

MXL Pack

the largest collection of M4L
MIDI devices for Ableton Live

MXL Clip Control and MXL Scene Control

midi
2themax

Introducing MXL devices

MXL devices from **midi-2-the-max** extend Ableton Live in many areas, most notably in the way it can process and transform MIDI messages. They work well with **Live Suite Edition version 10** and **11**, but do **NOT** work with other, less powerful versions of Ableton Live that don't support Max-for-Live devices.

Many MXL devices are truly unique and offer functionalities that you cannot find anywhere else. Moreover, often a single MXL device implements features that you may obtain only by combining two (or more) devices from other libraries.

MXL Pack is probably the largest collection of MIDI Max-for-Live plugins you can find anywhere, and includes **over 40 devices** for a very convenient price: if you are serious about Ableton Live, it is surely the one to get. We also carry the **MXL Free Pack** that – as its name implies – can be downloaded free and includes several devices that are useful in themselves or combined with devices in other packs.

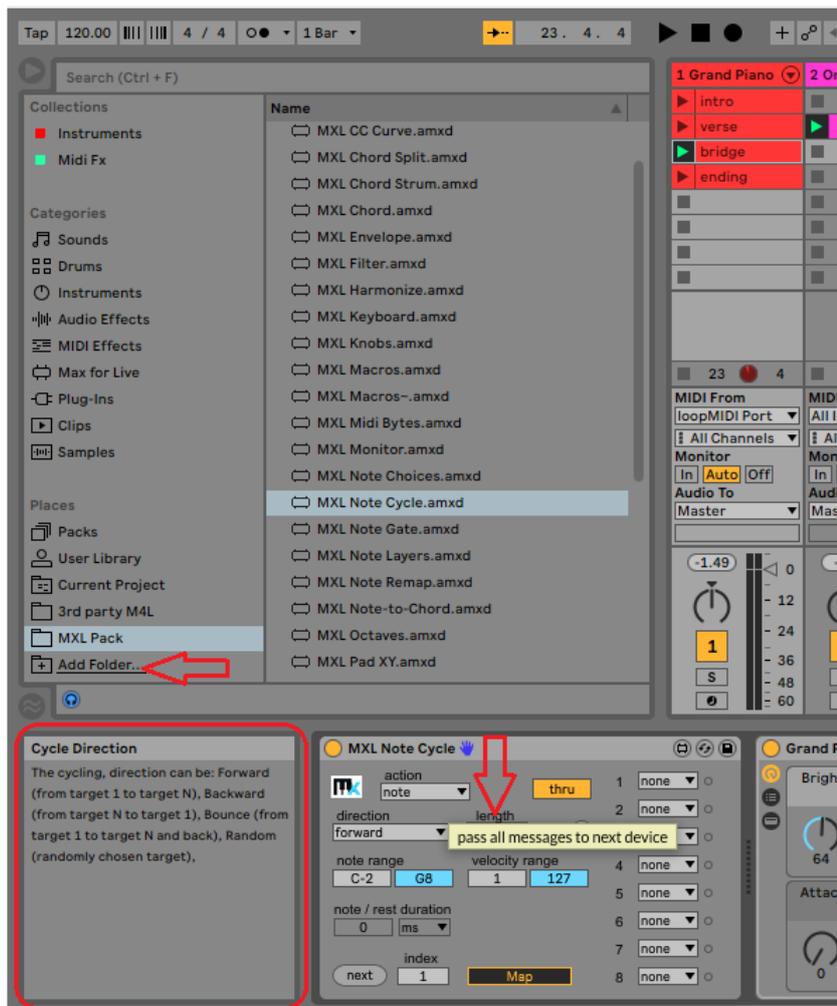
Other MXL devices are offered as stand-alone products or separate collection, as is the case of this **MXL Live Control Pack**. You can find all MXL devices here: <http://www.gumroad.com/midi2themax>

Setup and Documentation

Individual devices and the various MXL Pack versions are distributed as a compressed ZIP file containing one or more MXL devices. We recommend that you create a folder on your hard disk named **MXL Pack** and uncompress the ZIP file in that folder.

Inside Ableton Live, click in the **Add Folder** option in the left sidebar, and select the folder you just created. You can now drag MXL devices to your current track, as you would do with Live's native ones.

In addition to the PDF manual, you can learn how devices work by hovering the mouse on a field and look at Live's Help window (press the "?" key if the Help window is currently hidden). If you keep the mouse still for a few seconds, you can also read a short description in the yellow tooltip.



Support

If you need to report problems, have suggestions on how to improve them, or proposals for MIDI devices that might complete the **MXL Pack** collection, please contact us at midi2themax@gmail.com.

Common Features

All MXL devices share the same “philosophy” and the same approach to MIDI processing. Consequently, many fields and parameters work in the same way across the entire collection of devices, which in turn simplifies learning how to use them.

Global Buses

The majority of MXL devices can send MIDI messages to a “global” MXL bus and/or receive MIDI messages from a global bus. In fact, much of the unique features that MXL devices offer are based on buses, because they allow devices to communicate with other devices in the same or different track.

The concept of MIDI buses isn’t new in Live. For example, Ableton’s **Max 7 Pitch and Time Machines** pack includes the Max MIDI Sender and Max MIDI Receiver devices, which build on the same concept. As you read on, you can realize that the MXL Pack expands on this mechanism to implement features that would not be possible otherwise. (Notice that MXL buses are distinct from the buses used by the abovementioned Live devices, thus you can use both buses in a Live Set without them interfering with each other.)

For starters, two MXL devices allow you to send and receive messages to/from MXL buses. These devices are named – quite predictably – **MXL Send** and **MXL Receive**:



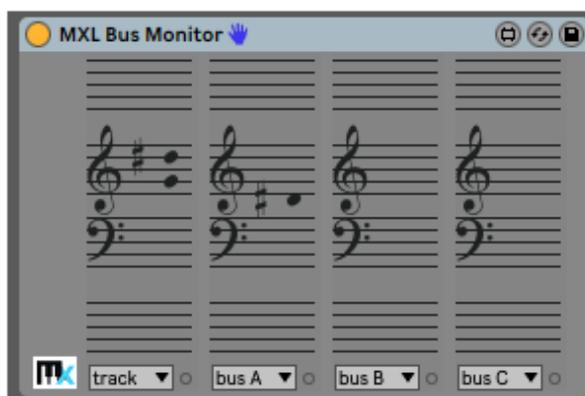
Note: *MXL Send and MXL Receive are included in the **MXL Free Pack** collection and are freely available at <https://midi2themax.gumroad.com/l/mxl-free-pack>.*

The above figure shows the most important feature of MXL buses: one single device can send to (or receive from) two or more buses at the same time. This detail adds a tremendous degree of flexibility to your Live sets:

- a track can receive notes from clips in other tracks – it is as if Live tracks supported multiple clips that run together
- a clip can send notes to multiple tracks, where they can be processed in different ways, for example by transposing them by a different number of semitones or by delaying them by a different time interval
- any combination of the above

Notice that also Live’s own Max MIDI Sender and Max MIDI Receiver devices allow you to merge notes from different tracks. However, they were **not** designed to handle complex scenarios and – in fact – they do not always behave correctly when a device receives the same note from two or more sources. When using MXL Send and MXL Receive, you can mitigate this issue using the **overlap notes** field.

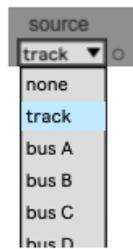
In some complex scenarios that involve multiple buses, you might find the **MXL Bus Monitor** device (included in MXL Free Pack) very useful to understand how different sources interact with each other.



Activation and Trigger Notes

Some MXL devices – for example **MXL Clip Control** and **MXL Scene Control** - can be activated and/or controlled remotely by sending a note to either a Live track or a global bus.

The first step in the device setup is selecting the **source** for such trigger notes:



During a studio session, triggering a given action must typically occur at a specific point of the song, and it makes sense performing the triggering by means of a note stored in a Live track, thus you should select the **track** option. Notice that trigger notes should not be played or heard, therefore the track should be muted and/or not contain any virtual instrument (except for testing purposes).

This feature is extremely powerful in that it allows you to leverage a given feature by storing notes in a Live clip or track or by hitting a key on your MIDI keyboard. Likewise, when triggering actions from your MIDI keyboard, you create a track that receives MIDI from your keyboard and place the MXL device in that track. Therefore, in this case, too, you should select the **track** option and ensure that the track is muted and/or doesn't include a virtual instrument.

Notes coming from the track or global bus can have different functions, and this document uses two different definitions for these functions.

Activation notes can enable and disable the device (or one of its features) and correspond to clicking an on/off switch



In most cases, activation notes always work in **momentary** mode: the NoteOn message activates the device and the NoteOff message deactivates it, and the device is active only while the note is playing (i.e. while you keep the key pressed on your MIDI controller). Some devices, however, allow you to enforce the **latch** mode, in which case the first NoteOn message activates the device and the second NoteOn message deactivates it.



Unlike activation notes, **trigger notes** are meant to **execute** one of the device's functions and broadly correspond to clicking a button.

In fact, in some cases, the function executed by a trigger note can be fired manually by clicking on a button. For example, the image below shows a portion of the [MXL Tempo Control](#) device: when the G-2 note is received, the new BPM is applied, as if the user had clicked on the **GO** button.



In the “studio session” scenario, all notes coming from the track are meant to trigger an action in the MXL device, therefore you typically enable the **master switch** manually (near the top of the device):

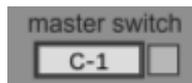


While the master switch is turned on, **trigger notes** coming from the same source can start actions in the device. For example, the MXL Tempo Control device allows you to “tap tempo” by playing a specific note:



Unlike studio sessions, during live performances you typically want to follow your inspiration and execute actions by using knobs or buttons on your MIDI keyboard. As an Ableton Live user, you would typically use MIDI or key mapping to remotely control Live parameters, however the number of knobs and buttons on most MIDI controllers is often insufficient to control many parameters. As you’ll see in a moment, activation notes offer a better solution.

In the “live performance” scenario, you typically keep the **master switch** off by default, and select the pitch of the note that can temporarily turn it on. This note is also known as the **master activation note**:



In this example, when the C-1 (low C) note arrives from the selected source, the **master switch** is temporarily turned on, so that “trigger notes” can be detected and can trigger actions in the device. As soon as you release the C-1 key on your MIDI keyboard, the master switch is turned off again.

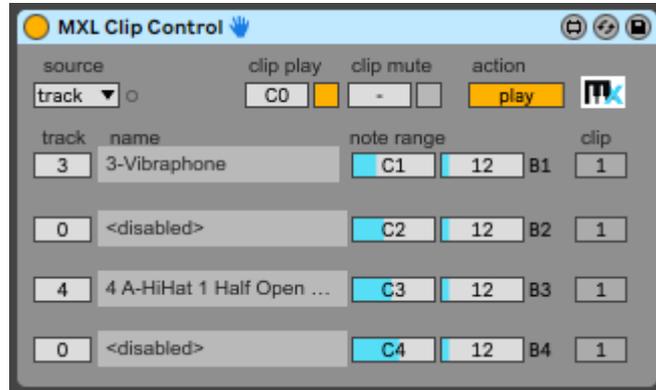
Note: in live performance scenarios, it is a good idea selecting close notes for both activating the master switch and for triggering actions, so that you can hit both keys with a single hand. In the above examples, the C-1 note temporarily turns the master switch on, and the D#-1 note (only three semitones away) can trigger the “tap tempo” action.

It is worth noting that using a single note to temporarily turn the master switch on and off allows you to freely use most of your MIDI keyboard for playing. Likewise, you can control multiple MXL devices using a different “master activation note” for each one of them

MXL Devices

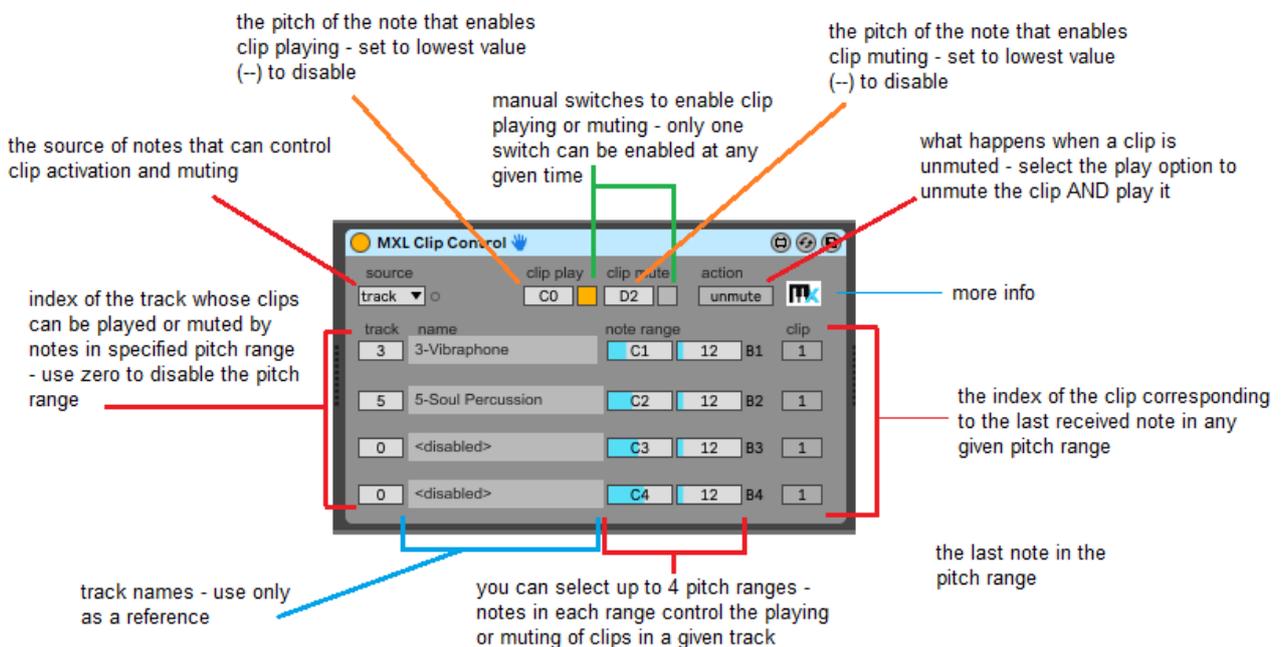
This section of the documentation describes individual MXL devices.

MXL Clip Control



This device allows you to play, mute and unmute clips in Session mode, by sending special “trigger notes” to this device, from either the current track or a global bus A-P. You can control any number of clips in four tracks and decide whether incoming notes are always processed as candidates for clip triggering or if they are processed only if another note (the “master activation note”) is also playing. You can also store trigger notes in a separate clip that works as a “controller” for the entire process.

This device is similar to [MXL Scene Control](#), which can trigger scenes instead of individual clips.

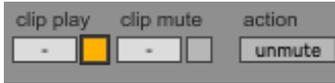


You start configuring the MXL Clip Control device by setting the **source** of “trigger” notes. In most cases, the source will be the current **track**, if you control the device using a MIDI keyboard or using notes stored in a clip. As a rule of thumb, the MIDI track that contains the MXL Clip Control should not part of the tracks that are controlled by this device, but there can be exceptions to this rule in advanced scenarios.

Note: the MXL Clip Control device is “transparent” to incoming notes, which are passed unmodified to the next device in the track. This feature allows you to mix multiple MXL

Control Pack devices in the same track, for example two or more MXL Clip Control devices in a row for triggering clips in more than four tracks. “Trigger notes” are not meant to be played, therefore the track containing the device doesn’t have to be connected to any instrument (except for testing purposes).

Next, you use the topmost fields to decide whether MXL Clip Control is always listening to incoming notes and which action must be performed when it detects a trigger note. Several combinations are available, as shown below.



Incoming notes trigger (i.e. play) the clip, assuming they fall in one of the four ranges specified in the bottom portion of the device.



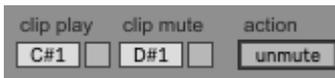
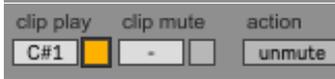
Incoming notes mute or unmute the clip.



Incoming notes mute the clip; if the clip is already muted, it is unmuted and played.



Incoming notes trigger the clip, but only if the C#1 – the so called “master activation note” is currently playing. When C#1 is detected, the left switch is highlighted to indicate that incoming notes will be processed, and is turned off when the C#1 key is released.



Incoming notes trigger a clip only while the C#1 note is playing, and mute/unmute a clip only while the D#1 is playing.



If either C#1 or D#1 is detected, the corresponding square led becomes lit, to indicate which action will be performed by incoming notes. If the device received both C#1 and D#1 notes, the action depends on the note received last.



The D#1 note acts as a switch for enabling clip muting and unmuting – in this case, muted clips and unmuted AND triggered

Note: in live performances, the ability to activate the device by means of a master activation note (C#1 or D#1 in previous examples) – and deactivate it when the NoteOff message for that note is received – allows you to control a large number devices in MXL Control Pack by reserving very few notes on your MIDI keyboard (i.e. one note for each device). Master activation notes are usually located in the lowest or the highest portion of the keyboard, so that you don’t hit them accidentally.

Note: for clarity’s sake, in the following descriptions “clip K-N” refers to clip in Nth row, located in Kth column (i.e. track).

Finally, you decide the pitch range of notes that can trigger or mute/unmute clips. In the following example, notes in the range C1-E1 will trigger one of the first five clips in track 3: the note C1 triggers clip 3-1, the note C#1 triggers clip 3-2. The rightmost field (labeled **clip**) reports the index of the clip that was triggered most recently:



If you are controlling clips in two or more tracks, you typically select different pitch ranges that don't overlap, so that each incoming note can trigger (or mute) one single clip. In some scenarios, you might find it useful to trigger clips in multiple tracks with the same note. In the next example, notes in range C1-E1 trigger a clip in all three tracks, notes in range F1-G1 trigger clips in tracks 2 and 4, whereas notes from G#1 to B1 trigger in track 4 only:

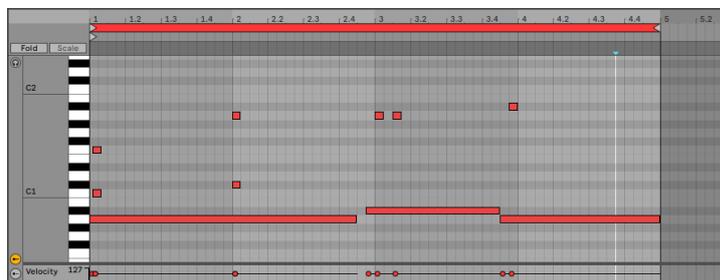
track	name	note range	clip
1	1-Grand Piano	C1 5 E1	1
2	2-Organ Power Ball	C1 8 G1	1
4	4 A-HiHat 1 Half Open ...	C1 12 B1	1

In live performances, you probably want to trigger or mute/unmute clips using your keyboard or another MIDI controller. but you can also store "trigger notes" in a clip. Consider the following settings:

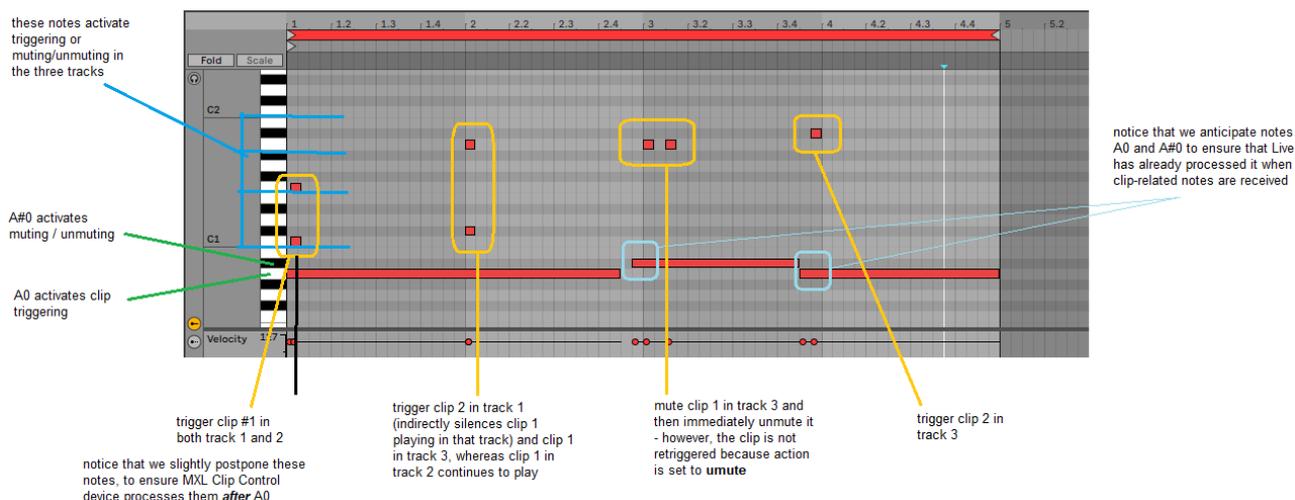
source	clip play	clip mute	action
track	A0	A#0	unmute

track	name	note range	clip
2	2-Organ Power Ball	C1 5 E1	4
3	3-Vibraphone	F1 4 G#1	1
5	5-Soul Percussion	A1 3 B1	1

and these trigger notes in this clip:



While the contents of this clip may appear to be nonsensical, everything makes sense if you consider the sequence from the perspective of the MXL Clip Control device that receives these notes:



This is what happens at each loop repetition:

- 1) when the loop starts, the A0 (master activation) note enables clip triggering, as opposed to muting/unmuting
- 2) a few milliseconds later, notes C1 and F1 trigger clips 1-1 and 2-1 – this short delay is necessary to ensure that Live processes these two notes **after** A0
- 3) at the beginning of bar 2, note C#1 triggers clip 1-2 (and indirectly stops clip 1-1) and note A1 triggers clip 3-1 – there is no action for track 2, therefore clip 2-1 continue to play
- 4) slight before bar 3 the A0 note is silenced, and “master activation note” A#0 plays – from now on, notes in range C1-B1 will mute/unmute clips instead of triggering them
- 5) trigger note A1 is played twice – the first time it mutes clip 3-1 and the second time it unmutes the same clip – however, the **action** field is set to **unmute** and therefore the clip is not retriggered when unmuted. While this step might appear useless, it correctly leaves clip 3-1 in the correct state for the next loop
- 6) just before bar 4, note A#0 is replaced by note A0 – from now on, incoming notes will trigger clips instead of muting/unmuting them
- 7) note A#1 triggers clip 3-2 – the note is slightly anticipated, to ensure that the loop starts correctly even if clip quantization is not set to “none”.

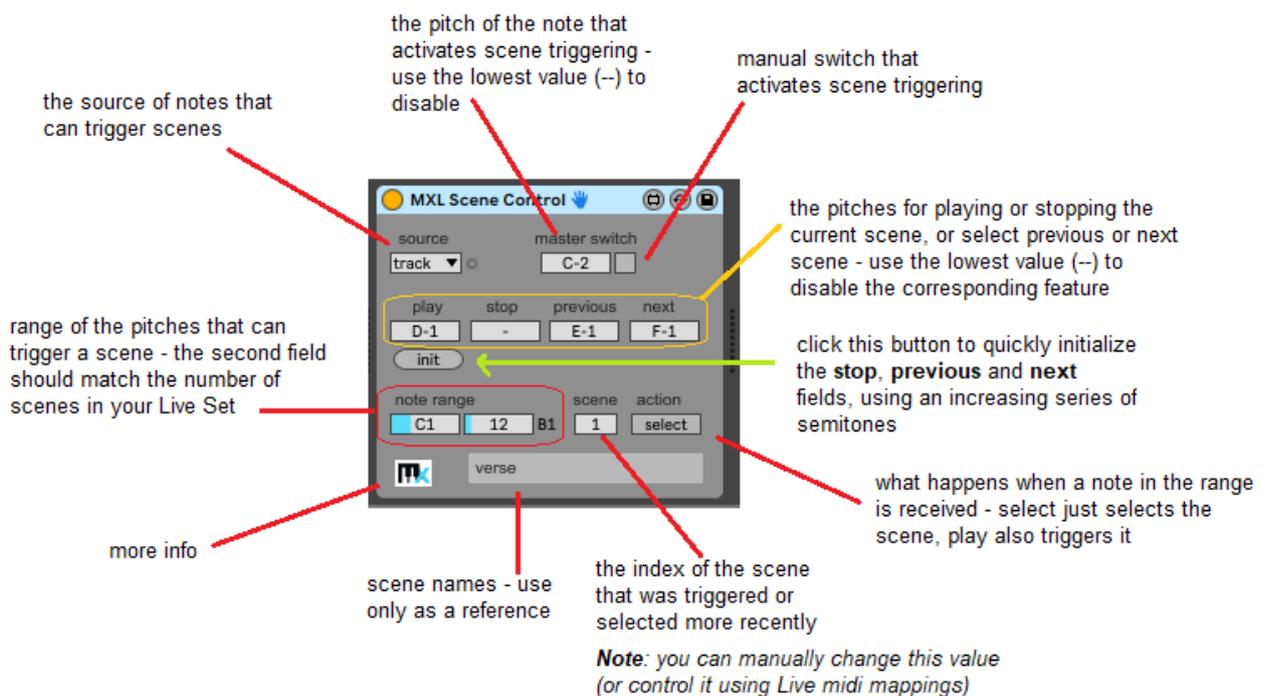
There are many creative uses for MXL Clip Control. For example, you can store different “trigger” sequences in different clips, and then use Live’s capabilities to select one of these “controlling clips” in a deterministic or random way.

MXL Scene Control



This device allows you to play or stop the current scene, select the previous scene, the next scene, or a specific scene (and optionally trigger it), by sending special “trigger notes” to this device, from the current track or a global bus A-P. You can decide whether incoming notes are always processed as candidates for clip triggering or if they are processed only if another note (the “master activation note”) is also playing.

This device is similar to [MXL Clip Control](#), which can trigger individual clips instead of scenes.



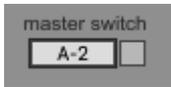
You start configuring the MXL Scene Control device by setting the **source** of “trigger” notes. In most cases, the source will be the current **track**, both if you control the device using a MIDI keyboard or using notes stored in a clip.

Note: the MXL Scene Control device is “transparent” to incoming notes, which are passed unmodified to the next device in the track. This feature allows you to mix multiple MXL Control Pack devices in the same track, for example one MXL Scene Control and one MXL Clip Control. “Trigger notes” are not meant to be played, therefore the track containing the device doesn’t have to be connected to any instrument (except for testing purposes).

Next, you use the **master switch** fields to decide whether MXL Scene Control is always listening to incoming notes. The following combinations are available.



Note detection is enabled - incoming notes are processed and trigger a scene if their pitch falls in the **note range** interval.



Note detection is disabled and incoming notes cannot trigger a scene – however, detection can be remotely activated by sending a specific “master activation note” (A-2 in this example).



When note A-2 is detected, the device is enabled and subsequent note can trigger a scene – when the A-2 note stops playing, the device is immediately disabled.

Note: in live performances, the ability to activate the device by means of a single note (A-2 in previous examples) – and deactivate it when the NoteOff message for that note is received – allows you to control a large number devices in MXL Control Pack by reserving very few notes on your MIDI keyboard (i.e. one note for each device). Master activation notes are usually located in the lowest or the highest portion of the keyboard, so that you don’t hit them accidentally.

If note detection is enabled, you can now send notes – to either the track or a global bus – to play and stop the current scene, select the previous or next scene, etc. In next example, trigger note D-1 plays the current scene, D#1 stops it, note E-1 selects the previous scene, and note F-1 selects the next scene:



Note: to speed up operations, just select the trigger note for play action (D-1 in previous image) and then click on the **init** button to generate increasing pitches for the other three fields. Likewise, you can disable all four fields by setting the lowest value for the **play** field (--), and then click the **init** button.

In the following example, you don’t use remote control to play and stop the current scene, yet you can select AND play the previous or next scene by sending the E-1 and F-1 note, respectively:



Notice that the **play** action still honors Live’s launch quantization settings. For example, if quantization is set to “1 bar” (the default setting), then the current scene continues to play until the end of the current measure.

Finally, you establish the pitch range of notes that can trigger scenes. In the following example, notes in the range C1-E1 trigger scenes 1-5: note C1 triggers the first scene, note C#1 triggers the second scene, and so forth. The **scene** field displays the index of the scene that was triggered most recently:



You can decouple the action of selecting and triggering a scene, by turning off the **action** field. In the following example, you still use notes C1-E1 to select a scene, but you have to send note B0 to start playing the selected scene:



Interestingly, the scene field can be mapped to a MIDI message, therefore you can select a different scene – for example – by rotating a knob on your MIDI controller. If the **action** field is set to **play**, you both select and play the scene.