

Gotharman's Little deFormer 3



Granular Workstation

Update Manual 0.74

In this manual:

- Display is now updating faster. [Page 3](#)
- Granulator (unsynced), Xfade Granulator, Abstract0, Time Stretch and Sample Pitch effects has been added to the output effects. [Page 4](#)
- PitchShaper 2 (dual input) has been added to the insert effects. [Page 20](#)
- Output effect 1 can now be sent to EFX2 for serial connection. [Page 24](#)
- Effects Mix and Pan can now be modulated. [Page 25](#)
- Bend and CC recording automatic setup added. [Page 26](#)
- Edit knobs function is now reset, when entering a sequencer page. Marking improved. [Page 28](#)
- Knob modulation sources renamed. [Page 29](#)

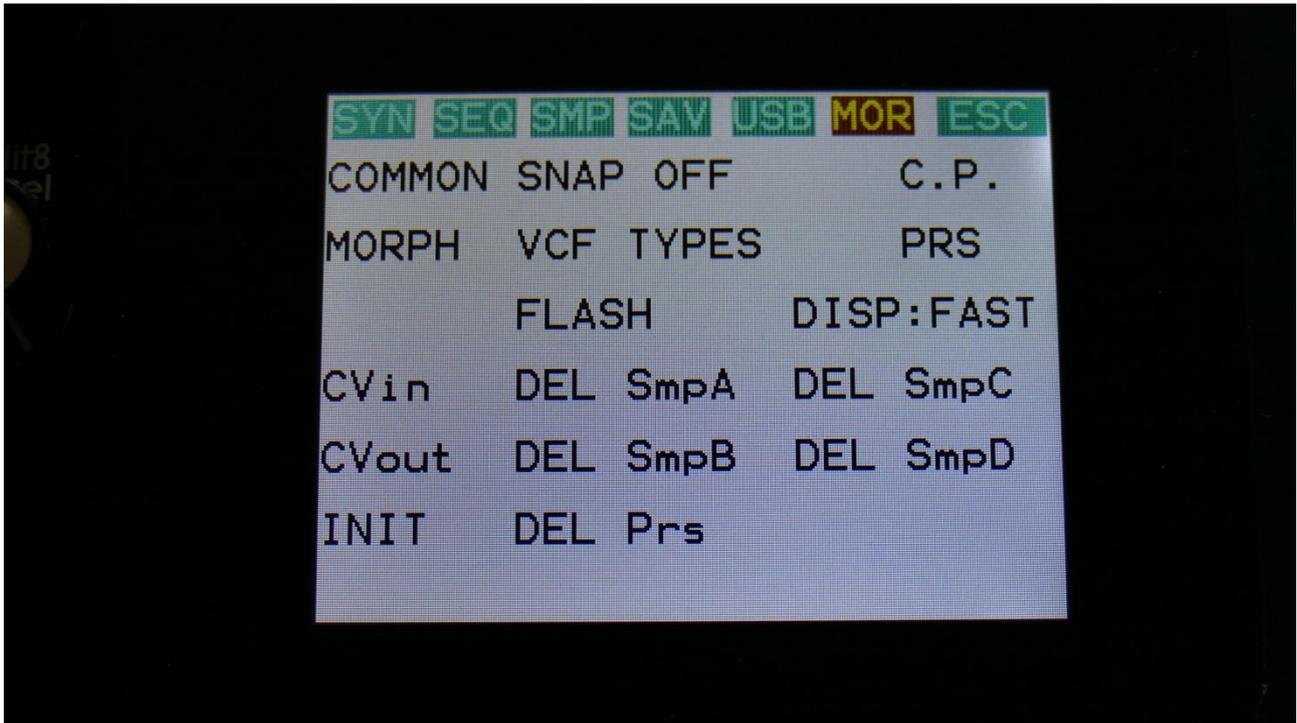
Bug Fixes:

- When changing preset, all effects were not always properly cleared (especially if the Variator effect was selected). This has now been fixed.

Display is now updating faster

The display has now been set to the maximum possible update rate. I have been testing this as much as possible, and did not discover any display freezes.

If you should discover any display freezes, go to the MOR page:



Touch the text: “DISP:FAST”. It will now change to “DISP:SLOW” and go back to the slower display mode, as before.

Please report any display freezes to: info@gotharman.dk.

More Output Effects

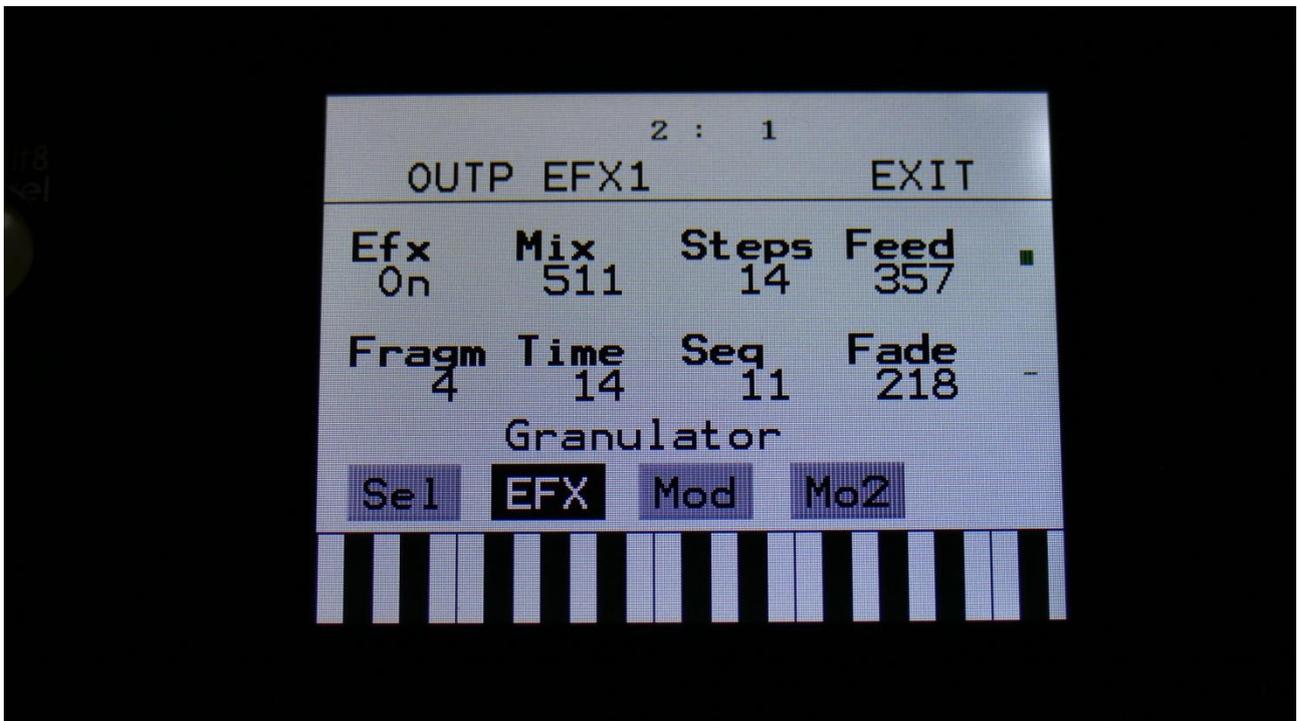
Granulator (unsynced), Xfade Granulator, Abstract0, Time Stretch and Sample Pitch effects has been added to the output effects.

Please find the explanation and parameters of each of the new effects on the following pages.

Granulator (unsynced)

Cuts the input signal up in grains, that can be re-arranged, using the step values of a selectable controller sequencer track.

This is the granulator that was named “AnaGran” in earlier Gotharman instruments. Unlike the Granulator SQ, this is not synced to the sequencer. It plays back one grain, and then it immediately advances to the next grain. The values for the granular sequence, is still taken from a selectable sequencer controller track.



Touch the EFX touch button, to access this page.

The 2 VU-meters at the right of the screen, shows the Effect input and output.

Efx: Off, on. When the effect is off, it is bypassed.

Mix: The mix between the un-effected signal on the effect input, and the effected signal on the effect output.

Steps: Sets how many steps the granulator sequences should go through, until they starts over again from step one. Range: 1 to 16.

Feed: Adjusts how much of the Granulator output signal should be fed back to its input.

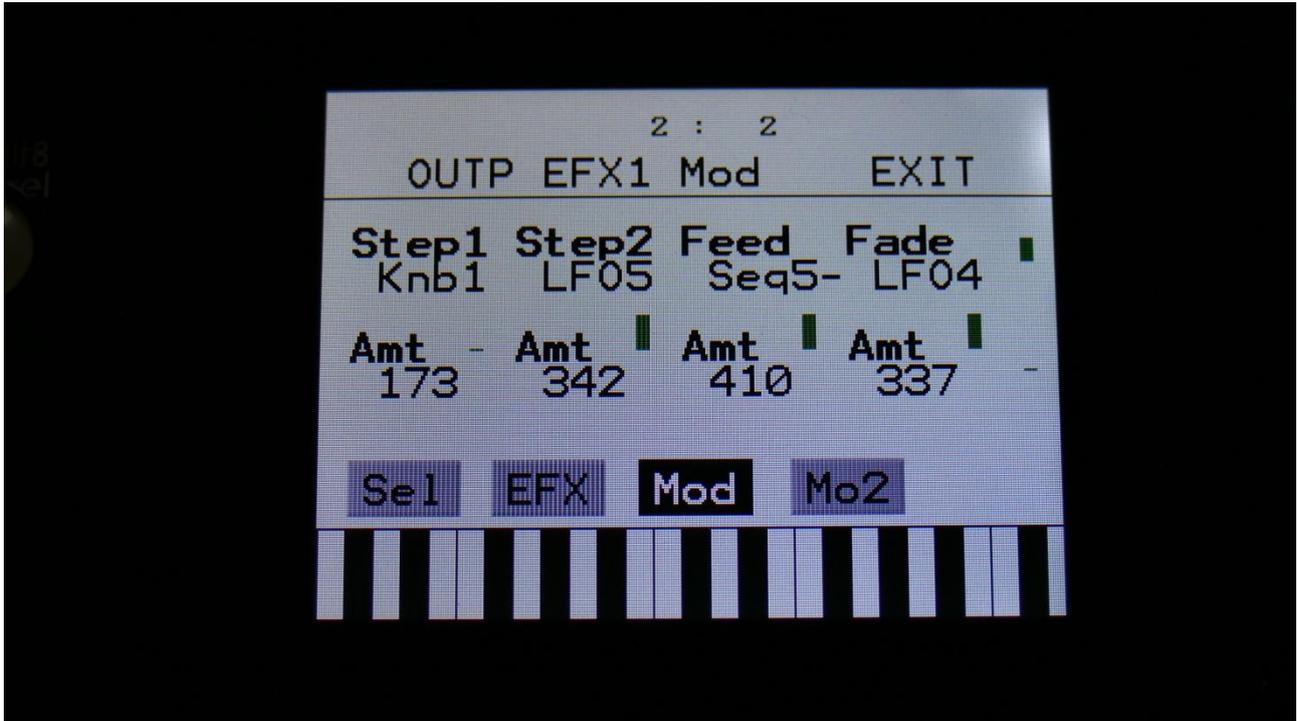
Fragm: Sets how many fragments (or grains) the input signal should be cutted up in. Possible values are 1, 2, 4, 8, 16, 32, 64 or 128.

Time: Sets the size of the input recording buffer. The higher the size, the bigger each grain will be.

Seq: Selects which of the 16 sequencer controller tracks, the granulator should get it step values from. Each value selects a different portion of the granulator input, to be played back.

Fade: When this parameter is turned up, each grain will fade in and out, to minimize clicks.

Granulator Modulation



Touch the Mod touch button, to access this page.

The 2 VU-meters at the right of the screen, shows the Effect input and output. The small VU-meters next to the parameters, shows the activity of the selected modulation sources.

For each parameter, that can be modulated, it is possible to select a modulation source, and to adjust the modulation amount. For a complete list of modulation sources, see the list in the start of this section.

The upper row of parameters selects the modulation sources, **the lower row of parameters** (Labelled Amt) adjusts the modulation amount in the range 0 to 511.

The parameters on this page:

Step1 and Step2: Modulates the number of steps parameter.

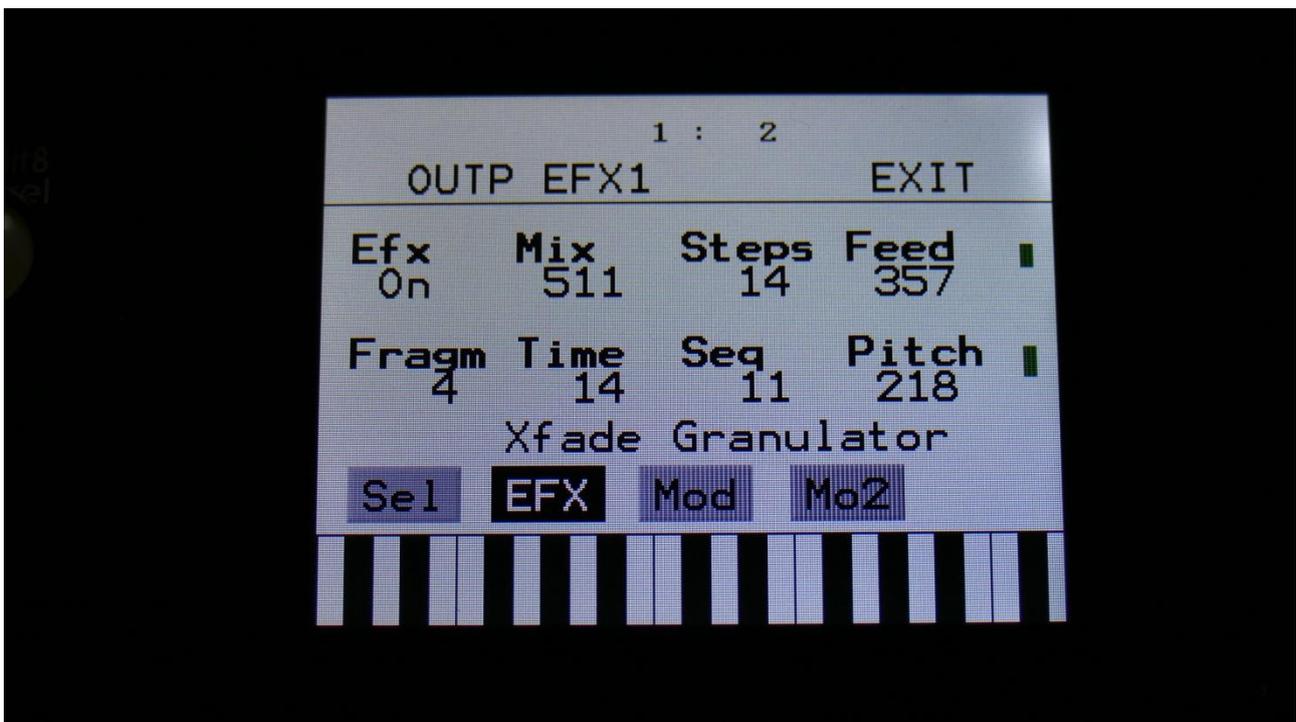
Feed: Modulates the feed parameter.

Fade: Modulates the Fade in and out times.

Xfade Granulator

Cuts the input signal up in grains, that can be re-arranged, using the step values of a selectable controller sequencer track. This granulator plays back one grain, and then it crossfades to the next grain.

It is also possible to adjust and modulate the pitch of the granular sequence, using any modulation source.



Touch the EFX touch button, to access this page.

The 2 VU-meters at the right of the screen, shows the Effect input and output.

Efx: Off, on. When the effect is off, it is bypassed.

Mix: The mix between the un-effected signal on the effect input, and the effected signal on the effect output.

Steps: Sets how many steps the granulator sequences should go through, until they starts over again from step one. Range: 1 to 16.

Feed: Adjusts how much of the Granulator output signal should be fed back to its input.

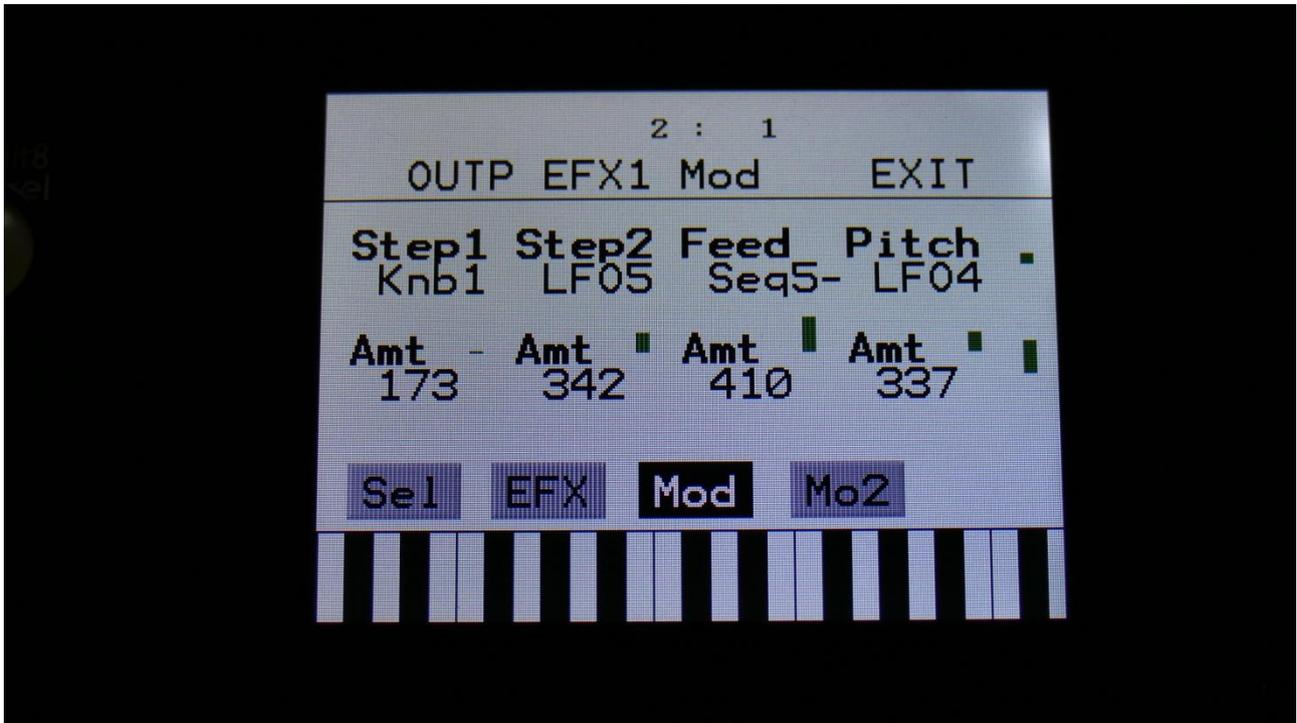
Fragm: Sets how many fragments (or grains) the input signal should be cutted up in. Possible values are 1, 2, 4, 8, 16, 32, 64 or 128.

Time: Sets the size of the input recording buffer. The higher the size, the bigger each grain will be.

Seq: Selects which of the 16 sequencer controller tracks, the granulator should get it step values from. Each value selects a different portion of the granulator input, to be played back.

Pitch: Sets the playback pitch of the granular sequence. A value below 256 will pitch the signal down, a value above 256 will pitch it up.

Xfade Granulator Modulation



Touch the Mod touch button, to access this page.

The 2 VU-meters at the right of the screen, shows the Effect input and output. The small VU-meters next to the parameters, shows the activity of the selected modulation sources.

For each parameter, that can be modulated, it is possible to select a modulation source, and to adjust the modulation amount. For a complete list of modulation sources, see the list in the start of this section.

The upper row of parameters selects the modulation sources, **the lower row of parameters** (Labelled Amt) adjusts the modulation amount in the range 0 to 511.

The parameters on this page:

Step1 and Step2: Modulates the number of steps parameter.

Feed: Modulates the feed parameter.

Pitch: Modulates the pitch of the granular sequence.

Abstract0

This effect constantly records the audio applied to its input, in a time interval determined by a "Rec" parameter. It uses 2 "playback heads" to play back the recorded audio. Each of these playback heads can be switched on and off, and the playback length can be adjusted for each of them. Every time a head has played back the adjusted amount of time, it jumps to a new random location of the recorded piece, and starts play back again. The playback pitch of head 2 can be adjusted.



Touch the EFX touch button, to access this page.

The 2 VU-meters at the right of the screen, shows the Effect input and output.

Efx: Off, on. When the effect is off, it is bypassed.

Mix: The mix between the un-effected signal on the effect input, and the effected signal on the effect output.

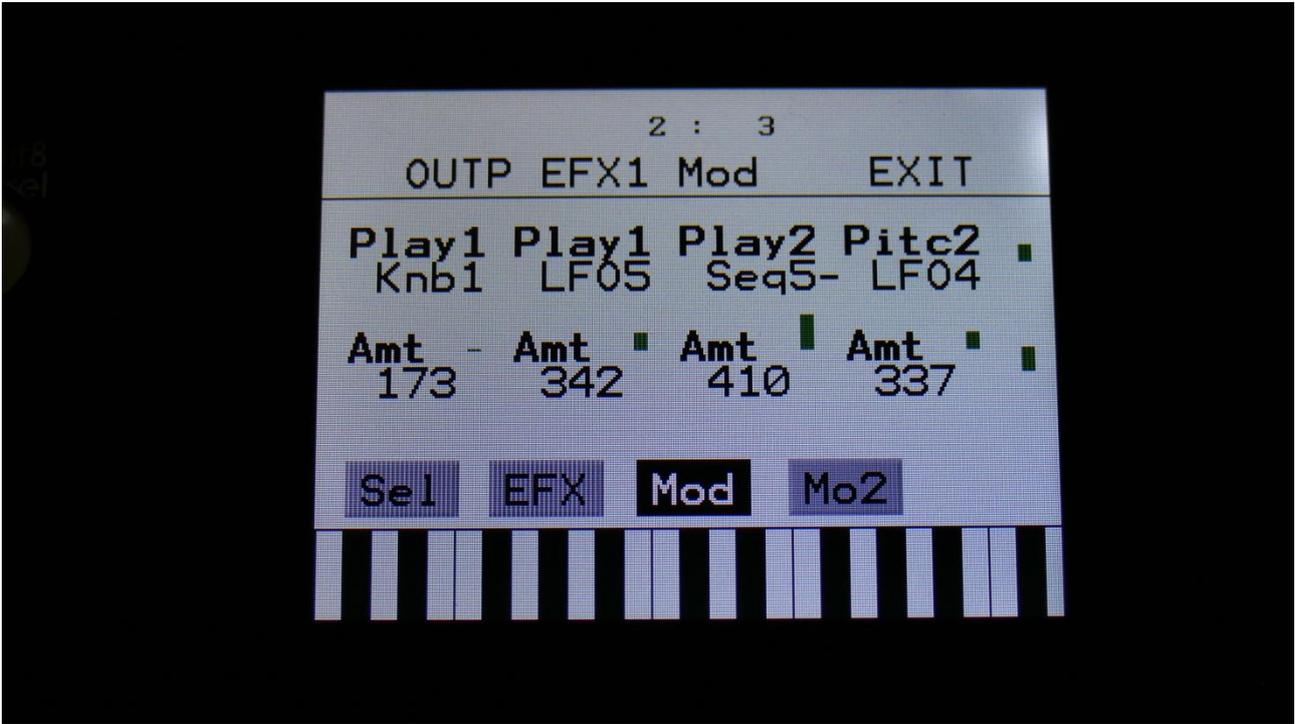
Play1, Play2: 0 (Off), 1 to 511. Sets for how long time each of the playback heads should play back, until it jumps to a new random location.

Rec: 0 to 511. Sets the record buffer size. Determines for how long time it should record the input, before it starts over again.

Psize: 0 (Off), 1 to 255. This parameter sets the total playback buffer size, independent of the record buffer size. If this parameter is 0, the Rec parameter determines the playback buffer size, but if it is at any other value, this parameter determines the playback buffer size. It can be used as a fast way of adjusting the playback length of both playback heads at the same time. At low settings, granular effects with very small grains can be obtained. If the value of this is higher than the Rec parameter, it will play back areas of the record buffer, that is not being recorded, and create a "Freeze" effect.

Pitc2: 0 to 511. Sets the pitch of the playback for playhead 2. A value below 256 will pitch the signal down, a value above 256 will pitch it up.

Abstract0 Modulation



Touch the Mod touch button, to access this page.

The 2 VU-meters at the right of the screen, shows the Effect input and output. The small VU-meters next to the parameters, shows the activity of the selected modulation sources.

For each parameter, that can be modulated, it is possible to select a modulation source, and to adjust the modulation amount. For a complete list of modulation sources, see the list in the start of this section.

The upper row of parameters selects the modulation sources, **the lower row of parameters** (Labelled Amt) adjusts the modulation amount in the range 0 to 511.

The parameters on this page:

Play1: Modulates the size of playback head 1.

Play2: Modulates the size of playback head 2.

Pitc2: Modulates the pitch of playback head 2.

Time Stretch

This effect is able to change the length of the input signal, almost without changing the pitch. Old fashioned time stretch done in realtime, that can be applied even to live input signals! It is also possible to change the pitch if desired, and it is possible to trigger this effect, for bigger precision.



Touch the EFX touch button, to access this page.

The 2 VU-meters at the right of the screen, shows the Effect input and output.

Efx: Off, on. When the effect is off, it is bypassed.

Mix: The mix between the un-effected signal on the effect input, and the effected signal on the effect output.

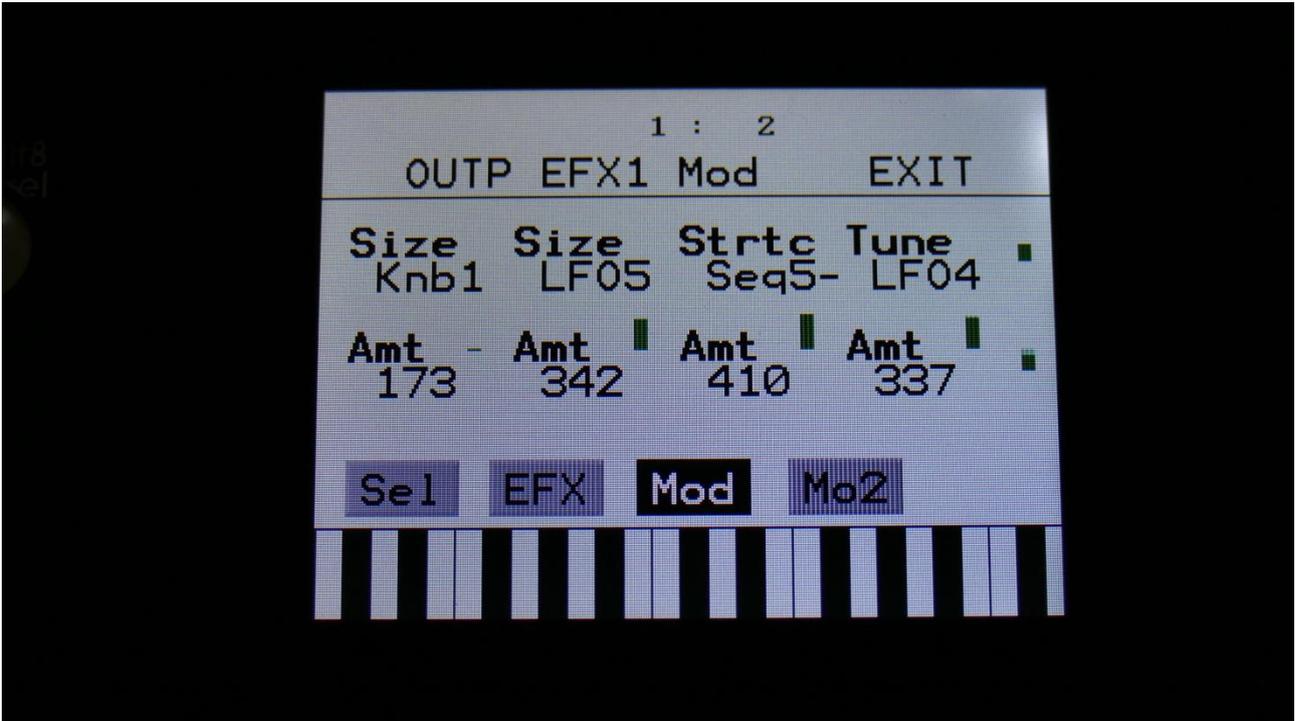
Size: 0 to 511. The size of the RAM buffer used for the TimeStretcher.

Strtch: 0 to 511. Time stretch. A value below 256 will stretch the sound longer, a value above 256 will compress the sound to become shorter.

Trig: Off, 1 to 16. Determines if the time stretch effect should be triggered by a part or not.

Tune: Pitch Coarse. A value below 256 will pitch the signal down, a value above 256 will pitch it up.

Time Stretch Modulation



Touch the Mod touch button, to access this page.

The 2 VU-meters at the right of the screen, shows the Effect input and output. The small VU-meters next to the parameters, shows the activity of the selected modulation sources.

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The parameters on this page:

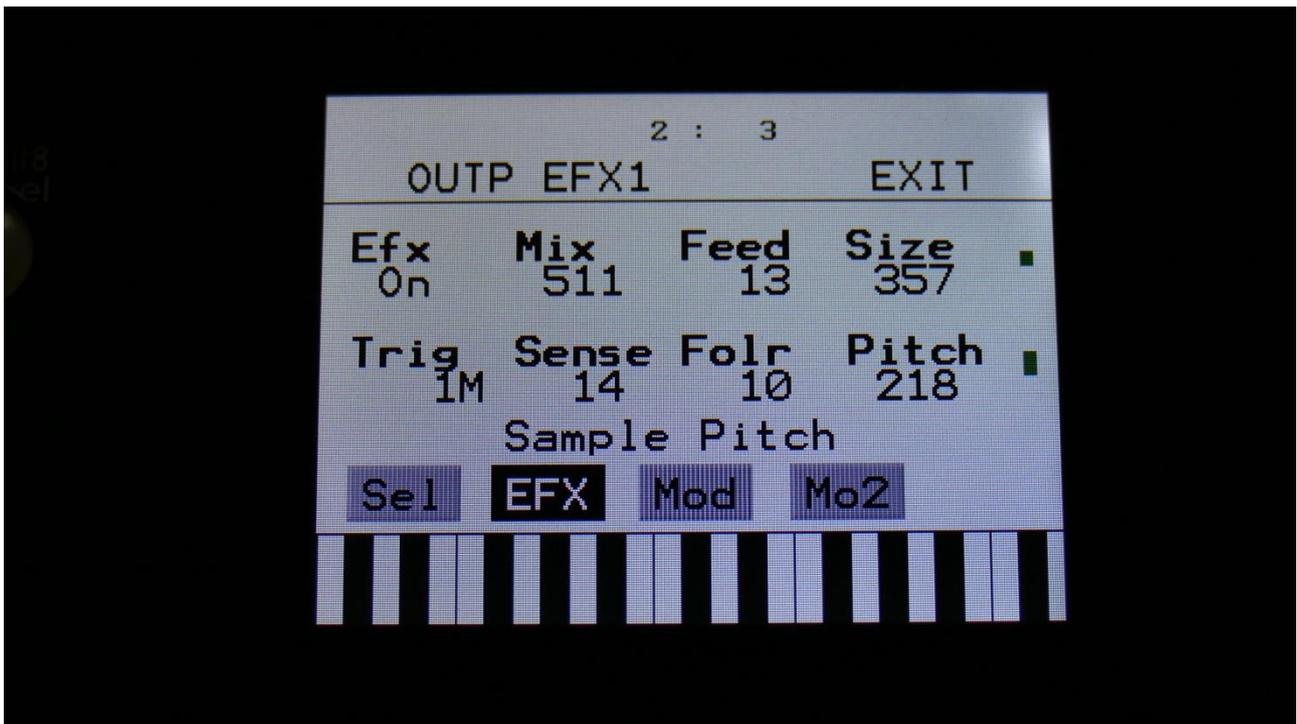
Size: Modulates the size of the time stretch input buffer.

Strtc: Modulates the time stretching.

Tune: Modulates the pitch coarse.

Sample Pitch

Changes the pitch of a sampling, without changing the length, using granular technology. It is possible to set the size of each pitch grain, to generate great granular effects. This effect has to be triggered from any of the parts, in order to function properly. It will work on external signals, but it still needs to be triggered by a part.



Touch the EFX touch button, to access this page.

The 2 VU-meters at the right of the screen, shows the Effect input and output.

Efx: Off, on. When the effect is off, it is bypassed.

Mix: The mix between the un-effected signal on the effect input, and the effected signal on the effect output.

Feed: Sets how much of the effect output signal should be fed back to its input.

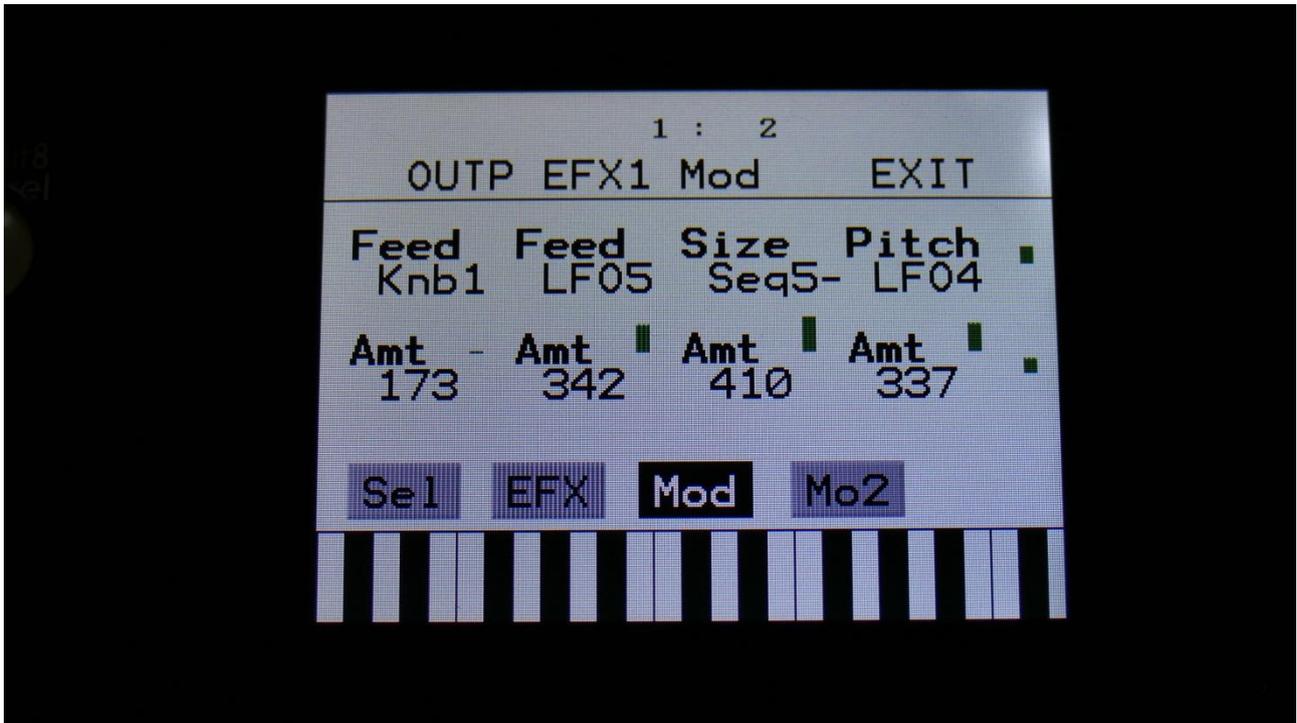
Size: 0 to 511. The number of wave frames used for each pitch grain.

Trig: Off, 1 to 16, OffM, 1M to 16M. Determines if the sample pitch effect should be triggered by all parts or a single part. The “M” suffix indicates that the playback pointer will be moving in another pattern, that will give slightly different results.

Folr: The sample pitch effect output envelope follower rate.

Pitch: The playback pitch. Values below 256 will tune down, values above 256 will tune up.

Sample Pitch Modulation



Touch the Mod touch button, to access this page.

The 2 VU-meters at the right of the screen, shows the Effect input and output. The small VU-meters next to the parameters, shows the activity of the selected modulation sources.

For each parameter, that can be modulated, it is possible to select a modulation source, and to adjust the modulation amount. For a complete list of modulation sources, see the list in the start of this section.

The upper row of parameters selects the modulation sources, **the lower row of parameters** (Labelled Amt) adjusts the modulation amount in the range 0 to 511.

The parameters on this page:

Feed: Modulates the feed parameter.

Size: Modulates the number of waveframes, used for the pitch shifting.

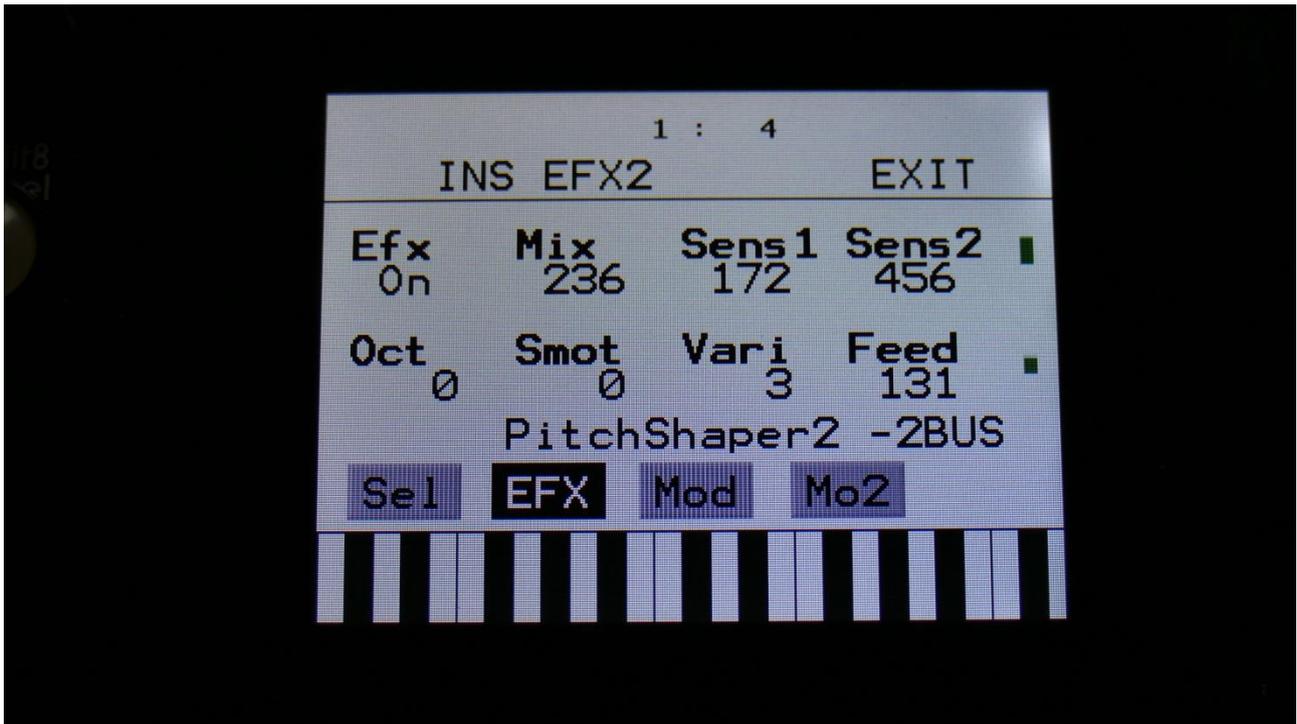
Pitch: Modulates the pitch shifting.

PitchShaper2

PitchShaper 2 has been added to the insert effects. This is a dual input PitchShaper. The pitch of the signal applied to input 1, is pitch matched to the signal applied to input 2. When changing the pitch of the pitch matched signal, the waveform on the effect output will change, still matched to the pitch of input 2.

It is also possible for the signal applied to input 1, to affect the output pitch, by turning the Vari parameter up.

The audio bus that this effect is placed on, applies the signal to be re-pitched. The audio bus numbered above the bus, that the effect is placed on, applies the signal that the first signal should be pitch matched to.



Touch the EFX touch button, to access this page.

The 2 VU-meters at the right of the screen, shows the Effect input and output.

Efx: Off, on. When the effect is off, it is bypassed.

Mix: The mix between the un-effected signal on the effect input, and the effected signal on the effect output.

Sens1: Pitch detection sense input 1. On a pure waveform, turn this fully down to make sure, that it detects all the waves of it, and pitch shifts correctly. On more complex sounds, turn this up until the desired effect are obtained. At higher settings, only portions of the sound will be pitch shifted, and when it doesn't detect any pitch, it will repeat the portion it detected, making the sound "granulate".

Sens2: Pitch detection sense input 2. On a pure waveform, turn this fully down to make sure, that it detects all the waves of it, and pitch shifts correctly. On more complex sounds, turn this up until the desired effect are obtained. At higher settings, only portions of the sound will be pitch shifted, and when it doesn't detect any pitch, it will repeat the portion it detected, making the sound "granulate".

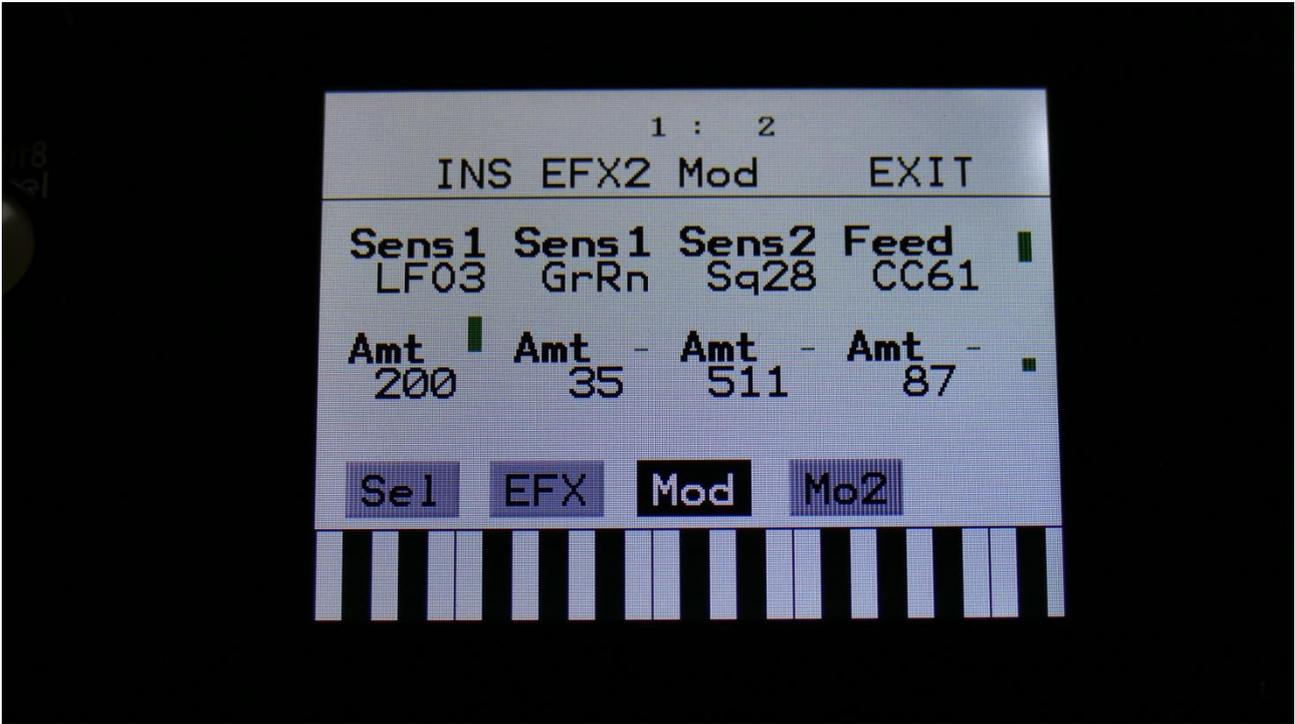
Oct: Octave transpose. From 0 to +3 octaves.

Smot: Smooth. The more this is turned up, the more the changes in pitch are smoothed.

Vari: Pitch variation. The more this is turned up, the more the pitch variations on the input 1 signal affects the pitch shaper frequency.

Feed: Pitch shaper feedback. Adjusts the portion of the output signal, that is fed back to the input.

PitchShaper2 Modulation



Touch the Mod touch button, to access this page.

The 2 VU-meters at the right of the screen, shows the Effect input and output. The small VU-meters next to the parameters, shows the activity of the selected modulation sources.

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The upper row of parameters selects the modulation sources, **the lower row of parameters** (Labelled Amt) adjusts the modulation amount in the range 0 to 511.

The parameters on this page:

Sens1 and Sens2: Modulates the sens 1 and 2 parameters.

Feed: Modulates the Feed parameter.

Output Effects Serial Connection



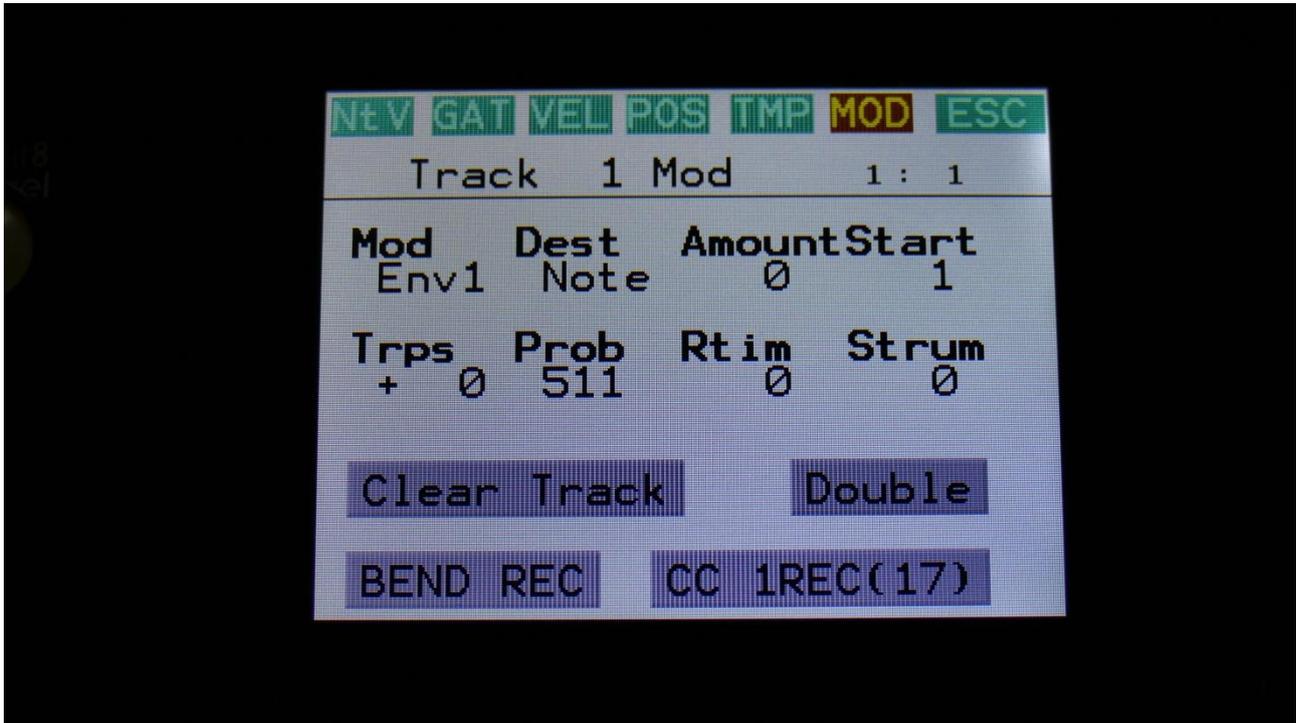
An **Outp** parameter has been added to Output Effect 1. When setting this to EFX2, Output Effects 1 and 2 will be serial connected. When setting it to L+R, the effects will be in parallel, like before.

Effects Mix and Pan Modulation



An extra modulation page (Mo2) has been added to the effect pages. On this it is possible to modulate the effect Mix parameter. On Output effects it is also possible to modulate the output effect panning.

Pitch Bend and CC recording auto setup



From the sequencer note track Mod pages, it is now possible to make LD3 automatically set up controller tracks to realtime record pitch bend and CC events.

When using this function, the controller track is set to the double resolution as the note track, and therefore also the double length, to make the tracks match.

Note track 1 will set up controller track 1 for pitch bend recording and controller track 17 for CC recording.

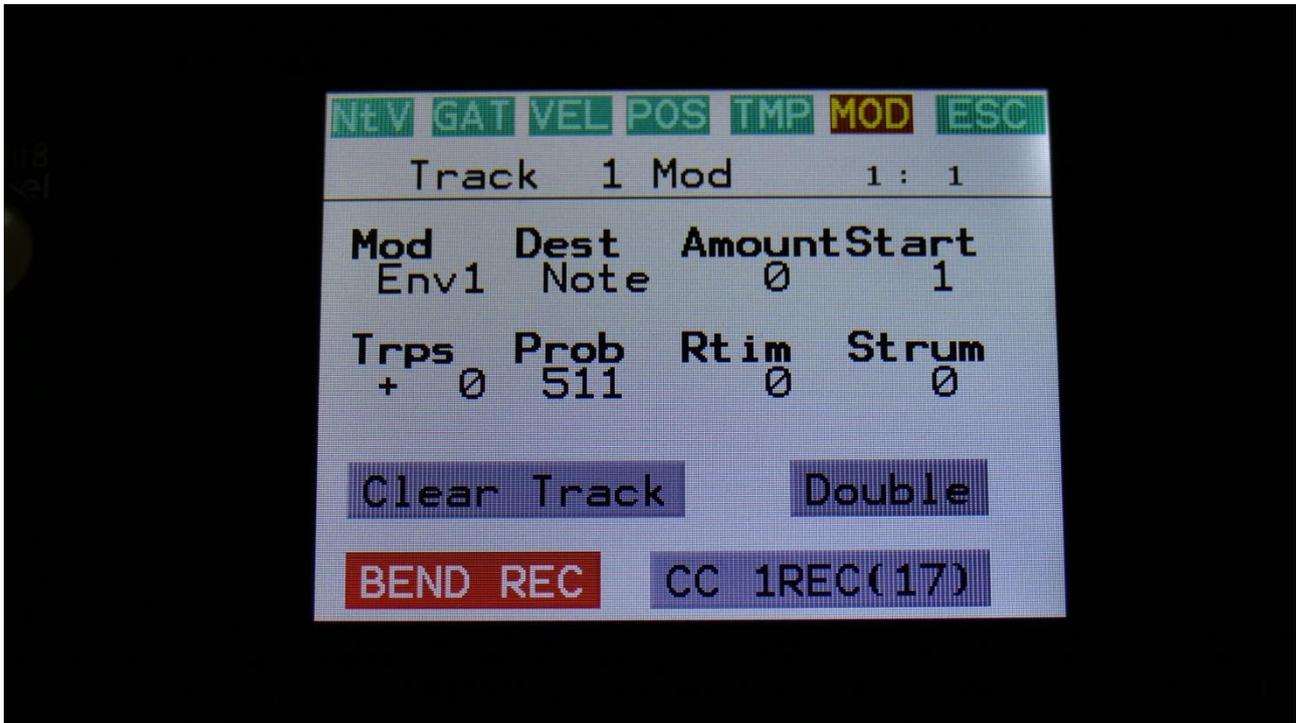
Note track 2 will set up controller track 2 for pitch bend recording and controller track 18 for CC recording.

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Note track 16 will set up controller track 16 for pitch bend recording and controller track 32 for CC recording.

The CC number to be recorded, will be the CC number, that the controller track is already set to. If the controller track is not already set to a CC number, CC1 will be recorded.

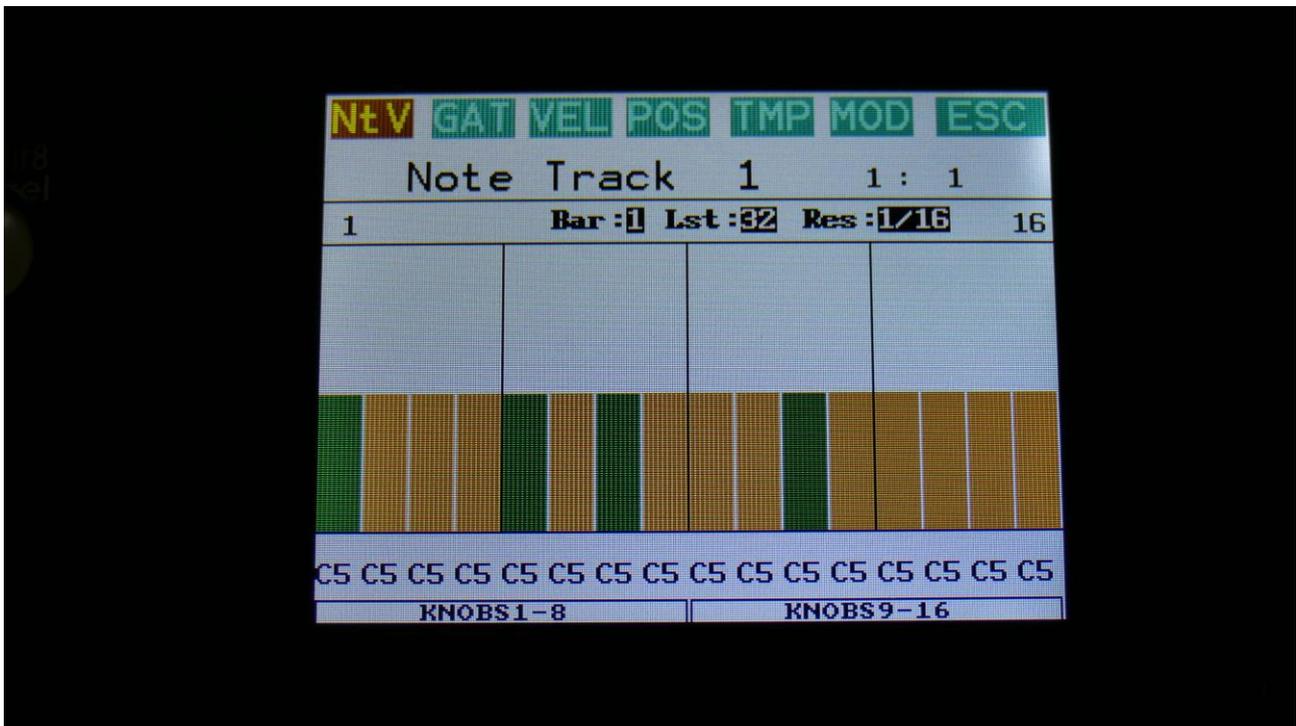
To initiate Pitch Bend recording



- Make sure that sequencer realtime recording is switched off.
- Go to the controller track, and set the MIDI channel, and track int/ext as desired.
- Set the desired length and resolution of the note track.
- Go to the Mod page, and touch BEND REC, so that it turns red.
- Start realtime recording.
- Pitch Bend messages will only be recorded the first time, the controller track is running.

Follow the same procedure, to record CC events, plus set the desired CC number on the controller track.

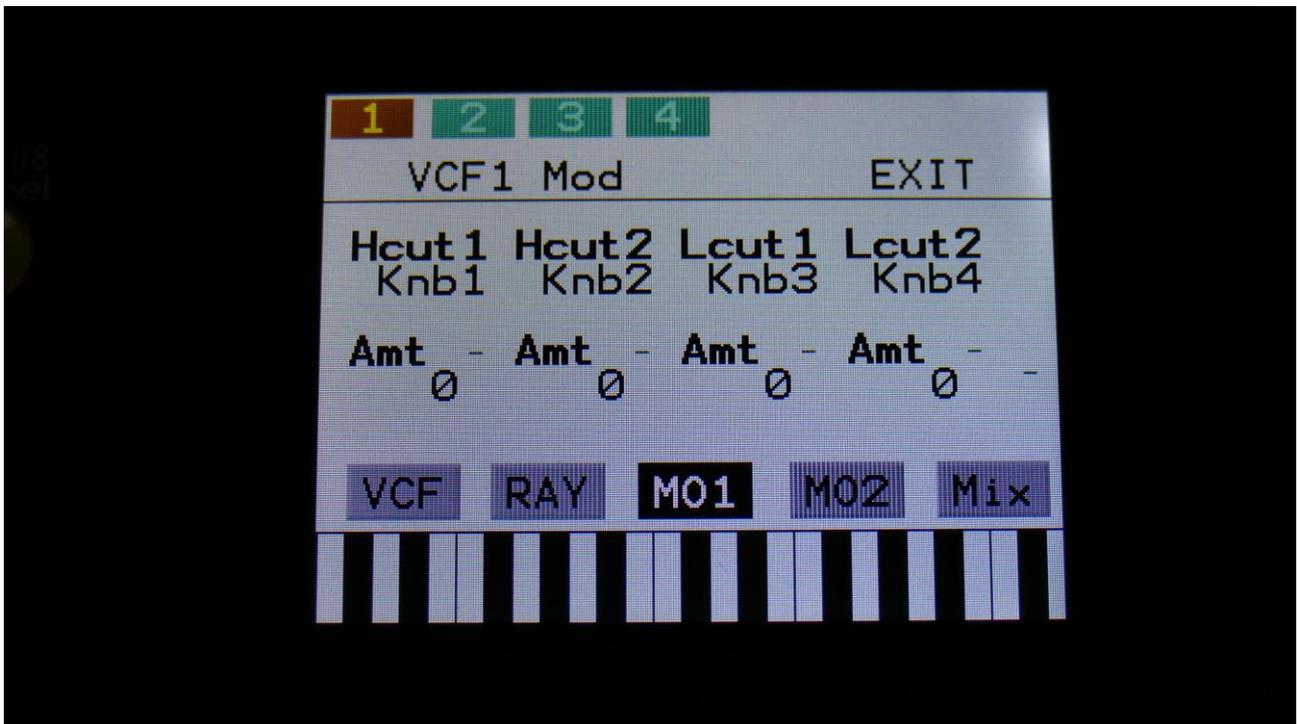
Sequencer Pages Optimization



Every time you enter a sequencer page, the edit knobs will now be set to edit the Bar/Lst/Res parameters.

These parameter will now be shown as white with black background, when they are selected for editing, to make this easier to see.

Edit knob modulation sources renamed



The Edit Knob modulation sources has now been renamed from K1C6 and so on to Knb 1 to 4, to make them a bit easier to find.

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2018