter describes in steps, how to capture a screenshot from the video stream in DQ Viewer application. To capture a screenshot, you need firstly to open and play a video stream (see chapter 6 - Open and Play Video Stream). Screenshots are captured in PNG format.

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 section **Images**, browse **Directory**, where the screenshots captured from video will be stored.
4. Click OK.
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 in menu **Settings – Options ...- Recording tab – Images section – 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	