



JPlayout & JPlaylist User's Guide

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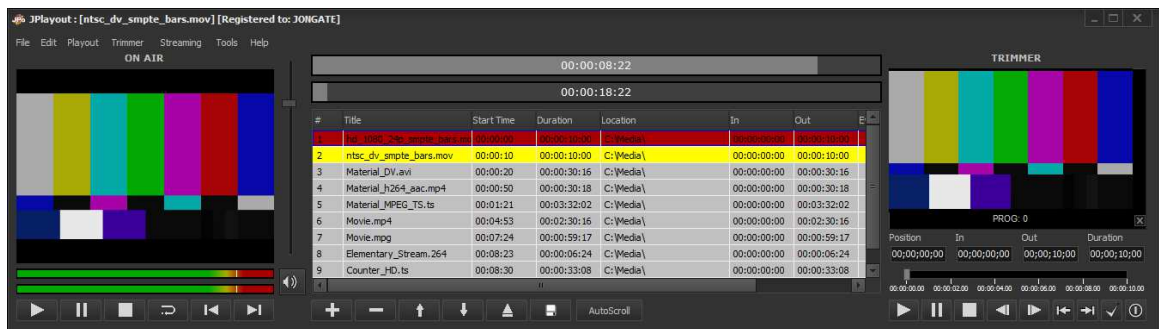


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1. Overview

JPlayout is a powerful SD, HD, 2K and 3D playout and streaming solution. Supported are different digital media formats, compressions, resolutions and frame rates mixed into a single playlist and playout with unified output format. Real-time video rescaling, video frame rate conversion and audio re-sampling support. Trimming source file support with in and out media points. Logo insertion. Some of the supported formats are MPEG-2, MXF, MP4, AVI, HEVC/H.265, AVC/H.264, DV CPRO 25/50/100, MPEG-4, AAC, MPEG Audio, XDCAM, HDV, QuickTime and more. The solution has integrated IP streaming and graphics overlay.



For automation workflows the solution supports playlist import and export. Current file and playlist position bars display. Real-time volume monitoring and control support.

1.1 General Features

- SD, HD, 2K and 3D playout
- Large variety of containers, video and audio compressions support
- Real-time video rescaling, frame rate conversion and audio re-sampling
- Mixing different formats into a single playlist
- On-air and offline playlist editing

- Audio loudness monitoring and control
- Media files trimming and preview
- Logo insertion
- Playlist export and import for automated workflows
- Multi-channel/multi-instance support
- Easy to use Graphical User Interface (GUI)
- Integrated Graphics
- Integrated Streaming
- Daily playlist

1.2 Supported Source Media File Formats

Supported multiplex formats:

- AVC HD
- MPEG-1
- MPEG-1 DVD
- MPEG-1 DVD-VR
- MPEG-1 VideoCD
- MPEG-2
- MPEG-2 ATSC
- MPEG-2 ATSC high
- MPEG-2 Blu-ray Disk
- MPEG-2 CableLabs
- MPEG-2 DVB
- MPEG-2 DVD
- MPEG-2 DVD-VR
- MPEG-2 DVHS
- MPEG-2 HD DVD
- MPEG-2 HDV HD1
- MPEG-2 HDV HD2
- MPEG-2 MICROMV
- MPEG-2 SuperVCD

- Transport Stream
- MOV
- MP4
- 3GPP
- QuickTime
- MXF Generic
- Sony XDCAM HD
- Sony XDCAM IMX
- Sony XDCAM DV
- Sony XDCAM SXS HD
- Sony XDCAM SXS IMX
- Sony XDCAM SXS DV
- Sony XAVC 4K
- Panasonic P2 DVCPRO
- Panasonic P2 AVCI
- ASF/WMV

Supported video compression formats:

- HEVC/H.265 Video
- AVC/H.264 Video
- MPEG-4 Video
- MPEG-2 Video
- MPEG-1 Video
- DVSD Video
- DV CPRO 25
- DV CPRO 50
- DV CPRO 100 (DV HD)
- JPEG 2000

Supported audio compression formats:

- AAC Audio
- MPEG Audio Layer I/II/III
- WAV Audio

2. Installation

2.1 Installing JPlayout

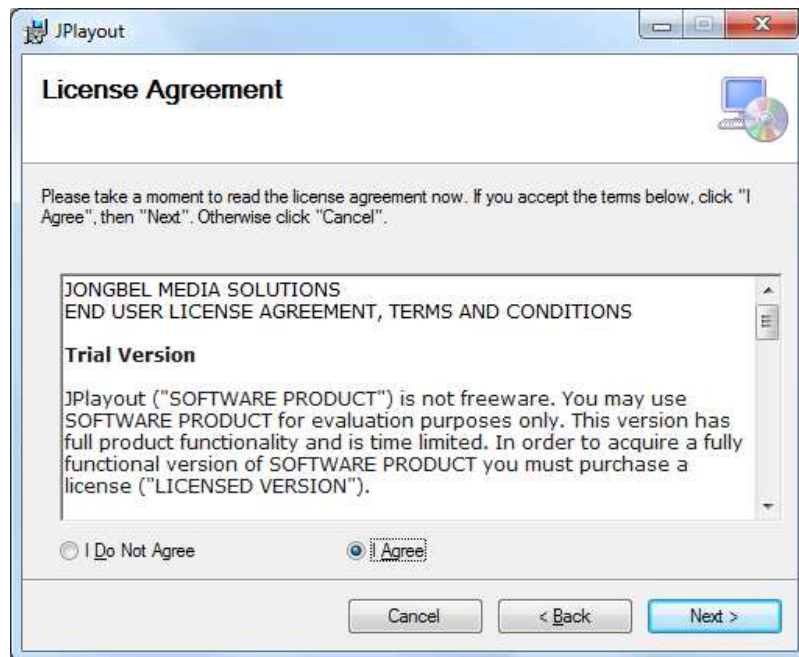
Before installing the **JPlayout** solution, make sure that any previous version of the product has been uninstalled refer 2.2.

The installation package of **JPlayout** is distributed in msi file. After downloading the file from the official Jongate web site – www.jongate.com, execute the installation by starting the msi file.

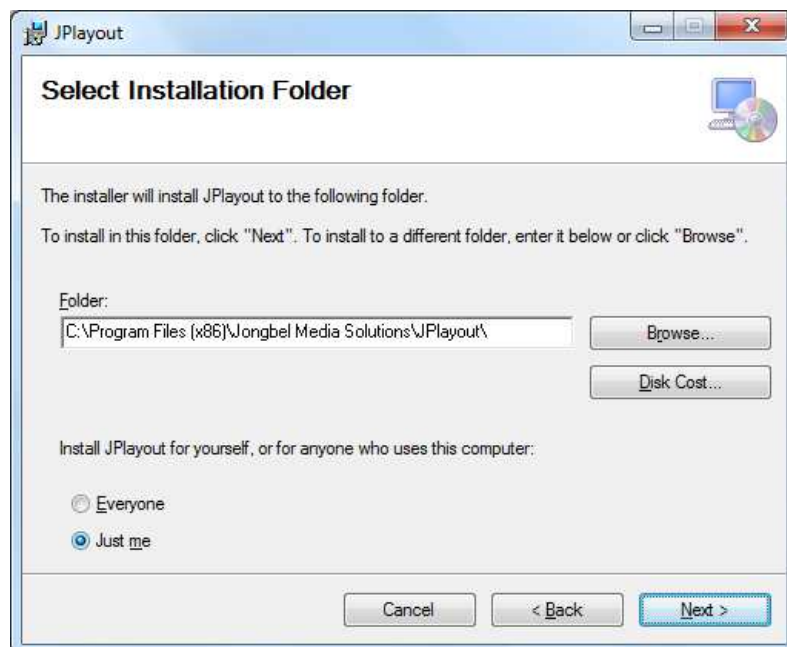
First a Welcome dialog pops up. Click “Next” in order to proceed.



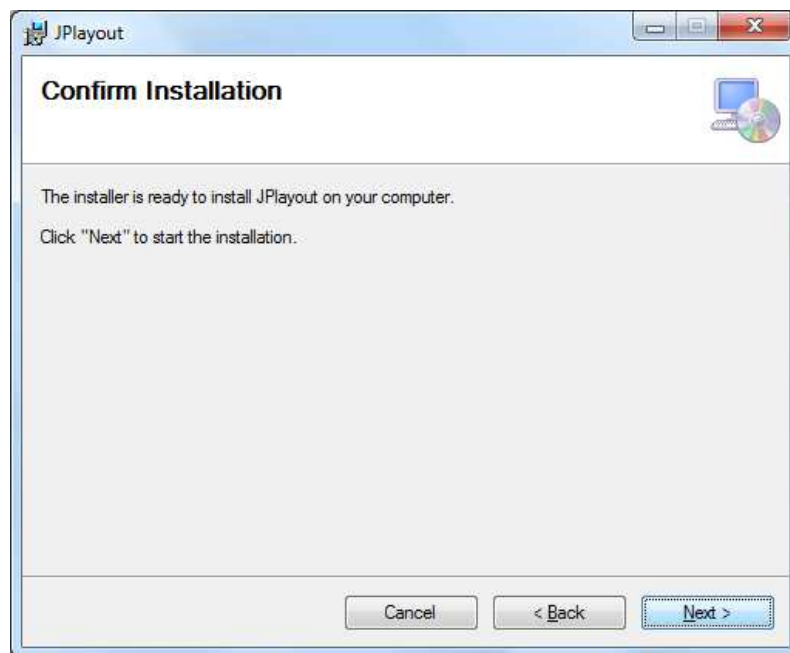
After this a License Agreement dialog pops up. Read the agreement carefully, select “I Agree” if you agree all the terms and click “Next” to proceed.



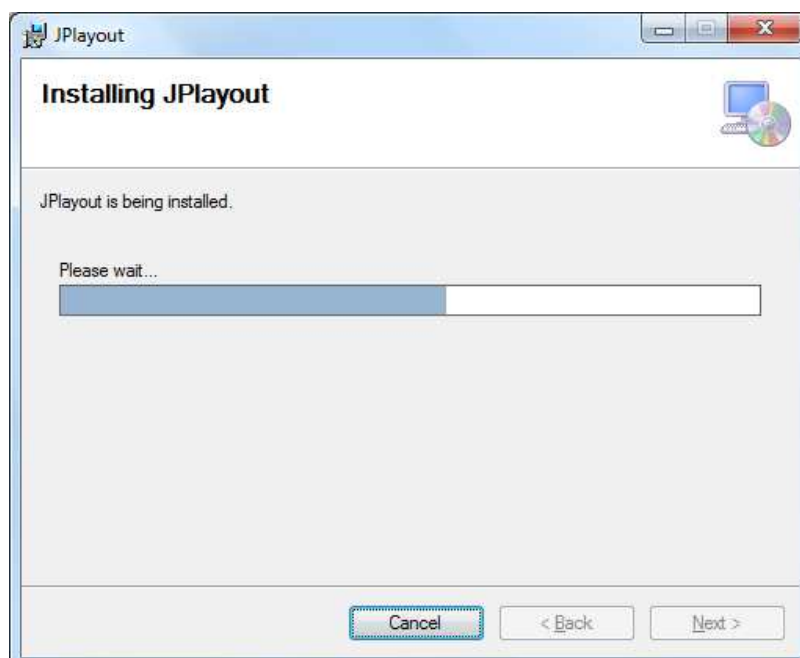
The next window shown specifies the installation product location and user access to the product. Change the destination product folder and user access if needed and click "Next" to proceed.



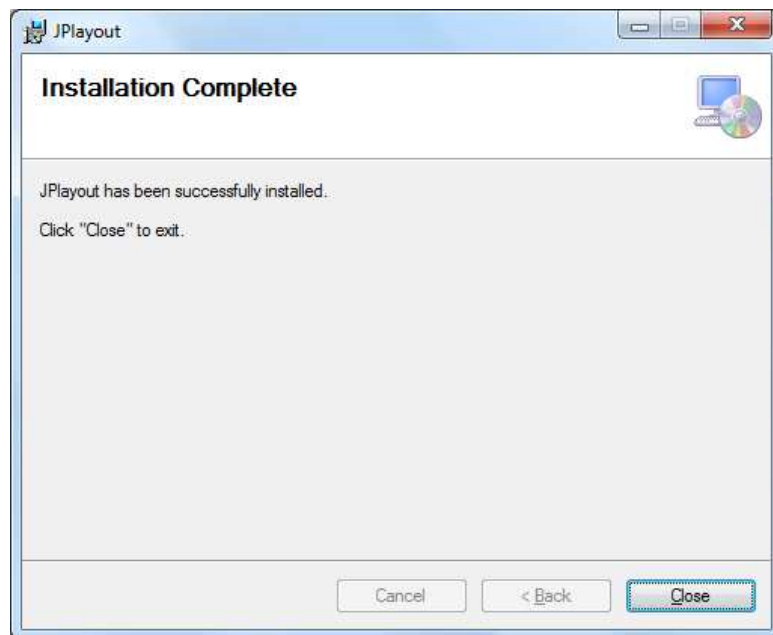
The next dialog is a confirmation dialog. Confirm by clicking "Next" in order to start the installation procedure.



While the product is being installed an “Installing” window shows the installation progress. Wait until the product is being installed.



At the end an “Installation Complete” dialog pops up, which denotes the successful **JPlayout** installation. Click “Close” to finalize the process.



2.2 Uninstalling JPlayout

The application can be removed opening the Control Panel – Programs and Features. Select the **JPlayout** application and click Uninstall.

3. General

The JPlayout solution is separated in three main parts – On Air, Playlist and Trimmer.

The On Air part is positioned on the left side of the solution and contains the on-air preview window, audio monitoring and control, and playback control buttons. The preview panel shows the current video on the playout output. Audio volume meters are positioned below the video preview. On the right of the video preview is positioned the audio volume control bar and the audio mute button. Below the audio volume meters are positioned the playback control buttons.

The Playlist part is positioned at the middle of the solution and contains the file and playlist position bars, the playlist list view and the playlist control buttons. The current file position is located at the top of the Playlist and denotes the playback position of the file being currently played. The playlist position bar denotes the position in the entire playlist and is located below the file position bar. The playlist list view is located below the position bars. It contains the following columns:

- denotes the playlist item number

Title – denotes the playlist item title

Start Time – denotes the in-playlist start time

Duration – denotes the trimmed clip duration.

Location – denotes the media file location

In – denotes the trimmed in-point of the media file

Out – denotes the trimmed out-point of the media file

Events – denotes the event assigned to the current playlist item

The playlist control buttons are located below the playlist list view. During the playback the playlist can be reviewed. AutoScroll button performs auto scrolling and positioning of the file currently being played.


The Trimmer part is positioned on the right of the solution and contains the trimmer video preview window, audio volume meters, position, in, out and duration edit boxes, seeking bar and trimmer control buttons. The trimmer video preview shows the rendered video of the currently loaded media file. The seeking bar can be used to position the trimmer to any point in the file. It is possible to manually set the Position, In or Out point by entering it in the corresponding edit box and hitting "Enter". The trimmer control buttons, located below the video preview window, can be used for controlling the trimmer seeking and in/out point selection.


4. Functions

4.1. File Functions

The following functions are available from the application's **File** menu.

New Playlist – Clears the current playlist and opens a new one.

Load Playlist – Loads previously saved playlist. The function is also available as a button  at the bottom of the form.


Save Playlist – Saves the current playlist. The function is also available as a button  at the bottom of the form.

Refresh Playlist – Refreshes the current playlist items. The function can be used when some of the items have been changed or the playlist has been updated.


Exit – Closes the JPlayout solution.


4.2. Edit Functions


The following functions are available from the application's **Edit** menu.

Add File – Adds a media file into the current playlist. The file is added at the bottom of the playlist. It is possible to add media files into the playlist while the palyout is running and stopped. The function is also available as a button  at the bottom of the form.

Remove File – Removes the currently selected media file from the playlist. While the palyout is stopped it is possible to remove any file from the playlist. While the palyout is running it is possible to remove only files that


have not been played yet. The function is also available as a button  at the bottom of the form.


Move File Up – Moves the selected file up with one position. While the palyout is stopped it is possible to move any file to any position in the playlist. While the payout is running it is possible to move only files that have not been played yet up to position in the playlist which has not passed. The function is also available as a button  at the bottom of the form.


Move File Down – Moves the selected file down with one position. While the palyout is stopped it is possible to move any file to any position in the playlist. While the payout is running it is possible to move only files that have not been played yet. The function is also available as a button  at the bottom of the form.


4.3. **Playout Functions**


The following functions are available from the application's **Playout** menu.


Play – Starts the playback from the beginning of the current playlist. The function is also available as a button  at the bottom of the form.

Pause – Pauses the playback. To resume the playback the Play command must be executed, ether from the menu or hitting the Play button. The function is also available as a button  at the bottom of the form.

Stop – Stops the playback. The function is also available as a button  at the bottom of the form.

Jump – Jump to the selected file in the playlist and starts the playback. Can be executed, while the playback is in stopped, paused or in running state. The function is also available as a button  at the bottom of the form.

Previous – Jumps to the file previous to the currently played one and resumes the playback. Can be executed, while the playback is in stopped, paused or in running state. The function is also available as a button  at the bottom of the form.

Next – Jumps to the file next to the currently played one and resumes the playback. Can be executed, while the playback is in stopped, paused or in running state. The function is also available as a button  at the bottom of the form.


4.4. Trimmer Functions


The trimmer is located in the most right part of the solution. It is hidden, while disabled. It is used to set in-point and out-point of the media files from the playlist. Files from the current playlist can be loaded into the Trimmer by double-clicking them in the playlist. If the file has been trimmed before the in and out points are loaded into the trimmer. Simple playback and seeking operations are available for easy in and out point selection. The seeking bar is loaded with the loaded file duration. The trimmer supports multi-program and multi-audio media files. Audio monitoring of each program is shown on the right side of each program preview panel.


The following functions are available from the application's **Trimmer** menu.


Trimmer Enabled – Enables/Disables the trimmer from the playout solution.


Unload File – Unloads the file, currently loaded in the trimmer.


Play – Starts playing the file loaded in the trimmer. The function is also available as a button  at the bottom right of the form.


Pause – Pauses the file loaded in the trimmer. The function is also available as a button  at the bottom right of the form.


Stop – Stops the file loaded in the trimmer. The function is also available as a button  at the bottom right of the form.


Step Backward – Positions the trimmer one frame backward and remains in paused state. The function is also available as a button  at the bottom right of the form.

Step Forward – Positions the trimmer one frame forward and remains in paused state. The function is also available as a button  at the bottom right of the form.

Mark In – Sets the current media position of the trimmer as an in-point. The in-point will be used by the playback engine – the media file will start playing from the chosen in-point. The function is also available as a button  at the bottom right of the form.

Mark Out – Sets the current media position of the trimmer as an out-point. The out-point will be used by the playback engine – the media file will stop playing at the chosen out-point. The function is also available as a button  at the bottom right of the form.

Set In/Out – Applies the chosen in-point and out-point of the currently loaded in the trimmer file back into the playlist. The playout engine will use the in-point as a start position of the media file and the out-point as an end position of the file. The function is also available as a button  at the bottom right of the form.

Reset In/Out – Resets the in-point and out-point of the currently loaded in the trimmer file back to the original file start and end positions. The points are reset only in the trimmer – in order to be applied back into the playlist the function “Set In/Out” must be executed. The function is also available as a button  at the bottom right of the form.

4.5. Streaming Functions

The following functions are available from the application's **Streaming** menu.

Enable IP Streaming – Enables and starts the streaming module with the currently selected streaming configuration.

Auto IP Stream Playback – Enables automatic stream playback synchronized with the playout. If the option is disabled the user can start the streaming manually by opening the streaming module.

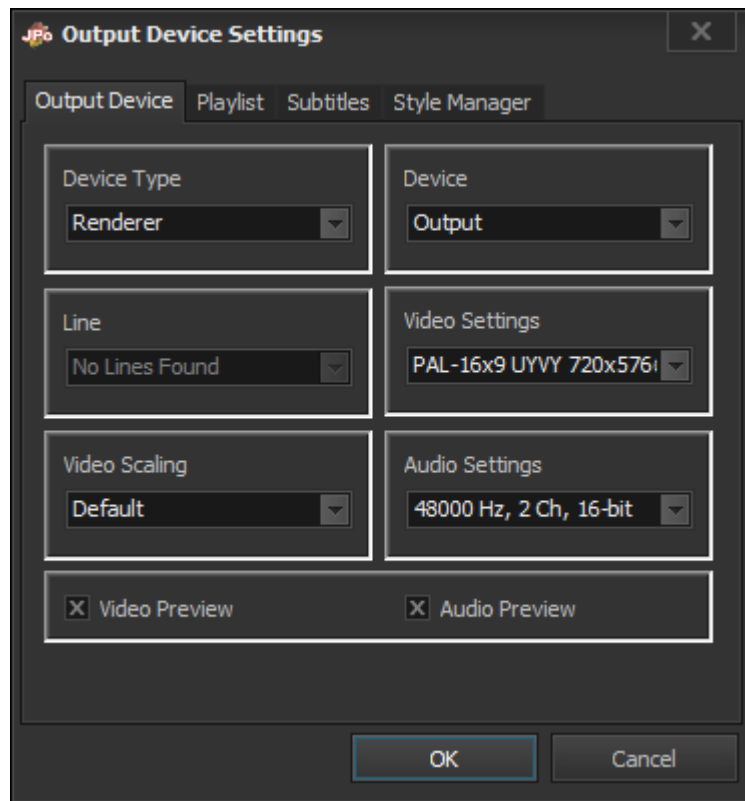
IP Stream Setup – Opens the streaming configuration dialog. The configuration is described in the JIPEncoder documentation.

Show IP Streaming Tool – Shows/hides the streaming tool. The tool can be hidden and still streaming. And it is possible to show the tool to preview the streaming bitrate, PSNR and other monitors.

4.6. Tools Functions

The following functions are available from the application's **Tools** menu.

Settings – Opens the Output Device Settings dialog.



The Output Device Settings dialog is used for setting up the output device, audio and video formats. The following fields can be configured:

Device Type – Specifies the type of the output devices, which will be enumerated for output. Currently only renderers are supported as output.

Device – Specifies the output device, used by the playout engine for playback. The output device list represents the currently available playout hardware and software devices on the system supported by the playout solution.

Line – Specifies the output device line/interface, used by the playout engine for playback. The output device line list represents the currently available output interfaces by the selected playout hardware or software device, such as SDI, Component, Composite, HDMI, etc. .

Video Settings – Specifies the output video format for the playout engine. The playout solution will perform the playback of all the media files through the selected output device and line with the selected video format.

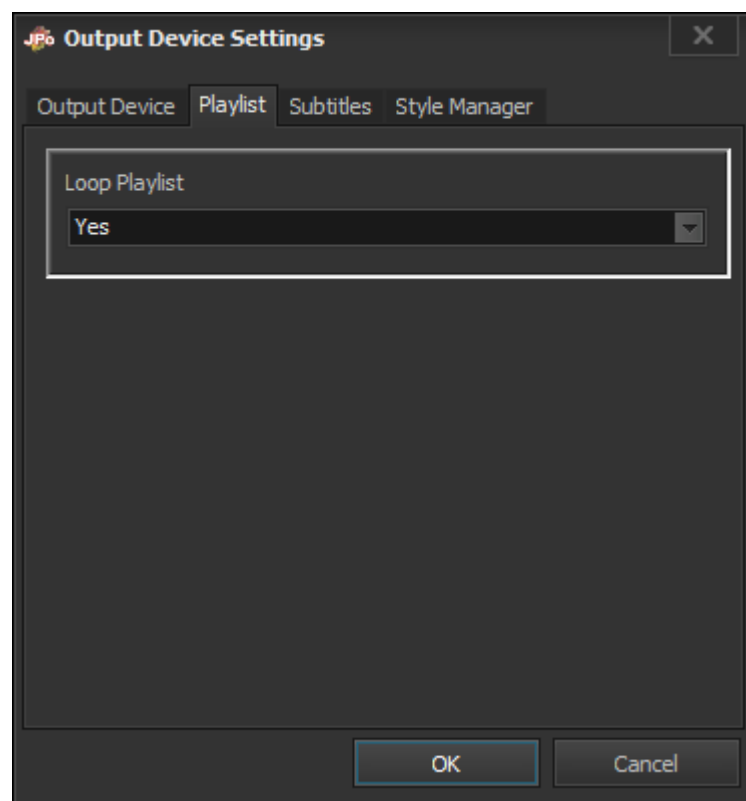
Audio Settings – Specifies the output audio format for the playout engine. The playout solution will perform the playback of all the media files through the selected output device and line with the selected Audio format.

Video Scaling – Specifies the video output scaling method. The following scaling modes are available:

- Default – no scaling
- None – no scaling
- Letterbox – adds letterbox / pillarbox keeping the output aspect ratio
- Crop – crops the output to match fill the output video frame
- No scale – stretches the vide to the output video frame

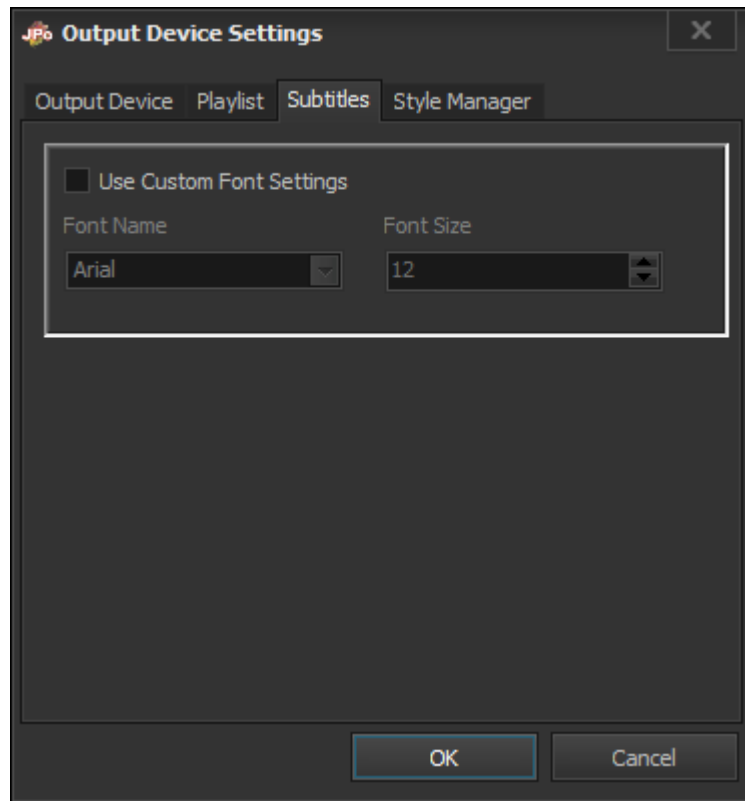
Video Preview – Enables the video preview.

Audio Preview – Enables the audio preview.



The Playlist tab in the Settings dialog is used for setting up the playlist behavior:

Loop Playlist – If set, the playlist is looped when the end is reached.

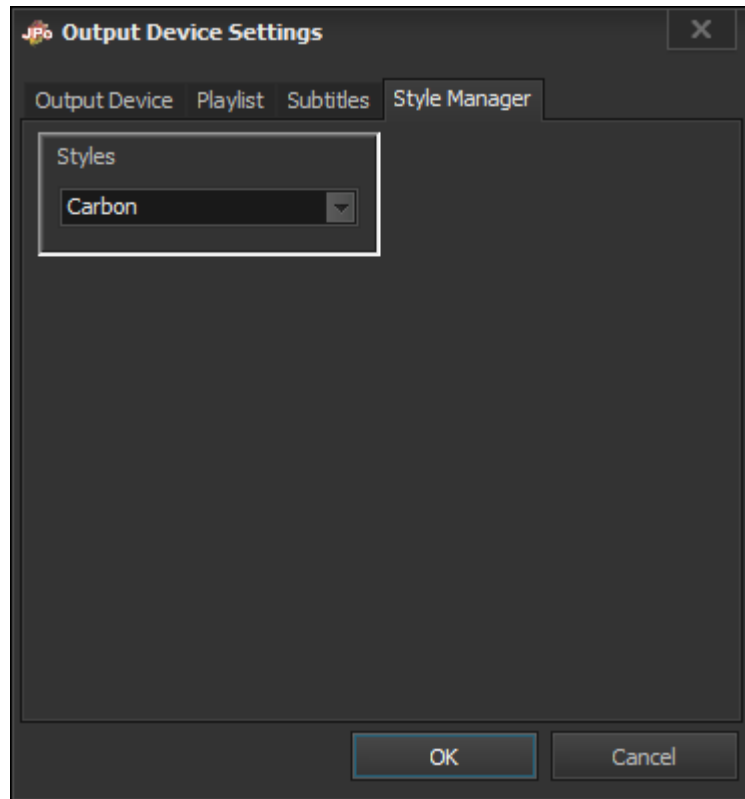


The Subtitles tab in the Settings dialog is used for setting up the subtitles behavior:

Use Custom Font Settings – Enables custom font for the subtitles.

Font Name – The custom font name.

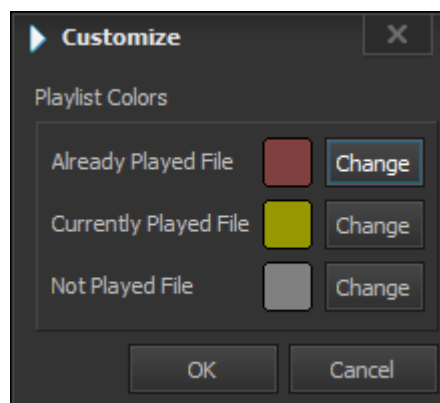
Font Size – The custom font size.



The Style Manager tab in the Settings dialog is used for setting up the visual style of the solution:

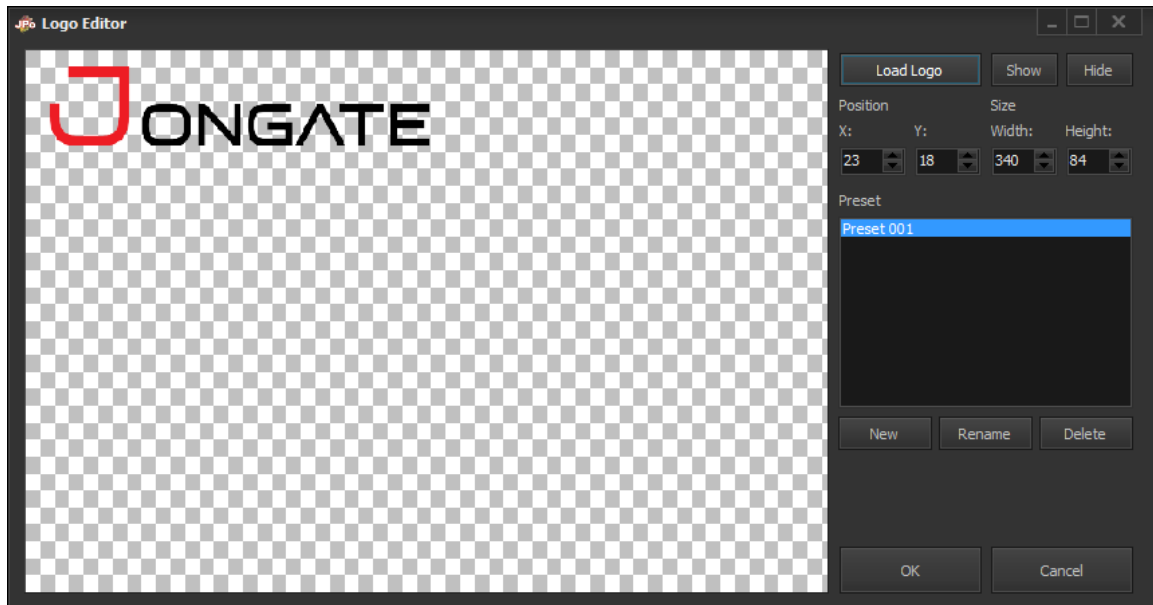
Styles – Selects the solution style.

Customize – Opens the Customize dialog.



Through the Customize dialog, the playlist colors can be adjusted. Each media file has three states – not played, currently played and already played. Each state can be marked with different color.

Logo Editor – Opens the Logo Editor dialog, used for logo insertion.



The Logo Editor supports import of most popular image formats, such as BMP 24 and 32 bit, TGA, JPEG and PNG. The alpha channel in all image formats, if present, is supported by the editor. The following controls are available in the editor:

The logo needs to be loaded into a preset. The presets are created with the “New” button, renamed with the “Rename” button and deleted with the “Delete” button. After creating new preset or selecting an existing one, it is possible to load the logo image with the “Load Logo” button. The “Show” button sets the logo in visible state and “Hide” button shows the logo in hidden state. Position and Size control the position and size of the logo on the screen.

Hitting “OK” will preserve all the logo presets changes, and “Cancel” will simply cancel the changes.

The logo presets, created by the logo editor, are then available in the playlist and can be assigned to each playlist time with the “Logo On” even, where it is possible to select the logo preset.

Graphics – Opens the graphics editing tool, described in the JGraphics documentation.

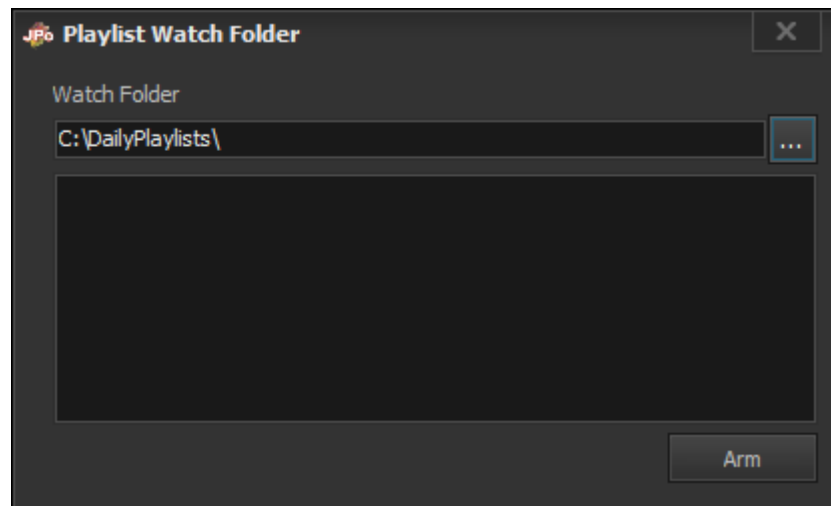
Seek Control – Shows/Hides the Seek Control form, which can be used for seeking in the file and playlist.



The “Playlist Seek” bar seeks along the entire playlist and “File Seek” seeks only in the currently selected file in the playlist. After each seek the playout is set in Pause state. It is also possible frame step backward and forward with the buttons on the right of the form, where the playlist and file positions are available.

Use Frame Based Timing – Sets the solution in frame based timing, where the time code values are displayed in days, hours, minutes, seconds and frames. If the option is not selected the time code values are displayed with milliseconds instead of frames.

Playlist Watch Folder – Opens the Playlist Watch Folder tool for automated daily playlist loading and playing.



The “Watch Folder” field holds the local or network folder, where all the playlists are expected. The “Arm” button arms the playback in watch folder mode. As soon as playlist appears in the watch folder it is loaded. Each playlist has start execution date and time in the following format:

2015_12_31_23_59_59_OPTIONAL_PLAYLIST_NAME.ML-PLS

The first four digits form the start year of the playlist, the second two digits from the month, the third two digits the day, the fourth two digits the hour, the fifth two digits the minutes and the sixth two digits the minute to start the playlist. An optional name is allowed after the date and time digits. The extension of the playlist file shall be “ML-PLS”. If the time of the playlist has not arrived yet, the playlist is being loaded and set in paused state on the first frame of the first clip in the playlist. If the time has passed, the playout engine calculates the current position of the playlist related to the time on the system and starts the playback from that position, keeping the playlist timing.

4.7. Help Functions

The following functions are available from the application **Help** menu.

Registration – Opens the product registration form. This function is available only in the full licensed version of the product.

Check For Updates – Enables/Disables automatic check for updates.

About – Opens the About dialog box of the product.

5. Trial and NFR version restrictions

The Trial and NFR versions of the JPlayout solution have the following restrictions. The decoded video has burned-in logo of the decoding components. The encoded audio streams are limited to 30 seconds only. After the 30th second the audio decoders produce silence. The IP streaming stops after 10 minutes.

6. JPlaylist

JPlaylist is a powerful playlist building and playout preview solution. The product supports in-playlist media clip trimming, audio volume preview and control, logo insertion and playlist preview. The built-in trimmer enables media clips preview and “in” and “out” trimming point selection, applicable into the playlist. The solution uses the same playout engine as in the main JPlayout solution, ensuring playlist and media files compatibility.

All the functions described for JPlayout solution are available in JPlaylist. The playout engine in JPlaylist is the same as in JPlayout solution.

JPlaylist is restricted not to be able to playout through an actual hardware device or to connect to the JIPEncoder. Its purpose is allow the offline playlist building, editing and preview.

7. Shortcuts

The following shortcuts are available in Jplaylist and JPlaylist:

JPlaylist	Fast Shortcuts	General
DEL		Remove Item
Alt+Enter	F	Fullscreen On/Off
ESC		Fullscreen Off
Ctrl+X		Cut
Ctrl+C		Copy
Ctrl+INS		Copy
Ctrl+V		Paste
Shift+INS		Paste
Ctrl+A		Select All Items
Ctrl+UP		Move Item Up
Ctrl+DOWN		Move Item Down
Ctrl+D		Add File
Ctrl+L		Add Live
Ctrl+O		Load Playlist
Ctrl+S		Save Playlist
Ctrl+Shift+F		Enable/Disable Fast Keyboard Shortcuts
Ctrl+P	P	Play
Ctrl+U	U	Pause
Ctrl+T	T	Stop
Ctrl+J	J	Jump
Ctrl+R	R	Previous
Ctrl+N	N	Next
Ctrl+E	E	Cue

8. REST API

JPlaylist can be controlled through REST API. The REST API control can be enabled from the Tools menu - Rest API. The below functions are available for externally controlling the JPlaylist.

GET [host]

Returns the current playlist status (play, pause, stop), position (index and time), main settings. Host is the IP of the system, where the REST API server is started.

Example: GET http://192.168.0.103:8080/

PUT [host]\watchfolder {"path": "SomeDir"}

Changes the watchfolder and returns the new value.

Example: PUT http://192.168.0.103:8080/watchfolder/?path=C:\watchfolder

PUT [host]\watchfolder {"command": "Arm"}

Arms the watchfolder and returns the new state.

Example: PUT http://192.168.0.103:8080/watchfolder/?command=arm

PUT [host]\watchfolder {"command": "Disarm"}

Disarms the watchfolder and returns the new state.

Example: PUT http://192.168.0.103:8080/watchfolder/?command=disarm

GET [host]\watchfolder

Returns the currently set watchfolder (armed or disarmed).

Example: GET http://192.168.0.103:8080/watchfolder/

PUT [host]\items\ {"path": "SomePath"}

Adds a item "SomePath" and returns resulting file count and total duration.

Example: PUT http://192.168.0.103:8080/items/?path=C:\media.mp4

PUT [host]\ {"path": "SomePath"}

Loads a playlist "SomePath" and returns resulting file count and total duration.

Example: PUT http://192.168.0.103:8080/?path=C:\playlist.ml-pls

PUT [host]\ {"command": "Play"}

Start playout and the returns the new state.

Example: PUT http://192.168.0.103:8080/?command=play

PUT [host]\ {"command": "Pause"}

Pauses playout and the returns the new state.

Example: PUT http://192.168.0.103:8080/?command=pause

PUT [host]\ {"command": "Stop"}

Stops playout and the returns the new state.

Example: PUT http://192.168.0.103:8080/?command=stop

PUT [host]\ {"command": "Next"}

Play next item playout and the returns the new state.

Example: PUT http://192.168.0.103:8080/?command=next

PUT [host]\ {"command": "Prev"}

Play previous item playout and the returns the new state.

Example: PUT http://192.168.0.103:8080/?command=prev

PUT [host]\items\[index]\ {"command": "JumpTo"}

Jumps to the item with the selected index and the returns the new state. The index starts from 0.

Example: PUT http://192.168.0.103:8080/0/?command=jumpto

PUT [host]\items\[index]\ {"command": "Cue"}

Jumps to the item with the selected index, pauses it and the returns the new state. The index starts from 0.

Example: PUT http://192.168.0.103:8080/0/?command=cue

GET [host]\items

Lists all items in xml format

Example: GET http://192.168.0.103:8080/items/

GET [host]\items\[index]

Returns the selected index files properties. The index starts from 0, which is the first item in the playlist.

Example: GET http://192.168.0.103:8080/items/0/

DELETE [host]\items\[index]

Deletes the selected item and returns resulting file count and total duration.

Example: DELETE http://192.168.0.103:8080/items/0/

DELETE [host]\items

Stops playout and deletes all the items and returns resulting file count and total duration.

Example: DELETE http://192.168.0.103:8080/items/