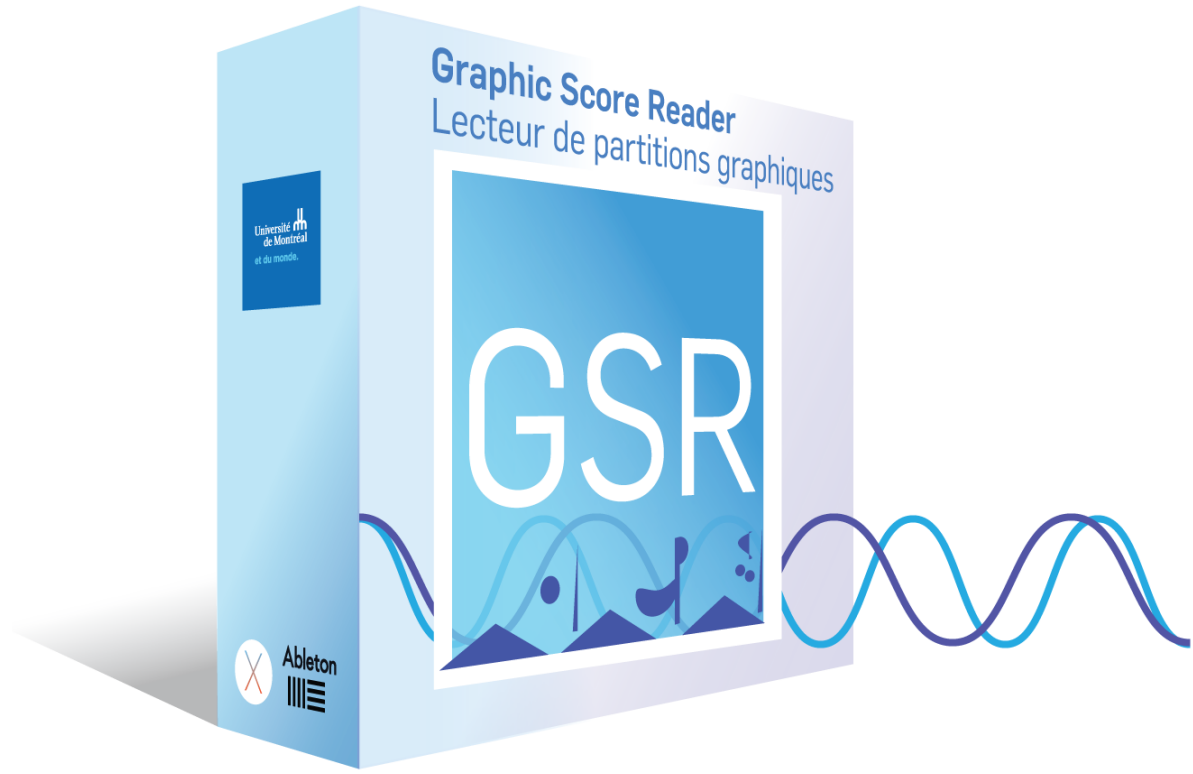


USER'S MANUAL (BETA VERSION)

GSR is a macOS *Max for Live* device for *Ableton Live* that allows real-time scrolling of graphical score files, thus allowing score playback to be combined with the mapping and audio features of a DAW environment.

System and Software Requirements

Tested on Mac OS X Sierra running Ableton Live 9.9.7.

On Live 10, please use Max 8.0.3 or higher as there are bugs related to Max 8.0.0.

On Live 9, please use Max 7.3.5 or 7.3.6.

In both cases, please make sure to set Live to use an external Max application rather than the bundled version of Max. You can change this setting in Live via Preferences -> File Folder -> Max Application. The appropriate versions of Max can be downloaded from cycling74.com.

License and Credits

More on Laboratoire son / matière:
http://son-matiere.org

More information on Nicolas Bernier:
http://nicolasbernier.com

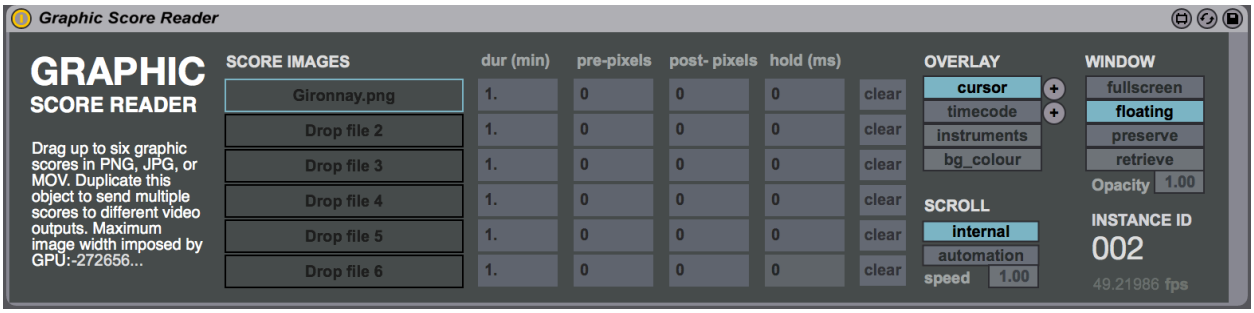
More information on Evan Montpellier:
https://github.com/evanmtp

More information on Université de Montréal:
http://umontreal.ca

More information on the digital music programs:
http://musnum.musique.umontreal.ca

Laboratoire son / matière is acknowledging the financial support of Fonds de recherche du Québec – Société et culture (FRQSC).

Overview



Graphic Score Reader (GSR) is macOS a *Max for Live* device that allows real-time playback of graphical score files, usually JPGs or PNGs. Each instance of the device generates its own video output window and can host up to six score files, allowing for multiple scores to be played in sequence for concert presentation. Multiple instances of the device may be loaded in order to support synchronized output of distinct score files. For example, one instance could host a score to be projected for viewing by an audience, while another could host an annotated version of the same score to be viewed on displays by instrumentalists. Playback may be directly linked to *Live*'s transport or controlled via automation curves. GSR can also be loaded as a standalone application, in which all parameters are exposed via OSC.

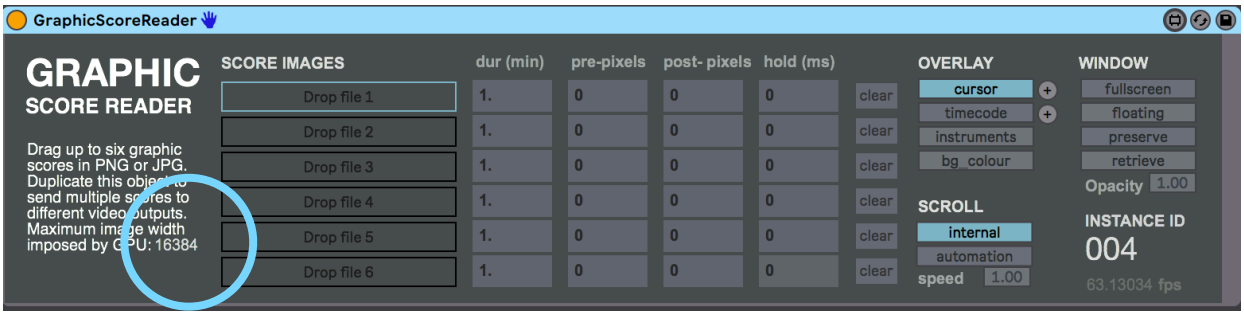
GSR was developed in 2018 for use by the Ensemble d'oscillateurs at the Université de Montréal. The project was directed by Nicolas Bernier and implemented by Evan Montpellier.

Setup

1) Drag the AMXD file onto an Ableton Live MIDI track
2) Drag the graphic file onto the drop file boxes of the AMXD

Specifications

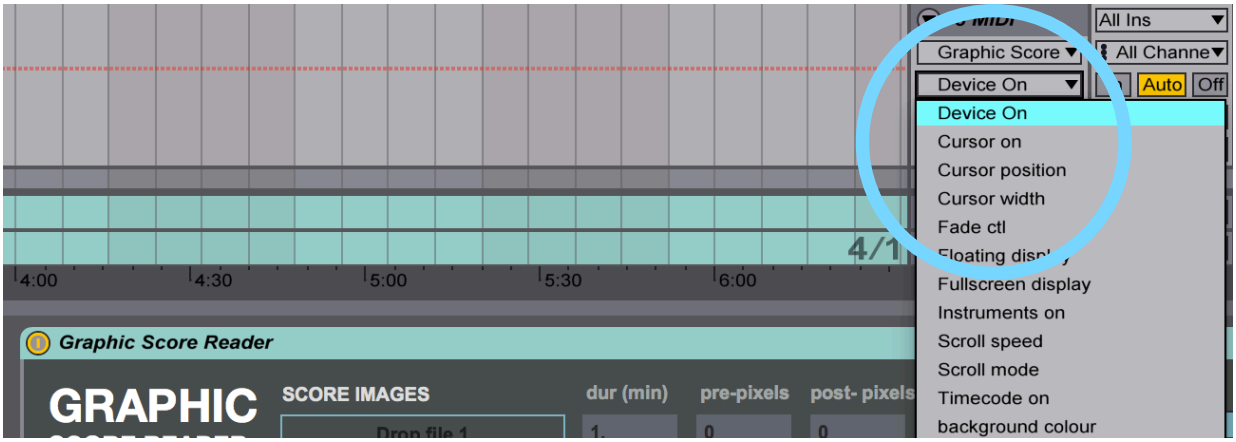
Maximum image width



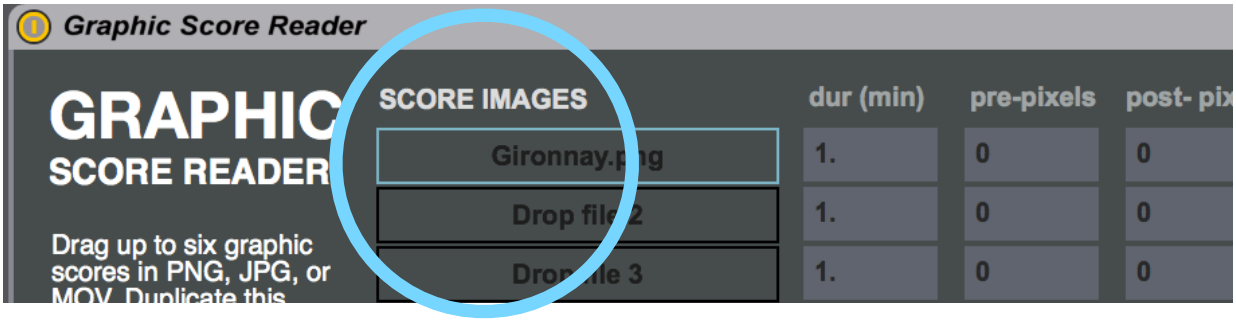
The device stores score image files as OpenGL textures. This number is the maximum width (in pixels) of a texture that can be used on your system as determined by your GPU. Score files with a dimension that is larger than this value will not load correctly. This dimension is written on the left bottom side of the device.

Control

Most of GRS's control can be MIDI mapped and automated.

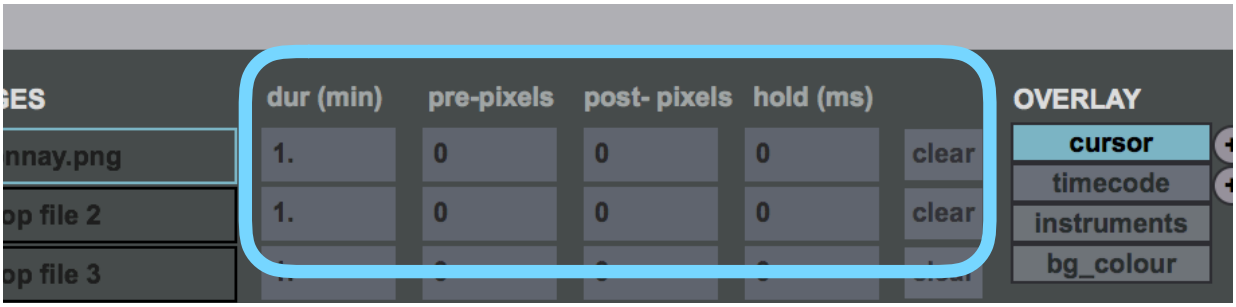


Score image slots



Drag an image or video file (with no accents or spaces in its filename) onto one of the slots in order to load it, or click on a slot to open a file dialog box.

Timing controls



dur (min)
Sets the amount of time you want it to take for the score to scroll from beginning to end.

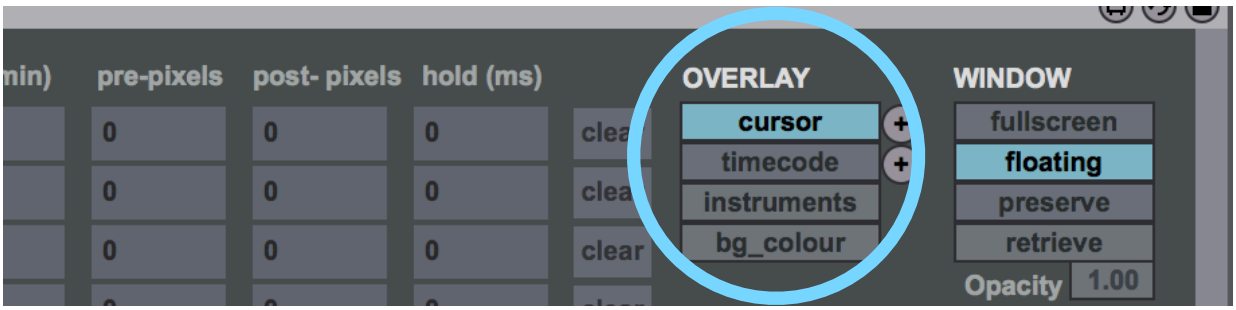
pre-pixels
If your score file contains horizontal space before the graphical elements (e.g., because it has a border), you must specify the width of this leading space in pixels. This quantity must be entered accurately in order for the score to scroll at the correct rate. It is suggested that you measure this precisely using an image viewing/editing application.

post-pixels
Same as above, but for horizontal pixels that follow the graphical elements in the score file.

hold (ms)
The amount of time to wait after the end of one score file before the next score file is loaded. Useful for creating pauses in a concert program.

Clear buttons
Click to remove a score file from the corresponding slot.

Overlay settings



The device allows you to superimpose several overlays, including a playhead cursor, a timecode display and an instrument guide.

Cursor
The cursor is a vertical bar used to indicate the current position in the score.

On/off
Toggle the cursor on or off.

Colour
Set the colour of the cursor.

Alpha
Set the transparency of the cursor.

Position
Set the horizontal position of the cursor.

Width
Set the width of the cursor.

Timecode

The timecode overlay shows the current time in the format HH:MM:SS:msmsms. The time value is derived from *Live*'s transport (*Max for Live* version) or the device's internal transport (standalone version).

On/Off

Toggle the timecode overlay on or off.

Colour

Set the colour of the timecode overlay.

Alpha

Set the transparency of the timecode overlay.

Position

Set the horizontal position of the timecode overlay.

Scale

Sets the size of the timecode overlay.

Instruments

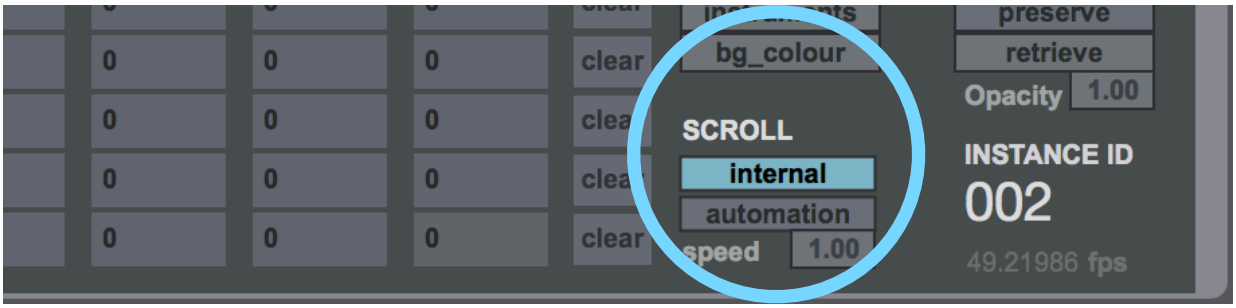
The instruments guide is a vertical bar that appears at the left-hand side of the output window with labels for each individual instrument (by default, oscillators 1-10) used to visually divide the score into parts for individual instrumentalists.

To add a custom instrument guide, place a file named instrument.png within the same folder as the GSR AMXD file.

On/Off

Toggle the instrument guide on or off.

Scrolling settings



Scroll mode

Sets the scrolling mode. In mode 0 (internal), scrolling is controlled by *Live*'s transport. In mode 1 (automation), scrolling is controlled by the Scroll Position parameter.

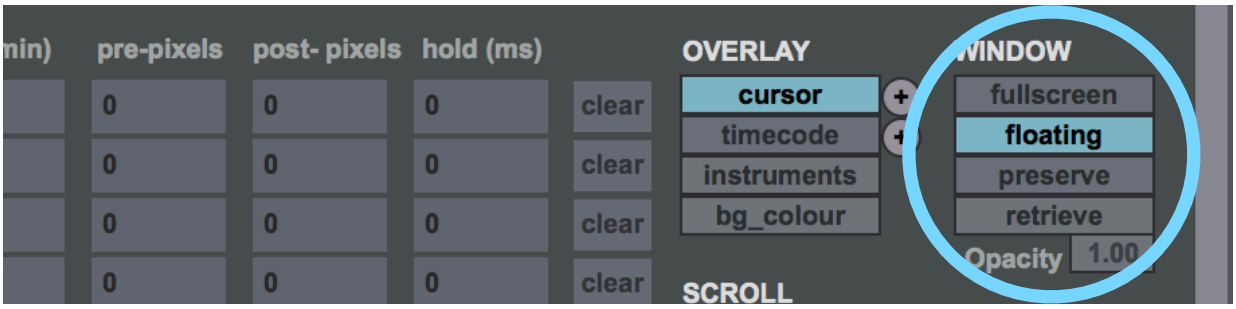
Scroll speed

Only works when scroll mode is set to 0 (internal). Controls the speed at which the score image scrolls, ranging from 0. (fully stopped) to 10. (100% speed).

Scroll position

Only works when scroll mode is set to 1 (automation). Sets the position of the scrolling image as a value from 0. (start) to 1. (end). Useful for automating complex scroll movements, including reversals, pauses and speed changes.

Window settings



Fullscreen

Toggles whether the output window is fullscreen. You can also toggle fullscreen by double-clicking on the video window's interior. The esc key will switch fullscreen off for all windows.

Floating

Toggles whether the output window floats over other windows.

Preserve

Preserve will keep original aspect ration of the image while Stretch will adapt the image to the size of the video output.

Retrieve

Returns the output window to a default position.
Keyboard Shortcut : R

Instance ID

Shows the three-digit ID tag automatically assigned to this instance of the device by *Live*. This is mostly only useful for debugging.

Framerate counter

Displays the framerate of the video output window in FPS.

Video output

Score images appear in a video output window. The name of the window is always (instance-id)_score, e.g. 024_score. To enter or exit fullscreen, double-click on the window. If you have additional displays or projectors connected, drag the window to the display that you wish for it to appear fullscreen on before double-clicking. If you lose the window, click the Retrieve button in the device interface to return it to a default positon. The escape key will exit full screen in ALL video output windows at once.

Multiple instances

Multiple instances of the device may be loaded simultaneously. Each instance of the device generates its own video output window. Timing and overlay controls are shared between all instances of the device in a given set. Score image files are stored independently for each instance, as are output window settings. This mix of shared and independent parameters is designed for concert scenarios that require both a projected image for audience viewing as well as a separate image for performers. In such a scenario, one instance of the device can be loaded with score files intended for projection, while a second instance can be loaded with a related-but-distinct set of score files for viewing by performers (e.g., the same images, but with more explicit annotations).

If you have additional displays or projectors connected, drag the window to the display that you wish for it to appear fullscreen on before double-clicking.

Standalone version

In addition to the *Max for Live* device, GSR is available as a standalone application. The standalone version has several unique features, including an internal transport with keyboard controls, a distinct saving/loading mechanism and OSC control over all parameters.

Transport controls

The standalone application runs off its own internal transport. Press the spacebar to pause or unpause the transport. Press the left arrow key to rewind by ten seconds and the right arrow key to fast-forward by ten seconds.

Saving and loading

Whereas the *Max for Live* version of GSR benefits from *Live*'s ability to save device parameters along with a *Live* set, the standalone version requires that you manually save and load parameter files. A set of parameters may be saved as a JSON file. To save your settings, click on the "save" button on the right of the application window. To reload parameters from a file, click the "load" button and select the file you wish to use.

Open Sound Control (OSC)

In the standalone version, all parameters are exposed for control via OSC. Commands can be sent to the standalone via UDP (e.g., using the [udpsend] object in Max). The OSC port for the standalone can be specified using the number box in the bottom right of the main window. The default OSC port is 7981.

OSC namespace

The OSC namespace is as follows:

Address	Type	Range	Description
/[1-6]/clear	any		Clears the file from the slot.
/[1-6]/dur	float	0-n	Sets the time (in minutes) it will take to play through the score.
/[1-6]/pixels/pre	int	0-n	Sets the number of pixels before the graphical elements in the score image.

/[1-6]/pixels/post	int	0-n	Sets the number of pixels after the graphical elements in the score image.
/[1-6]/hold	int	0-n	Sets the hold time (in ms) before the next score is loaded.
/[1-6]/file	string	file path	Sets the file to be loaded for a given slot.
/aspect/preserve	bool	0-1	Toggles whether the image should be displayed with its original aspect ratio or stretched to fill the output window.
/bgcolour/colour	float	0.-1.	Sets the background colour.
/bgcolour/saturation	float	0.-1.	Sets the saturation of the background colour.
/opacity	float	0.-1.	Sets the opacity of the score image. Useful for fading in and out.
/overlay/cursor/alpha	float	0.-1.	Sets the transparency of the cursor.
/overlay/cursor/colour	vec3f	0.-1.	Sets the colour of the cursor.
/overlay/cursor/on	bool	0-1	Toggles the cursor overlay on and off.
/overlay/cursor/position	float	0.-1.	Sets the horizontal position of the cursor.
/overlay/cursor/width	float	0.-100.	Sets the width (in pixels) of the cursor.
/overlay/instruments/on	bool	0-1	Toggles the instruments overlay on and off.
/overlay/timecode/alpha	float	0.-1.	Sets the transparency of the timecode overlay.
/overlay/timecode/ colour	vec3f	0.-1.	Sets the colour of the timecode overlay.
/overlay/timecode/on	bool	0-1	Toggles the timecode overlay on and off.
/overlay/timecode/ position/x	float	-1.-1.	Sets the horizontal position of the timecode overlay.
/overlay/timecode/ position/y	float	-1.-1.	Sets the vertical position of the timecode overlay.
/overlay/timecode/ saturation	float	0.-1.	Set the saturation of the timecode overlay colour.
/overlay/cursor/ saturation	float	0.-1.	Set the saturation of the cursor overlay colour.
/overlay/timecode/scale	float	0.-3.	Sets the size of the timecode overlay.
/port			Sets the OSC communication port.
/preset/save	any	n/a	Open the dialog box to save a preset file
/preset/load	any	n/a	Open the dialog box to load a preset file

/scroll/mode	bool	0-1	Sets the scrolling mode. In mode 0 (internal), scrolling is controlled by the internal transport. In mode 1 (automation), scrolling is controlled by the Scroll Position parameter.
/scroll/position	float	0.-1.	Only works when scroll mode is set to 1 (automation). Sets the position of the scrolling image as a value from 0. (start) to 1. (end). Useful for automating complex scroll movements, including reversals, pauses and speed changes.
/scroll/speed	float	0.-1.	Only works when scroll mode is set to 0 (internal). Controls the speed at which the score image scrolls, ranging from 0. (fully stopped) to 1. (100% speed).
/window/floating	bool	0-1	Toggles whether the output window floats over other windows.
/window/fullscreen	bool	0-1	Toggles whether the output window is fullscreen.
/window/render	bool	0-1	Toggles video rendering on or off.
/window/retrieve	any	any	Returns the output window to a default position.