Realityplayer

User's Manual

Table of Contents

1   Installing the Player

To install the universal 3D media player **realityplayer**, just double-click on the installer executable *realityplayer GUI-1.4.0-win32.exe* `(for version 1.4.0)` and follow the usual procedure to install programs on your system. This will create a program group and a desktop-icon. The installer will also associate `.rf3d` playlist files with the **realityplayer**.

2   Simple Usage

2.1   Starting the Player

Start the **realityplayer** by double-clicking on its desktop-symbol. You can also single-click on its icon in the start-menu. In Windows 7 or Windows Vista operating systems, you can use the search-tool: type "realityplayer" into the search-field and click on the appropriate result of the search.
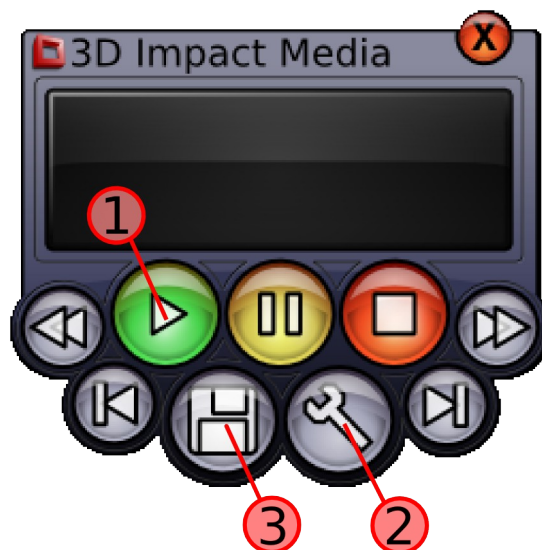
The **realityplayer** control (Fig. 1) appears.

Figure 1: The main window

Now, If you just want to play ordinary 2D movies, you are ready to go – just drop any media file onto the **realityplayer** control and press the Play-Button ①.

However, if you want to enjoy 3D multiview media file, you need to setup the **realityplayer** for your 3D Display.

A playback windows appears after pressing the Play-Button ① for the first time. The playback window can be switched to full-screen mode by double-clicking into its interior or – if it has the focus – by pressing `F11`. In addition while in fullscreen mode, press ESC to return to regular non-fullscreen mode.

2.2   Basic Usage

To configure your 3D display, simply click on button ② in Fig.1. This will open the Configuration Dialog (Fig. 2).
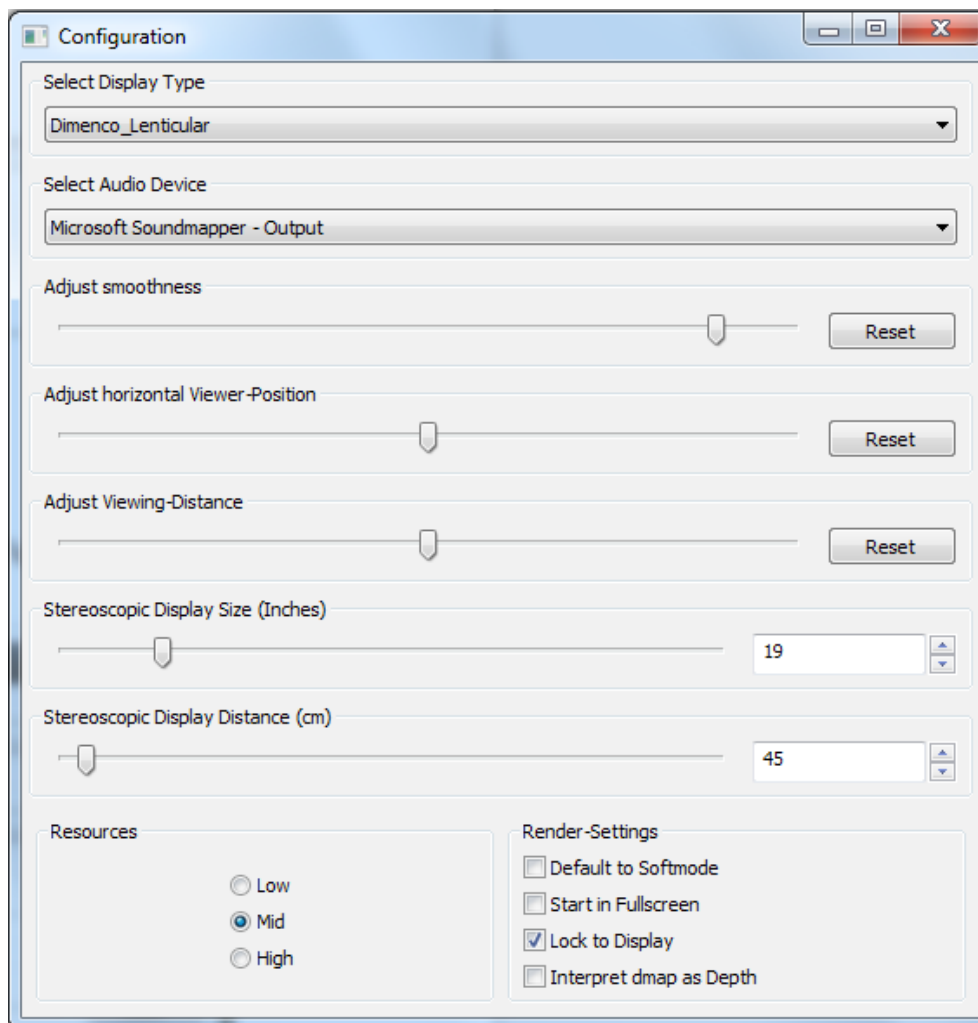

Figure 2: The configuration dialog

For proper playback it is important that you select the appropriate 3D Display from the first drop-down selection box. The **realityplayer** is especially designed to play back multiview 3D content on glasses-free autostereoscopic displays. In case your 3D display is not listed, please contact us at sales@3dimpactmedia.com for help. Some ordinary glasses-based 3D displays are supported, and the **realityplayer** can play back 3D content as flat 2D or in anaglyph mode on classical 2D displays.

Once you have selected the appropriate display, you can close the configuration dialog by clicking again on button ② of the main player control, or by simply closing the window. You are now ready to enjoy 3D media files.

2.3   Using the Playlist

A click on button ③ in Fig.1 opens the playlist. The playlist is also automatically opened when you drag and drop a mediafile onto the main player control:
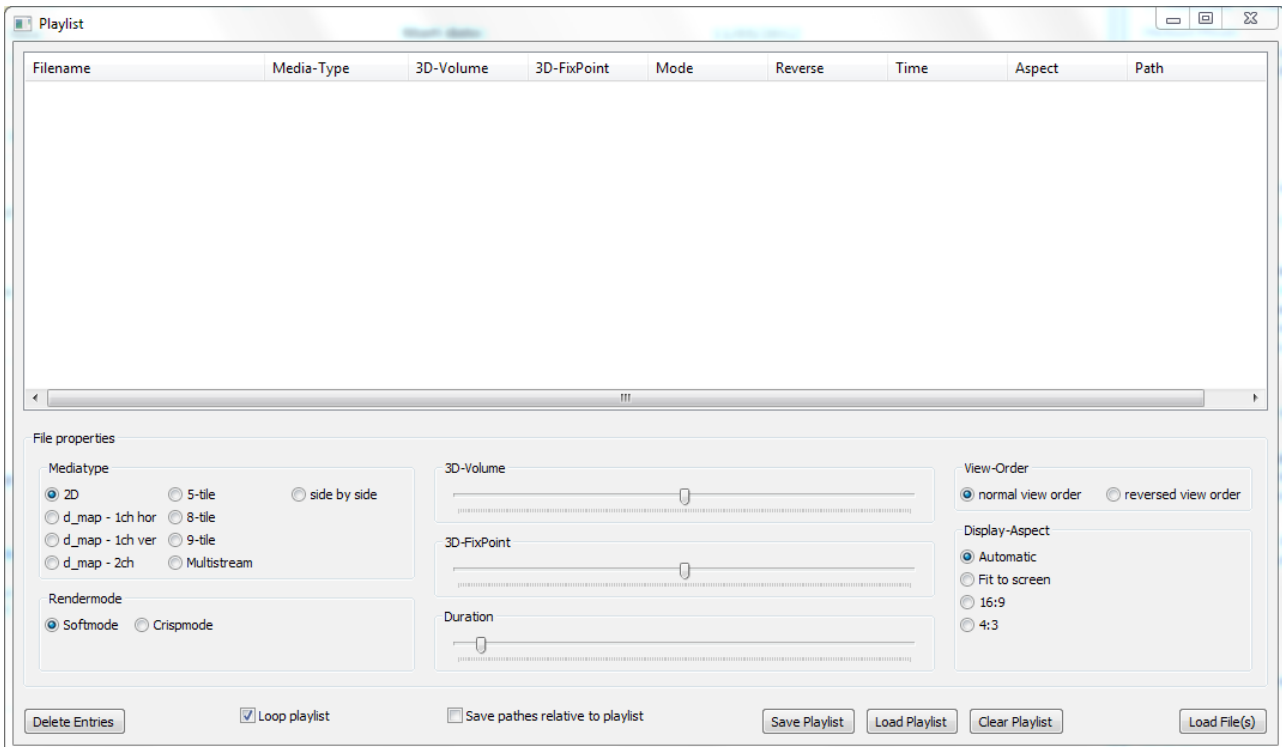

Figure 3: The playlist-window

The playlist window is divided into three sections:

1. At the top the actual playlist is displayed. Here, you can arrange 3D media files by drag-&-drop.

2. The middle section is unique to the **realityplayer**. It allows you to change important 3D playback parameters for one file or a group of files selected in the playlist.

3. The lower section handles general aspects of the playlist itself: you can load and save playlists, clear the playlist or load single or multiple media-files into the playlist.

2.4 Loading a File into the Playlist

You have several options for including a 3D media file into the playlist. We already mentioned the drag-and-drop functionality of the player control. You can also drag any media file directly onto the playlist.
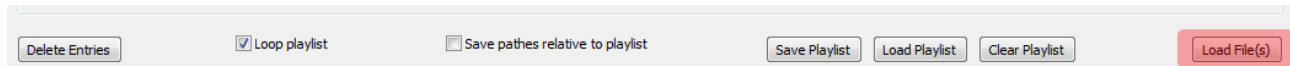

Figure 4: Loading files into the playlist

Additionally, you can use the "Load File(s)"-Button on the lower-right of the playlist-window. The standard file selection dialog of your operating system opens. Navigate to the location of your media-files and select one or more Files you want to load. Finish by pressing the "OK" button.

If your file is not visible in the File Open Dialog, select the "all files" option.

Any media file is scanned before loading in the playlist. This can take a second or two, especially if a lot of files are loaded at once into the playlist. If the **realityplayer** finds a file which it cannot play, a message will inform you about.

2.4.1 Selecting the Media-Type

Since there are many 3D file-formats established, you have to select the 3D file format before the **realityplayer** can play the file. So the first thing to do after loading the media files into the playlist is to select the appropriate input type. Usually, the newly loaded files will already be selected in the playlist. So simply clicking on the appropriate 3D media type takes care of this step.

If you are in doubt about the appropriate 3D media type of your material, select initially 2D mode and check how the file looks during playback. Compare with the examples listed in section 3D Media-Types (Appendix) which format might be most appropriate for your material.
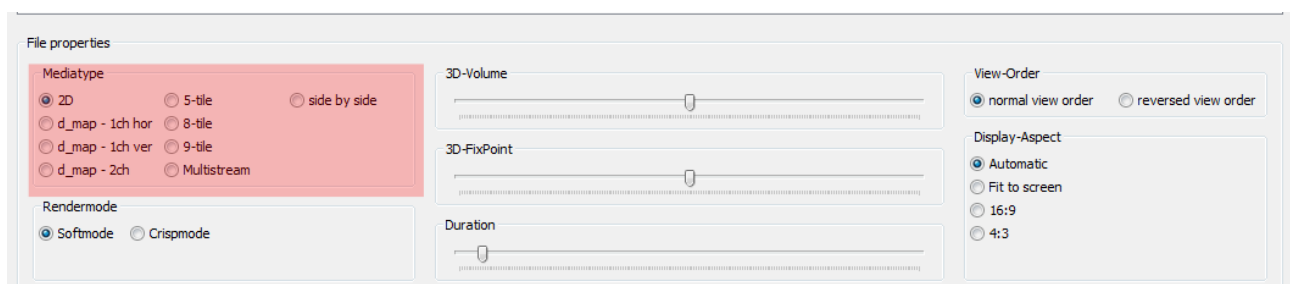

Figure 5: Selecting the Media-Type

Once the 3D media type is set for every entry of the playlist you can start playback immediately. The other options in the playlist are for advanced usage and will be explained in a later section. During playback, the current file is highlighted. If you like, you can close the playlist.

2.4.2   Deleting Playlist-Entries

The playlist supports basic editing functionality (see Advanced Usage).

To delete one or more entries in the playlist, just select the entries to be deleted by shift-clicking them with the mouse. Now either press the "del"-key on your keyboard or press the "Delete Entries"-Button in the lower left of the playlist-window.
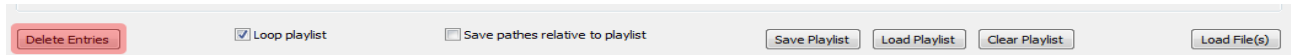
Figure 6: Deleting entries in the playlist

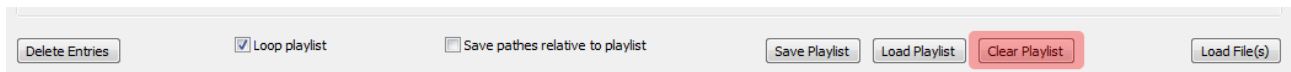If you want to clear the entire playlist, simply use the button labeled "Clear Playlist".

Figure 7: Clearing the playlist

2.5   Playing Files

To start the playback with the first entry to be found in the playlist, simply click the play-button ① (Fig. 1) on the player control. You can also double-click on any entry in the playlist to start the playback with this file.

3   Advanced Usage

3.1   Managing Files in the Playlist

Once you have added several files to the playlist, you can move them around in the list via drag and drop and the usual copy-and-paste operations (CTRL-C, CTRL-X, CTRL-V). Selection of groups of files with CTRL- and SHIFT-keys is also supported as well as CRTL-A for the selection of the whole playlist. This allows easy editing of file parameters.

3.1.1   Selecting the Rendermode

The Rendermode selection in the playlist changes the way the 3D image is created on your 3D dispay. In Softmode, the appearance of viewing gaps is reduced. This mode is usually preferred. The Crispmode allows for a somewhat stronger 3D effect, but the gaps between viewing zones become more visible.
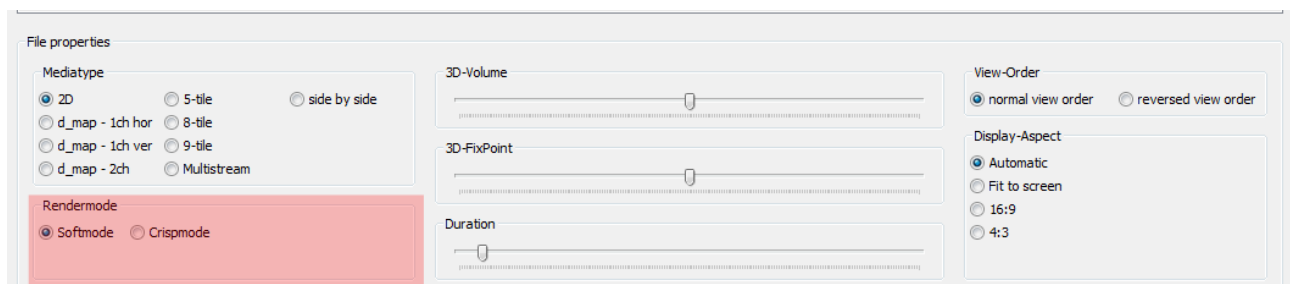

Figure 8: Selecting the Rendermode

The amount of the Softmode effect can be controlled by the Adjust Smoothness slider in the configuration screen. For more info, see section 4.7 on page 14.

3.1.2   Improving the 3D experience

The two sliders "3D-Volume" and "3D-Fixpoint" allow for the optimization of the 3D viewing experience for each 3D media file.

Depending on your 3D-display (or your personal preference), the perceived depth of a given media-file may be appearing as "too flat" or "too deep". In this case you can change the perceived depth of a selected media-file in the playlist with the 3D-Volume slider. You can choose values from 0.0 (which will make the media-file to appear completely flat) to 2.0 (which will give 2 times the original depth experience stored in the media-file).

For stereoscopic displays, the final 3d volume is also influenced by the settings for size and distance of the display. See section 4.6 on page 13.
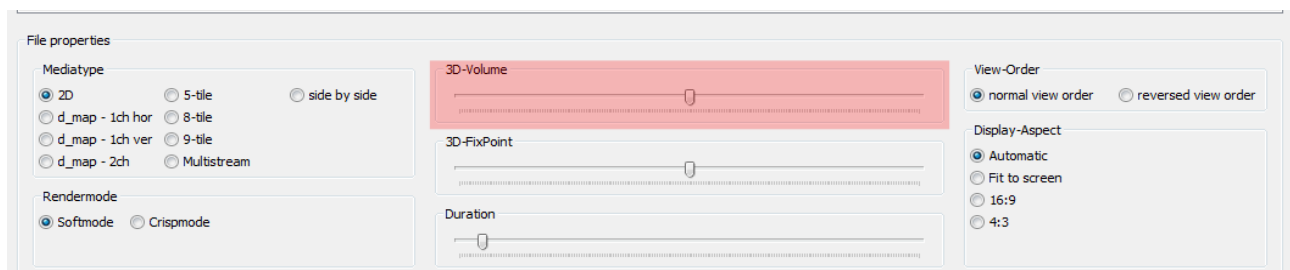

Figure 9: Changing the 3D-Volume

The "3D-Fixpoint"-Slider allows you to change the center of the whole 3D scene which is displayed in relationship to the 3D display.

In this way, you can optimize the display of 3D scenes: objects are most clearly visible if they float directly at the physical surface of the 3D device. This slider allows you to change the 3D position of the important parts of the scene in such a way that these appear in the zone of highest clarity.
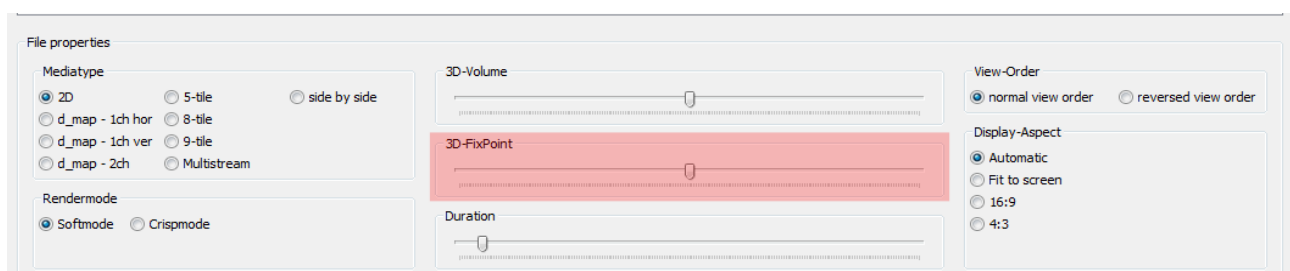

Figure 10: Changing the 3D-FixPoint

3.1.3 Selecting the View-Order

Sometimes a 3D media-file contains the 3D-content in the wrong view order. This results in an inverse depth display. If this situation occurs, the view order can be reversed quickly with this option.
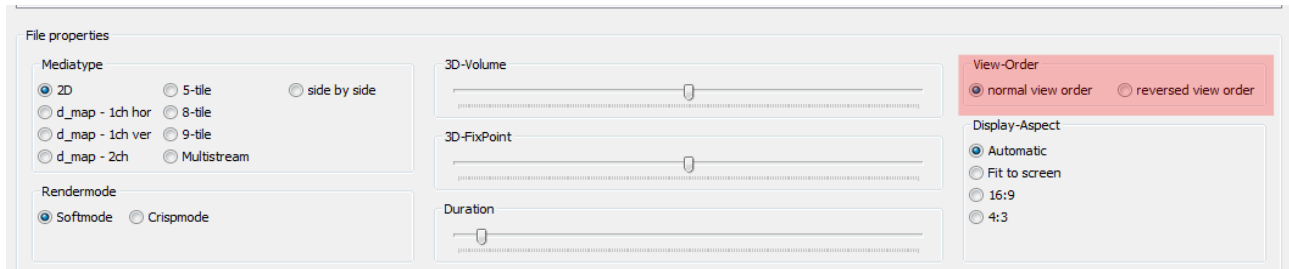

Figure 11: Selecting the View-Order

3.1.4 Selecting the Display-Aspect

Normally, the **realityplayer** is able to read out the correct aspect ratio from the media file. If screen and media aspect ratio do not fit, appropriate black borders are put around the 3D material. This is what happens if you leave this entry in "Automatic".

Some 3D media files are however encoded with wrong aspect ratios. Sometimes one wants to have a full screen display, even so the display is 16:10 and the media file is only 16:9. In that case, select "Fit to screen".

The other options allow you to select standard aspect ratios, irrespective of screen and media aspect ratios.
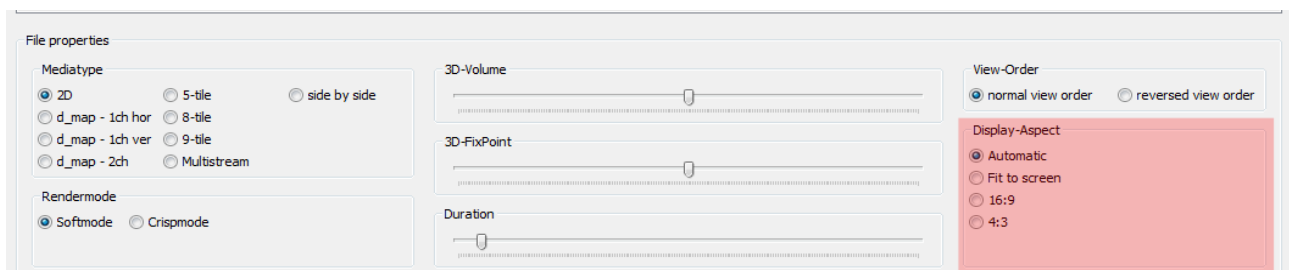

Figure 12: Selecting the Display-Aspect

3.1.5   Selecting the Duration

The **realityplayer** is also able to play back standard image formats. Currently, .JPG, .PNG, .BMP and .PNM images are supported.

If you use images instead of movies, you end up with a 3D slideshow. The slider "Duration" allows you to set the display time for each image file individually. It has no function with standard video files.
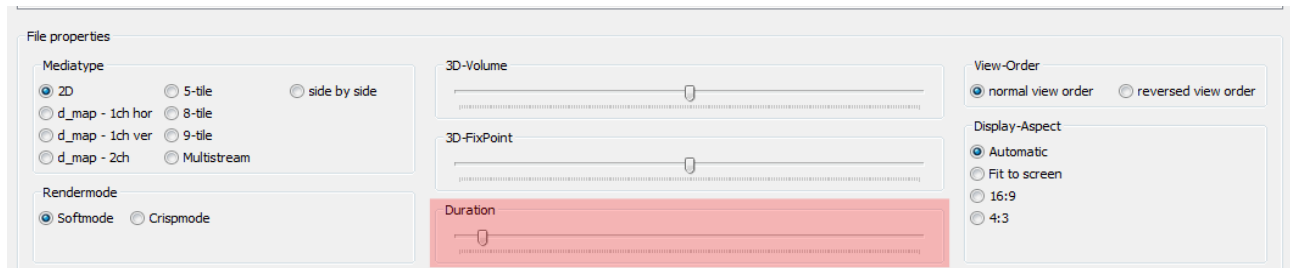

Figure 13: Changing the display-time (duration) for still images

3.2   Loading and Saving a Playlist

Using the Buttons labeled with "Load Playlist" and "Save Playlist" you can load a previously saved playlist or you can save the current playlist. All settings in the playlist are saved as well.
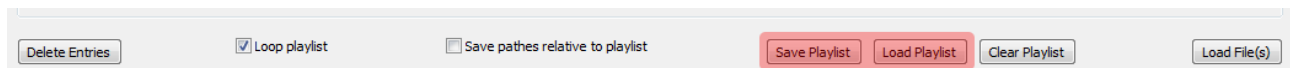

Figure 14: Loading and saving playlists

When saving a playlist, consider the "Save pathes relative to playlist" checkbox. If this is unchecked, absolute pathnames are stored in the 3D playlist – which is the appropriate way if you have your 3D material for example on a common and shared network drive.
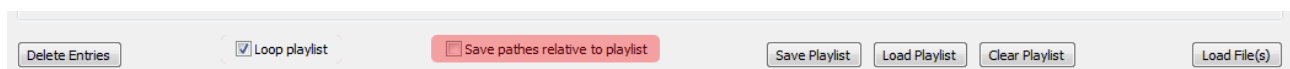

Figure 15: Selecting if the playlist should store relative paths

If you want to put a 3D playlist plus corresponding media files into an archive, to be send to a friend, consider the "save pathes relative to playlist" mode. Put the 3D playlist in the top directory, and all 3D media files into sub-directories. The top-directory with the playlist can now easily be moved between different locations.

3.3   Playlist-Options

Currently there is just a single further option for playlists: if "Loop Playlist" is checked, the playlist repeats after the last file, otherwise, playback stops after the last file in the list.
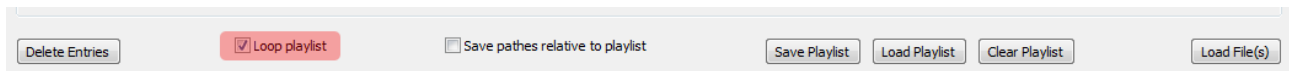
Figure 16: Selecting if the playlist should be played back in a loop

3.4 Automatic Playback

If the **realityplayer** is started with a valid playlist, the player will automatically start in full-screen mode, regardless of the setting in the configuration dialog. Furthermore, the player controls will not be visible.

This mode is intended to facilitate stand-alone applications on unattended playback stations. Simply copy a valid playlist into the Startup or Autorun-folder of your computer. On power-up, the **realityplayer** will automatically play the files in the playlist.

Note:
The player control can be made visible by pressing F12 on the keyboard.

Note:
Be sure to have the "Save pathes relative to playlist"-checkbox *unchecked* when saving the playlist.

4 Expert Settings

In the configuration-window you will find several options which allow you to fine-tune your overall experience with **realityplayer**. With the exception of the display type, and the audio device those settings are for experienced users only.

4.1 Select Display Type

The Display-Type selection in the configuration dialog should be set to the attached 3D-display. If there is no 3D-Display connected to your computer, you may either choose 2D-Display or Anaglyph. This will allows for viewing 3D media files on a standard 2D-Display.

If you own a 3D-Display currently not listed in this dialog, please contact our technical-support: sales@3dimpactmedia.com.

Figure 17: Select display type

4.2 Select Audio Device

If multiple sound-interfaces are installed into or connected to your computer, the Audio-Device selection allows you to choose which one will be used by **realityplayer** for playback of media files.
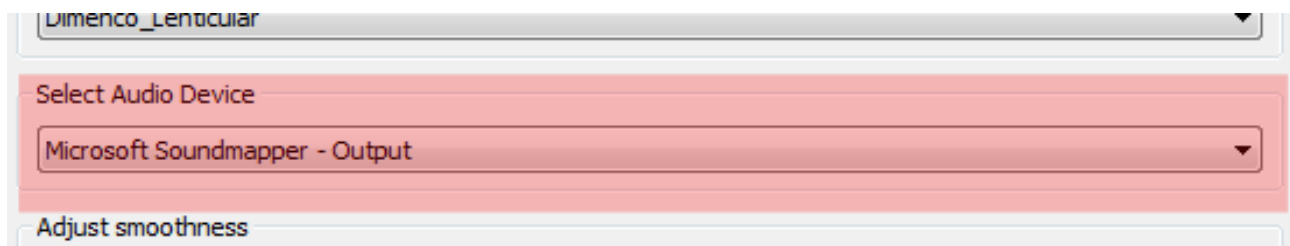

Figure 18: Select audio device

4.3 Adjust smoothness

With the slider you can control the softening strength in the softmode. For more info, see section 4.7 on page 14.

Figure 19: Adjust smoothness

4.4 Adjust horizontal Viewer-Position

With this slider you can move the center-view of the 3D-display to the left or right. You should do so, if see a non-satisfying 3D-image when standing approximately centered at the optimal-viewing-distance in front of your screen.

Figure 20: Adjust horizontal view position

4.5 Adjust Viewing-Distance for autostereoscopic Displays

Your 3D-display is engineered for an optimal viewing distance. With the "Viewing-Distance" slider you can optimize this value to your current viewing situation. Shifting the slider to the left decreases, shifting the slider to the right increases the optimal viewing distance of the display. Test images for the adjustment of the optimal viewing distance can be ordered for a small fee from sales@3dimapctmedia.com.
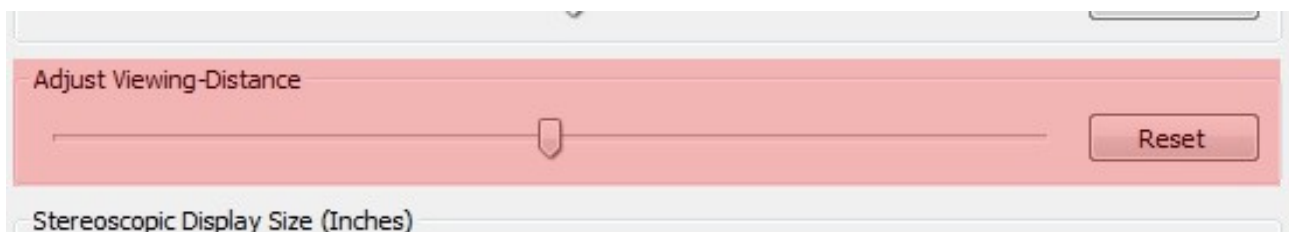

Figure 21: Adjust viewing distance

4.6 Adjustments for stereoscopic Displays

For stereoscopic Displays, the limit of 3d volume depends on the size of the screen, and the viewer distance. Use the "Stereoscopic Display Size" and the "Stereoscopic Display Distance" slider to control adjust volume limits. Those settings influence the final volume used for stereoscopic displays.
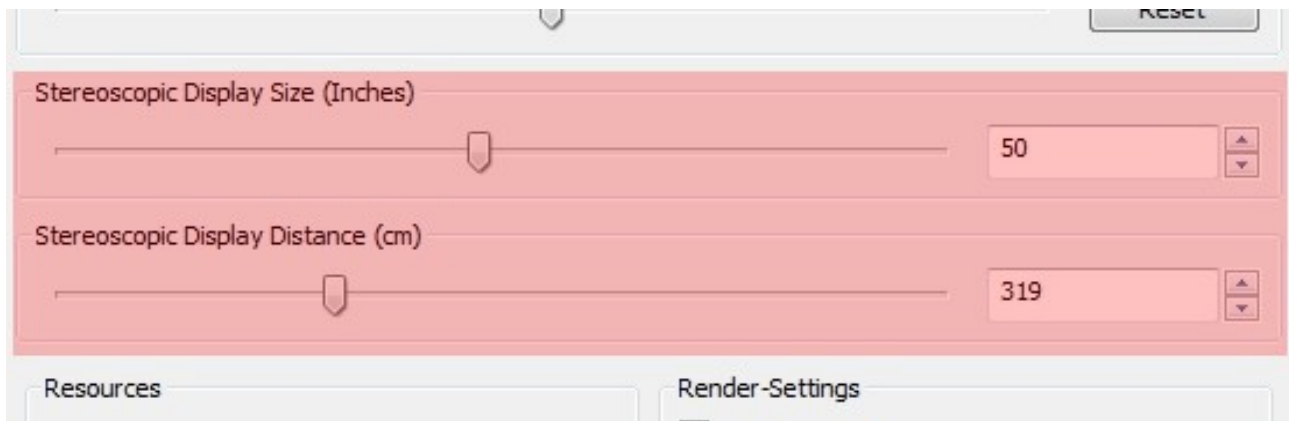
Figure 22: Adjustments for stereoscopic Displays

4.7   Softmode

This option changes the default for the Rendermode discussed in "3.1.1 Selecting the Rendermode", when loading new files into the playlist. Choose this setting to fit your personal preferences.
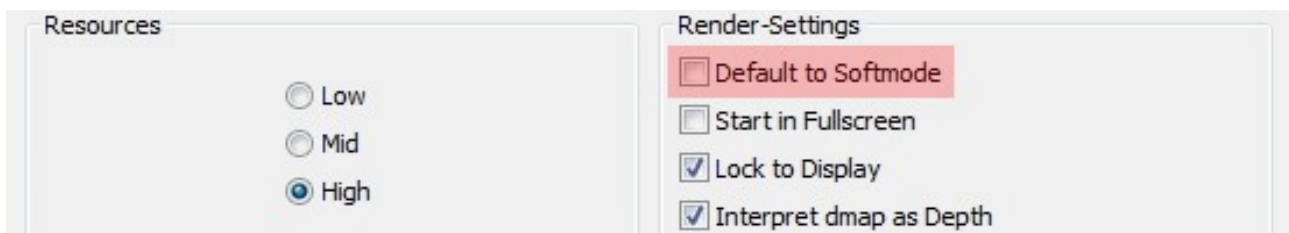

Figure 23: Softmode

The Adjust Smoothness slider might be used to adjust the strength of the softening. If this is on the leftmost position, there is no view smoothing applied and the result is the same as using Cripsmode. The right-most position gives the maximal amount of smoothing possible. This slider only takes effect if the Smoothmode is turned on for the given video.

4.8   Fullscreen

This option changes the default behaviour of our realityplayer when being started. If this option is set, it will start in fullscreen-mode.

Note:
The **realityplayer** should best be run in full-screen mode. Thus, activate the full-screen-checkbox on normal operations. For stand-alone applications, compare also section 3.4, Automatic Playback, of this manual.
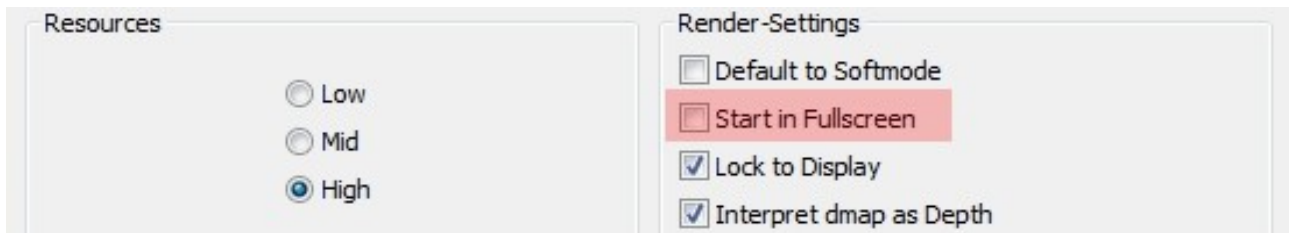
Figure 24: Fullscreen

Window-Modes:

The realityplayer features two distinct window-modes, full-screen and windowed. The windowed mode is recognizable by normal windows decorations of your operating system around the 3D playback window. They allow you to resize, move and position the 3D playback window to any position on your screen estate.

The behavior of the player is different when operating in full-screen mode as opposed to windowed mode. In full-screen mode, the full area of the screen is used for 3D playback and no window decorations are visible around the 3D playback window. The player checks whether one or two screens are attached to your computer. In case just a single screen is found, the player uses this screen for 3D playback.

In case you operate in a 2-screen environment, the realityplayer assumes that the secondary screen is the 3D display. The primary screen usually shows a taskbar and other stuff which is not visible at the secondary screen. If in doubt, make sure that the screens are numbered correctly in your display settings.

You can easily switch between windowed mode and full-screen mode by double-clicking in the center of the 3D playback window.

4.9   Lock to Display

This option will lock the 3D display's update-frequency with the players internal frame-update-frequency. This can prevent tearing which might occur otherwise under certain circumstances.

Note:
Please keep in mind, that this feature, depending on your graphics-hardware and or it's driver, may be supported or not. If this option is enabled and there still is visible tearing, it might be worth choosing the primary port (DVI, HDMI, DisplayPort) of your graphics adapter for attaching the 3D display. If this still does not work, it is highly likely that your graphics-adapter does not support this feature at all.

As it may have a small impact on the overall performance it is recommended to leave this disabled on low-end machines (like for instance notebooks).
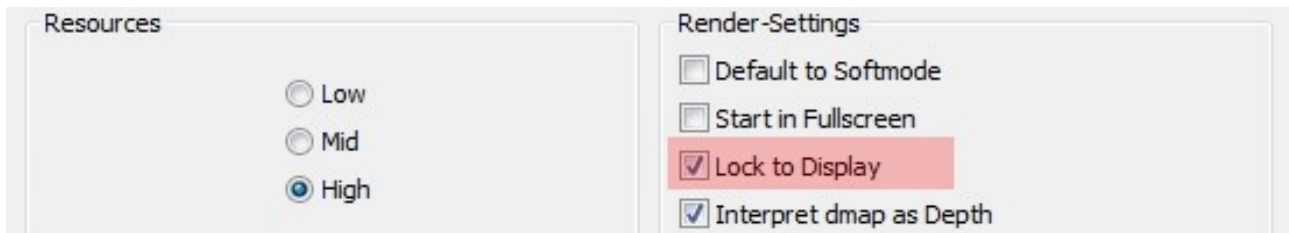
Figure 25: Lock to display

4.10   Resource-Level

The Resource-Setting allows you to fine-tune the use of your computer's hardware by your **realityplayer**. Real-time decoding and playback of 3D media is a demanding task, and the hardware of your computer might not be able to deliver performance at the highest settings.

Resource settings:

- **low**: this setting allows to play back 3D media files with machines which do not have a perfect hardware environment.

- **medium**: is a good compromise between 3D display quality and resource demand; it is intended to be used for notebooks with good gameing graphics.

- **high**: uses all hardware resources your computer has to offer and delivers the highest visual quality possible with your machine.

Warning:
Please do a longer test-run with the chosen setting to find out if your hardware can handle the resource demand. An inappropriate setting can severely damage your hardware!
Make sure with appropriate monitoring that neither your CPU nor GPU is overheating during playback. If this happens for a specific setting, choose a lower one!

5   General Hints

If you encounter performance problems such as juddering refresh, you might either consider choosing less demanding display-options or using a more powerful machine. If in doubt contact our technical support: sales@3dimpactmedia.com.

6 Appendix

If you are in doubt which 3D media file format is the approproiate playback choice, try to play back your material first in standard 2D mode. Compare the output with the following examples and choose the one matching your display.

6.1 Media-Types

- **2D**

  Use this media-type for playing back usual 2D-material.

- **D-Map 1-Channel, horizontal**

  Use this mode for playing back most d-mapped single-channel material. If the material is encoded in this format you will see a full-color image on the right and a black-and-white image on the left.

- **D-Map 1-Channel, vertical**

  Use this mode for playing back d-mapped single-channel material where the depth-map is under the full-color image when viewed in 2D-mode.

- **D-Map 2-Channel**

  Use this mode for playing back d-mapped dual-channel material. If the material is encoded in this format you will see two full-color images on the right and two black and white depth-images on the left.
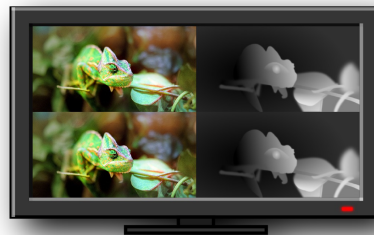
- **5-Tile**

  Use this mode for playing back 3D material encoded in 5 image-tiles. If the material is encoded in this format you will see four full-color image-tiles and a fifth one split in half on the bottom of the 2D-image.

- **8-Tile**

    Use this mode for playing back 3D material encoded in 8 image-tiles. If the material is encoded in this format you will see six full-color image-tiles and the seventh and the eighth one split in half on the bottom of the 2D-image.
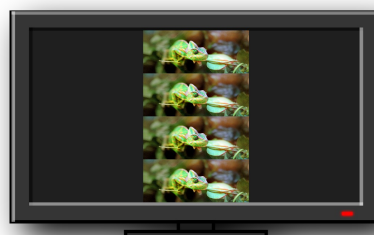

- **9-Tile**

    Use this mode for playing back 3D material encoded in 9 image-tiles. If the material is encoded in this format you will see nine full-color image-tiles.

- **Multistream**

    Use this mode for playing back 3D material where the 3D-channels have been encoded as multiple streams in the container-file.

    Multistream media content is displayed in 2D as a vertical strip of images. The number of vertically stacked channels is arbitrary. The figure below shows a case with 4 channels but expect usually higher numbers of channels to be present in multistream data (8 or 9). The **realityplayer** automatically adapts to the number of available channels.

- **Side by side**

    Use this mode for playing back 3D material encoded in side by side layout. If the material is encoded in this format you will see two full-color images next to one another.