Royale viewer

Version **3.4.0**

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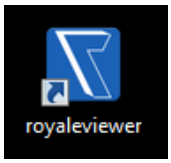
1. Introduction

Royale provides its own visualization tool which is based on the royale API. It will be installed with the standard royale installation package and it can be used to display depth data from any calibrated camera.

2. Starting the Royale viewer

2.1.1. Starting the Royale viewer on Windows



The Royale viewer can be started using the “royaleviewer”- Desktop icon or the “royaleviewer” entry in the start menu (Windows 7).

It is also accessible here: "*C:\Program Files\libroyale\3.4.0.*X*bin\royaleviewer.exe*" where “*Program Files\libroyale*” is the default installation folder.

2.1.2. Starting the Royale viewer on Android

Just tap the „royaleviewer“ application. The look and feel is the same as on the x86 based OS.

Note that on Samsung Galaxy S7 devices, the point cloud visualization might look slightly different than on other platforms.

2.1.3. Starting the Royale viewer on Mac OS X

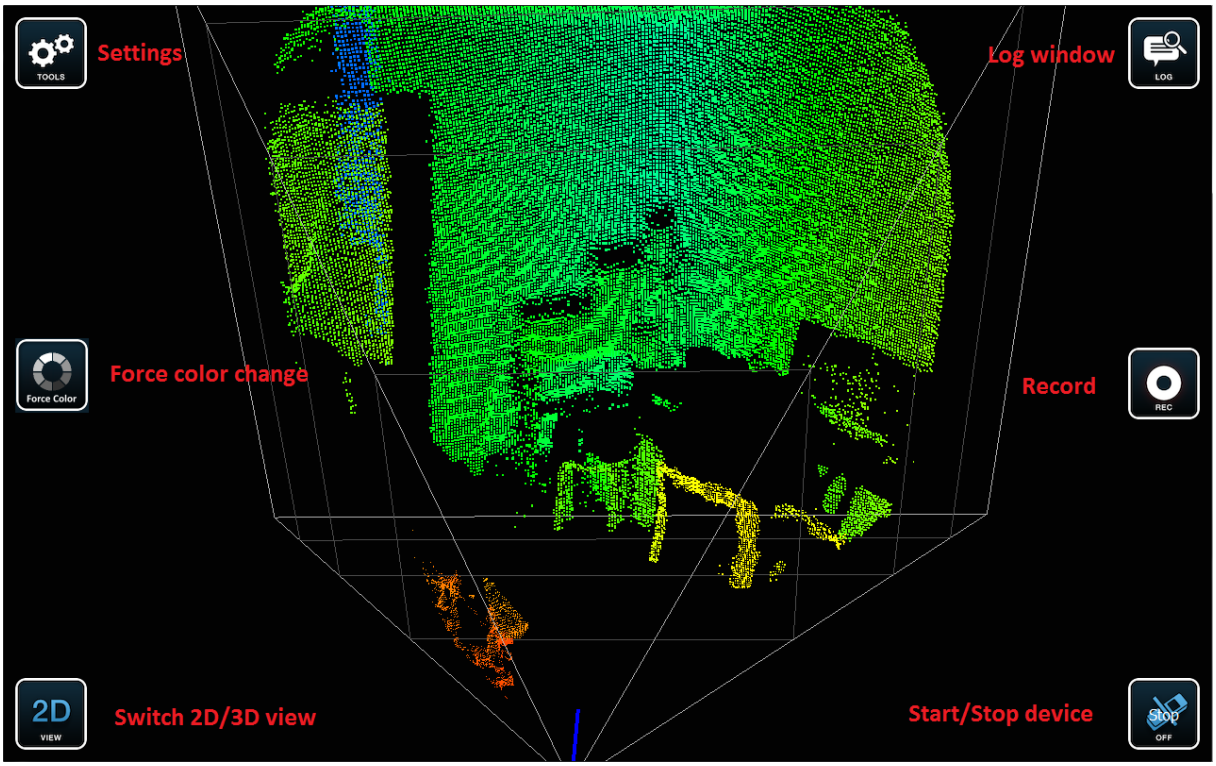
Click the royaleviewer-app in the /bin subfolder of your extracted package.

2.1.4. Starting the royale viewer on Linux

To run the Royale viewer, please execute royaleviewer.sh in the /bin directory of the extracted Linux package. It will automatically set the right path to the necessary libraries.

2.2. Operating a camera with the Royale viewer

The application screen will open blank with the control buttons as shown below:

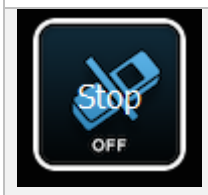
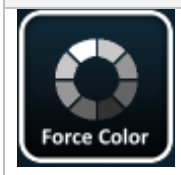


To start the data acquisition press "Start" in the lower right corner and wait for the camera to initialize.

To check if the camera was found and started click on the info button in the upper right corner. The Info-box can be closed by clicking on the Info button again.

At first you will see a color coded 2D visualization of the depth data.

You can switch to the 3D visualization by clicking on the button in the lower left corner.

Button	Function
	Switch to start/stop the processing and display of 3D data from the camera
	Switch the visualization of 3D data between color coded 2D or 3D point-cloud view
	Settings for visualization and operation modes
	Force an adaption of the color scheme to the current scene
	Log Window: Status and history info
	Record (→ turns red if active) Records royale recording format (.rrf) as default or single 3D point cloud (.ply) and a screenshot of the current view (.png) if selected in settings Output folders depend on OS: Windows : DocumentsFolder/royale Linux : /path/to/homefolder/royale Mac OS X : /path/to/homefolder/royale Android : /storage/sdcard0/royale

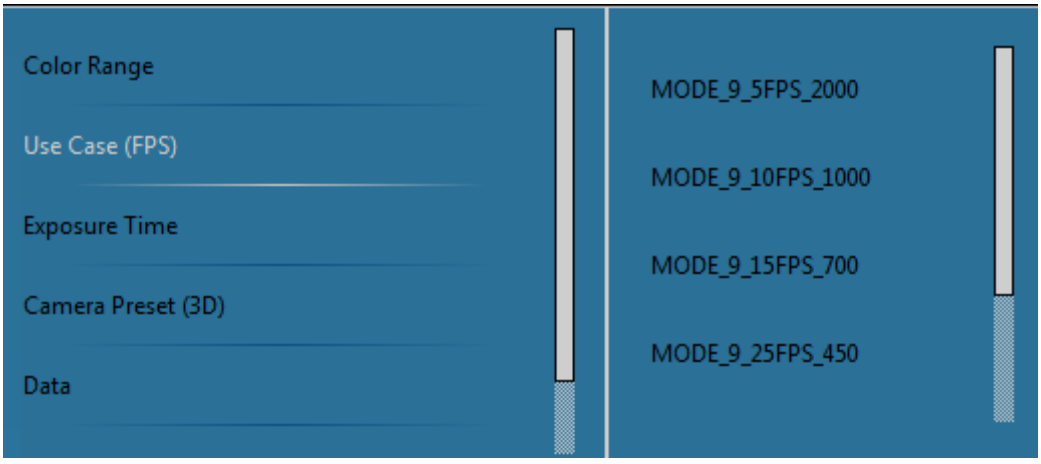
2.2.1. Settings

2.2.1.1. Settings > Color Range:

The color scale can be adjusted and reset (auto-scale between min and max range).

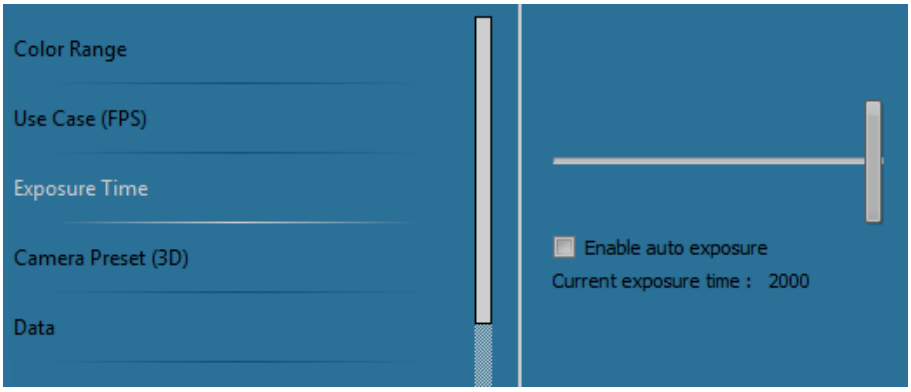
2.2.1.2. Settings > Use Case (FPS)

Selection of pre-defined operation modes. Please refer to the Royale documentation (HTML document in subfolder “doc”) for further details on operation modes.



2.2.1.3. Settings > Exposure time

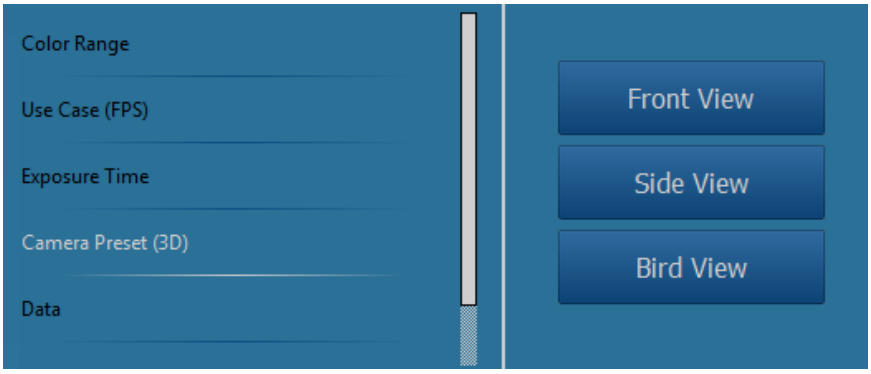
Setting the exposure time between max (default) and min exposure time for the chosen operation mode.



If “Enable auto exposure” is selected, the exposure time will automatically be adapted to the current scene.

2.2.1.4. Settings > Camera Preset (3D)

Affects 3D visualization only. If the 3D point cloud visualization is active (can be activated by the button in the lower left corner) the view can be switched to front view, side view or bird view here.



2.2.1.5. Settings > Data

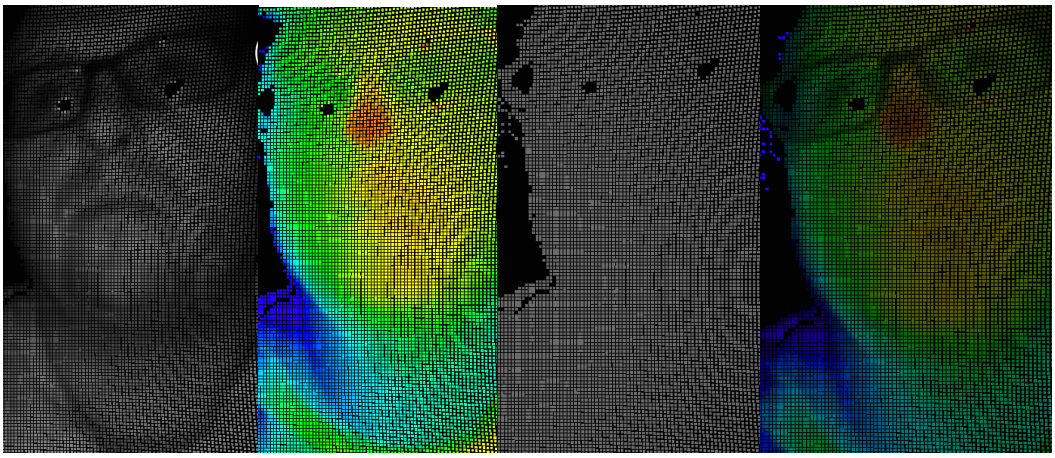
Visualization can be switched between the color coded 3D data and Grayscale data formats.

Gray will show a gray scale IR image (2D) or be overlaid to the 3D point cloud)

Distance will show a color coded depth map (2D) or point cloud (3D)

Gray (uniform) (only available for 3D visualization) shows a uniform gray point cloud

Overlay shows a combination of a color coded depth and the gray image



2.2.1.6. Settings > Load File

Loads .rrf (Royale recording files) files from default storage location that can be played with the viewer. Clicking the connect button during a playback will unload the current file. Afterwards you can connect to a live camera again.

The above control buttons have the following functions:

- The left button jumps to the previous frame
- The middle button stops and starts the playback
- The right button jumps to the next frame
- While paused, a specific frame can be selected by the slider

2.2.1.7. Settings > Show Frustum (3D)

Enables/Disables the viewing frustum in the 3D visualization

2.2.1.8. Settings > Flip vertically (2D)

Flips the displayed data vertically in the 2D visualization

2.2.1.9. Settings > Flip horizontally (2D)

Flips the displayed data horizontally in the 2D visualization

2.2.1.10. Settings > Show FPS

Shows current FPS rate if checked

2.2.1.11. Settings > Show StreamID

Shows the stream IDs of the current streams

2.2.1.12. Settings > Single Frame Recording

Toggle if a single frame and a screenshot or a rrf file is recorded

2.3. Shortcuts

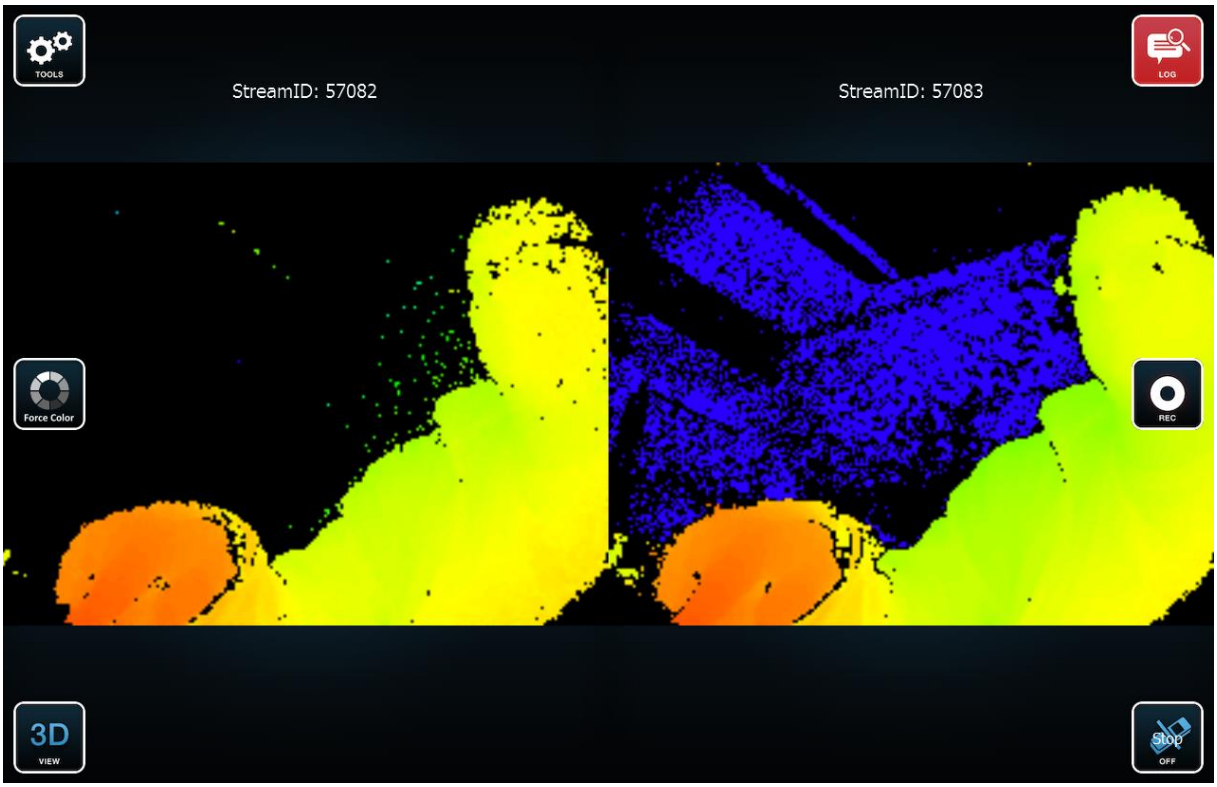
RoyaleViewer offers shortcuts for most of the available functions :

Shortcut	Function
S	Start/Stop camera.
L	Display log (if buttons are visible)
R	Start/Stop recording
H	Hide/Show buttons
ESC	Quit RoyaleViewer.
F1/F2/F3/F4	Switch data to Gray/Distance/Uniform/Overlay
2/3	Switch view to 2D/3D
C	Force color range update

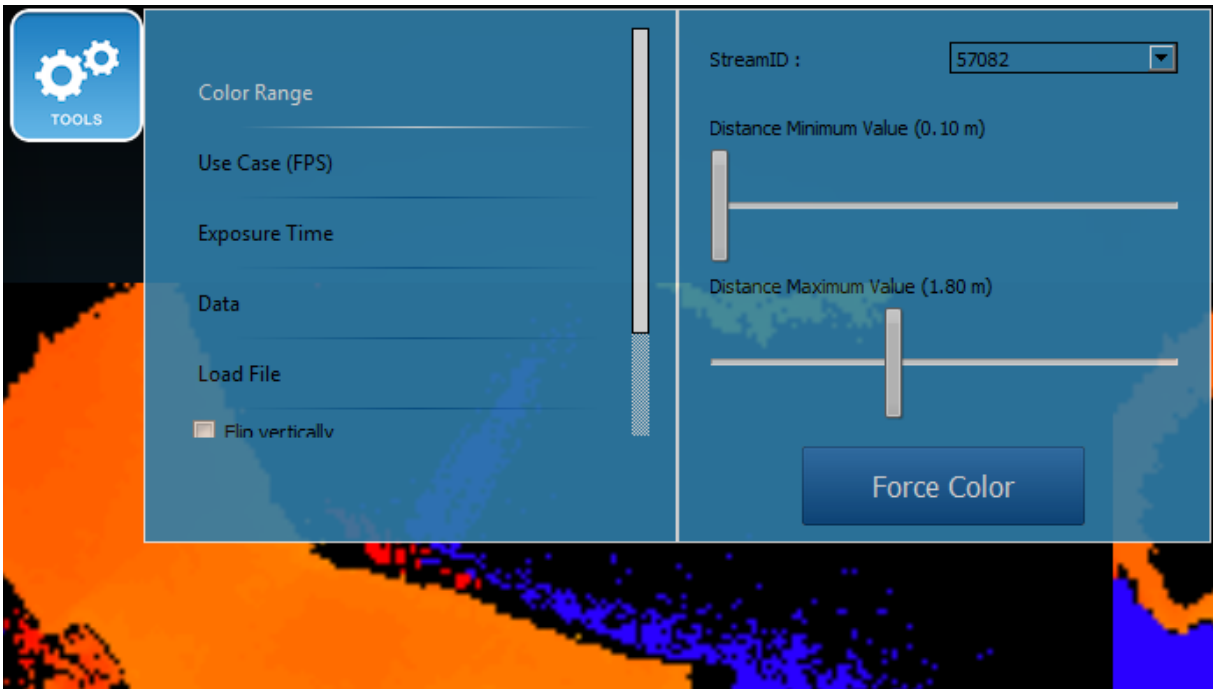
2.4. Mixed Modes

The mixed modes can be used to run two or more different modes at the same time, by capturing frames that fit into separate use cases.

In the Royale viewer application this is visualized like this:



If you're using one of the mixed modes, some of the settings will require you to select a StreamId:



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