

USER'S MANUAL (BETA VERSION)

Developed by Laboratoire son / matière (programming: Evan Montpellier), GSR is a macOS Max for Live device for real-time scrolling of graphical score files, allowing score playback to be combined with the audio and MIDI features of Ableton Live.

GSR version 1.0.2
March 8, 2020

System and Software Requirements

Tested on Mac OS X Sierra running Ableton Live 9.9.7 and macOS Mojave running Ableton Live 10.0.5.

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

Programmed by Evan Montpellier between 2018 and 2020 for Laboratoire son / matière directed by Nicolas Bernier in the digital music program at Université de Montréal.

More on Laboratoire son / matière:

<http://son-matiere.org>

More information on Nicolas Bernier:

<http://nicolasbernier.com>

More information on Evan Montpellier:

<https://evanmontpellier.net>

More information on Université de Montréal:

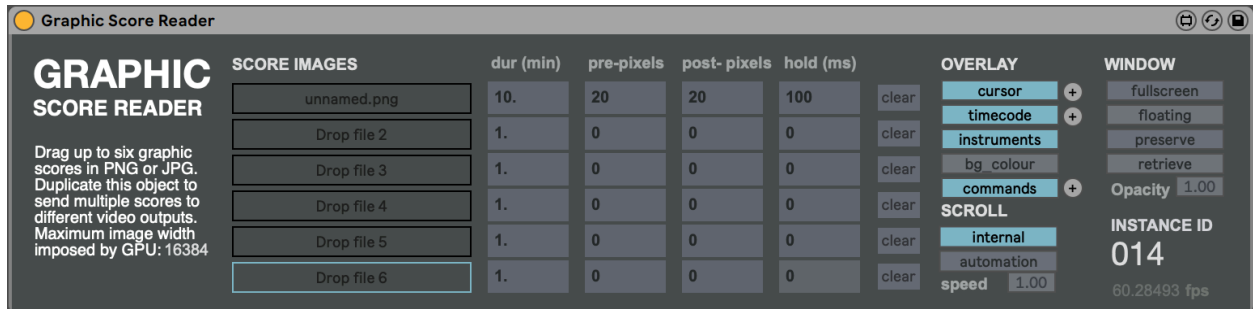
<http://umontreal.ca>

More information on the digital music programs:

<http://musnum.musique.umontreal.ca>

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

Overview



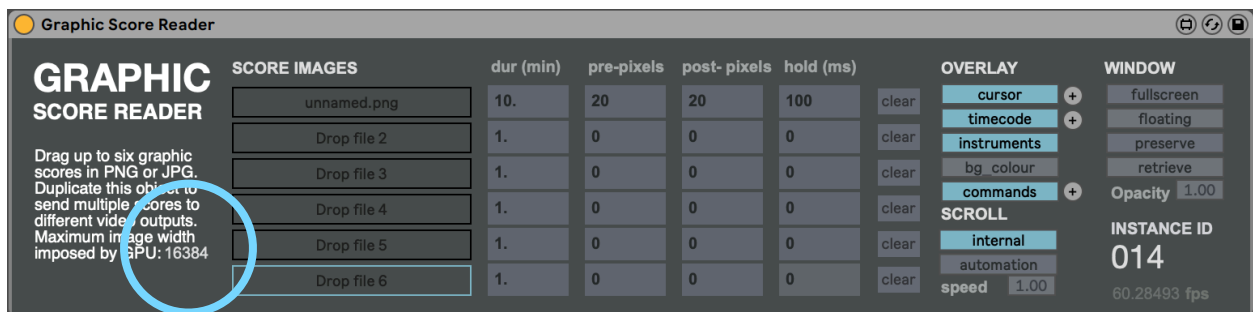
Graphic Score Reader (GSR) is a macOS Max for Live device that allows real-time playback of graphical score files, usually JPGs or PNGs. Each instance of the device generates its own video output window and can host up to six score files, allowing for multiple scores to be played in sequence for concert 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 between 2018 and 2020 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 score files onto the drop file boxes of the AMXD

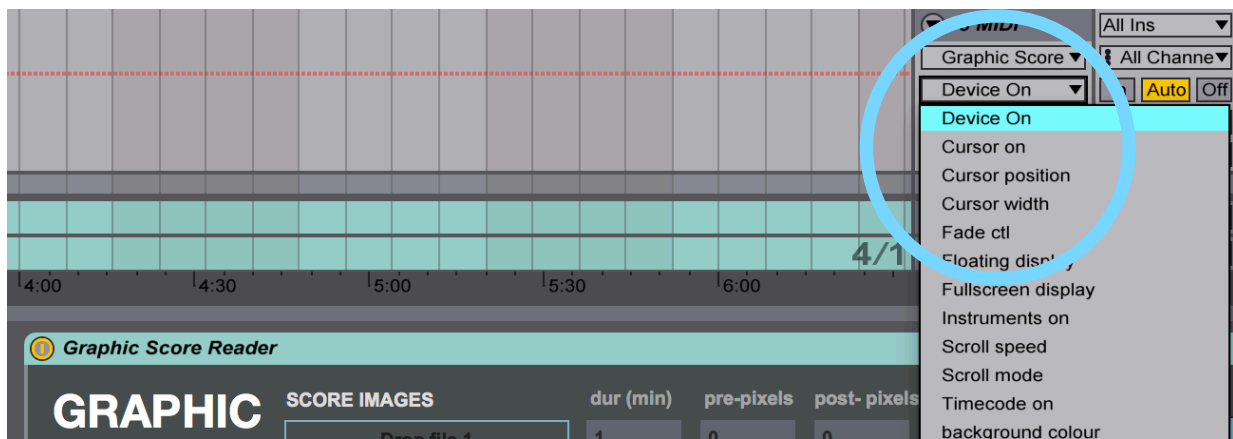
Specifications



Maximum image width

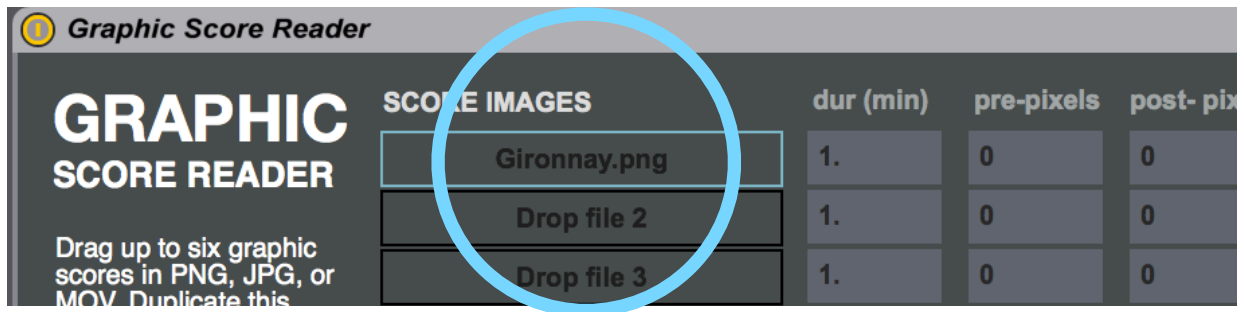
The device stores score image files as OpenGL textures. This number is the maximum width (in pixels) of a texture that can be used on your system as determined by your GPU. Score files with a dimension that is larger than this value will not load correctly. This dimension is written on the left bottom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

Control



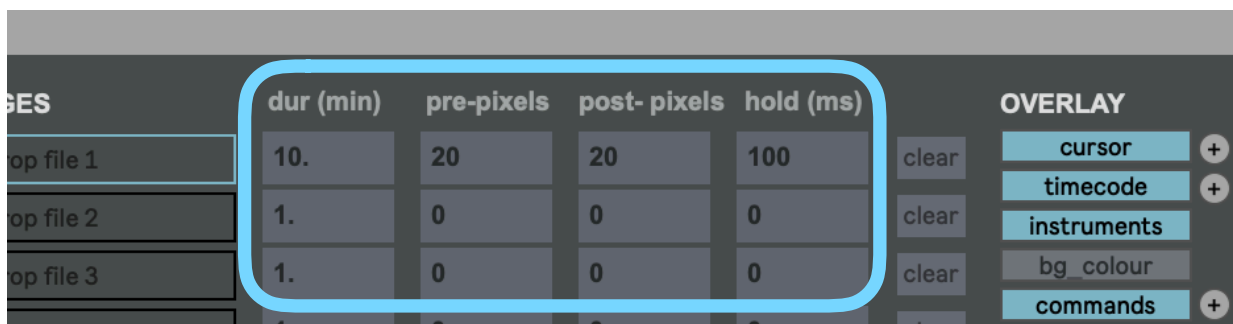
Most of GRS's controls can be MIDI mapped and automated.

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.

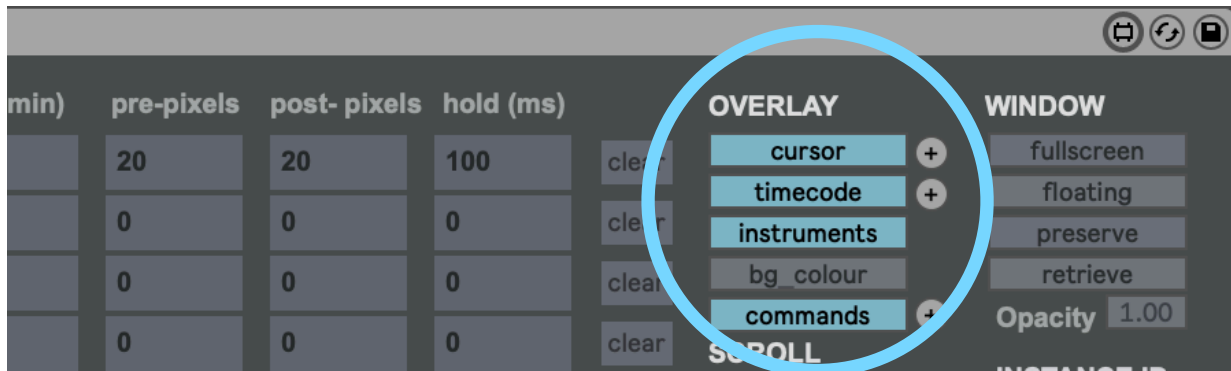
hold (ms)

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, an instrument guide and a command overlay.

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.

Saturation

Set the colour saturation of the cursor.

Alpha

Set the transparency of the cursor.

Position

Set the horizontal and vertical position of the cursor.

Width

Set the width of the cursor.

Angle

Rotate the cursor.

Marker

Display a marker showing the centre of the cursor. Useful as a visual guide for rotation.

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.

Saturation

Set the colour saturation of the timecode overlay.

Position

Set the horizontal and vertical 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.

Background colour

Set the background colour of the video output window.

Commands

The command overlay allows you to enter multiple text items that can be displayed sequentially in the video output window. This can be useful for giving directions to instrumentalists.

On/Off

Toggle the command overlay on or off.

Colour

Set the colour of the command overlay.

Alpha

Set the transparency of the command overlay.

Saturation

Set the colour saturation of the command overlay.

Position

Set the horizontal and vertical position of the command overlay.

Scale

Sets the size of the command overlay.

Add commands to menu

Type in this box and press return to add an entry to the list of commands that can be displayed.

Select command to display

Choose a command to display, either by setting an index number or selecting it from the dropdown menu.

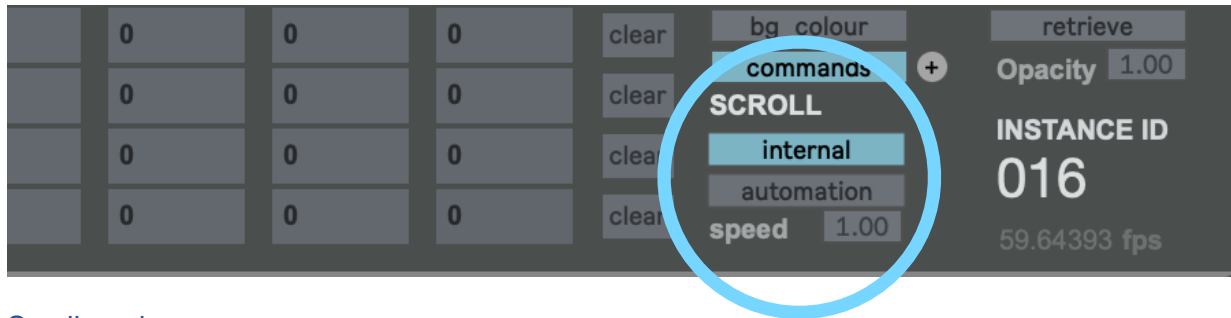
Delete

Delete the currently-selected command from the dropdown menu.

Clear

Clear all commands from the dropdown menu.

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.

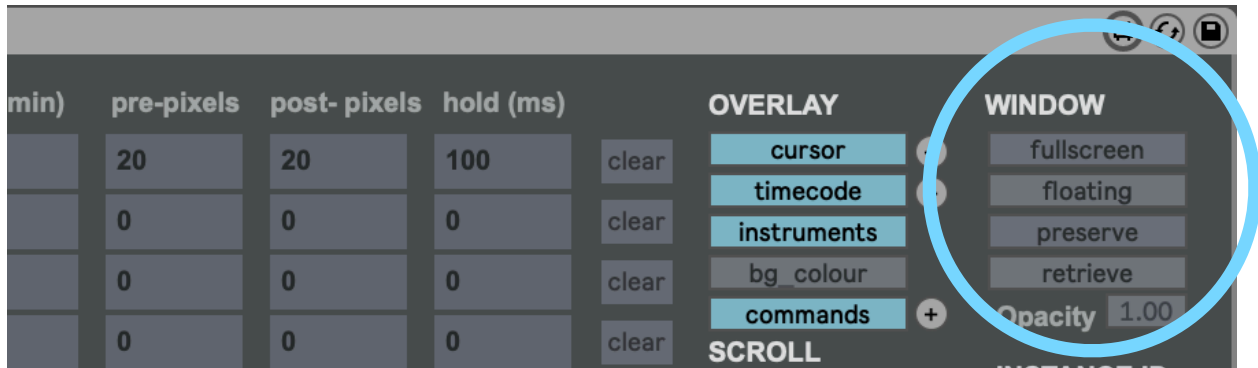
Scroll speed

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. (1000% speed). A setting of 1. corresponds to 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 the original aspect ratio 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 position. 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 controls are shared between all instances of the device in a given set. Score image files and overlay controls 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	n/a	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/commands/add	string		Add an entry to the list of commands that can be displayed.
/overlay/cursor/alpha	float	0.-1.	Sets the transparency of the command overlay.
/overlay/commands/clear	any	n/a	Clear all commands from the dropdown menu.
/overlay/commands/colour	vec3f	0.-1.	Sets the colour of the command overlay.
/overlay/commands/delete	any	n/a	Delete the currently-selected command from the dropdown menu.
/overlay/commands/index	Int	0-n	Select a command to display via its index value.
/overlay/command/on	bool	0-1	Toggles the command overlay on and off.

/overlay/commands/ position/x	float	-1.-1.	Sets the horizontal position of the command overlay.
/overlay/commands/ position/y	float	-1.-1.	Sets the vertical position of the command overlay.
/overlay/commands/ saturation	float	0.-1.	Sets the saturation of the command overlay colour.
/overlay/commands/ scale	float	0.-3.	Sets the size of the command overlay.
/overlay/cursor/alpha	float	0.-1.	Sets the transparency of the cursor.
/overlay/cursor/angle	float	0.-1.	Rotate the cursor.
/overlay/cursor/colour	vec3f	0.-1.	Sets the colour of the cursor.
/overlay/cursor/marker	bool	0-1	Toggles the cursor centre marker on and off.
/overlay/cursor/on	bool	0-1	Toggles the cursor overlay on and off.
/overlay/cursor/position/ x	float	-1.-1.	Sets the horizontal position of the cursor.
/overlay/cursor/position/ y	float	-1.-1.	Sets the vertical position of the cursor.
/overlay/cursor/ saturation	float	0.-1.	Sets the saturation of the cursor overlay colour.
/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/timecode/scale	float	0.-3.	Sets the size of the timecode overlay.

/port	Int		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.