

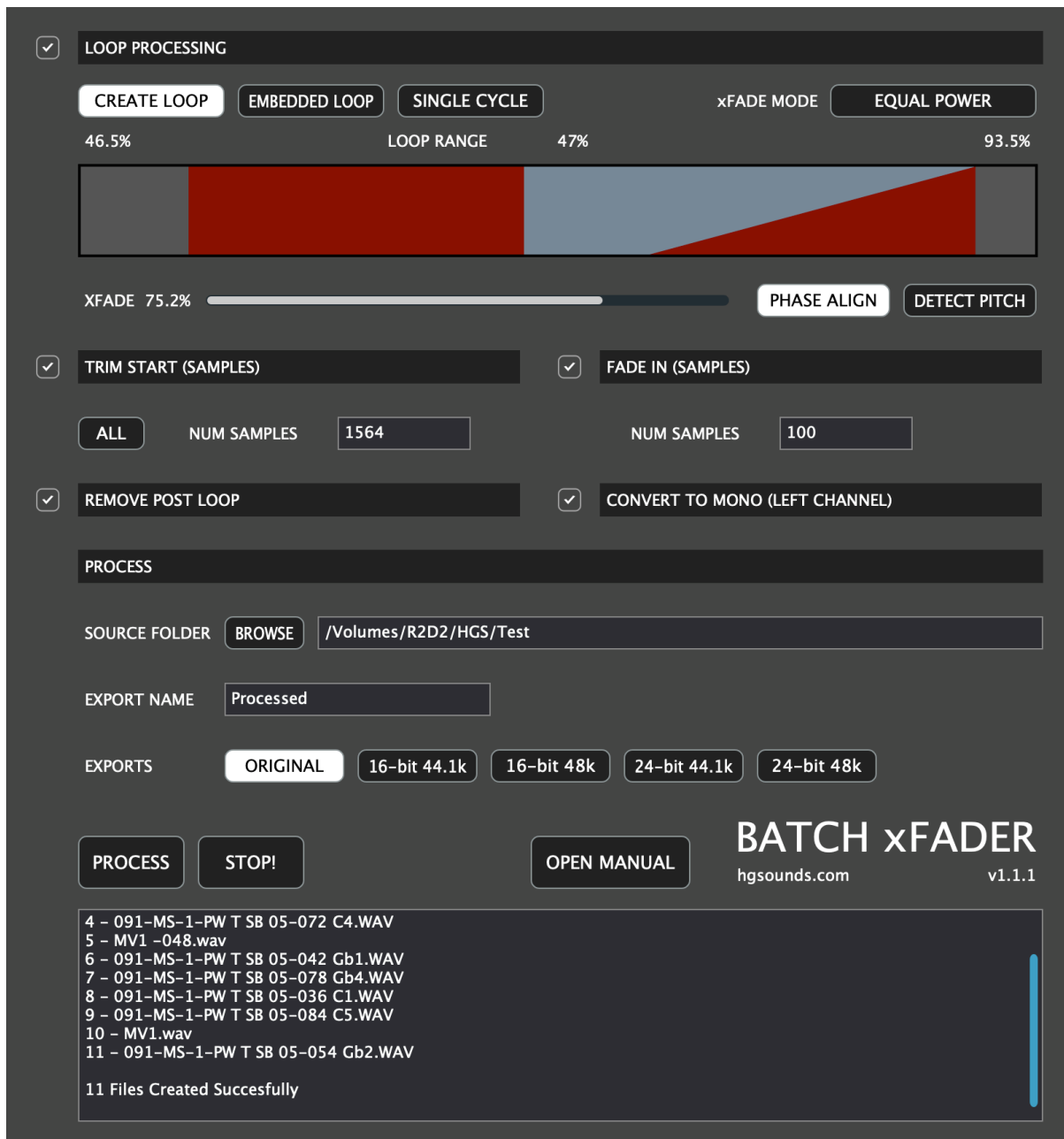
BATCH xFADER

Manual

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Introduction



Batch xFader is designed to accomplish the tedious work involved making sampler instruments out of samples. This process generally involves:

- Creating a sustain loop.
- Cross fading the loop so it loops seamlessly.
- Trimming any space at the start.
- or trimming all/most space at the start.
- Creating a short fade in at the start to avoid any non zero-crossing clicks.
- Deleting all data after the loop section which is not usually used.
- Converting Stereo to Mono

Batch xFader can accomplish all of these tasks as a batch process on the selected folder of WAVs very quickly.

It can either use an already existing sustain loop in the file or create a new/replace existing. Creating a loop allows visually selecting percentage values for the loop start, loop end and the

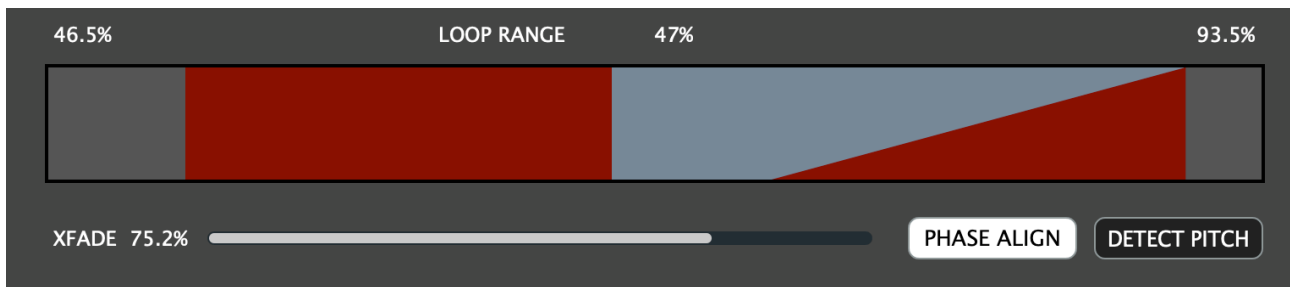
cross fade amount. The crossfade uses data from before the loop to mix the crossfade at the end of the loop section.

Files are saved in a sub folder created in the source folder which is named by the 'Export Name' edit box. This means you can easily try out a few different settings and create different folders to compare later.

It also allows converting files to mono by just using the left channel which is useful if using something like MPC Software/Beats to auto sample mono instruments as it only samples in stereo.

Each section has an enable button to use the section. This means you can use the application just for specific purposes such as for removing some samples at the front or fading in for example.

Loop Processing



The Loop Processing section is where a new loop is created, or if using an existing loop the Cross Fade amount is set. The section must be enabled with the tick button next to the title for it to work. There is also an option to create single cycle loops based on the midi Note number.

Because the processing is a batch process, the settings are represented in percentages so they are relational to the size of each file, as each may be a different size. It's an abstract way of working and the most important thing to bear in mind is what data is at the start and the end of the file that you don't want involved in the xFade (such as silence or a fade out).

xFade Mode

There are different types of cross fade curves that can be used by Batch xFader:

- **EQUAL POWER**

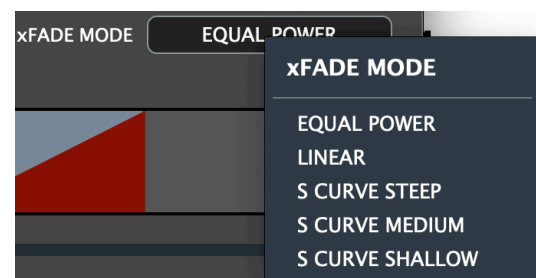
This is the default type & most of the time loops well without a volume dip.

- **LINEAR**

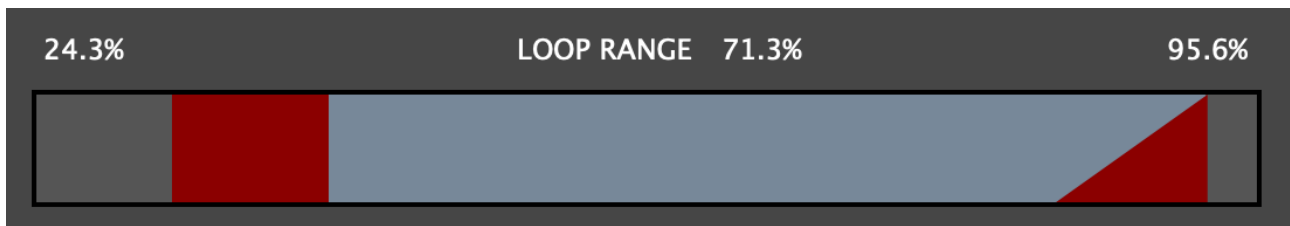
Linear is a straight line & tends to produce a volume dip in the middle.

- **S-CURVE**

S-curve fades are similar to equal power in that they produce a more natural fade & they have an adjustable slope which slowly becomes a linear curve. There are 3 types provided, steep, medium & shallow.

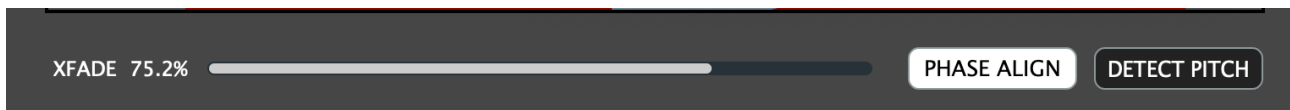


Create Loop



The display represents the entire WAV file, the blue/grey area represents the loop and the red represents the cross fade data that will be used and where it will be mixed. Dragging the left or right side will edit the loop start/end points and the values at the top show the percentages.

The xFade Slider represents a percentage of the pre loop area leading up to the loop start. This data is used to crossfade at the end of the loop so that it seamlessly loops back to the front. The fade uses Equal Power so that there is usually no noticeable drop in volume.



The Process

Beach xFader creates the loop by getting the start & end sample locations.

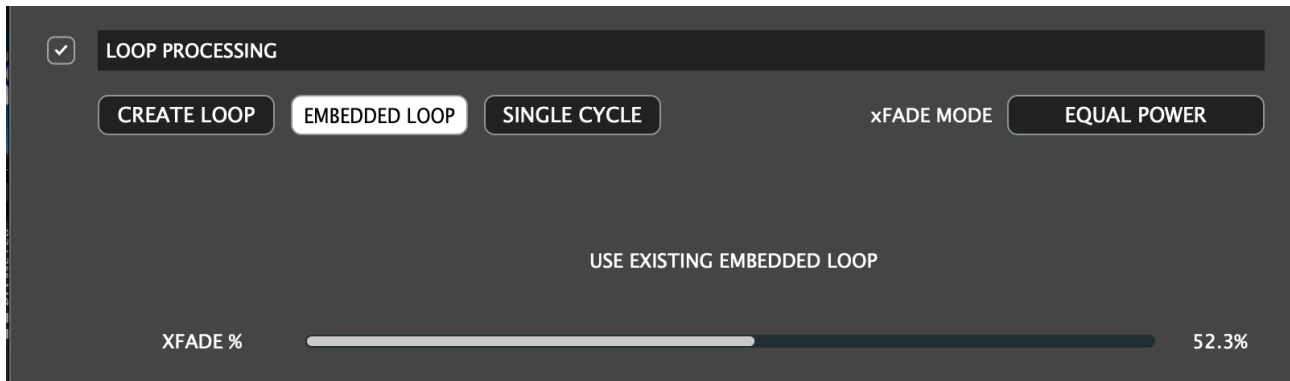
If '**Phase align**' is enabled, it will make some effort to prevent phase cancellation in the following way:

- The loop start will scan for the next positive zero Crossing
- If Midi Note information is either embedded or found in the filename (eg '-036') this will be used to calculate the single cycle size. This is then used to quantise the size of the loop to make sure it's a multiple of the single cycle sample size.
- If no Midi Note is found, **Detect Pitch** can be used however it very much depends on the source material on whether it will be successful or not. It's much better to assign of name files with the proper Midi Note when recording when possible.
- The end point is then moved to the nearest negative zero crossing.

If the source is fairly regular on pitch material, this technique may even mean there's no need for any cross fading at all. It all depends on the material provided however, and it works best with correctly pitched sounds.

NOTE: To disable the crossfade entirely, since 1.1 you can set the slider to zero & it will be bypassed. Useful for constant material such as our oscillators which can sometimes be looped seamlessly.

Embedded Loop



If your audio files already have loop points, these can be used instead of creating a loop. For example Akai's Auto Sampler has the ability to add a loop. Simply set the xFader amount.

Single Cycle Mode

Single Cycle waveforms are useful for capturing sounds to use as virtual oscillators, they are small and can also be used for building wavetables etc...

For this to work, it's essential that the Audio file lets batch xFader know what midi note it is destined for so that the sample size can be calculated. This can either be done via the small header which is automatically filled in by Akai auto sampler during sampling. If this header isn't set the filename will then be looked at with the note number preceded by a dash & the 3 digits. This should be the last dash in the filename. So the filename should be something like this:

001 - sample sound 01 -**036** C1.wav

So that file would be registered as C1, but the actual 'C1' part is ignored, it's the -036 that is used, as long as there are no more dashes in the filename after this number it will be detected. Again Akai auto sampler does this automatically. Batch xFader is really geared to work with this auto sampler. If you use something different that needs special support, let me know and I'll happily add it.

Cycle Multiple - when the sample size of a single cycle is calculated, you may find that it isn't capturing lower octaves. By setting this to 2 it doubles the size of the cycle resolution and so allows cycles an octave below.

Detect Pitch - If no Pitch is found then there is an option to detect it, however there are no guarantees it will always work as it depends very much on the source material and should only be used with sounds which are close to an actual identifiable tuned pitch.

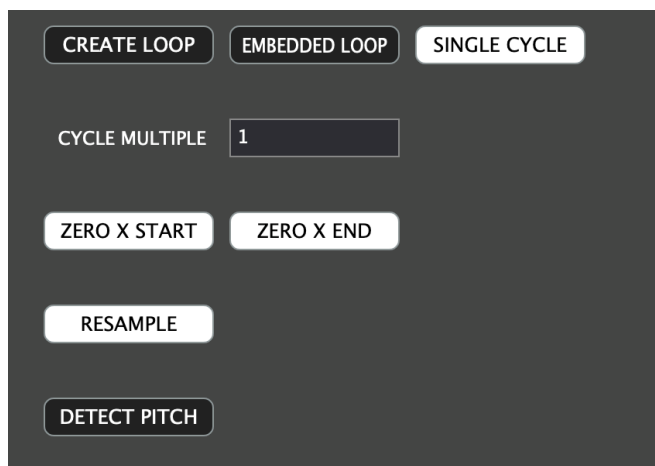
The Process

The loop is taken from the centre of the file, and if '**ZERO X START**' is enabled, a positive zero crossing is found and then the correct sample size for the note is provisionally set based on the Midi Note value.

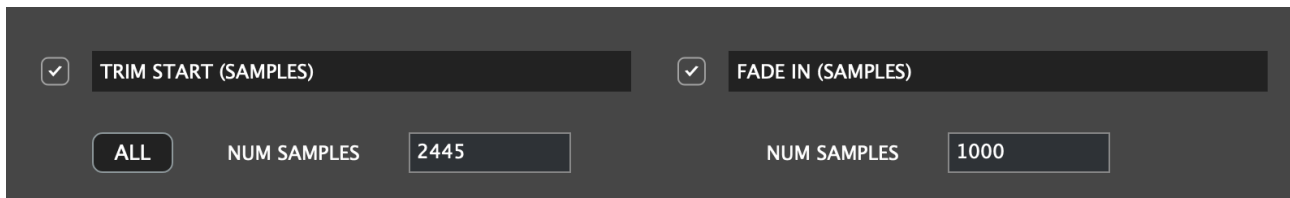
If the file is pitch perfect for the frequency, this should be fine, however if the source is slightly out of tune '**ZERO X END**' can be used to locate the nearest negative zero crossing. This in theory will capture the actual waveform at the source pitch.

Resample provides an option to retune the sample to the midi Note pitch, although bear in mind this may change the character of the sound for anything beyond slight adjustments.

You will notice that all options are hidden & unavailable in this mode, all data before & after the loop is trimmed and the loop points are set to the entire file so that samplers that recognise the loop header will automatically loop them.



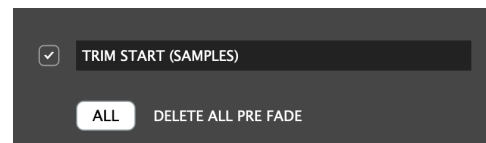
Trim Start



A dark-themed interface showing two settings. The first is 'TRIM START (SAMPLES)' with a checked checkbox, a button labeled 'ALL', and a text input field containing '2445'. The second is 'FADE IN (SAMPLES)' with a checked checkbox, a button labeled 'ALL', and a text input field containing '1000'.

Trim Start allows removing x samples from the front of the file. When recording often there is a latency in recorded files caused by the sound card latency etc, so if you have a folder of files recorded in a session you can use an audio editor to see what this latency is in samples and enter the value in this box.

Alternatively you can also use 'ALL' to remove all of the pre loop audio (except for any fade in selected). The audio material is removed after it has been used for the xFade.



A dark-themed interface showing the 'TRIM START (SAMPLES)' setting with a checked checkbox. Below it, a button labeled 'ALL' is highlighted, and the text 'DELETE ALL PRE FADE' is visible to its right.

Fade In

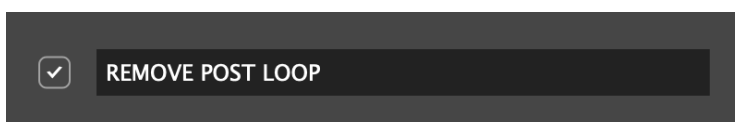
The Fade in is designed to avoid any non zero crossings at the start of the file which will cause a click. The value is in samples, it depends on the sample rate how many samples you should use but usually 100-1000 samples will do. This is a linear fade.

If you have selected to remove all of the Start Data (in the Trim Start section), the the start of the fade will become the start of the file. It's a good idea to have a lead-in before the loop for this type of sample, firstly it allows a fade in and secondly some sample formats such as .sf2 require pre loop sample data.



A dark-themed interface showing the 'FADE IN (SAMPLES)' setting with a checked checkbox. Below it, the text 'NUM SAMPLES' is followed by a text input field containing '1000'.

Remove Post Loop



A dark-themed interface showing the 'REMOVE POST LOOP' setting with a checked checkbox.

Usually the sustain loop in a sample is used for the fade out too, in which case any material after the loop is just a waste of space. This option will remove it so that the file ends straight after the loop.

Convert to Mono



CONVERT TO MONO (LEFT CHANNEL)

If you have auto sampled a mono instrument using something such as MPC Software/Beats auto sampler, it always records to a stereo file. This provides the option to just use the left channel and so saves space and reduces processing time.

Process

PROCESS

SOURCE FOLDER /Volumes/R2D2/HGS/Samples/Stack/Orig/Test

EXPORT NAME

EXPORTS

BATCH xFADER
hgsounds.com v1.0

1 - Hydra-Stack-20- 04 Saw-036 C1.WAV
2 - Hydra-Stack-20- 04 Saw-042 Gb1.WAV
2 Files Created Successfully

This section allows selecting the folder of WAVs which will be processed, the output directory name they will be saved to & any file conversion copies etc...

- **SOURCE FOLDER**

Browse and select the folder of samples you wish to process, it is not recursive.

- **EXPORT NAME**

Type the sub directory name you want to save the files to into the box and press your Return/Enter key.

- **EXPORTS**

This section allow choosing what files will be exported which includes the original files Bit depth/Samplerate and a few common conversions for specific sampler support. All files are saved in folders inside the 'EXPORT NAME' folder and have the format "xx-bit xxk" named after the bit Depth & sample rate.

Single Cycle Export folders also have and "SC" prefix so that they can be saved separately to the normal files without overwriting in case both are required.

- **ORIGINAL** - This file has no change to the source files bit-depth/samplerate. "(Orig)" will also be added to the folder name so it's clear which are exported using the original format.
- **xx-bit xxk** - These formats will be converted using high quality Lagrange Interpolation.
- **PROCESS/STOP**
When you are ready, click Process and the files will start being generated. Clicking STOP can interrupt the process prematurely.

Changelog

- V1.1.2
 - Added FFT Frequency/Midi Note detection. Use with caution as it will not detect all material correctly, it's still a much better option to add midi note information to the file header/name prior to batch processing.
 - Reworked & Improved the phase align code.
 - FIXED: crash when using Phase Align and files that have no Midi Note assignment.
 - FIXED: fade % is now visible at startup.
 - Removed single cycle scan range, now just uses the single cycle sample size instead.
- v1.1.1
 - Improved the single cycle loop zero crossing search for the end point, it now scans for nearest in both direction.
 - Added controls to enable/disable Zero-X Start which then gives the option for zero-X end and a maximum scan time in percentage of loop size.
 - Resample added for the single cycle loop, this will resample loops that are larger/smaller due to the zero X scan which effectively tunes them to perfect pitch. It should only be used as a last resort as it does change the character of the sound. It's better to ensure that the source is already the correct pitch before it reaches batch xFader.
 - Added option to enable/disable the zero X scan phase alignment on 'CREATE LOOP' mode, although it's recommended to leave this on usually.
- v1.1
 - Single Cycle Export Mode Added – locates a positive zero crossing in the centre of the file, sets the end to the correct number of samples for the given midi note & then scans for the next negative zero crossing. For the midi note, it can either be embedded or in the filename.
 - Loops now quantise to the nearest multiples of frequency if the filename has a midi Note number or embedded note number in the smpl header.
 - Loop section now looks for positive zero crossing at the start & negative at the end which can help with phase issues & also setting xFade amount to zero will now bypass the xFade altogether. If you have constant material this can perhaps create seamless loops if single cycle mode is not sufficient.
 - Added xFade Mode menu with a choice between Equal Power, Linear, & 3 S Curve modes.
 - Fixed: Trim Start 'All' ignored the Trim Start enable.
 - Fixed: occasional small click on some loops.
 - Fixed: The Fade in sample amount was left when using 'Delete All' even though 'Fade In' was disabled.
- v1.0
 - Initial Release