# **The Headphase Looper**

Ableton Retrospective Live Looping Performance Template



Thank you for purchasing The Headphase Looper!

**A word about performance**: On older and lower powered computers the defaults in this set may cause high CPU usage. If you are experiencing this please read through the **performance tuning** section for details and instructions to correct this.

Note: On older versions of Ableton Live the template may warn about missing audio files. The file in question comes from a factory pack. Click why? And then click search. Ableton should then find the file automatically.

# **Installation & Setup:**

# ClyphX:

This template uses the ClyphX scripting for a number of the automations that make its features possible. ClyphX is available for free, and the install process is a simple folder drag & drop as described below.

- Install latest ClyphX release zip file from https://github.com/ ldrolez/clyphx-live11/releases/download/v2.7.5/ClyphX-2.7.5.zip
  - Download the ClyphX release zip file from the link above
  - $\circ~$  Unzip the zip file
  - Find the innermost ClyphX folder (it will have several script files inside it)



 Drag this ClyphX folder into the Ableton "Remote Scripts" folder (if "Remote Scripts" does not exist in your User Library, go ahead and create the folder. Your Remote Scripts folder should look like this:



 For a video walkthrough see https://www.youtube.com/ watch?v=-8SRwa-nBNs

Note: the link above may not be the latest available version by the time you are reading this, please see <u>https://github.com/ldrolez/clyphx-live11/releases</u> for the most up to date ClyphX release.

 In Ableton Settings/Preferences > MIDI, select ClyphX on an empty controller slot and set input and output to "None". If you have other control surfaces already configure simply choose the next available slot.

	Settings			
Display & Input	Link			
Theme & Colors	Show Link Toggle Show			
Audio	Start Stop Sync Off			
Link, Tempo & MIDI	Tempo Follower			
File & Folder	Show Tempo Follower Toggle Hide	Hide		
Library	Input Channel (Ext. In) 3/4 Blackhole	•		
Plug-Ins	Show Resync Button Hide			
Record, Warp & Launch	MIDI			
Licenses & Updates	Control Surface Input Output			
	1 ClyphX 🔻 None 🔻 None	▼ Dump		
	2 None ▼ None ▼ None	▼ Dump		
	3 None ▼ None ▼ None	Dump		

Note: if you aren't seeing ClyphX appear in the control surface list, double check that the innermost ClyphX was copied to the Remote Scripts folder and ensure Ableton has been restarted

# **Ableton Settings:**

For several features to operate as designed the Ableton setting "Select on Launch" must be set to off

 Open Ableton Preferences/Settings and ensure that "record warp launch" > "select on launch" is set to off

This allows the template to launch automation clips without changing the track that you have selected. It also is necessary for the foot switch controls to work properly.

# **Using the Template**

Inputs:

• A group called "Audio Inputs" contains several example inputs. Replace/Customize/Drag in your own inputs here!

Audio Inputs 😑	Input 1 - Example External In	Input 2 - Example Software Ins 💌	Input 3	Input 4	Input 5	Input 6	Input 7
	Ų						
	Audio From Ext. In ▼ 1/2 ▼ Monitor Auto Off	MIDI From All Ins ▼ All Channels ▼ Monitor In Auto Off	A. From Ext. In ▼ 1 ▼ Monitor Off ▼				
Audio To	Audio To	Audio To	A. To	A. To	A. To	A. To	A. To
Looper Auditior▼	Audio Inputs 🔹	Audio Inputs 🔹	Audio Iı▼	Audio Iı▼	Audio Iı▼	Audio Iı▼	Audio Ir▼
Track In							
A Sends	A Sends	A C C S Sends B	A -∞ B -∞ C -∞	A −∞ B −∞ C −∞			
0 12 29 36 48	0 12 30 5 5 48	0 12 24 36 48	c • • • • • • • • • • • • • • • • • • •	C	c	C 35 35 S	C
A B	A B	A B	A B	A B	A B	A B	A B

Note: Example tracks are provided to help you get started. Customize this group to your liking using external inputs or software instruments.

- To route a new track to the looper, create a track and route this tracks **Audio To "Looper Audition"**. The loopers are listening for audio sent to the "Looper Audition" channel. The example "Audio Inputs" group provided accomplishes this through the Audio To routing on the "Audio Inputs" group track.
- There is also a "Looper Bus" track, for special cases where you wish to route audio into the retrospective looper tracks without hearing (auditioning) it.

# **The Retrospective Looper Section**

The retrospective looper section is comprised of 8 "Looper" tracks, each with 5 loop length clips(green/blue/turquoise/yellow), 1 initialize clip (red), and 1 target clip (purple)

The loop lengths are stacked from longest (16 bars) at the top to shortest (1 bar) at the bottom.

Looper 1 🔳	Looper 2 📃	Looper 3 🛛 🗐	Looper 4 🛛 🗐	Looper 5	Looper 6 🛛 🗐	Looper 7 🛛 🗐	Looper 8 🛛 🗐
▶ /// 16 bar ///	▶ /// 16 bar ///	▶ ///_ 16 bar ///	▶ ///_ 16 bar ///	▶ /// 16 bar ///	▶ /// 16 bar ///	▶ ///_ 16 bar ///	▶ ///_ 16 bar ///
> 8 bar	> 8 bar	> 8 bar	> 8 bar	▶ /// 8 bar ///	▶ /// 8 bar ///	> // 8 bar //	▶ <b>/// 8</b> bar <b>///</b>
> 4 bar	> 4 bar	• 4 bar	▶ 4 bar	▶	▶ 4 bar	> 4 bar	• 4 bar
2 bar	2 bar	2 bar	2 bar	> 2 bar	> /// 2 bar ///	> 2 bar	> 2 bar
l bar	1 bar	l bar	1 bar	1 bar	l bar		
	EX Target button				EX Target button	EX Target button	EX Target button
Audio To	Audio To	Audio To	Audio To	Audio To	Audio To	Audio To	Audio To
Main 🔻	Main 🔻	Main 🔻	Main 🔻	Main 🔻	Main <b>v</b>	Main <b>v</b>	Main 🔻
Main 🔻	Main 🔻	Main 🔻	Main V	Main V	Main  View of the second se	Main	Main V
Main V Sends	Main V Sends	Main V Sends C B	Main V A Sends C B	Main V As Sends	Main V A Sends C B	Main V Asin V A Sends C B	Main Main Sends A C Sends
Main Sends Sends C B 12 24 36 48	Main Sends C S 12 24 36 48	Main V Sends C C C C C C C C C C C C C C C C C C C	Main V Sends C C C C C C C C C C C C C	Main ▼ A Sends C B 12 14 5 16 48	Main Sends A Sends C S 12 19 19 19 10 12 24 36 48	Main ▼ A Sends C B 0 12 24 5 4 8 48	Main Sends C Sends C S 12 C 12 C 25 S 12 C 4 S 12 S 12 C 4 S 12 C 4 S 12 S 12
Main Sends A B C C C C C C C C C C C C C	Main Sends A C C C C C C C C C C C C C	Main V A Sends C B 10 12 24 36 48 A B	Main V A Sends C B 12 24 36 48 A B	Main V Main V Sends C S 12 24 36 48 A B	Main Main A Sends C S C S C	Main Main Sends C Sends 12 24 36 48 A B	Main Main Sends A Sends B 12 24 36 48 A B

Note: the text is overlaid in the above image to visualize what each clip does. Today the clips will appear as their colors, as Ableton does not yet support naming grouped scene clips.

### Starting the looper

• Turn on the metronome (optional, but helpful)

- Hold down scene 6 "Initialize (Hold)"
  - This will initialize (erase and start) the retrospective loopers on all channels and get them ready for looping

Main	
	1
	2
•	3
•	4
•	5
Initialize(Hold)	6

- Play your instrument.
- When ready to loop, press the desired loop length button on any channel.



• The retrospective looper will instantly begin to loop the selected number of bars that you just played

## **Looping & Loop Lengths**

- Each of the 8 looper tracks are set up for retrospective looping at 5 different loop lengths.
  - 1 bar, 2 bars, 4 bars, 8 bars and 16 bars.

*Important: the looper must have audio for at least the length of the loop.* e.g. you must play 16 bars before creating a 16 bar loop.

## Shortening and Extending Loops

• Existing loops may be shortened or extended (provided they have played long enough to fill the desired loop length). Simply press the new loop length

## Overdubbing

- Overdubbing is as easy as playing the part that you would like to add and selecting an active looper track.
- You may overdub at the same or different loop length provided that the input audio is as long or longer than the desired loop length.
- If a shorter loop length is chosen when overdubbing the existing loop will be shortened

### **Insert FX**

• Standard Ableton insert FX are enabled on all 8 of the Looper tracks, which means that the 8 macros on your control surface will apply effects to the focused track. Below is an example insert FX rack on a Looper track



• The effects that you apply via the insert FX can overdub/replace the loop (within the same track) just press the desired loop length clip.

Note: each time a loop clip is launched the insert FX macros are reset to their default position. This makes the FX automatically "punch out" when re-looping effected sounds, making for smoother application of FX and transitions.

## **Setting FX Device Defaults**

• When customizing Insert FX you'll want to set the default values that will be used when the rack device is reset. To do this, click the save disk icon in the upper right of the audio effect rack, save it using a name of your choosing, and then drag the saved device over itself.

## **Using Effects Targeting**

### **Effects Targeting & Re-looping**

Any "Looper" track(s) can be instantly rerouted through the Effects track and re-looped after FX are applied. This is referred to in the template as "FX Targeting".

### Using FX Targeting:

• On the desired "Looper" track(s) launch the **purple** "[FX TARGET BUTTON]" clip. This instantly reroutes a tracks audio through the Effects track. Launch again to un-target a track.

% FX Target button // 
 % FX Target butt

Note: You may prefer manually mapping these target clips to buttons on your control surface. Please see the MIDI mapping section above for details.

• When an FX TARGET BUTTON is activated the "Effects" track is instantly selected. This gives immediate control over the 8 device macros, i.e. the 8 device knobs on your controller are now controlling the audio effect racks on the "Effects" track

Effects
► [EFFECT1] DEV1 SEL
► [EFFECT2] DEV2 SEL
[EFFECT3] DEV3 SEL
EFEECT4] DEV4 SEL
EFFECT5] DEV5 SEL
[EFFECTS RESET] MUTE ON; DEV1 RESET; DEV2 RES
Ų
No Input Volume
Sends
46 - 12 36
A B
A B

• You may target multiple tracks to apply FX to multiple tracks at the same time. Simple launch the FX Target clips on each track you wish to apply FX to.

VEX Target button // EX Ta

• After applying Effects, press a new or existing loop slot.

Looper 1	. 🗐	Looper 2		Looper 3 🗐	Looper 4 🛛 🗐	Looper 5 🗐	Looper 6 🔳	Looper 7 🗐	Looper 8 🗐
> ///	16 bar ///	▶ ///_ 16 ba	r ///	🕨 🥢 16 bar 🥢	▶ /// 16 bar ///	▶ /// 16 bar ///	▶ /// 16 bar ///	▶ /// 16 bar ///	▶ /// 16 bar ///
» ///	8 bar ///	> /// 8 bar		> /// 8 bar ///	▶ /// 8 bar ///	▶ ///_ 8 bar ///	▶ ///_ 8 bar ///	▶ /// 8 bar ///	▶ ///_ 8 bar ///
» ///	4 bar ////	> ///_ 4 bar		🕨 //// 4 bar ////	▶ ///_ 4 bar ///	▶ ///_ 4 bar ///	▶ ///_ 4 bar ///	▶ ///_ 4 bar ///	▶ ///_ 4 bar ///
» ///	2 bar ///	> /// 2 bar		> /// 2 bar ///	> /// 2 bar ///	> /// 2 bar ///	> /// 2 bar ///	> /// 2 bar ///	> /// 2 bar ///
» ///	1 bar ////	> ///_ 1 bar		> ///_ 1 bar ///	> ///. 1 bar ///	> ///_ 1 bar ///_	> ///_ 1 bar ///	> ///_ 1 bar ///	> ///_ 1 bar ///

Note: The targeted tracks will all be combined (bounced) into the new location. Old loops will be cleared automatically and active FX targets will be reset.

## **Bouncing (combining tracks/loops):**

- To bounce, simply target the tracks you wish to combine together, allow them to play for the desired duration of the new loop, then select the new loop location.
- The process is effectively the same as using effects above, without applying any effects.
- Old loops will be cleared automatically.

#### **Recording Arrangement**

• There is a track group called "Arrangement Record" that contains 9 tracks. It is preconfigured to record all 8 of the loopers, and the audition track when arrangement record (the record button) is active. Simply press the record button in Ableton and what you are hearing will be recorded into the arrangement view.



• In order to playback from this group you'll need to switch to arrangement view by pressing TAB or clicking the toggle in the top right corner



• To listen back to a recording, expand the "Arrangement Record"

group.

	€ €		
•	Arrangement Record	Main 🔻	69 S 0 C
	Speaker On 🔹 🔻		-∞ -∞ -∞
۲	Recording 1  None	Arrangemer▼	70 S •
•	Recording 2	Arrangemer▼	71 S •
►	Recording 3      None	Arrangemer▼	72 S • 0 C
•	<ul> <li>Recording 4</li> <li>None</li> </ul>	Arrangemer▼	73 S • 0 C
	<ul><li>Recording 5</li><li>None</li></ul>	Arrangemer▼	74 S O O C
	<ul><li>Recording 6</li><li>None</li></ul>	Arrangemer▼	75 S •
	Recording 7  None	Arrangemer▼	76 S •
	Recording 8  None	Arrangemer▼	77 S •
	Recording Looper Bus   None	Arrangemer▼	78 S •

Note: The group track (track 69) is muted to avoid doubling during session use

• You may also need to click "Back to Arrangement" or press F10

# **Re-Sampling**

An example group called "Clip Sampling" is provided for resampling the Main output into clips.

Clip Sampling 😑	Sampling 1	Sampling 2	Sampling 3	Sampling 4	Sampling 5	Sampling 6	Sampling Control
							▶ [UP] SEL/CLIP SEMI >
							[DOWN] SEL/CLIP SEMI
Audio To Main ▼	Audio From Resampling▼ Monitor In Auto Off Audio To Clip Sampli▼	Audio From Ext. In 1 Monitor In Auto Off Audio To Main V					
C Sends	Sends	C Sends	C Sends	Sends C	$\bigcap_{C}^{Sends}$	Sends	Sends

Uses for resampling into clips vary. This group is provided as an example with routings in place to create resampled audio clips with audio that is fed back into the retrospective loopers.

## Sends

Sends work within Ableton as normal. An example delay and reverb are included. You are encouraged to customize with your favorite plugins!

Note: Sends operate outside the loop, overdub and Effects audio routings. Effects applied via sends will not be applied to loops.

## Saving the set

If saving the Headphone Looper set seems slow, it is most likely because the looper buffers are still holding audio data.

• To clear the loopers press the stop button, and then press ~

This will significantly reduce the size of the set, which will speed up

saves and loads as well. Of course this will clear any audio currently stored in the loopers.

Note: Initialize does not fully clear the loopers (as it creates empty recordings) they must be cleared using the steps above

# **MIDI Mapping:**

This template is designed to be highly customizable. To customize this template to your physical control surfaces, manual MIDI mappings are recommended.

You should see several informational tracks inside the template that highlighting where mappable clips are located.

The most common manually mapped features are:

#### **Target buttons:**

• Within each "Looper" group track there is an "Out Select" track that contains a clip named [FX TARGET BUTTON]. These clips act as on/off buttons that instantly route the looper audio through the Effects track.



• You may optionally MIDI map these clips to the buttons on your controller that will be used to quickly target looper track(s) for FX and bounce.

• To MIDI map, activate the MIDI mapping mode in Ableton by clicking the MIDI button in the upper right



- Then find the "Looper" group tracks and expand them. Inside these groups is a track called "Out Select #" containing a clip called "[FX TARGET BUTTON]
- With the mouse select the FX TARGET BUTTON clip, and then press the desired button on your midi controller to map it.



- Repeat this process for all 8 of the "Looper" group tracks. Then fold the group tracks back up to their default minimized/folded view.
- When finished click the MIDI button again to exit MIDI mapping mode.

## Effects:

- There are several clips in the "Effects" track which function as effect selection buttons. Map these clips to the buttons on your midi controllers that you will use to select effects
- Enter MIDI mapping mode



• Then click each of the desired EFFECT# clips, mapping them to your desired "preset" buttons.

Effects
[EFFECT1] DEV1 SEL
Ų
►
Audio From

• These clips will Select (SEL) between devices in the insert FX on the Effects track, allowing your control surface to quickly jump between effects



Note: the "Effects" track is meant to be customized! Create your you audio effect racks containing your favorite plug in effects!

### **Foot Switches:**

• There are several clips in the "Footswitch Control" track which function as foot switch buttons. Optionally map these clips to

your midi foot switch(es). In my case I only have one foot switch, and I've mapped it to the 8bar loop. You can use none, some or all of these clips.

Footswitch Control				
	[Foot 16bar] SEL/PLAY 1			
	[Foot 8bar] SEL/PLAY 2			
	[Foot 4bar] SEL/PLAY 3			
	[Foot 2bar] SEL/PLAY 4			
	[Foot 1bar] SEL/PLAY 5			
	[Foot Init] SEL/PLAY 6			

• These clips will activate loops on the focused track, so **select the desired "Looper" track first, then press the foot switch** 

To map the footswitch clips:



• Then select the loop length clip(s) wish to map, and map this to your foot control button(s)

Footswitch Control					
	[Foot 16bar] SEL/PLAY 1				
	[Foot 8bar] SEL/PLAY 2				
	[Foot 4bar] SEL/PLAY 3				
	[Foot 2bar] SEL/PLAY 4				
	[Foot 1bar] SEL/PLAY 5				
	[Foot Init] SEL/PLAY 6				

Note: The "Foot init" initialize clip must be held down

# **Performance Tuning**

Ableton is designed to run all tracks that route audio into each other as a single CPU thread. Since this template uses a lot of track routings, the CPU usage can become quite high on older and lower powered computers as only one CPU core ends up doing a majority of the work. While the ideal solution is the fastest CPU available, this is not always possible.

Luckily, **we can work around this** limitation by setting an alternate track routing for the Effects channel.

### Alternate Effects routing for lower CPU usage

You will first need to install a loopback audio driver.

MacOS: Blackhole 2ch https://existential.audio/blackhole/download/ available for free after email signup (donation optional) Windows: VoiceMeeter (instructions forthcoming, please ask on discord for support)

### **MacOS instructions:**

- Download blackhole 2ch from https://existential.audio/ blackhole/download/
- After you have downloaded installed Blackhole 2ch, open Audio & MIDI settings

• • •	< > Applications	»Q
Favorites	Name ^	Date Modified
AirDrop	✓ I Utilities	, Jan 11, 2024 at 6
Recents	Activity Monitor	Jan 11, 2024 at 6
Applications	💿 AirPort Utility	Jan 11, 2024 at 6
	🛄 Audio MIDI Setup	Jan 11, 2024 at 6
Documents	诸 BluetoothExchange	Jan 11, 2024 at 6
🕖 Downloads	🔀 ColorSync Utility	Jan 11, 2024 at 6
		Jan 11, 2024 at 6
	💋 Digital Color Meter	Jan 11, 2024 at 6

 It may be necessary to click "Window" > Show Audio Devices (if the Audio Devices window did not open automatically)



• Now click the + button and click "Create Aggregate Device"

Create Aggregate Device	
Create Multi-Output Device	
Connect AirPlay Device	>
+ - 🌣 🗸	

• Now, add your sound card to the aggregate device.

• Check the box next to your sound card first, and then check the Blackhole 2ch device second.

Note: Your sound card may show up as one device with inputs and outputs, or two separate input and output devices. My sound card appears as two separate devices, so I will add both first, then add the Blackhole 2ch device.

Aggregate Device Clock Source: USB Audio CODEC 1 🔉 Sample Rate: 48.0 kHz 📀	?
Subdevices USB Audio CODEC USB Audio CODEC Bi Input Channels Front Left Front Right 1 2 3 4 Output Channels Front Left Front Right 1 2 3 4	lackHole 2ch
Use Audio Device	In O Drift Correction
<ul> <li>USB Audio CODEC</li> <li>USB Audio CODEC</li> <li>BlackHole 2ch</li> <li>MacBook Pro Microphone</li> <li>MacBook Pro Speakers</li> <li>iPhone Microphone</li> </ul>	0 2 2 0 V 2 2 V 1 0 0 2 1 0

Note: The aggregate device acts as a virtual sound card and will present all of these inputs/outputs to Ableton as a single sound card.

- Now, in Ableton Settings/Preferences select the Aggregate device that was just created.
- Select "Aggregate Device" as both the input and output:

<b></b>	Settings	
Display & Input	Audio Device	
Theme & Colors	Driver Type	CoreAudio 🔻
Audio	Audio Input Device	Aggregate Device (2 In, 2 Out) ▼
Link, Tempo & MIDI	Audio Output Device	Aggregate Device (2 In, 2 Out) ▼
File & Folder	Channel Configuration	No Device Use System Device
	Sample Rate	USB Audio CODEC (0 In, 2 Out)
Library	In/Out Sample Rate	BlackHole 2ch (2 In, 2 Out)
Plug-Ins	Default SR & Pitch Conversion	Aggregate Device (2 In, 2 Out)

• Now, in both Input Config and Output Config:



• Enable the bottom most stereo channel pair and name it "Blackhole"

	Input Conf	fig
Choose which audio hardware i used as one stereo in and/or tw	nputs to make available o mono ins. Deactivatin	to Live's tracks. Every input pair can be g inputs reduces the CPU load.
Mono Inputs		Stereo Inputs
1&2		1/2
3&4		3/4 Blackhole

Output Config		
Choose which audio hardware outputs to make available to Live's tracks. Every output pair can be used as one stereo out and/or two mono outs. Deactivating outputs reduces the CPU load.		
Mono Outputs	Stereo Outputs	
1&2 3&4	1/23/4Blackhole	

- Click OK to return to the Ableton set. If you haven't loaded the Headphase Looper Template already, load it now.
- Next, in the template find the "Effects" track and set Audio To: "Ext. Out". In the second dropdown choose Blackhole.

Effects		
	[EFFECT1] DEV1 SEL	
	[EFFECT2] DEV2 SEL	
	[EFFECT3] DEV3 SEL	
	[EFEECT4] DEV4 SEL	
	[EFFECT5] DEV5 SEL	
	[EFFECTS RESET] MUTE ON; DEV1 RESET; DEV2 RES	
	Ŷ	
Au	dio From	
No	No Input 🔹	
Mo	onitor	
Au	dio To	
Ex	t. Out	
	1/2 🔻	
1	L/2	
3	3/4 Blackhole	
1	L	
2	2	
Co	onfigure	

• Next, in the template find the "Looper Audition" track and set Audio From: to "ext in". In the second dropdown choose the blackhole inout channels.

Looper Audition	
. Ý	
Audio From	
Ext. In 🔻	
1/2 🔻	
1/2	
3/4 Blackhole	
1	
2	
Configure	

You should now see an immediate reduction in CPU utilization using this alternate routing.

Note: If you aren't experiencing clipping/popping/dropouts due to high CPU you are encouraged use the templates default routings.

Questions, comments, suggestions? Join the Discord! https:// discord.gg/zAS8FcZUu9

Have fun!