

# Gotharman's Little deFormer 2



Granular WorkStation

User Manual v 336

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# Introduction

Thank you very much for purchasing/consider to purchase a Little deFormer 2.

The Little deFormer are the result of a lot of ideas I have been writing down, since I made the first deFormer in 2009, coming true. It has more effects (plus more to come), a more powerful synthesizer section, more filter types, an added sampler, a much improved sequencer, it's expandable and MIDI updatable, and has much more power.

Since it has both sampler, synthesizer, sequencer and granular effects in one box, I feel that it must be considered to be a workstation.

The unexpanded version of Little deFormer 2 holds 512 presets, 512 samplings (max 100 minutes), and 512 songs. The expanded version holds 1024 presets, 1024 samplings (max 200 minutes), and 512 songs.

Each preset has 16 sampleslots, to each of which it is possible to assign a sampling or an oscillator. Various parameters can be adjusted and modulated separately for each sample slot, like tune, sample start and length, loop, waveform and level/gain.

Each sample slot has their own filter, which can be in a number of different modes, like LPF, BPF, HPF, BEF, shaper and Lo-Fi. The filters has some special "Filter adjust" parameters, that can change the shape of the filter completely, and make new filter types.

It is also possible to make the sample slot filters form a FilterBank.

Each sample slot can be assigned to output to one of four audio busses. The FilterBank, a compressor and a distortion effect can be placed on these busses, to process only the samples that are assigned to the same busses as these effects.

On audio bus 1, a common filter and the Time & Pitch effect are placed. Various different reverbs, delays and time and pitch mangling granular effects can be selected in this section, and the common filter can either be placed before, after or inside the Time & Pitch effect.

Audio signals applied to the 2 external audio input can also be assigned to an audio bus, and go through the FilterBank, the compressor, the distortion effect, the common filter and the Time & Pitch effect.

LD has a built-in sequencer with 32 step tracks for recording notes and 4 controller tracks for controlling parameters. The sequencer both receives and transmits MIDI clock for synchronization to other MIDI gear, and it can also trigger MIDI notes on external gear.

A comprehensive modulation section is also found. It is possible to make 32 modulation routings per preset. 10 LFO's, 16 random generators, 4 sequencer controller tracks and MIDI controllers and velocity can be the sources, and almost any parameter can be the destination.

LD can also be triggered and controlled via MIDI.

It is possible to connect various expansion boxes, for analog control and new sound possibilities.

LD's sample engine is 4 note polyphonic. A Poly Expansion will though soon be available to give it more polyphony and more filters...

## **The idea behind**

Being a budget musician, you usually don't have the cash to bring out and set up all of your gear, when you go out and play live.

The alternative is to sample phrases from your gear, and just trigger those samplings live, or to pre-record everything on a dat recorder or one of all those fancy new recorders.

Personally I have used both methods, but found both of them really boring. That was why I made the first deFormer. After I made that, I brought a Roland MC-909 or a SP-606 and connected their output to the deFormers audio input. Because of the deFormers great granular effects, it was now possible to really tweak the samplings, and do something while standing on the stage, and it was no longer boring.

In the Little deFormer, I have added a sampler with a stunning audio quality, ready to be boosted up on a big PA. So now it is only necessary to bring one piece of gear...

Because of the deFormers unique and high quality Gotharman made effects and the synthesizer section, it is also usable as an add-on for any studio or gear setup, and for musicians who needs something that they can't get anywhere else (at least not at this moment).

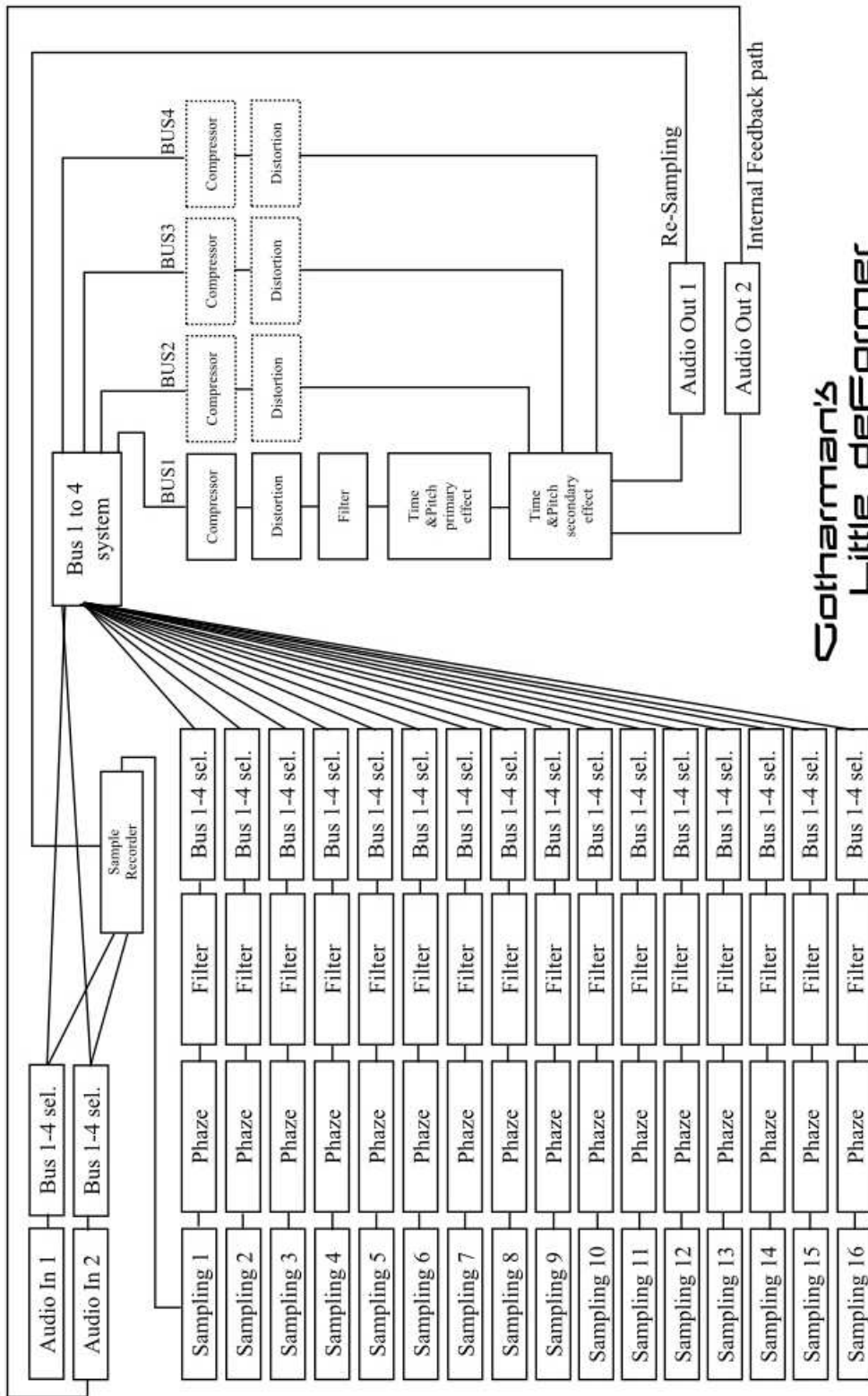
**I hope you will deForm some great tracks with it.**

**Very special thanks to:**

Kris Kunz  
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Halvard Djupvik Smedsrud  
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**For supporting this project from the beginning. I really appreciate your trust. Without you, the Little deFormer might not have been...**

**Gotharman May 2012**



# Gotharman's Little deFormer

Audio Path

## Getting Started

Well, now you got your Little deFormer, you probably can't wait to get it up and going, so let's jump right to it.

### **Connecting:**



On the right end panel of your Little deFormer, you will find the power switch and connections for power supply, audio inputs and outputs, MIDI in and out and for an expansion box.

Connect the audio out 1 or 2 or both to a mixer or an amplifier, or anything else that ends out in a set of speakers, a single speaker, or even a pair of headphones, if you are in a neighbour friendly mood. Since it doesn't have build in speakers, it just needs to be connected to something, that can transfer its amazing sound to you.

It is also possible to connect a pair of stereo headphones directly to Little deFormer. Use the ¼" jack labelled "Audio Out 2 (hp)" for this.

If you plan to control LD from a MIDI device, connect that to its MIDI input.



If you plan to trigger another MIDI device, using LD2's trigger/step buttons and/or sequencer. Connect this to its MIDI output.

If you would like to effect some other gear through the Little deFormers effects, connect this to Audio Input 1 and/or 2. NOTE: When nothing is connected to Audio Input 2, Audio Output 2 are internally connected to this. The audio in 2 level parameter then acts as a feedback control.

It is also possible to synchronize Little deFormer to another device that transmits MIDI clock, like it is possible to sync another device to Little deFormers MIDI clock, via MIDI in and out.

If you have also purchased an expansion box, please also connect this to the "Expansion" connector, before turning your Little deFormer on. Please refer to the specific expansion box manual, for details about how to connect and use it together with Little deFormer.

Several expansion boxes are available, and more are to come.



### **AnaX mkII banana, eurorack and minijack models**

Makes it possible to use your Little deFormer together with analog gear.

### **SP-Box**

Adds an extra Emu SP-1200 audio output stage to your Little deFormer, with 12 bit converter and analogue filter.

### **Anamono Box**

Adds an extra output stage, derived from my anAmoNo synthesizer, with 2 analogue filters, analog distortion and a unique G-Ray feedback circuit.

### **Tube Box**

Adds an extra output stage with a real tube bandpass filter with drive.

Connect the supplied power adaptor to the 9V DC input, and to a 100V to 240V power source.



It's a 9V, 660 mA type with a 2.1 mm DC plug, with positive middle.



On the left side panel, you will find an “Audio Port”. At writing moment, there are not anything available for connecting to this, but I do have some audio expansion boxes planned, that will be available in a near future.

### **Turn it on**

Toggle the power switch on the right end panel, so its pin is pointing down. Your Little deFormer 2 should now turn on.



## The User Interface



### **Exit button**

This will exit from any menu to the level above, with the preset and song select screens being the highest possible level.

When held down, while another button is pushed, secondary button functions will be accessed. Most of these secondary functions are marked on Little deFormer 2's frontpanel. Here are some short descriptions:

**Exit + any trigger and step button:** Stop sample playback. Will stop the playback of the sampling assigned to that trigger button.

**Exit + Dec:** Qrec, Quick recording. Will immediately make Little deFormer start recording a sample. In the "COMMON" menu, it is possible to select if the source for the Qrec sampling should be Little deFormers audio inputs or outputs. The "Freeze" LED will flash, when LD2 are in Qrec mode. Push this same button combination again, to exit Qrec mode. This will take you to the sample name screen, where it is possible to audition, name and save the sampling you have just recorded.

**Exit + Inc:** Reload. When you have edited the active selected preset, this offers a fast way to get back to the original settings of the stored preset.

### **Dec and Inc buttons**

On the preset select screen, these will select preset. On the song select screen, they will select song. In the edit menu's they will select among the different edit pages. In the Assign menu they will select samplings. Holding one of these buttons down, will cause LD to auto increment/decrement. Holding one of these buttons down, while pushing the other, will cause it to scroll fast through presets/samplings/pages.

### **Edit button**

Pushing this will enter the edit menu's. It is also necessary to push it, to confirm a preset change. When located on a sample/oscillator page or the sample select page, pushing the Edit button, will make LD enter "Select" mode, and the Edit LED will flash. In this mode, you can select a sample slot by pushing any of the Trigger and Step button, without the sample/oscillator making a sound. Push the Exit button or the Edit button again, to exit "Select" mode.

### **Assign button**

Push this one time, so the Assign LED is lit, to select a sampling/oscillator for the last activated Trigger and Step button. Push any Trigger and Step button, to view what sampling/oscillator are assigned to it, and use the inc/dec buttons to select another sampling. Selecting sample 0 will assign an oscillator to the selected Trigger and Step button.

Push it one more time, so its LED is flashing, to mute/unmute any of the 32 sequencer tracks/16 selected samplings, by pushing the Trigger and Step buttons. In the "COMMON" menu, it is possible to select if you want the mute function to mute both the sampling and the sequencer track, or just the sequencer track. In the "MODULATION" section it is possible to modulate mute/unmute for each sample/oscillator slot.

When holding this button down, while pushing another button, it is possible to "fast jump" between the edit menu's:

**Assign + Trigger/Step button 1:** Jumps to the Sampler/Oscillator edit menu.

**Assign + Trigger/Step button 2:** Jumps to the Compressor edit menu. One more push makes it jump to the Distortion edit menu.

**Assign + Trigger/Step button 3:** Jumps to the Common Filter edit menu. One more push makes it jump to the FilterBank edit menu.

**Assign + Trigger/Step button 4:** Jumps to the Time & Pitch effects edit menu.

**Assign + Trigger/Step button 5:** Jumps to the Sequencer edit menu.

**Assign + Trigger/Step button 6:** Jumps to the LFO's edit menu.

**Assign + Trigger/Step button 7:** Jumps to the Modulation edit menu.

**Assign + Trigger/Step button 8:** Jumps to the Save Preset menu.

**Assign + 1\_8\_9\_16... button:** Jumps to the Expansion Box edit menu. Only if an expansion box are connected. Not marked on front.

**Assign + Edit button:** Jumps to the Flash section page, where you can check out how many samplings has been recorded on sample memory banks A and B, and how much sample memory that are available. Not marked on front.

### **1-8 9 – 16 17-24 25-32 button**

When on the preset select screen, use this button to select what you would like the Trigger and Step buttons to trigger:

**Unlit:** The Trigger and Step buttons triggers sample/oscillator 1 to 8, or if track 1 to 8 of the internal sequencer are in “Ext” mode, these buttons will trigger external MIDI gear.

**Lit:** The Trigger and Step buttons triggers sample/oscillator 9 to 16, or if track 9 to 16 of the internal sequencer are in “Ext” mode, these buttons will trigger external MIDI gear.

**Flashing:** The Trigger and Step buttons triggers fragment 1 to 8, if Double Gran is selected as the Time and Pitch effect, and it is in key mode, or if track 17 to 24 of the internal sequencer are in “Ext” mode, these buttons will trigger external MIDI gear.

**Flashing fast:** The Trigger and Step buttons triggers fragment 9 to 16, if Double Gran is selected as the Time and Pitch effect, and it is in key mode, or if track 25 to 32 of the internal sequencer are in “Ext” mode, these buttons will trigger external MIDI gear.

On sequencer step programming screens, it toggles between step 1-8, 9-16, 17-24 and 25-32. When reaching step 17-24 its LED flashes slow, when reaching step 25-32, it flashes fast.

On the mute/unmute screen, you select the samples/tracks to mute/unmute in the same way.

### **Freeze button**

Pushing this button, so its LED is lit, freezes the audio content of the time and pitch effect. If a preset is stored, with this button active, the frozen audio content will be stored together with the preset as a sampling, and re-loaded the next time you select that preset. Pushing this button one more time, so its LED is unlit, un-freezes the Time & Pitch effects audio buffer, and it is working normally again.

On the Delay 1 TAP page, this button work as the “Tap” button. Tap in the delay tempo you would like. The Freeze LED flashes, to indicate the delay tempo.

On any of the “SEQUENCER” pages, this works as a realtime record button. Pushing it one time, will make its LED lit, and put the sequencer in “rehearsal” mode. If the metronome in the “COMMON” menu is set to “Rec”, you will now hear this, and you can practise jamming on the step buttons. Push it one more time to enter realtime record mode. The Freeze LED will now be flashing, and it will realtime record anything yoy play on the step buttons. Push the Freeze button one more time to exit realtime record mode.

On any of the FilterBank pages, the Freeze button will freeze the filterbank sequencer, and cause it to only play back the selected filter frame.

### **Start/stop button**

Pushing this button starts and stops the internal sequencer.

**Notice:** If the sequencer Sync parameter in the “COMMON” section is set to “Ext” (external), and no clock are applied to the MIDI input, it will not be possible to start/stop the sequencer.

Neither will it be possible to start and stop it, if the AnaX or SP-box expansion boxes are connected, and any of the trigger inputs is set to “clk”, without any clocksource connected.

**Volume knob**

Turns the output level of the Little deFormer up or down, depending on what direction you are turning it. Clockwise movement will turn the volume up, counterclockwise movement will turn the volume down.

**The 8 Edit Knobs**

The 8 edit knobs, placed right under the display, edits up to 8 parameters at a time on the various edit pages. When on the Preset select page, or the edit group select page (explained later), these knobs send out a selected MIDI CC number, both to the MIDI OUT and internally. Parameters assigned to be controlled by "Kn1-8" will be affected, when turning these.

These are REAL potmeters, NOT jumpy rotary encoders.

**The 8 "Triggers and Steps" Buttons**

Little deFormer has 16 sample slots, that can each have a sampling or an oscillator assigned to them. On most pages, these buttons trigger the sampling/oscillator assigned to them. On the Mute/Unmute page, they toggle each sample/sequencer track between mute and unmute stage, and on the sequencer pages they step grid program the sequencer tracks.

## Well, now it's time for some action

If you have followed the previous steps, your Little deFormer should now be turned on and connected. When it is turned on, it starts up on the preset select screen:

[AnaBeat Pattern	]	A01	(0- 0)
---------------------	---	-----	--------

Or the song select screen:

[ New Song Song	]	A01
--------------------	---	-----

### **Listening to the pre-programmed preset sequences**

-Make sure that LD are on the Preset select screen, in Pattern mode (it writes "Pattern" right under the preset name). If not, push the "Edit" button one time, to enter the edit group select screen, hold the "Dec" button down for a few seconds, to change to pattern mode, and hit the "Exit" button, to get back to the preset select screen.

-Push the "Start/Stop" button one time.

-The sequencer will now start.

-To stop it, hit the "Start/Stop" button again.

### **Listen to some other preset sequences**

Use the "Inc" and "Dec" buttons to select another preset.

The "Edit" LED will start to flash.

Push the "Edit" button to confirm the change to another preset.

If the sequencer is still running, the "Edit" LED will now start to flash faster, until it reaches the sequencer start step. Then the "Edit" LED will go out, and playback of the newly selected preset will start.

If the sequencer is stopped, it will change to the new preset, immediately when the "Edit" button is pushed.

### **Listen to some samplings**

While still on the preset select screen, push some of the Trigger and Step buttons. You should now hear some samplings play back. The step LED will light up, as long as the sample is playing.

Push the "1-8 9-16 17-24 25-32" button to switch between samples 1 to 8 and 9 to 16, and the extra triggers 17 to 25, which will be explained later in this manual.



## Assigning samples and oscillators to the sample slots/step buttons

Push the "Assign" button one time, so its LED is lit.

Push a step/trigger button.

The assigned samplings name and number are now displayed.

```
[dmTom1      ]  Bank -Push Frz To Change  
203          [01]      A
```

Push the "Inc" and "Dec" buttons to assign another sampling to the step button. Holding down the Inc or Dec button will make the sample number auto increment/decrement. Holding either the Inc or the Dec button, while pushing the other, will make it increment/decrement fast.

Push the "Freeze" button to toggle between sample bank A and B, if your Little deFormer 2 are expanded with double sample memory.

The number in the brackets shows the sample slot/step button number (1 to 16).

Decrementing to sample number zero, will cause this screen to show:

```
[ ~Waveform~ ]  
----      [01]
```

An oscillator waveform has now been selected as the soundsource for this sample slot/stepbutton.

To edit parameters like sample start and filter settings, you will have to go to the edit pages. These will be described in a short while.

The assign settings is stored in a preset.

## The Mute/Unmute screen

If you, from the preset select screen, push the Assign button 2 times, so its LED is flashing, you are on the tracks/samples mute screen.

Depending on the setting of the “Mute” parameter in the “COMMON” section (described a little bit later), it is on this screen possible to mute/unmute the sequencer tracks and the samples/oscillators.

The readout on the screen, should now be something like this:

Tracks 1-8 Mute

By pushing the “1-8 9-16 17-24 25-32” button, you can make the screen change to “Tracks 9-16 Mute”, “Track 17-24 Mute” and “Track 25-32 Mute”.

On this page, each of the 8 trigger and step buttons represents a track. If a step buttons LED is mostly lit, and flashes lightly when the sample/oscillator is triggered, the track is unmuted. If the LED is completely turned off, the track is muted. Use the trigger and step buttons to mute/unmute a track.

If the “Mute” parameter in the “COMMON” section is set to “seq” (the default value), only the sequencer tracks will be muted. If this parameter is set to “all”, both the sequencer tracks and the sample/oscillator assigned to it, will be muted, and it will not be possible to trigger this sample/oscillator, neither from the trigger buttons, the internal sequencer, or any external MIDI gear. For track 17 to 32, which does not have any sample slots assigned to them, only the sequencer tracks will be muted, regardless of the setting of the “Mute” parameter.

The mute settings is stored in a preset.

### Mute/Unmute Modulation

In the "MODULATION" section, it is possible for each sampling/oscillator, to select "Mute" as a modulation destination.

The mute modulation only affects the samples/oscillators, NOT the sequencer tracks, so if the “Mute” parameter in the “COMMON” section is set to “seq”, it is possible to use the Mute page just to mute the sequencer tracks, while muting the samples/oscillators by using another source.

Any modulation source, except Common LFO 1 and 2, can mute/unmute the samplings.

The modulation value parameter has no effect, when mute is the destination. When the selected modulation source is below half of its maximum value, the sampling will mute, when it is above half of its maximum value, the sampling will unmute.

# Editing parameters

From the preset select screen

[AnaBeat Pattern	]	A01	(0- 0)
---------------------	---	-----	--------

Push the "edit" button one time, to enter this screen:

COMMON PATTERN -hold dec to change
---------------------------------------

This is referred to as an "Edit Group screen".

By pushing the "Inc" and "Dec" buttons, you can select between various edit group screens:

SAMPLER [01]
--------------

Number in brackets shows the sample slot/pushbutton number.

FILTER BANK
-------------

COMPRESSOR
------------

DISTORTION
------------

FILTER
--------

TIME & PITCH
--------------

SEQUENCER
-----------

LFO's
-------

MODULATION
------------

KNOB CC's
-----------

```
SAVE PRESET
```

```
FLASH
```

To go back to the preset select screen, from the edit group screens, just hit the "Exit" button.

To enter the parameters for the selected group, hit the "Edit" button.

The first parameter screen of the "SAMPLER" group of parameters looks like this:

```
Tune . Fine . Gain . Env . Dec . Mode . Chop . #chp  
+ 0 + 0 + 0 Off 128 poly Off 1
```

Push a step button to select the sampling you want to edit.

Use the 8 edit knobs right below the display to edit the parameter values.

Push the "Inc" and "Dec" buttons to select various parameters.

Push the "Exit" button to go back to the edit group select screens.

In the "SAMPLER" and "FLASH" sections, there are some special parameter pages, that might look like this:

```
SAMPLE REC >  
PUSH <edit>
```

On these parameter pages, you will have to push the "Edit" button, either to enter a set of sub-parameters, or to make the little deFormer perform a certain function.

From the “COMMON” edit group screen:

COMMON PATTERN -hold dec to change
---------------------------------------

It is possible to switch between Pattern and Song mode, by holding down the “Dec” button for a few seconds. In pattern mode it is possible to edit all parameters regarding samples/oscillators, filters, sequencer, effects and modulation. In song mode it is possible to arrange automatic playback of patterns in up to 120 steps. The only preset parameters that can be edited in song mode, are the parameters assigned to the 8 knobs.

And unexpanded Little deFormer 2 holds 512 presets and 512 songs, while an expanded one holds 1024 presets and 512 songs.

After switching to song mode, the COMMON screen will look like this:

COMMON SONG -hold dec to change
------------------------------------

In Song mode, these edit groups are available:

ARRANGE
---------

SAVE SONG
-----------

# Preset Parameters

## COMMON

The Common section is where you adjust common settings like audio input and output routings, MIDI settings, metronome settings and behaviour of the mute function.

The input level parameters can be modulated by any of Little deFormers modulation sources. This is done in the “MODULATION” section, described later in this manual.

**Inp1** – -128 to +127. Adjusts the level of audio input 1. Negative values will damp the signal, positive values will gain the signal. While monitoring the input signal, on this page, the 8 step LED’s will act as a VU-meter. Adjust the input level, so stepLED 8 (the rightmost one) is not lighting up. This parameter is stored with each preset.

**Bus** – 1 to 4. Selects which one of the 4 audio busses, Audio input 1 should be routed to. This parameter is stored with each preset.

**Inp2** – -128 to +127. Adjusts the level of audio input 2. Negative values will damp the signal, positive values will gain the signal. If nothing is connected to Audio input 2, Audio output 2 will be internally connected to this, and the level parameter will act as “FeedBack”. While monitoring the input signal, on this page, the 8 step LED’s will act as a VU-meter. Adjust the input level, so stepLED 8 (the rightmost one) is not lighting up. This parameter is stored with each preset.

**Bus** – 1 to 4. Selects which one of the 4 audio busses, Audio input 2 should be routed to. This parameter is stored with each preset.

**Qrec** – Int, Ext. Select if you would like the Quick Record function, to record the audio of LD’s own audio outputs (Int) or the audio of LD’s audio inputs (Ext). The Quick Record function is activated by pushing and holding down the “Exit” button, while pushing the “Dec” button. This parameter is global, and are automatically globally stored, when changed.

**Bank** – A, B. Select if you would like the Quick Recording function to record to sample bank A or B. This parameter is global, and are automatically globally stored, when changed.

**Snap** – Off, On. Parameter snap mode. When this is on, a parameter value will not be changed, until the knob value passes the previous parameter value, when using the edit knobs to edit parameters. This does not work on all parameters.

When off, a parameter will immediately change to the value of an edit knob, when it is moved. This parameter is global, and are automatically globally stored, when changed.

**Chan** – 1 to 16. Common MIDI channel select. The Little deFormer will receive and transmit note on's and off's, and controllers on the channel selected here. This parameter is global, and are automatically globally stored, when changed.

**Clck** – Int, Ext. Clock select. Selects whether Little deFormer's sequencer should sync to its own internal clock source or to an external MIDI clock source. If "ext" is selected here, a MIDI clock transmitting device must be connected to Little deFormers MIDI IN. This parameter is global, and are automatically globally stored, when changed.

**Xmit** – Off, On. Selects whether or not Little deFormer should transmit MIDI clock pulses on MIDI OUT. Unlike most other MIDI gear, Little deFormer is able to re-transmit external MIDI clocks, that is present on its MIDI IN. This parameter is global, and are automatically globally stored, when changed.

**Mute** – seq, all. Select whether you would like the Mute function (on the Mute/Unmute screen) to mute the sequencer tracks only (seq), or both the sequencer tracks AND the samplings/oscillators (all). When all is selected, and a sample/track are muted, it is not possible to trigger this neither from the step buttons, via the sequencer, or via MIDI in. This parameter is global, and are automatically globally stored, when changed.

**Metr** – Off, On, Rec. Metronome. At setting Off, no metronome will sound, at setting On, the metronome will always sound, when LD's internal sequencer is running, at setting Rec, it will sound, when LD's sequencer is running and LD are in realtime record mode. This parameter is global, and are automatically globally stored, when changed.

**Tics** – 1 to 32. The metronome will make 1 click per beat. Is can produce clicks in 2 different pitches. This parameter adjusts, when the click will be higher pitched. At a setting of 4, every 4<sup>th</sup> click will be higher than the other clicks. This setting is useful for recording a usual 4/4 pattern. This parameter is global, and are automatically globally stored, when changed.

**Output select Bus1, Bus2, Bus3, Bus4** – Both, Out1, Out2, Off. Select for each of the 4 assignable audio busses, which audio output(s), they should output to. Please notice, that the Time & Pitch effects are always routed to BUS 1. These parameters are stored with each preset.

## **SAMPLER**

All parameters in this section, is stored with each preset.

Little deFormer has 16 sampleslots available for each of its 512/1024 presets. To each of these sampleslots, it is possible to assign a sampling or an oscillator, as described in the “Assigning samples and oscillators to the sample slots/step buttons” chapter earlier in this manual. How to record your own samplings, are described a little bit later.

In this section, you can edit all the parameters for each of the 16 samples/oscillators, that you have assigned to Little deFormers 16 sample slots. To select what sample slot you would like to edit, just hit the step button it is assigned to. If you would like to select a sample slot for editing, without making the sample/oscillator sound, hit the “Edit” button one time, so its LED is flashing. This will bring you in “Select” mode, and you can hit any step button without making its sample/oscillator sound, but still selecting it for editing. To exit select mode, hit the “Edit” button again, or the “Exit” button.

In this section you can edit all the basic parameters of the samples/oscillators, like tune, gain, start/length, filters and the phaze effect. More sample parameters are available in the “MODULATION” section. There you can assign modulation to most of the parameters in this section PLUS to sample select, sample play triggering, sample mute/unmute and to quantized pitching.

### **When a sampling are assigned to the selected sample slot:**

**Tune** - -128 to +127. Adjusts the pitch of the selected sampling. Negative values will pitch the sampling down, positive values will pitch the sampling up.

**Fine** - -64 to +63. Fine tunes the pitch of the selected sampling. Negative values will pitch the sampling down, positive values will pitch the sampling up.

**Gain** – -128 to +127. Adjusts the level of the selected sampling. Negative values will damp the sampling output level, positive values will gain it.

**Env** – Off, On. Selects if the selected samplings level should be controlled by a decay envelope, or not.

**Dec** – 0 to 255. Sample envelope decay. The decay will be relative to the length of the sampling.

**Mode** – poly, mono. In poly mode, 4 samplings can play back at the same time, in mono mode only one sampling can play back at a time, and samplings will cut each other off. The mono mode is very useful in conjunction with the sample trigger system mentioned later, for creating a kind of wavesequencing.

**Chop** – Off, 1-63. Selects what chop frame should play back. This can only be adjusted, if a sampling is chopped, using the ”auto chop” or manual chop functions mentioned later. If the sampling is not chopped, this parameter will have no function.



**#chp** – 1 to 64. Adjusts how many chop frames should be played back in a row. Like the Chop parameter, this will have no function, if the selected sampling is not chopped.

**Strt** – 0 to 255. The selected samplings start point. When triggering the sampling, playback will start from the adjusted point. This parameter is relative to the selected samplings length.

**Fine** – 0 to 255. Fine adjustment of the selected samplings start point. . This parameter is relative to the selected samplings length.

**Lngt** – 0 to 255. The selected samplings playback length. When triggering the sampling, it will play back for the adjusted amount of time. This parameter is relative to the selected samplings length.

**Fine** – 0 to 255. Fine adjustment of the selected samplings playback length. . This parameter is relative to the selected samplings length.

**Loop** – Off, On, Togl.

**Off** – When the sampling is triggered, it will play back one time from the adjusted start point.

**On** – When the sampling has played back one time, after triggering, it will loop back to the start point, and start playing back again, for as long as the step button is held.

**Togl** – When the step button is pushed, the sampling will play back like in loop mode, and keep playing back, until the step button is pushed again.'

**Trig** – Off, 1 to 255. Selects a point in the selected samplings playback time, where it shall trigger another sampling. At a setting of 1, it will trigger the other sampling immediately after it is triggered, at a setting of 128 it will trigger the other sampling, when it has played back half of its time and at a setting of 255, it will trigger the other sampling, when it has reached its end point. This parameter is relative to the selected samplings length.

**Smpl** – 1 to 16. Selects which sampling it should trigger.

**Bus** – 1 to 4. Selects which one of 4 busses the selected samplings audio output should be routed to.

**Phaz** – 0 to 255. Phaze effect. Each sampling on the Little deFormer has its own phaze effect. This parameter adjusts the phaze angle. If the next parameter (Levl) is set to zero, this parameter will have no effect at all.

**Levl** – 0 to 255. Phaze effect level.

**Cut** – 0 to 255. Each sampling on the Little deFormer has its own filter. This parameter adjusts the cutoff frequency of the selected samplings filter.

**Reso** – 0 to 255. Adjusts the resonance of the selected samplings filter.

**Type** – The response (type) for the selected samplings filter. Choices are:

**Lpf** – Lowpass.

**Bpf** – 4 pole bandpass.

**Bp8** – 8 pole bandpass.

**Hpf** – Highpass.

**Add** – This is actually not a filter, since it doesn't filter out harmonics from the sample, but adds some.

**Bef** – Band reject filter.

**Bass** – Enhances the low frequencies of the sampling, and passes the high frequencies through in a very poor way.

**Lofi** – A destructive lowpass filter.

**LPF2:** A smoother version of the other LPF.

**Shp:** WaveShaper. This isn't really a filter. By adjusting 7 values, that each re-shapes their part of the incoming audio signal, it is possible to shape the sound into something completely different. The output of this is rather complex and unpredictable, and it is easy to make it distort.

**NOTE:** Since this has 7 filter adjust parameters, and does not use Cut and Reso, the display readout will change, when you select it.

**NOTE:** This is not available when sample filters mode is set to FilterBank.

**fEnv** - -128 to +127. Adjusts how much the sample envelope will affect the filter cutoff frequency. Negative values will reverse the envelope.

**fMix** - -128 to +127. Filter mix. Adjusts the mix between the clean sample output, and the filter output. At position zero, you will only hear the output from the filter. At positions +127 and -128, you will only hear the clean sampling. When turning this parameter from zero to +127, the pure sample will be added more and more to the filter output. When turning it from zero to -128, the pure sample will be subbed more and more from the filter output.

**mEnv** - -128 to +127. Adjusts how much the sample envelope will affect filter mix. Negative values will reverse the envelope.

**Filter adjust 1, 2 and 3 (1 to 7, when "shp" is selected as Type)** – 0 to 255. A little deFormer speciality. With these 3 (or 7) parameters you can adjust the filter response, and create completely new filter types. It's a bit hard to explain what exactly they do, and it is also a bit unpredictable. Tweak and listen.

**pEnv:** -127 to +128. Adjusts how much the sample/oscillator VCA envelope should affect the pitch of the sampling.

**Dir:** Sample playback direction.

**Fwd:** Plays back the sample normally in forward direction (from start to end).

**Bwd:** Plays back the sample in backwards direction (from end to start)

**When an oscillator are assigned to the selected sample slot:**

**Tune:** -128 to +127. Tunes the pitch of the oscillator up and down in quarter tone steps.

**Fine:** -64 to +63. Fine tunes the the pitch of the oscillator.

**Gain:** -128 to +127. Adjusts how loud the oscillator will go in to the filter. Positive values will create overdrive.

**Dec:** 0 to 255. Oscillator VCA envelope decay. Adjusts how long time it will take for the oscillator to fade out. Besides controlling the output VCA level, this envelope can also control the filter cutoff and mix, and the pitch of the oscillator.

**Mode:** poly, mono. Selects polyphonic or monophonic playback.

**Wave:** **Sine** to **Tria** to **Saw** to **Squr** to **Nois**. Selects the oscillator waveform. The numbers inbetween the waveform names, indicates that it is morphing between two waveforms.

**Strt:** Off, 1 to 255. By this parameter it is possible to make the waveform start at a fixed point, every time the oscillator is triggered. This can be very useful for creating percussive sound with a harder attack. When this is off, the waveform is completely free-running.

**Pw:** 0 to 255. Adjusts the pulse width of the waveform. Unlike on much other gear, this works on all waveforms in the Little deFormer.

**Trig:** Off, 1 to 255. When this parameter is set to any other value than "Off", it will trigger another sampling/oscillator, selected by the "Smpl" parameter, when it reaches the selected point of playback. When exactly it will trigger another voice, is very dependent on the envelope decay setting.

**Smpl:** 1 to 16. Selects the sample/oscillator that should be triggered by "Trig".

**Bus:** 1 to 4. Selects the audio bus, the output of the oscillator should be routed to.

**Levl:** 0 to 255. Adjusts the output level of an oscillator voice, after the filter.

**Cut** – 0 to 255. Each sampling on the Little deFormer has its own filter. This parameter adjusts the cutoff frequency of the selected samplings filter.

**Reso** – 0 to 255. Adjusts the resonance of the selected samplings filter.

**Type** – The response (type) for the selected samplings filter. Choices are:

**Lpf** – Lowpass.

**Bpf** – 4 pole bandpass.

**Bp8** – 8 pole bandpass.

**Hpf** – Highpass.

**Add** – This is actually not a filter, since it doesn't filter out harmonics from the sample, but adds some.

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**Bass** – Enhances the low frequencies of the sampling, and passes the high frequencies through in a very poor way.

**Lofi** – A destructive lowpass filter.

**LPF2:** A smoother version of the other LPF.

**Shp:** WaveShaper. This isn't really a filter. By adjusting 7 values, that each re-shapes their part of the incoming audio signal, it is possible to shape the sound into something completely different. The output of this is rather complex and unpredictable, and it is easy to make it distort.

**NOTE:** Since this has 7 filter adjust parameters, and does not use Cut and Reso, the display readout will change, when you select it.

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**fEnv** - -128 to +127. Adjusts how much the sample envelope will affect the filter cutoff frequency. Negative values will reverse the envelope.

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**mEnv** - -128 to +127. Adjusts how much the sample VCA envelope will affect filter mix. Negative values will reverse the envelope.

**Filter adjust 1, 2 and 3 (1 to 7, when "shp" is selected as Type)** – 0 to 255. A little deFormer speciality. With these 3 (or 7) parameters you can adjust the filter response, and create completely new filter types. It's a bit hard to explain what exactly they do, and it is also a bit unpredictable. Tweak and listen.

**pEnv:** -127 to +128. Adjusts how much the sample/oscillator VCA envelope should affect the pitch of the sampling.

## **SAMPLER special parameter pages**

The functions described in this section only affects sample slots, which has a sampling assigned to them.

### **Re-save sampling and copy samplings between sample bank A and B**

RE-SAVE > PUSH <edit>
--------------------------

When you have adjusted the startpoint and length of a sampling, you might want to save it that way (Called "Truncate" on many samplers). Or when you have auto-chopped a sampling, you might want to save the chops as single samplings. Or maybe you just want to re-name a sampling, or make a collection of samplings in one sample bank. All these functions are accomplished with the Re-Save function.

How to use it:

1. Adjust the sample start and length to your likings, or auto/manual chop it, and select the chop you want to save. Or in case you just wants to copy a sample to the other bank, just select the sampl you want to copy.
2. Push the step button, and listen to the sampling. What you hear it play back, is what will be saved as a new sampling.
3. Navigate to the re-save screen.
4. Push the "Edit" button. That will take you to this page:

TO BANK:      PUSH A                      <inc>
--

Use edit knob 1 to select the sample bank, you want to re-save copy the sampling to, and push the "Inc" button, to get you to this screen:

Name 1 – 8      PUSH dmTOM1              <inc>
---

5. Use edit knob 1-8 to adjust the first eight characters in the new samplings name.
6. Push "Inc".
7. Use edit knob 1-4 to adjust the last 4 characters in the new samplings name.
8. Push "Inc" again.

9. The display will read "Saving..." for a short while, and then it will return to the Name 1-8 page.
10. Your new sampling has now been saved at the next available location on the internal FLASH memory, and can be recalled, by assigning it to a step button.

## Erase sampling

```
ERASE SAMPLING >  
PUSH <edit>
```

Since there might be cases, where you would like to delete a sampling, that function is added too. T.ex. when you have re-saved a sampling with correct start and end points, you might not need to keep the original. Then you go to this page.

Push the "Edit" button to go to this page:

```
[dmTOM1          ]  
 460          <frz>
```

The last selected sampling will show in the display. If this is not the sampling you want to erase, push the "Inc" and "Dec" buttons to select the right one.

Push the "Freeze" button. This display will show:

```
Sure?  
<dec> = yes
```

Push the "Dec" button, if you are sure that you would like to erase this sampling. If you are not sure, hit the "Exit" button.

If you decide to push the "Dec" button, this display will show:

```
Erasing...  
Sample 460
```

Since little deFormer records samplings to the FLASH memory in a linear fashion, the hole that this sampling leaves, will need to be filled out, so it starts moving the above samplings:

```
Moving...  
Sample 461
```

If there are many samplings after the one you erased, this takes very long time, so this system will most probably be changed in a future firmware.

When the erasing and moving is done, it will return to the "Select sample to be erased" page. If you need to erase more samplings, repeat this procedure, if not, push "Exit".

## Record a sampling

```
SAMPLE REC >
PUSH <edit>
```

This lets you record your own samplings. If the device you want to sample does not have a volume knob, you should go to the "COMMON" edit group before you proceed with this, and adjust the input level as described in that section.

Little deFormer can record 100 minutes/512 samples in each sample bank. If your Little deFormer are unexpanded, it will only have 1 bank (Bank A), if it is expanded, it will have 2 (Bank A and B).

The maximum length of a single sampling is 100 minutes.

**HINT:** When you enter the sample parameters, from the edit group menu, you will only need to push "Dec" one time, to enter this sample recording menu.

To proceed, push the "Edit" button:

```
Source. Auto. Bank.  PUSH
Input  Off  A      <dec>
```

**Source:** Use edit knob 1 to select what you want to record. Select "Input" to record an audio source connected to Little deFormers audio inputs, select "Output" to re-sample anything that is going on inside Little deFormer.

**Auto:** Using edit knob 2, you can adjust an auto sample offset. If this is not off, but has a value, sample recording will not start immediately, when you hit the "Dec" button. It will not start until the level of the signal to be recorded, has reached the adjusted auto offset level. You can check the auto offset level, by looking at the step LED's VU-meter. If there are no reaction on the LED's at all, the level of the signal to be recorded, are below the auto offset level.

**Bank:** Use edit knob 3 to select whether you would like to record the new sampling to sample bank A or B. Sample bank B are only available, if your Little deFormer are memory expanded.

Activate the source. If the source is "Output" play Little deFormers step buttons or start the sequencer. The step LED's now acts as a VU-meter. Take care, that step LED 8 (the rightmost one) does not light up. If it does, adjust the level of the source, or push "Exit" and go to the "COMMON" section and adjust the input level.

Now push "Dec" to activate recording. The display reads:

```
Records...
Stop = <inc>
```



Activate the source to record it. When you are done recording, push "Inc" to go to this screen:

Audition = <inc> Name = <dec>
----------------------------------

If you would like to audition you sampling, push the "Inc" button. If you would like to name it and save it, push "Dec". If you would not like to keep this sampling, push "Exit".  
When auditioning a sample, it is played back on audio **BUS4**.

If you choose to push "Dec", you will go to this screen:

Name 1 – 8      PUSH
dmTOM1          <inc>

Use edit knob 1-8 to select the first 8 characters of the new samplings name

Push "Inc".

Use edit knob 1-4 to adjust the last 4 characters in the new samplings name.

Push "Inc" again.

The display will read "Saving..." for a short while, and then it will return to the record source select screen.

Your new sampling has now been saved at the next available location on the internal FLASH memory, and can be recalled, by assigning it to a step button.

## Auto-chop

```
AUTO CHOP >  
PUSH <edit>
```

If you have recorded a sampling, that contains more than one sound, t.ex. a beat or different variations of the same sound, or just a lot of different sounds in one sampling, you might want to trigger one sound at a time. You can, of course, adjust the start point and length of each sound manually and re-save them, as described earlier in this manual, but that is rather time consuming. Instead you might want to use this auto-chop function. It detects the start point of each single sound, adds a chop mark, and lets you select each sound using the "Chop" parameter.

It does not do anything to the sampling itself. It just creates a table of chop points, which the chop parameter then uses to find the startpoints very fast.

To do this, make sure that the sampling you want to auto chop was the last sample that you triggered using the step buttons. If you are not sure, please trigger it, using the step button.

Push the "Edit" button.

The display will read:

```
Analyzing...
```

After a short while, this screen will appear:

```
Sens . Dec . Sample  
39    2    1
```

It is now possible to test the chop points. Push the step button, the chopped sampling is assigned to, to audition. Push "inc" and "Dec" buttons to select the chop to audition.

If you are satisfied with the result, just push "Exit", and go to the "Chop" parameter to play with the newly created chops.

If you are not satisfied with the result, you might need to adjust the 2 parameters, and retry by hitting "Exit" and "Edit" again.

The parameters:

**Sens** – 0 to 255. Adjust how loud the level of the sample audio should be, before it detects a start point. If it creates too many chop points, turn this parameter up a bit. If it creates too little or no chop points, lower this parameter.

**Dec** – 0 to 255. Chop envelope decay. This adjusts the decay time of the chop detection envelope in a reverse manner. The lower the value, the slower the decay. If the sounds is recorded with very little or no silence between them, like in a beat, this needs to be set to a high value. If there's a good gap of silence between the sounds, set it to a low value.

In case you need to erase a chop point, this is also possible from this page.

Select the chop point you would like to erase.

Push "Edit".

This screen appears:

Delete?    PUSH <inc>
--------------------------

Push "Inc" to erase the selected chop point or "Exit" if you regret.

**If you intend to keep the chop points you have created, remember to save them, as described a few pages later in this manual.**

## Add chop point

```
ADD CHOP POINT >  
PUSH <edit>
```

This function allows you to manually place a chop point to be used with the chop parameter.

Adjust the start point of the sampling, to where you want a chop point to appear.

Go to this page.

Push "Edit".

The display reads:

```
DONE!
```

For a short while.

You have now manually added a chop point. Go back to the start point parameter, and set it to zero.

Play with the "Chop" parameter.

**If you intend to keep the chop points you have created, remember to save them, as described a few pages later in this manual.**

## **Add live chop point**

```
ADD CHOP LIVE >  
PUSH <edit>
```

This function allows you to manually place a chop point to be used with the chop parameter, while the sampling is playing back

Trigger the sampling. When it plays back the point where you want to add a chop point, hit "Edit". The chop point is now added.

**If you intend to keep the chop points you have created, remember to save them, as described a few pages later in this manual.**

## **Delete a chop point**

```
DEL CHOP POINT >  
PUSH <edit>
```

This function allows you to manually delete a chop point.

Select the chop point you wish to erase, using the "Chop" parameter.

Go to this page.

Push "Edit".

The display reads:

```
DONE!
```

For a short while.

## Move a chop point

```
MOVE CHOP POINT >  
PUSH <edit>
```

If a chop point is not added exactly where you want it, it is possible to move it a bit, using this function, instead of erasing it and making a new one.

Select the chop point you would like to move, using the "Chop" parameter.

Go to this page.

Push "Edit"

This screen will appear:

```
Chop . Offs.  
+0    +0
```

**Chop** - -128 to +127. Moves the chop point. Positive values moves it forwards, negative values moves it backwards.

**Offs** - -128 to +127. Move chop point fine adjust. Positive values moves it forwards, negative values moves it backwards.

When you are done, push "Exit"

## Save the chop points

```
SAVE CHOPs >  
PUSH <edit>
```

This function allows you to save the choppoints you have created for the sampling. The chop points are saved together with the sampling, so the next time you recall it, they will immediately be available.

When saving a preset, Little deFormer checks if there are any unsaved chop points, and if there are, it saves them, just in case you should have forgotten to do it.

Push "Edit".

The display reads:

```
DONE!
```

For a short while.

The chop points has now been saved.



## Clear the chop points

```
CLEAR CHOPs >  
PUSH <edit>
```

In case that you doesn't need the created chop points anyway, this function allows you to clear them all for the selected sampling.

Push "Edit".

The display reads:

```
DONE!
```

For a short while.

The chop points has now been cleared.

If you want these to dissapear permanently, go back to the previous page, and save the cleared chop points.

## **Sample Quick Recording**

A fast way of entering (re)sample recording, to make sure your great sound moments doesn't slip away. In this recording mode, it is possible to tweak all parameters, while recording.

By locating the "Qrec" parameter in the "COMMON" section, it is possible to select, whether you would like your Little deFormer to perform "int" or "ext" recording, when you enter the Quick recording mode.

**Int** – Normal resampling. The audio inputs will be blocked. Everything you play or perform on your Little deFormer, that is present on it's outputs, including all parameter tweaks, will be recorded.

**Ext** – Any external audio signal present on "Input 1" will be recorded with effects. Since it is using its internal hardware feedback loop, output 2 to input 2, nothing must be plugged in to "Input 2", when using this mode.

The best result is obtained, when you are sure that there are no clipping of Input 1. To make sure:

-Go to the "COMMON" edit section.

-Set "Inp1" (Input 1 level) to the value"+0".

-On this page, the step LED's acts as a VU-meter.

-Adjust the volume of the input source, so step LED 8 (the rightmost one) is never lighting up.

### **Accessing Quick Recording mode:**

From any screen push and hold the "Exit" button, while pushing the "Dec" button. The Freeze LED will now flash fast, indicating that you are recording.

Perform whatever you would like to record.

### **Exiting Sample Quick Recording mode:**

Push and hold the "Exit" button, while pushing the "Dec" button again. Little deFormer will now jump to the audition/name sample page. Here it is possible to audition your recording, and name and save it, as described in the Sample Rec section of the this manual, if desired.

**NOTE:** You will have to name and save the recording, if you want it to be available for later use.

**When sample Quick Recording is stopped,** all sample and sequencer playback is also stopped.

## FilterBank

All parameters in this section, is stored with each preset.

Instead of having one filter per sample/oscillator it is, by switching the FilterBank mode to “bank”, possible to have all the filters of the 16 sampleslots forming a bank of 4x4 filters – 4 active filters, morphing through 4 frames. The FilterBank can be assigned to any of the 4 audio busses, and any sample/oscillator/audio input that are assigned to the same bus, will run through the FilterBank. Running a sampling or an oscillator through a FilterBank with morphing settings, gives some new and exciting sound possibilities.

An example of setting it up:

- Switch Mode to bank.
- Set the Trig parameter to Free.
- Make sure to select an audio bus, that has some samplings and/or oscillators and/or audio inputs assigned to it, so you can audition the result.
- Access frame 1.
- Adjust the parameters for the 4 filters of frame 1, while auditioning the result, by triggering the samples/oscillators manually or by the sequencer, or by feeding an audio input with a signal.
- Exit back to the FilterBank main page, and set the #frm parameter to 2. It will now morph or switch between the filtersettings of frame 1 and 2. For each frame it is possible to make it either morph to the next frame, by setting the Smot parameter to On, or to make it switch to the next frame, by setting the Smot parameter to Off, in the time set by the Time parameter.
- Enter the filter settings of frame 2, and adjust these to your likings.
- Repeat these steps for frame 3 and 4, if you need these.
- You can, at any time, go back and re-adjust the settings of any frame.
- You can, At any time, hit the “Freeze” button, to audition only the frame you are editing, without any morphing or switching to other frames.

When Trig is set to Free, all frame morphing and switching is controlled by the Time parameters set for each frame. It is also possible to make the morphing/switching happening every time a sample/oscillator is trigged, by setting Trig to Key, and it is possible to make LD’s internal sequencer controlling the morphing/switching by selecting any of the Sq/x settings for Trig.

Most of the parameters can be modulated by any of Little deFormers modulation sources. This is done it the “MODULATION” section, sample 1 to 4 filters, described later in this manual.

The filterbank parameters are, unlike the other Little deFormer edit groups, accessed through a tree of menu’s.

FILTERBANK
------------

From the FilterBank edit group select screen, push the “Edit” button, to go to the first FilterBank screen:

Mode . #frm . Bus . Trig . Smpl      4      1   free
---

**Mode – *smpl*, *bank*.** When ”*smpl*” is selected, each of the 16 samplings/oscillators in a preset, each has its own filter assigned to it. So this is the ”normal” mode.

When ”*bank*” is selected, each sampling no longer has its own filter. Instead the 16 sample filters form a bank of 4 filters with each 4 frames of settings, that it can morph between.

**#frm** – 1 to 4. Selects how many frames you want it to morph between. It is always starting at frame 1, and morphs through frame 2, 3 and 4. If this setting is set to '1', it will not morph at all, but only play back the settings of frame 1.

**Bus** – 1 to 4. Selects what audio bus you would like the filterbank to process.

**Trig** – free, key, Sq/1, Sq/2, Sq/4, Sq/8, S/16, S/32.

**Free:** it morphs from one frame to the next, in the ”Time” adjusted in the frame.

**Key:** It morphs to the next frame, every time all sample triggers have been released, and a sample is triggered.

**Sq/1 :** The filter frames shift in sync with the sequencer steps.

**Sq/2 :** The filter frames shift for every 2 sequencer steps.

**Sq/4 :** The filter frames shift for every 4 sequencer steps.

**Sq/8 :** The filter frames shift for every 8 sequencer steps.

**S/16 :** The filter frames shift for every 16 sequencer steps.

**S/32 :** The filter frames shift for every 32 sequencer steps.

By pushing the [Edit] button again, you will access this screen:

FRAME 1
---------

On this page, you select what frame, you would like to edit. Pushing the [Inc] and [Dec] buttons, selects between frame 1 to 4.

**The [Freeze] button on this page:**

When pushing the [Freeze] button, while on this page, or the frame edit pages, it will freeze the selected frame, and not do any morphing. Using this function, it is possible to adjust and hear just one frame, without any interference from the morphing.

You can also use this function to manually select frames, without any morphing.

By pushing the [Edit] button yet another time, you will access this screen:

Time . Smot .
60    On

Only if "bank" is selected as "Mode". If not, it will just display: "SmplFILTER MODE".

**Time** – 0 to 255. Adjusts how long time it should take, to morph from the selected frame, to the next.

**Smot** – Smooth on/off. If this is "Off", it will not morph to the next frame, but just hold the settings of this frame in the "Time" amount of time, and the hardshift to the settings of the next frame. If this is "On", it will morph to the next frame.

By pushing the [Inc] and [Dec] buttons, you can access the settings for the four filters of the selected frame.

F1	. Levl .	Cut .	Reso .	Type .	Filter	Adjust
	255	22	222	bpf8	0	0 0

**F1, F2, F3 and F4** indicates which of the four filters you are editing.

**Levl** – 0 to 255. Adjusts the output level of the selected filter, in the selected frame.

**Cut** – 0 to 255. Adjusts the cutoff frequency of the selected filter in the selected frame.

**Reso** – 0 to 255. Adjusts the resonance of the selected filter in the selected frame.

**Type** – Lpf, Bpf, Bpf8, Hpf, Bef, Add, Bass, LoFi, LPF2. Selects the filter type of the selected filter in **ALL FRAMES**. It does not morph between filter types, so the type setting in any frame, affects all frames.

**Filter adjust 1, 2 and 3** – 0 to 255. A little deFormer speciality. With these 3 parameters you can adjust the filter response, and create completely new filter types, for the selected filter, in the selected frame.

# Compressor

All parameteres in this section, is stored with each preset.

Puh, it takes long time to write this manual, with all the features, that LD has!

On top of all the other features, LD also has a compressor. This is especially made to give the sound a bit more kick, not to allign uneven levels. Someone has pointed out that this is more the function af an expander, than a compressor. So allright, let's call it an "Expanding Compressor".

The compressor can be assigned to any of the 4 audio busses. Any sample/oscillator/audio input that is assigned to the same bus, will go through the compressor, when it is switched On.

Most of the parameters can be modulated by any of Little deFormers modulation sources. This is done it the "MODULATION" section, described later in this manual.

**Please note:** The Compressor is not available, when "DoubleGran" is selected as the Time & Pitch effect.

**Powr** – Off, On. Compressor power switch.

**Bus** – 1 to 4. Selects which of the 4 audio busses, the compressor should be added to.

**Gain** – 0 to 255. Compressor gain. If this is zero, no sound will go through the compressor.

**Flor** – 0 to 255. Compressor floor. Sets a minimum level for the sound that goes through the compressor. If this is set to zero, you will only hear the compressed sound itself. If this is set to 255, you will hear no compression at all.

**Thrs** – 0 to 255. Adjust the audio level point, where the compression will start in a reverse manner. If this is set to zero, compression will never start, if it is set to 255, the compressor will constantly be active.

**Gate** – 0 to 255. Compressor gate time. Sets a "relax space" for the compressor, right after it has been triggered. In that space of time, it will not re-trigger.

**Atak** – 0 to 255. Compressor curve attack time.

**Rel** – 0 to 255. Compressor curve release time.

**Trig** – Compressor trigger select.

**Aud** – The compressor is triggered by the audio signal going through it.

**sm1 to sm16** – The compressor is triggered by sampling 1 to 16 trigger.

# Distortion

All parameters in this section, is stored with each preset.

LD has a distortion, that can do anything from giving a sound a bit of grit, to totally destroy it.

The distortion can be assigned to any of the 4 audio busses. Any sample/oscillator/audio input that is assigned to the same bus, will go through the distortion.

The distortion effect does not have an Off or bypass setting, but with Bit Manipulator chosen, BitR set to 16, and all other parameters set to zero, no distortion will occur.

Most of the parameters can be modulated by any of Little deFormers modulation sources. This is done in the “MODULATION” section, described later in this manual.

**Effect** – Distortion effect select. Choices are:

**BitManipu** – Bit manipulator including bit and rate reduction and the special obscember distortion.

**Gain** – Gains the signal. It is possible to gain it so much, that it distorts.

**Valve** – A digital simulation of a classic valve distortion.

**Sine** – A noisy and warm sine shaping distortion.

**Fuzz** – Simulates a classic fuzz distortion.

**Xdis** – Complete destruction of the sound.

**Bus** – 1 to 4. Selects which of the 4 audio busses, the distortion effect should be added to.

## Bit Reduction parameters

**BitR** – 16 to 1. Bit reduction.

**Rate** – 0 to 255. Sample rate reduction. The higher the value, the more the sample rate will be reduced.

**Obsc** – 0 to 255. Obscember. This parameter will manipulate the audio bits to extremes, and make it sound weird.

**Dly** – 0 to 255. Obscember feedback delay. Creates a delay in the Obscember feedback path.

**Feed** – 0 to 255. Obscember feedback. When Obscember and delay is both set to zero, this creates a warm overdrive sound. If any of the other parameters is not set to zero, this creates some unpredictable sounds.



### **Distortions parameters**

**Driv** – 0 to 255. Drive. The higher the value, the more the sound will distort. If this is set to zero, no sound will pass through the distortion.

**Offs** – 0 to 255. Distortion offset. The more this is turned up, the more unsymmetric the distortion will be.

**Damp** – 0 to 255. Damps the output from the distortion.

## Common Filter

All parameters in this section, is stored with each preset.

This filter is always placed on audio bus 1. All samples, oscillators and audio inputs routed to bus 1, will go through this filter, when the “Conn” parameter are at setting “On”.

By other settings of the Conn (connection) parameter, it is possible to use the common filter in combination with the selected Time & Pitch effect.

Routing it to the feedback connection of a reverb, and modulate the cutoff frequency using an LFO, can really bring some interesting results.

Most of the parameters can be modulated by any of Little deFormers modulation sources. This is done in the “MODULATION” section, described later in this manual.

**Cut** – 0 to 255. This parameter adjusts the cutoff frequency of the filter.

**Reso** – 0 to 255. Adjusts the resonance of the filter.

**Type** – The response (type) for the filter. Choices are:

**Lpf** – Lowpass.

**Bpf** – 4 pole bandpass.

**Bp8** – 8 pole bandpass.

**Hpf** – Highpass.

**Add** – This is actually not a filter, since it doesn't filter out harmonics from the sound, but adds some.

**Bef** – Band reject filter.

**Bass** – Enhances the low frequencies of the sound, and passes the high frequencies through in a very poor way.

**Lofi** – A destructive lowpass filter.

**LPF2**: A smoother version of the other LPF.

**Shp**: WaveShaper. This isn't really a filter. By adjusting 7 values, that each re-shapes their part of the incoming audio signal, it is possible to shape the sound into something completely different. The output of this is rather complex and unpredictable, and it is easy to make it distort.

**NOTE**: Since this has 7 filter adjust parameters, and does not use Cut and Reso, the display readout will change, when you select it.

**NOTE**: This is not available when sample filters mode is set to FilterBank.

**fMix** - -128 to +127. Filter mix. Adjusts the mix between the clean sound and the filter output. At position zero, you will only hear the output from the filter. At positions +127 and -128, you will only hear the clean sound. When turning this parameter from zero to +127, the pure sound will be added more and more to the filter output. When turning it from zero to -128, the pure sound will be subbed more and more from the filter output.

**Conn** – Selects where to place the filter. Choices are:

**Off** – The filter is shut off.

**On** – The filter is placed on the input of the Time and Pitch effect. Both the clean and the effected sound will be filtered.

**Dly** – The filter is placed on the input of the Time and Pitch effect. Only the effected sound will be filtered.

**Feed** – The filter is placed in the feedback path of the Time and Pitch effect.

**Post** – The filter is placed right after the feedback path of the Time and Pitch effect.

**Outp** – The filter is placed on the output of the Time and Pitch effect.

**folr** – 0 to 255. An envelope follower is added to this filter. This parameter adjusts the speed of the envelope follower.

**fEnv** - -128 to +127. Adjusts how much the envelope follower will affect the filter cutoff frequency. Negative values will reverse the envelope.

**mEnv** - -128 to +127. Adjusts how much the envelope follower will affect filter mix. Negative values will reverse the envelope.

**Filter adjust 1, 2 and 3** – 0 to 255. A little deFormer speciality. With these 3 parameters you can adjust the filter response, and create completely new filter types. It's a bit hard to explain what exactly they do, and it is also a bit unpredictable. Tweak and listen.

## Time and Pitch effects

All parameters in this section, is stored with each preset.

Here you will find time and pitch based effects, like reverb, delay, granulators and pitch manipulators. The main effect will always be present on audio bus 1. A secondary effect will be present at audio bus 2 to 4. The "freeze" button freezes the audio signal, and makes whatever audio that is held in the effect buffer repeat continuously.

Most of the parameters can be modulated by any of Little deFormers modulation sources. This is done in the "MODULATION" section, described later in this manual.

**Effect** – Selects the Time and Pitch effect. Choices are, at this moment:

**Delay 1** – A delay effect with special granular parameters like "Beam" and "Size", and with a feedback that can go higher than infinite. Can also be used as a one track loop recorder, with an included metronome.

**Secondary eff:** The same as primary.

**Delay 2** – A bright sounding 2-tap delay.

**Secondary eff:** The same as primary.

**Reverb 1** – A FAT synthesized reverb with a very high resolution. High end!

**Secondary eff:** The same as primary.

**Reverb 2** – Like reverb 1 with a bit lower resolution, but more parameters.

**Secondary eff:** The same as primary.

**PitchShp1** – PitchShaper 1. A one input pitchshaper, that re-pitches the input signal to a new adjustable pitch. All pitch variations in the sound will be removed, but can be added again, using the "Vari" parameter. Has a very wide pitch range.

**Secondary eff:** Reverb or delay 2.

**GlitchShf** – GlitchShifter 1. This is not really a pitchshifter, but then again.... It does some weird stuff!

**Secondary eff:** Reverb or delay 2.

**GlitchSh2** – GlitchShifter 2. Almost the same as glitchshifter 1, but it sounds different.

**Secondary eff:** Reverb or delay 2.

**SamplePtc** – Sampling Pitch Shifter. Changes the pitch of a sampling, without changing the length. It will also work on external signals, but it needs to be triggered by a sampling.

**Secondary eff:** Reverb or delay 2.

**DoubleGran** – Double Step Granulator. A 16 step granulator effect with 2 tracks and audio frame detection, so it only splices grains together at zero points. This takes up a lot of DSP power, so the Compressor will be disabled, when selecting this effect.

**Secondary eff:** Reverb.

**Variator** – A granular effect that creates new variations of the input sound, in both pitch and time.

**Secondary eff:** Reverb or delay 2.

**TimeStrtc** – TimeStretch. Able to change the length of the input signal, without changing the pitch. It is also possible to change the pitch if desired. It is also possible to trigger it with a sampling, for bigger precision.

**Secondary eff:** Reverb or delay 2.

**PitchShp2** – PitchShaper 2. This pitchshaper needs 2 inputs. The sound present on bus 1 will get re-pitched, while the sound present on bus 2 will determine the pitch.

**Secondary eff:** Reverb or delay 2.

**Abstract0** - This effect constantly records the audio applied to its input (BUS 1), in a time interval determined by a "RecT" parameter. It uses 3 "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 and 3 can be adjusted. Since there are no feedback path in this effect, when common filter connection is set to "Feed", playhead 2 will be individually filtered.

**Secondary eff:** Reverb or delay 2.

**AnaGran** - anAmoNo Granulator. This granulator effect is much simpler than the DoubleGran, and much easier to get results from.

This effect records the input signal and cuts it up into fragments, which sizes depends on both the Time and the Frgm (number of fragments) parameter. It is then possible to rearrange the order of these fragments, and to re-pitch or time-stretch them, using two 16-step granulator sequencers, to get something completely new out of the input signal.

#### **Fusion**

Compared to the original anAmoNo granulator, to new play modes has been added: "Pitch Fusion" and "Stretch Fusion". These two modes makes the Granulator fusion with the 2<sup>nd</sup> effect, which can be either a two-tap delay or a reverb. This can create some really interesting effects.

**Notice:** Because of the complex nature of these new play modes, the inputting sound might be a bit effected, even if the Mix parameter are at zero, when one of these new playmodes are selected.

**Secondary eff:** Reverb or delay 2.

**Chorus** - A simple two-tap Chorus. To obtain the classic chorus effect, you must apply LFO modulation to the Time 1 & 2 parameters. This is possible in the "MODULATION" section.

**Secondary eff:** Reverb or delay 2.

**Mix1** – 0 to 255. The mix between the audio signal present on bus 1 and the primary effect.

**Mix2** – 0 to 255. The mix between the audio signal present on bus 2 and the secondary effect.

**Mix3** – 0 to 255. The mix between the audio signal present on bus 3 and the secondary effect.

**Mix4** – 0 to 255. The mix between the audio signal present on bus 4 and the secondary effect.

**EfxC – Off, On. Effects buffer clear.** When this is set to “On”, the memory buffer of the Time & Pitch effect will be cleared every time you change preset, change Time & Pitch effect and every time you adjust the Time parameter in a Time & Pitch effect.

When it is set to “Off”, LD will keep its Time & Pitch memory buffer at any time, and sometimes it might play back fragments of a previously played back preset.

You will have to switch this on for every preset, where you want the effect buffer to be cleared.

## **Effects parameters**

### **Delay 1**

**Grp** – 0 to 15. Delay time group. This is a very coarse adjustment of the delay time.

**Time** – 0 to 255. Delay time.

**Fine** – 0 to 255. Delay time fine adjust.

**Feed** – 0 to 255. Delay feedback. At settings below 128, the feedback is decreasing. At setting 128 (middle position) the feedback is 1:1. Use this setting, if you want to use delay 1 as a loop recorder. At settings above 128, the feedback is increasing, and might cause distortion.

**Size** – 0 to 255. A granular parameter. The more this is turned up, the less space of the delay box is used, causing some echo's to repeat, and others not to sound at all.

**Xfad** – 0 to 255. Crossfade. Makes the delay effect sound smoother, by crossfading the feedback repeats into each other.

**Mode** – Crossfade mode.

**norm** – Normal crossfade mode. The repeats crossfades into each other.

**duck** – Ducked crossfade mode. One repeat fades out, before the next fades in.

**Dir** – Delay playback direction.

**Fwd** – Forwards.

**Bwd** – Backwards

**Beam** – 0 to 255. A granular parameter, that "beams" some of the delay sound grains to another place.

**Deep** – 0 to 63. Simulates a delay box, with adjustable depth.

**Metr** – Off, On. Delay metronome on/off. Use this when you are using the delay as looprecorder.

**Tics** – 0 to 32. Number of metronome ticks per delay time run.

**Level** – 0 to 255. Metronome volume.

TAP!	PUSH
	<freeze>

**Delay TAP page** – Use the "Freeze" button to tap the delay time, when you are on this page. The delay time parameters are automatically adjusted to fit the tap time, so you can always go to the time page, and fine adjust.



## **Delay 2**

**Grp1** – 0 to 15. Delay time group tap 1. This is a very coarse adjustment of the delay time.

**Tim1** – 0 to 255. Delay time tap 1.

**Fin1** – 0 to 255. Delay time fine adjust tap 1.

**Fed1** – 0 to 255. Delay feedback tap 1.

**Size** – 0 to 255. A granular parameter. The more this is turned up, the less space of the delay box is used, causing some echo's to repeat, and others not to sound at all.

**Grp2** – 0 to 15. Delay time group tap 2. This is a very coarse adjustment of the delay time.

**Tim2** – 0 to 255. Delay time tap 2.

**Fin2** – 0 to 255. Delay time fine adjust tap 2.

**Fed2** – 0 to 255. Delay feedback tap 2.

**Deep** – 0 to 63. Simulates a delay box, with adjustable depth.

**Dir** – Delay playback direction.

**Fwd** – Forwards.

**Bwd** – Backwards

## **Reverb 1**

**Time** – 0 to 255. Reverb time. The total reverb time is a combination of time, timeX, feed and feedX.

**Fine** – 0 to 255. Reverb time fine adjust.

**TimX** – 0 to 255. Adjusts how much the following reverb taps will decrease in time. Lower settings is good for a short reverb, and higher settings for a long reverb.

**Feed** – 0 to 255. Reverb feedback.

**FedX** – 0 to 255. Adjusts how much the following reverb taps will decrease in feedback. Lower settings gives a delay effect. As this is turned up, it goes over in a metallic reverb type, and at higher settings it gives a more full reverb.

**Size** – 0 to 255. A granular parameter. The more this is turned up, the less space of the reverb box is used, causing some echo's to repeat, and others not to sound at all.

**Levl** – 0 to 255. Reverb level.

**Dir** – Reverb playback direction.

**Fwd** – Forwards.

**Bwd** – Backwards

## **Reverb 2**

**Time** – 0 to 255. Reverb time. The total reverb time is a combination of time, timeX, feed and feedX.

**Fine** – 0 to 255. Reverb time fine adjust.

**TimX** – 0 to 255. Adjusts how much the following reverb taps will decrease in time. Lower settings is good for a short reverb, and higher settings for a long reverb.

**Feed** – 0 to 255. Reverb feedback.

**FedX** – 0 to 255. Adjusts how much the following reverb taps will decrease in feedback. Lower settings gives a delay effect. As this is turned up, it goes over in a metallic reverb type, and at higher settings it gives a more full reverb.

**Xfad** – 0 to 255. Crossfade. Makes the reverb effect sound smoother, by crossfading the feedback repeats into each other.

**Deep** – 0 to 63. Simulates a reverb box, with adjustable depth.

**Levl** – 0 to 255. Reverb level.

**Dir** – Reverb playback direction.

**Fwd** – Forwards.

**Bwd** – Backwards

## **PitchShaper 1**

**Sens** – 0 to 255. Pitch tracking sense. At lower settings it will find more pitch tracking points, which will make the pitch higher on complex sounds, while at higher settings it will find less pitchtracking points.

**Pitc** – 0 to 255. Pitch Coarse.

**Fine** – 0 to 255. Pitch Fine.

**Feed** – 0 to 255. Feedback.

**Smot** – 0 to 255. Output smoothing. The more this is turned up, the more it smoothen out the pitch changes in the signal

**CompX** – 0 to 255. Complexity. The more this is turned up, the less complex the sound output will be.

**FM** – 0 to 255. Makes frequency Modulation of PitchShaper 1 pitch possible.

**Sorc** – Self, Bus2. Selects the source for the frequency modulation.

**Self:** The signal on Bus1, that is re-pitched by the PitchShaper, is also the frequency modulation source.

**Bus2:** Any signal present on audio bus 2, will be the frequency modulation source. Bus 2 itself will be muted, when this is selected.

**Vari** – 0 to 255. The more this parameter is turned up, the more the PitchShaper will follow the pitch of the input sound.

**Oct** – -4 to +3. Changes the output pitch of the PitchShaper in octaves.

**Effect2** – Reverb or Delay 2. See the parameters for these under "Reverb 1" and "Delay 2".

## **GlitchShifter 1 and 2**

**Sens** – 0 to 255. Pitch tracking sense. At lower settings it will find more pitch tracking points, which will make the pitch higher on complex sounds, while at higher settings it will find less pitchtracking points.

**Folr** – 0 to 255. Envelope follower speed.

**Pitc** – -128 to +127. Pitch Coarse.

**Feed** – 0 to 255. Feedback.

**CompX** – 0 to 255. Complexity. The more this is turned up, the less complex the sound output will be.

**Effect2** – Reverb or Delay 2. See the parameters for these under "Reverb 1" and "Delay 2".

## **Sample Pitch**

**Sens** – 0 to 255. Pitch tracking sense. At lower settings it will find more pitch tracking points, which will make the pitch higher on complex sounds, while at higher settings it will find less pitchtracking points.

**Size** – 0 to 255. The size of the RAM buffer used for the pitchshifting

**Pitc** – -128 to +127. Pitch Coarse.

**Folr** – 0 to 255. Envelope follower speed.

**Feed** – 0 to 255. Feedback.

**Effect2** – Reverb or Delay 2. See the parameters for these under "Reverb 1" and "Delay 2".

## **Double Granulator**

**Sens** – 0 to 255. Pitch tracking sense. At lower settings it will find more pitch tracking points, which will make the pitch higher on complex sounds, while at higher settings it will find less pitchtracking points.

**Time** – 0 to 255. The time the granulator will sample the input, until it starts over again.

**Size** – 0 to 255. The size of one grain.

**Stp1** – 1 to 16. Adjusts how many steps the granular sequence should consist of.

**Spr1** – 0 to 255. Adjusts how big an area of the RAM buffer, track 1 should use for grain playback.

**Fsz1** – 1 to 128. Adjusts how many grains track 1 should play back in a row.

**Ofs1** – 0 to 127. Selects the location of the lowest possible grain track 1 will play back.

**Lvl1** – 0 to 255. Granulator track 1 volume.

**Feed** – 0 to 255. Granulator Feedback.

**Play** – Granulator play mode:

**Seq** – The granulator sequencer is controlling the grain playback order.

**Key** – The grain playback order is controlled by the step buttons. The "9-16" must be pushed so it is flashing to activate this. In this mode, a grain plays to its end, before it shifts to the selected grain.

**KeyI** – Key Immediate. The grain playback order is controlled by the step buttons. The "9-16" must be pushed so it is flashing to activate this. In this mode, it immediately shifts to the selected grain.

**KeyO** – Key One-Shot. The grain playback order is controlled by the step buttons. The "9-16" must be pushed so it is flashing to activate this. In this mode, it also immediately shifts to the selected grain, but only plays it back one time.

**Frm1-16** – Granulator track 1 grain select for sequencer step 1-16. Only 8 steps can be adjusted at a time. Push the "9-16" button, to toggle between steps 1-8 and steps 9-16.

**Pit1-16** – Granulator track 1 pitch for sequencer step 1-16. Only 8 steps can be adjusted at a time. Push the "9-16" button, to toggle between steps 1-8 and steps 9-16.

**Lvl1-16** – Granulator track 1 level for sequencer step 1-16. Only 8 steps can be adjusted at a time. Push the "9-16" button, to toggle between steps 1-8 and steps 9-16.

**Dir1-16** – Granulator track 1 playback direction for sequencer step 1-16. Only 8 steps can be adjusted at a time. Push the "9-16" button, to toggle between steps 1-8 and steps 9-16.

**Move** – 0 to 15. If this is zero, track 1 and 2 syncs to each other. If this has any other value, track 2 plays back a different step than track 1.

**Spr2** – 0 to 255. Adjusts how big an area of the RAM buffer, track 2 should use for grain playback.

**Fsz2** – 1 to 128. Adjusts how many grains track 2 should play back in a row.

**Ofs2** – 0 to 127. Selects the location of the lowest possible grain track 2 will play back.

**Lvl2** – 0 to 255. Granulator track 2 volume.

**Frm1-16** – Granulator track 2 grain select for sequencer step 1-16. Only 8 steps can be adjusted at a time. Push the "9-16" button, to toggle between steps 1-8 and steps 9-16.

**Pit1-16** – Granulator track 2 pitch for sequencer step 1-16. Only 8 steps can be adjusted at a time. Push the "9-16" button, to toggle between steps 1-8 and steps 9-16.

**Lvl1-16** – Granulator track 2 level for sequencer step 1-16. Only 8 steps can be adjusted at a time. Push the "9-16" button, to toggle between steps 1-8 and steps 9-16.

**Dir1-16** – Granulator track 2 playback direction for sequencer step 1-16. Only 8 steps can be adjusted at a time. Push the "9-16" button, to toggle between steps 1-8 and steps 9-16.

**Powr** (in reverb section) – On, Off. When this is set to "Off", the reverb effect will no longer be available after the Double Gran effects, or on Bus 2 to 4. Instead the Compressor, Distortion and Filter will be available, which was always disabled in Double Gran mode earlier.

**Mode** – Auto, Manu. In earlier firmware versions, the Double Gran was always in "Auto" mode, using an audio detection algorithm to detect and generate frames for granulator use. For some reason, this doesn't work on all kinds of audio signals, so a manual ("Manu") mode has now been added. In this mode it will generate 256 equally sized frames, regardless of the input signal tracking.

**Effect2** – Reverb. See the parameters for this under "Reverb 1".



## **Variator**

**Time** – 0 to 255. The size of the RAM buffer used for the variator

**Size** – 0 to 255. The size of one grain.

**Gran** – 0 to 255. Determines the variation pattern.

**Pitc** – -128 to +127. Pitch Coarse.

**Feed** – 0 to 255. Feedback.

**Effect2** – Reverb or Delay 2. See the parameters for these under "Reverb 1" and "Delay 2".

## **Time Stretcher**

**Tune** – -128 to +127. Pitch Coarse.

**Size** – 0 to 255. The size of the RAM buffer used for the TimeStretcher

**Strc** – -128 to +127. Time stretch. A negative value will stretch the sound longer, a positive value will compress the sound to appear shorter.

**Trig** – Off, On. Determines if the time stretch effect should be triggered by the samplings or not.

**Effect2** – Reverb or Delay 2. See the parameters for these under "Reverb 1" and "Delay 2".

## **PitchShaper 2**

**Sns1** – 0 to 255. Pitch tracking sense for bus 1, the sound that will be pitched. At lower settings it will find more pitch tracking points, which will make the pitch higher on complex sounds, while at higher settings it will find less pitchtracking points.

**Sns2** – 0 to 255. Pitch tracking sense for bus 2, the sound that will determine the pitch. At lower settings it will find more pitch tracking points, which will make the pitch higher on complex sounds, while at higher settings it will find less pitchtracking points.

**Feed** – 0 to 255. Feedback.

**Smot** – 0 to 255. Output smoothing. The more this is turned up, the more it smoothen out the pitch changes in the signal

**CompX** – 0 to 255. Complexity. The more this is turned up, the less complex the sound output will be.

**Mrph** – 0 to 255. Morphs between the re-pitched signal of Bus1 and the pitch controlling signal of Bus 2.

**Oct** - -4 to +3. Makes it possible to octave shift the re-pitched sound.

**FM** – 0 to 255. Makes frequency Modulation of PitchShaper 2 pitch possible. Source is the pitch controlling signal of Bus 2.

**Effect2** – Reverb or Delay 2. See the parameters for these under "Reverb 1" and "Delay 2".

## **AbstractO**

**RecT** – 0 to 255. Adjusts the record buffer size. Determines for how long time it should record the input, before it starts over again.

**Ply1, Ply2, Ply3** – Off, 1 to 255. Adjusts for how long time each of the playback heads should play back, until it jumps to a new random location.

**Pit2, Pit3** - -128 to +127. Adjusts the pitch of the playback for playhead 2 and 3.

**Psiz** – Off, 1 to 255. This parameter adjusts the total playback buffer size, independent of the record buffer size. If this parameter is "Off", the RecT 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 all 3 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 RecT parameter, it will play back areas of the record buffer, that is not being recorded, and create a "Freeze" effect.

## **AnaGran**

**Last** – Value 1 to 16: Sets how many steps the granulator sequencers should go through, until they starts over again from step one.

**Time** – Value 0 to 255: Adjust the total size of the Granulator record and play buffer – How long time it will record the input signal, until it starts over again.

**Fine** – Value 0 to 255: Fine adjustment of the Time parameter.

**FrGm** – Values 1, 2, 4, 8, 16, 32, 64, 128: Adjusts how many fragments (grains) the recorded input signal should be cutted up in, when played back.

**Feed** – Value 0 to 255: Adjusts how much of the Granulator output signal should be fed back to its input.

**Dir** – Values fwd, bwd: Sets the playback direction of the Granulator output, which can either be forwards or backwards.

**Mode** – Values pitc, strc, FusP, FusS: Sets the playback mode of the second granulator sequencer.

**pitc:** The second granulator sequencer will re-pitch the playback.

**strc:** The second granulator sequencer will time stretch the playback.

**FusP:** The second granulator sequencer will re-pitch the playback and fusionate its output sound with the 2<sup>nd</sup> effcect.

**FusS:** The second granulator sequencer will time stretch the playback and fusionate its output sound with the 2<sup>nd</sup> effcect.

**Xfad** – Values 0 to 255: Adjusts how much ducking crossfade that will be added between the granulator sequencer steps.

**Frm1 to Frm9 and Fr10 to Fr16** – Values 1 to 128: Adjusts which fragment of the sound buffer, that should be played back at each step of the granulator sequencer. Push the 9-16 button, to access steps 9 to 16.

**Pit1 to Pit9 and Pi10 to Pi16** – Values -128 to +127: Adjusts how much the fragment of each granulator sequencer step, should be re-pitched or time-stretched. Push the 9-16 button, to access steps 9 to 16.

## **Chorus**

**Time1** – Value 0 to 255: Adjusts the Chorus delay time for tap 1.

**Feed1** – Value -128 to +127: Adjusts the Chorus feedback amount, which can be negative or positive, for tap 1.

**Time2** – Value 0 to 255: Adjusts the Chorus delay time for tap 2.

**Feed2** – Value -128 to +127: Adjusts the Chorus feedback amount, which can be negative or positive, for tap 2.

**Deep** – Value 0 to 255: Adjusts how deep the chorus box should be.

## Time/Pitch effect copy and randomize

When on any Time & Pitch effect edit screen, where you can edit the effect parameters, push the "Edit" button to enter the effect functions. Use the "Dec" and "Inc" buttons to select a function, and push the "Edit" button to execute a function.

The Time & Pitch effect functions are:

**Copy:** By using this function, you can copy the Time & Pitch effect from any other preset. Use edit knob 1 and 2 to select the bank and number of the preset you want to copy from, and push the "Edit" button. The parameter settings of the common filter will also be copied, since it is sometimes a part of the effect.

**Rndm:** Randomizes the Time & Pitch effect parameters. Effect type will not be randomized. Hit the "Edit" button to be surprised.

## Sequencer

All parameters in this section, is stored with each preset.

The Little deFormer's sequencer has 32 step tracks for sample/oscillator/note triggers and 4 modulation tracks, that each can be up to 32 steps long. A common last step can be set, that is valid for all of the 36 tracks. Each track has an "Rst" (Reset Step) parameter (RsC1 to 4 for the controller tracks), that can make it loop before the last step, and make it possible for each track to have different lengths. The time signature scaling "Scal" is global for the 32 note tracks. The 4 controller tracks each has their own time signature parameter "ScC1 to 4".

To switch individual tracks on and off, push the "Assign" button 2 times, so it is flashing. The step buttons now toggles the sequencer tracks on/off. When a track is on, the LED representing it will be lit, and give a short "flash", when the sequencer track triggers. Only 8 tracks are shown on the step button LED's at a time, because there are only 8 step buttons!

To access track 9 to 32 on/off, push the "1-8 9-16 17-24 25-32" button. The "1-8 9-16 17-24 25-32" LED indicates what tracks your are monitoring in the following way:

Off – track 1-8

On – track 9-16

Slow flashing – track 17-24

Fast flashing – track 25-32

All 32 tracks can individually be set up to control either internal sample/oscillator/grain triggering or external MIDI gear. When set to internal, track 1 to 16 controls triggering of sampling 1 to 16, and track 17 to 32 controls triggering of grains, if "Double Granulator" is selected as the Time & Pitch effect, and if it is in key mode.

When a tracks is set to external, MIDI channel and note number can be selected separately for each track. The MIDI channel and note number set here, is the same that will be transmitted, when pushing Trigger and Step button 17 to 32, on the pages where these function as trigger buttons.

It is also possible to directly link one of the four controller tracks to a step track, to make pitched sequencing. This setting applies both to internal and external tracks. Please note, that this setting is only quantized to semi tones, when applied to and Ext track. If you would like to sequence LD's internal samplers/oscillators in semi tones, you should go to the "MODULATION" section, and set up a controller track to modulate the pitch of the sample/oscillator you wold like to sequence, using "TunQ" as the destination.

The controller tracks can modulate almost any parameter. Routing of this is done on the "MODULATION" section.

It is also possible to modulate many of the sequencers parameters. This is also done in the "MODULATION" section.



Each track can be independently routed to one of four Note Randomizers, that can give the sequence a slight random feel, or create complete random chaos. This setting applies both to internal and external tracks.

It is, at any time and at any page, possible to start and stop the sequencer playback, using the "Start/Stop" pushbutton. When the sequencer is running, the Start/Stop LED is lit.

It is possible to synchronize the sequencer to the MIDI clock of external MIDI gear. To do so, connect MIDI out of the sync master to MIDI in of Little deFormer, and select "ext" as "Clck" in the "COMMON" section. Little deFormer also does output MIDI clock, to sync external MIDI gear to it. If you would like to do this, the "Xmit" parameter in the "COMMON" section must be set to "On".

It is also possible to sync Little deFormers sequencer to analog gear, and to sync analog gear to Little deFormer, by connecting an AnaX expansion box to it, and select "clk" for a trigger input or output.

## **Recording**

The sequencer of Little deFormer has 2 ways of inputting notes, to be played back: Step grid recording and realtime recording.

### **Step grid recording**

On all sequencer pages, it is possible to turn the trigger for each step of the selected track on and off. This is referred to as "Step grid recording". Since there are only 8 step buttons, you can only edit 8 steps at a time. The steps are selected and monitored in the same fashion as the tracks on/off page, using the "1-8 9-16 17-24 25-32" button and LED:

Off – step 1-8

On – step 9-16

Slow flashing – step 17-24

Fast flashing – step 25-32

To select the track for recording, you can either adjust the "Trak" parameter, using an edit knob, or you can push the "Assign" button one time, use the step buttons to select the track, and then push the "Assign" button 2 times, to return to the sequencer menu's.

### **Realtime recording**

To enter realtime recording mode, first you have to enter the "SEQUENCER" menu. Make sure, the sequencer is running. Inside the sequencer menus, hit the Freeze button one time, so its LED is lit. You are now in rehearsal mode, and you can practice by playing the step buttons or an attached MIDI device. If the metronome is in "Rec" mode, you will now hear it. The metronome settings can be adjusted in the "COMMON" section, using the "Met" parameter.

Hit the Freeze button one more time, so its LED is flashing. LD will now record everything you play on the step buttons or a connected MIDI device, in real time.

Hit the Freeze button one more time, so its LED is unlit, to exit realtime record mode.

You can enter/exit realtime recording mode, while the sequencer is running.

### **Pattern Link mode**

It is possible to link two patterns/presets together for continuous playback. It is possible to adjust how many times it should play back each pattern, and all edits you make in both patterns will be kept.

It is not possible to select which preset it should link to. It will always just increment the preset number with one, when linking, and play back the next selectable preset.

The preset you link to can be completely different, with for instant different Time and Pitch effects, so this can really get odd.

**NOTICE:** When you save a preset that is linked to another preset, Little deFormer will save both presets at one time, so it will take up TWO preset locations.

## Sequencer parameters

**Trak** – 1 to 32. Selects the step track you wish to edit.

**Last** – 1 to 32. Selects the length of the sequence, in number of steps.

**Scal** – 1/32, 1/24, 1/16, 1/12, 1/8, 1/4, 1/2, 1. Selects the time signature for the note step tracks.

**Rndm** – 1 to 4. Selects which one of the four Note Randomizers, the selected track will run through.

**Prob** – 0 to 255. Probability of the selected Note Randomizer. When set to 255, all note-on's will be played back, when set to zero, no note-on's will be played back.

**Velo** – 0 to 255. Adjusts how much the selected Note Randomizer will affect velocity.

**Time** – 0 to 255. Determines how much the selected Note Randomizer will affect the timing of the tracks running through it. At settings 1 to 3, it will give a slight natural unstability or feel to the rhythmic timing. At higher settings the rhythmic timing will be unrecognizable.

**Tempo** – 50 to 305. The tempo of the sequence in BPM (Beats Per Minute). This parameter has no function, if "sync" in the "Common" section is set to "ext", or if an AnaX expansion box is connected, and any of the trigger inputs is set to "clk".

**Outp** – Int, Ext. Selects whether the selected track will trigger the internal samplings/grains, or external MIDI gear.

**Chan** – 1 to 16. The MIDI channel the selected track will output note-on's to, if Outp = Ext.

**Note** – C-2 to B7, Ctt1 to Ctt4. The note number that the selected track will output, if Outp = Ext. If Ctt1 to 4 is selected, controller track 1 to 4 will determine the note number to output. This setting will also affect internal tracks.

**Rst** - 32 to 1. Selects a step for the track, on which it will reset to step 1, and start over again. Adjust this, if you would like the track to have a separate length. If the value of this parameter is 32 or higher than the "Last" parameter, the "Last" parameter will determine the last step of the track.

**Link:** On, Off. Switches the link function on or off. Links the next preset/pattern to this, for continuous playback of 2 patterns. Using the following 2 parameters, you can adjust, how many times it should play back each pattern.

**This:** 1 to 64. Adjusts how many times it should play back the currently selected preset, until it shifts to the next preset, if "Link" is "On". If the tracks of this preset has different lengths, the number indicates how many times track 1 will play back.

**Next:** 1 to 64. Adjusts how many times it should play back the next preset, until it shifts back to the currently selected preset, if "Link" is "On". If the tracks of this preset has different lengths, the number indicates how many times track 1 will play back.

**Controller track 1, step 1 to 32** – 0 to 255. The value for each step in controller track 1. Step groups of 8, is selected using the "1-8 9-16 17-24 25-32" button, as described earlier in this section.

**Controller track 2, step 1 to 32** – 0 to 255. The value for each step in controller track 2. Step groups of 8, is selected using the "1-8 9-16 17-24 25-32" button, as described earlier in this section.

**Controller track 3, step 1 to 32** – 0 to 255. The value for each step in controller track 3. Step groups of 8, is selected using the "1-8 9-16 17-24 25-32" button, as described earlier in this section.

**Controller track 4, step 1 to 32** – 0 to 255. The value for each step in controller track 4. Step groups of 8, is selected using the "1-8 9-16 17-24 25-32" button, as described earlier in this section.

**RsC1 to 4:** 32 to 1. Selects a step for the controller track, on which it will reset to step 1, and start over again. Adjust this, if you would like the track to have a separate length. If the value of this parameter is 32 or higher than the "Last" parameter, the "Last" parameter will determine the last step of the track.

**ScC1 to 4:** 1/32, 1/24, 1/16, 1/12, 1/8, 1/4, 1/2, 1/1. Selects the time signature (scaling) for each controller track.

## Sequencer Swing Modulation

Many times users and other people has asked me, if the Little deFormer should not have a Swing function. And I have wanted to add this a number of times! I just felt that a Swing on/off button, wouldn't really be "deForming".

Then one great day, I came up with the idea of the "Swing Modulation" system. Instead of having one or a number of pre-defined patterns, that defined the swing, it should be possible to add swing to a pattern, using any modulator, and thereby making the swing completely user definable.

By using a Sequencer Controller track as the modulation source, it is possible to make any swing pattern you like. And by adjusting the modulation amount, you can adjust how much swing should be added.

It is possible to have different swing sources for each of the 16 sampler/synth tracks, and it is also possible to add swing modulation to all 16 tracks at one time.

**Parameters for the swing modulation can be found in the "MODULATION" section, in the "Seq" (Sequencer) destination group:**

**Sw1 to Sw9 and Sw10 to Sw16:** Selects sampler/synth track 1 to 16 as the destination for Swing Modulation.

**SwA1:** Selects all 16 sampler/synth tracks as the destination for Swing Modulation.

## Sequencer pattern clear, copy and randomize

When on any sequencer edit screen, where you can edit the sequencer parameters, push the "Edit" button to enter these sequencer functions. Use the "Dec" and "Inc" buttons to select a function, and push the "Edit" button to execute a function.

The sequencer functions are:

**Clear:** This function will erase all 32 note tracks, and leave you with an empty sequence, to start over. The controller tracks and time signature/length/tempo parameters are leaved unchanged. If you regret having cleared a pattern, you can always exit to the preset select screen, select another preset, and select this preset again, or use the "Reload" function, by pushing the "Exit" and "Dec" buttons at the same time. Data in memory are not changed, until you save the preset.

**Copy:** By using this function, you can copy the sequencer data from any other preset. Use edit knob 1 and 2 to select the bank and number of the preset you want to copy from, and push the "Edit" button to execute.

**Rndm Note:** Randomizes one note track. Select the track you wants to randomize, using edit knob 1, and push the "Edit" button to execute.

**Rndm Ctrl:** Randomizes one controller track. Select the controller track you wants to randomize, using edit knob 1, and push the "Edit" button to execute.

# LFO's

All parameters in this section, is stored with each preset.

Little deFormer has 10 LFO's. These can morph between triangle, sawtooth, square, pulse and unlinear (FM) waveforms. They can be key-triggered or free running, looped or one-shot, so it is possible to use them both as traditional LFO's and as envelopes. The LFO's appears as sources in the "MODULATION" section as "LF1 to 9+/-" and "L10+/-", and can modulate almost any parameter.

The LFO's also appears as destination in the "MODULATION" section. Their rate, waveform and output level can be modulated, with one exception: LFO10 can't be modulated.

LFO 1 and 2 are reserved for the effects section, and LFO 3 to 10 are reserved for the sample/oscillator section.

## **Parameters:**

**Rat1 to 10:** 0 to 255. Adjusts the rate (or speed) of the LFO's. From very slow to very fast.

**Wav1 to 2:** **tri** to **saw** to **squ** to **puls** to **rndm**. Selects the LFO waveform. The numbers inbetween the waveform names, indicates that the LFO is morphing between two waveforms.

**Wav3 to 10:** **tri** to **saw** to **squ** to **puls** to **Utri** to **Usaw** to **Usqu** to **rndm**. Selects the LFO waveform. The numbers inbetween the waveform names, indicates that the LFO is morphing between two waveforms. The **Utri**, **Usaw** and **Usqu** are unlinear high-speed waveforms, great for FM.

**Trg1 to 10:** Off, 1 to 15. LFO reset trigger. Selects a sample/oscillator, that when it is triggered, will reset the LFO.

**Lop1 to 10:** On, Off. LFO loop on/off. When off, the LFO will only run its cycle one time, every time it is triggered, and then stop. With this function, the LFO's can be used as a kind of envelopes.

## **Triggered Random Generators**

Each sampleslot on the Little deFormer has a triggered random generator assigned to it (16 in total). Every time a sample/oscillator is triggered, either from the step buttons, the internal sequencer, or via MIDI in, its random generator changes to a new random value.

The random generators does not have any parameters. They can just be assigned as modulation sources in the “MODULATION” section, and under LFO1 in that section, the output level of the random generators can be modulated.



# Modulation

All parameters in this section, is stored with each preset.

The Little deFormer has 32 modulation routings per preset. For each modulation routing, you will have to select the source, the destination, and the modulation amount.

**MOD** – 1 to 32. The modulation routing number. Push the "Inc" and "Dec" buttons to select.

**Sorc** – Modulation source select. Choices are:

**Kn1+** : Edit knob 1, on the preset select screen and the edit group select screens. The MIDI CC number assigned to this knob, in the "Knob CC's" section, will be a source at the same time.

**Kn1-** : Edit knob 1 inversed, on the preset select screen and the edit group select screens. The MIDI CC number assigned to this knob, in the "Knob CC's" section, will be a source at the same time.

**Kn2+** : Edit knob 2, on the preset select screen and the edit group select screens. The MIDI CC number assigned to this knob, in the "Knob CC's" section, will be a source at the same time.

**Kn2-** : Edit knob 2 inversed, on the preset select screen and the edit group select screens. The MIDI CC number assigned to this knob, in the "Knob CC's" section, will be a source at the same time.

**Kn3+** : Edit knob 3, on the preset select screen and the edit group select screens. The MIDI CC number assigned to this knob, in the "Knob CC's" section, will be a source at the same time.

**Kn3-** : Edit knob 3 inversed, on the preset select screen and the edit group select screens. The MIDI CC number assigned to this knob, in the "Knob CC's" section, will be a source at the same time.

**Kn4+** : Edit knob 4, on the preset select screen and the edit group select screens. The MIDI CC number assigned to this knob, in the "Knob CC's" section, will be a source at the same time.

**Kn4-** : Edit knob 4 inversed, on the preset select screen and the edit group select screens. The MIDI CC number assigned to this knob, in the "Knob CC's" section, will be a source at the same time.

**Kn5+** : Edit knob 5, on the preset select screen and the edit group select screens. The MIDI CC number assigned to this knob, in the "Knob CC's" section, will be a source at the same time.

**Kn5-** : Edit knob 5 inversed, on the preset select screen and the edit group select screens. The MIDI CC number assigned to this knob, in the "Knob CC's" section, will be a source at the same time.

**Kn6+** : Edit knob 6, on the preset select screen and the edit group select screens. The MIDI CC number assigned to this knob, in the "Knob CC's" section, will be a source at the same time.

**Kn6-** : Edit knob 6 inversed, on the preset select screen and the edit group select screens. The MIDI CC number assigned to this knob, in the "Knob CC's" section, will be a source at the same time.

**Kn7+** : Edit knob 7, on the preset select screen and the edit group select screens. The MIDI CC number assigned to this knob, in the "Knob CC's" section, will be a source at the same time.

**Kn7-** : Edit knob 7 inversed, on the preset select screen and the edit group select screens. The MIDI CC number assigned to this knob, in the "Knob CC's" section, will be a source at the same time.

**Kn8+** : Edit knob 8, on the preset select screen and the edit group select screens. The MIDI CC number assigned to this knob, in the "Knob CC's" section, will be a source at the same time.

**Kn8-** : Edit knob 8 inversed, on the preset select screen and the edit group select screens. The MIDI CC number assigned to this knob, in the "Knob CC's" section, will be a source at the same time.

**Sq1+** : Sequencer controller track 1.  
**Sq1-** : Sequencer controller track 1 inverted.  
**Sq2+** : Sequencer controller track 2.  
**Sq2-** : Sequencer controller track 2 inverted.  
**Sq3+** : Sequencer controller track 3.  
**Sq3-** : Sequencer controller track 3 inverted.  
**Sq4+** : Sequencer controller track 4.  
**Sq4-** : Sequencer controller track 4 inverted.

**CV1+** : AnaX analog expander CV input 1. If AnaX is not connected to LD, this source puts out nothing.

**CV1-** : AnaX analog expander CV input 1 inverted. If AnaX is not connected to LD, this source puts out nothing.

**CV2+** : AnaX analog expander CV input 2. If AnaX is not connected to LD, this source puts out nothing.

**CV2-** : AnaX analog expander CV input 2 inverted. If AnaX is not connected to LD, this source puts out nothing.

**CV3+** : AnaX analog expander CV input 3. If AnaX is not connected to LD, this source puts out nothing.

**CV3-** : AnaX analog expander CV input 3 inverted. If AnaX is not connected to LD, this source puts out nothing.

**CV4+** : AnaX analog expander CV input 4. If AnaX is not connected to LD, this source puts out nothing.

**CV4-** : AnaX analog expander CV input 4 inverted. If AnaX is not connected to LD, this source puts out nothing.

**LF1+** : The output of LFO1.

**LF1-** : The output of LFO1 inverted.

**LF2+** : The output of LFO2.

**LF2-** : The output of LFO2 inverted.

**LF3+** : The output of LFO3.

**LF3-** : The output of LFO3 inverted.

**LF4+** : The output of LFO4.

**LF4-** : The output of LFO4 inverted.

**LF5+** : The output of LFO5.

**LF5-** : The output of LFO5 inverted.

**LF6+** : The output of LFO6.

**LF6-** : The output of LFO6 inverted.

**LF7+** : The output of LFO7.

**LF7-** : The output of LFO7 inverted.

**LF8+** : The output of LFO8.

**LF8-** : The output of LFO8 inverted.

**LF9+** : The output of LFO9.

**LF9-** : The output of LFO9 inverted.

**L10+** : The output of LFO10.

**L10-** : The output of LFO10 inverted.



**Rn13+** : The output of triggered random generator 13. This changes to a new random value, every time the sample/oscillator of sample slot 13 is triggered.

**Rn13-** : The output of triggered random generator 13 inversed. This changes to a new random value, every time the sample/oscillator of sample slot 13 is triggered.

**Rn14+** : The output of triggered random generator 14. This changes to a new random value, every time the sample/oscillator of sample slot 14 is triggered.

**Rn14-** : The output of triggered random generator 14 inversed. This changes to a new random value, every time the sample/oscillator of sample slot 14 is triggered.

**Rn15+** : The output of triggered random generator 15. This changes to a new random value, every time the sample/oscillator of sample slot 15 is triggered.

**Rn15-** : The output of triggered random generator 15 inversed. This changes to a new random value, every time the sample/oscillator of sample slot 15 is triggered.

**Rn16+** : The output of triggered random generator 16. This changes to a new random value, every time the sample/oscillator of sample slot 16 is triggered.

**Rn16-** : The output of triggered random generator 16 inversed. This changes to a new random value, every time the sample/oscillator of sample slot 16 is triggered.

**V11+** : The velocity value received for sample/oscillator 1, either from MIDI in or from the Note Randomizer.

**V11-** : The velocity value received for sample/oscillator 1 inversed, either from MIDI in or from the Note Randomizer.

**V12+** : The velocity value received for sample/oscillator 2, either from MIDI in or from the Note Randomizer.

**V12-** : The velocity value received for sample/oscillator 2 inversed, either from MIDI in or from the Note Randomizer.

**V13+** : The velocity value received for sample/oscillator 3, either from MIDI in or from the Note Randomizer.

**V13-** : The velocity value received for sample/oscillator 3 inversed, either from MIDI in or from the Note Randomizer.

**V14+** : The velocity value received for sample/oscillator 4, either from MIDI in or from the Note Randomizer.

**V14-** : The velocity value received for sample/oscillator 4 inversed, either from MIDI in or from the Note Randomizer.

**V15+** : The velocity value received for sample/oscillator 5, either from MIDI in or from the Note Randomizer.

**V15-** : The velocity value received for sample/oscillator 5 inversed, either from MIDI in or from the Note Randomizer.

**V16+** : The velocity value received for sample/oscillator 6, either from MIDI in or from the Note Randomizer.

**V16-** : The velocity value received for sample/oscillator 6 inversed, either from MIDI in or from the Note Randomizer.

**V17+** : The velocity value received for sample/oscillator 7, either from MIDI in or from the Note Randomizer.

**V17-** : The velocity value received for sample/oscillator 7 inversed, either from MIDI in or from the Note Randomizer.

**V18+** : The velocity value received for sample/oscillator 8, either from MIDI in or from the Note Randomizer.

**V18-** : The velocity value received for sample/oscillator 8 inversed, either from MIDI in or from the Note Randomizer.

**V19+** : The velocity value received for sample/oscillator 9, either from MIDI in or from the Note Randomizer.

**V19-** : The velocity value received for sample/oscillator 9 inversed, either from MIDI in or from the Note Randomizer.

**V10+** : The velocity value received for sample/oscillator 10, either from MIDI in or from the Note Randomizer.

**V10-** : The velocity value received for sample/oscillator 10 inversed, either from MIDI in or from the Note Randomizer.

**V11+** : The velocity value received for sample/oscillator 11, either from MIDI in or from the Note Randomizer.

**V11-** : The velocity value received for sample/oscillator 11 inversed, either from MIDI in or from the Note Randomizer.

**V12+** : The velocity value received for sample/oscillator 12, either from MIDI in or from the Note Randomizer.

**V12-** : The velocity value received for sample/oscillator 12 inversed, either from MIDI in or from the Note Randomizer.

**V13+** : The velocity value received for sample/oscillator 13, either from MIDI in or from the Note Randomizer.

**V13-** : The velocity value received for sample/oscillator 13 inversed, either from MIDI in or from the Note Randomizer.

**V14+** : The velocity value received for sample/oscillator 14, either from MIDI in or from the Note Randomizer.

**V14-** : The velocity value received for sample/oscillator 14 inversed, either from MIDI in or from the Note Randomizer.

**V15+** : The velocity value received for sample/oscillator 15, either from MIDI in or from the Note Randomizer.

**V15-** : The velocity value received for sample/oscillator 15 inversed, either from MIDI in or from the Note Randomizer.

**V16+** : The velocity value received for sample/oscillator 16, either from MIDI in or from the Note Randomizer.

**V16-** : The velocity value received for sample/oscillator 16 inversed, either from MIDI in or from the Note Randomizer.

**C12+** : MIDI controller 12 received from MIDI in.

**C12-** : MIDI controller 12 received from MIDI in inversed.

**C13+** : MIDI controller 13 received from MIDI in.

**C13-** : MIDI controller 13 received from MIDI in inversed.

**C14+** : MIDI controller 14 received from MIDI in.

**C14-** : MIDI controller 14 received from MIDI in inversed.

**C15+** : MIDI controller 15 received from MIDI in.

**C15-** : MIDI controller 15 received from MIDI in inversed.

**C16+** : MIDI controller 16 received from MIDI in.

**C16-** : MIDI controller 16 received from MIDI in inversed.

**C17+** : MIDI controller 17 received from MIDI in.

**C17-** : MIDI controller 17 received from MIDI in inversed.

**Grp** – Destination parameter group. Choices are:

**Off** – No modulation.

**Comm** – Common section.

**Smp1-16** – Sampling 1 to 16 and the FilterBank (if on).

**Comp** – Compressor.

**Dist** – Distortion.

**Fltr** – Filter.

**Time** – Time & Pitch effect.

**Sequ** – Sequencer

**LFO1 – 9** – The LFO's.

**Dest** – Destination parameter. Choices are, for each group:

**Off**

-No choices

**Comm**

-**Inp1** : Audio input 1 level

-**Inp2** : Audio input 2 level

**Smp1-16** (sampling) - Modulation destinations will vary, depending on what filter type is selected

-**Tune** : Sample tune

-**Gain** : Sample gain

-**EnvD** : Sample envelope decay

-**Chop** : Chop select

-**#chp** : No of chops to play back

-**Strt** : Sample start point

-**Lngt** : Sample length

-**Phaz** : Phaze effect angle

-**PhLv** : Phaze effect level

-**Cut** : Sample filter cutoff frequency

-**Reso** : Sample filter resonance

-**Ftyp** : Sample filter type select

-**Fenv** : Sample envelope to filter cutoff amount

-**Fmix** : Sample filter mix

-**Menv** : Sample envelope to filter mix amount

-**Fad1** : Sample filter adjust 1

-**Fad2** : Sample filter adjust 2

-**Fad3** : Sample filter adjust 3

-**Fad4** : Filter adjust 4

-**Fad5** : Filter adjust 5

-**Fad6** : Filter adjust 6

-**Fad7** : Filter adjust 3

- Trig** : Sample trigger point (when will it trigger another sampling)
- Ssel** : Sample select – Makes it possible to select the samples/oscillators in the other sample slots
- Mute** : Sample mute – If the source are below half of its max value, the sample is muted, if it is above half of its max value, the sample is unmuted.
- Play** : Sample playback – Every time the source goes from a value below half of its max value, to a value above half of its max value, the sample is triggered.
- TunQ** : Quantized tune modulation. Quantizes the modulation source to semi tones.

**Smp1-16** (oscillator) - Modulation destinations will vary, depending on what filter type is selected

- Tune** : Oscillator tune
- Gain** : Oscillator gain
- EnvD** : Oscillator envelope decay
- Wave** : Oscillator waveform
- Pw** : Oscillator pulse width
- Levl** : Oscillator filter output level
- Cut** : Oscillator filter cutoff frequency
- Reso** : Oscillator filter resonance
- Ftyp** : Oscillator filter type select
- Fenv** : Oscillator envelope to filter cutoff amount
- Fmix** : Oscillator filter mix
- Menv** : Oscillator envelope to filter mix amount
- Fad1** : Oscillator filter adjust 1
- Fad2** : Oscillator filter adjust 2
- Fad3** : Oscillator filter adjust 3
- Fad4** : Filter adjust 4
- Fad5** : Filter adjust 5
- Fad6** : Filter adjust 6
- Fad7** : Filter adjust 3
- Trig** : Oscillator trigger point (when will it trigger another sampling)
- Ssel** : Sample select – Makes it possible to select the samples/oscillators in the other sample slots
- Mute** : Oscillator mute – If the source are below half of its max value, the sample is muted, if it is above half of its max value, the sample is unmuted.
- Play** : Oscillator playback – Every time the source goes from a value below half of its max value, to a value above half of its max value, the sample is triggered.
- TunQ** : Quantized tune modulation. Quantizes the modulation source to semi tones.

### **FilterBank**

-Does not have its own modulation group, since it is the sample/oscillator filters, that is used to form a bank. When FilterBank is “On”, modulating the filters of sample/oscillator 1 to 4, will affect filters 1 to 4 of the bank. Modulating the filters of sample/oscillator 5 to 16, will have no effect at all in this mode.

When modulation the filter of:

- Sample/oscillator 1**, it affects **filter 1** in the FilterBank
- Sample/oscillator 2**, it affects **filter 2** in the FilterBank
- Sample/oscillator 3**, it affects **filter 3** in the FilterBank
- Sample/oscillator 4**, it affects filter **4** in the FilterBank

## **Comp**

- Gain** : Compressor gain
- Floor** : Compressor floor
- Thrs** : Compressor Threshold level
- Gate** : Compressor gate time
- Atak** : Compressor attack time
- Rel** : Compressor release time

**Dist** – Modulation destinations will vary, depending on what distortion effect is selected

- Obsc** : Obscure
- Dly** : Delay
- Feed** : Feedback
- BitR** : Bit rate
- Rate** : Sample rate
- Driv** : Distortion drive
- Offs** : Distortion offset
- Damp** : Distortion damping

**Fltr** – Common filter. Modulation destinations will vary, depending on what filter type is selected

- Cut** : Filter cutoff frequency
- Reso** : Filter resonance
- Ftyp** : Filter type select
- Fmix** : Filter mix
- Folr** : Envelope follower rate
- Fenv** : Envelope follower to filter cutoff amount
- Menv** : Envelope follower to filter mix amount
- Fad1** : Filter adjust 1
- Fad2** : Filter adjust 2
- Fad3** : Filter adjust 3
- Fad4** : Filter adjust 4
- Fad5** : Filter adjust 5
- Fad6** : Filter adjust 6
- Fad7** : Filter adjust 3

**Time** – Time and pitch effect. Modulation destinations will vary, depending on what Time and Pitch effect is selected.

- Mix1** : Bus 1 mix
- Mix2** : Bus 2 mix
- Mix3** : Bus 3 mix
- Mix4** : Bus 4 mix
- Time/Tim1/Tim2/TimX/Rtim/Rtm2/RtmX** : Effect time bases
- Feed/Fed1/Fed2/FedX/Rfed/Rfd2/RfdX** : Effects feedback amount
- Size/Rsiz** : Effects size
- Xfad** : Effects crossfade amount
- Beam** : Effects granular beam



- Deep/Rdep** : Effect box depth
- Levl /Lvl1/Lvl2**: Effect output level
- Sens/Sns1/Sns2** : Effect sensitivity
- Pitc/Tune/Pit2** : Effect pitch shifting/shaping
- Smot** : Effect smoothing
- ComX** : Effect complexity
- Rmix** : Reverb mix
- FM** : Effect frequency modulation amount
- Oct** : Effect octave pitch shifting/shaping
- Vari** : Effect variation amount
- Folr** : Effect VCA envelope follower rate
- Step/Last** : Granulator no of steps
- Spr1/Spr2** : Granulator spread
- Fsz1/Fsz2** : Granulator no of grains
- Ofs1/Ofs2** : Granulator frame select offset
- Gran** : Variator granulizing amount
- Strc** : Effect time stretch
- Mrph** : Effect morphing amount
- RecT** : Abstruct0 recording time
- Ply1/Ply2/Ply3** : Abstruct0 playback times
- Frez** : Effect freeze on/off

#### **Sequ(encer)**

- Last** : Sequencer global last step
- Scal** : Sequencer note tracks time signature
- Temp** : Sequencer tempo
- Trk1-4** : Sequencer controller track 1 to 4 value
- Swi1-9/Sw10-16** : Sequencer note tracks separate swing
- SwAl** : Sequencer note tracks all swing
- AMc1-4** : Sequencer controller tracks output level

#### **LFO1**

- Rate** : LFO rate
- Wave** : LFO waveform
- Levl** : LFO output level
- AMr1-9/Ar10-16** : Triggred random generators output level

#### **LFO2 – 9**

- Rate** : LFO rate
- Wave** : LFO waveform
- Levl** : LFO output level

**Value** – 0 to 255. Modulation amount.

## **Knob CC's**

All parameteres in this section, is stored with each preset.

Edit knob 1 to 8 MIDI CC assign. The edit knobs will output the MIDI controller numbers you select here, to MIDI OUT, on the global MIDI channel as selected in the "Common" section, when on the preset select page and on the parameter group select pages.

Incoming MIDI conrollers (from MIDI IN) will also be directed to the parameters that are assigned to be controlled by the edit knobs, in the "MODULATION" section.

**cc1 – cc8** - #0 to #64. The MIDI CC number assigned to the edit knob.

## Save Preset

This section will describe how to save a preset on the Little deFormer.

All parameter settings and sequences will be saved as a preset. Only MIDI channel, sync options and MUTE mode are automatically saved as common data, and are not part of the preset.

**NOTE:** If the freeze function is active, the content of the Time & Pitch audio buffer, will be saved together with the preset as a sampling, and loaded into this buffer, every time you select the preset. This is cool for "capturing the moment". If you don't want this to happen, make sure that the freeze function is off. If you play back a sampling, or any audio from the inputs, and you can hear the sound gets effected by the selected Time & Pitch effect, then you can be sure, that freeze is off.

**NOTE:** All unsaved sample chop tables, will also be saved, when you save the preset. So if you have, either automatically or manually, added some chop points, you do not wish to keep, make sure to go to the "SAMPLE" edit group "Clear Chops" and activate this, before you save your preset.

**NOTE:** If the preset is linked (Link is ON), you will need to stop the sequencer playback, before you can save the preset.

From this edit group page:

SAVE PRESET

Push the "Edit" button, to go to this page:

[HipHop 1     ]  
SAVE TO: A02

Here it is possible to select the memory location, on which you would like to save your preset. Push the "Inc" and "Dec" buttons to select. The "Edit" LED will flash. There are 512 locations to choose from (1024 if your LD are expanded).

If a location reads this out:

[ <empty>     ]  
SAVE TO: A02

No preset has previously been saved on this location. If you choose a preset, that already has a name, this will be overwritten by the new preset.

Push the "Edit" button to proceed. This screen will appear:

Name 1-8	PUSH
HipHop 1	<inc>

Use edit knob 1-8, to select the first 8 letters of the name in your preset.

Push the "Inc" button to proceed.

Use edit knob 1-4, to select the last 4 letters of the name in your preset.

Push the "Inc" button.

Your preset is now stored in the selected location, and it is automatically selected.

## FLASH pages

In this parameter group, there are no real parameters. It is mostly for service purposes, for updating Little deFormers firmware, for backing up/sharing your presets and for checking out on available sampling memory.

**SEND PRESET? – Push <edit>.** Send preset as sysex data through MIDI out. Connect a computer or another MIDI device, that is able to record sysex data, to your Little deFormer's MIDI out, and use this function to transmit the preset data, for back-up or for sharing with other LD's. Notice that only the preset parameter data is sent, NOT the sample data. Push the "Edit" button to activate this function.

### **UPDATE OS?**

For updating Little deFormers firmware. Complete procedure is described later in this manual.

### **SRAM TEST?**

For testing the SRAM used for the Time & Pitch effect, and when updating the firmware.

Push "Edit" to activate.

The display will read "Testing..." for a while, and thereafter return a result of the test. If the result is anything else than "SRAM OK!", something is damaged around the SRAM, either the SRAM itself or a connection.

**# Of Samples A/B** – 0 to 512. Shows the number of samplings present in the FLASH memory bank A and B. Bank B is only present, if your LD are expanded.

**% Avail A/B** – 0 to 100. Shows the amount of available FLASH memory in percent, for new sample recordings in bank A and B. Since Little deFormer has 100 minutes of total sampling time in each bank, 1% equals 1 minute.

**FLASH ID** – This should show a hex number like: ADDC109554. If this number is all zeros or all ones, the Little deFormers internal FLASH memory might be damaged, and it needs service.

**# Of Bad Blocks** – If this number is higher than 20, the FLASH memory might need to be replaced. If it reads 255, it is really not good.

### **Test Display:**

0000	0006
0020	0030

If you have more than 4 samplings stored, this display **MUST** show 4 numbers. The numbers might not be the same as shown, but they **MUST** increase as shown. If not, there might be a loose connection between the DSP processor and the FLASH memory.

### **XMIT OS1? / XMIT OS2?**

If you want to keep a backup of the Little deFormer firmware, before you update it, you can use these functions. Connect a MIDI device that is capable of recording .syx files (Like a pc with MIDI-OX installed), and push "Edit" to activate.

**FORMAT FLASH A– Push <edit>.** If the power goes off, while you are doing a recording, it will create a mess in the internal FLASH memory. Use this function to "clean up" sample bank A. It will only clean up unused spaces of the FLASH memory, so no samplings or presets will be erased.

**FORMAT FLASH B– Push <edit>.** If the power goes off, while you are doing a recording, it will create a mess in the internal FLASH memory. Use this function to "clean up" sample bank B. It will only clean up unused spaces of the FLASH memory, so no samplings or presets will be erased. This function will only work, if your Little deFormer are expanded.

**DELETE ALL SAMPLES BANK A– Push <edit>.** This function will, unconditionally, delete all samplings in sample bank A. Use it with care! Push the "Edit" button to activate.

**DELETE ALL SAMPLES BANK B– Push <edit>.** This function will, unconditionally, delete all samplings in sample bank B. Use it with care! Push the "Edit" button to activate. This function will only work, if your Little deFormer are expanded.

## Song mode

It is possible to chain patterns/presets together for automatic playback in up to 120 steps. For each step you can select the preset number, and how many times the preset should play back, until it goes on to the next step. Little deFormer holds 512 songs.

In song mode, it is not possible to edit all the voice and effect parameters. Only the "COMMON" parameters, and the parameters assigned to the knobs and MIDI CC's can be edited, but unlike Link mode, your edits will not be kept. The song mode is just a simple arranger.

### **How to switch between song and pattern mode:**

On the first edit group page "COMMON", Little deFormer will now write: "PATTERN –hold dec to change".

While on this page, push and hold the "Dec" button for around one second, and that text will change to: "SONG –hold dec to change".

You are now in song mode.

Perform the same operation to switch back to pattern mode.

In song mode, the preset select screen changes to song select screen. It is possible to select any of 512 songs, exactly the same way as you select a preset, except you don't have to push "Edit" to confirm, and it is not possible to select another song while the sequencer is running. It must be stopped.

When Little deFormer are in song mode, it has other edit groups, than when in pattern mode:

**COMMON** is the same as in pattern mode.

**ARRANGE** – Here you arranges your song, by selecting in what order presets should play back, and how many times each preset should play.

**SAVE SONG** – Here you name and save your song.

## **Song Edit Pages:**

### **ARRANGE:**

Step . Bank . Ptrn . X .
1     A     1     1

**Step:** 1 to 120. Selects the song step number, you would like to edit. Song playback always starts at step 1, then it plays step 2, then step 3 and so on....

Use either the inc and dec buttons, or edit knob 1 to select a step.

**Bank:** A to H, End, Loop. Here you select the bank number of the preset you would like to play back on the selected step, or if you would like to end or loop your song, you can select "End" or "Loop" here.

**Ptrn:** 1 to 64. Here you select the number of the preset you would like to play back on the selected step.

**X:** 1 to 64. Here you select how many times you want the selected preset to play back, until it shifts to the next step. If the tracks of a preset has different lengths, this number indicates how many times track 1 will play back.



## Naming and saving a song

Select this edit group page, using the "Inc" button:

SAVE SONG
-----------

Push the "Edit" button, to go to this page:

[My Song 1       ] SAVE TO: A02
------------------------------------

Here it is possible to select the memory location, in which you would like to save your song. Push the "Inc" and "Dec" buttons to select. The "Edit" LED will flash. There are 512 locations to choose from. It is only possible to enter this page, when the sequencer is stopped.

If a location reads this out:

[ <empty>       ] SAVE TO: A02
-----------------------------------

No song has previously been saved on this location. If you choose a song, that already has a name, this will be overwritten by the new song.

Push the "Edit" button to proceed. This screen will appear:

Name 1-8       PUSH
My Song 1       <inc>

Use edit knob 1-8, to select the first 8 letters of the name in your song.

Push the "Inc" button to proceed.

Use edit knob 1-4, to select the last 4 letters of the name in your song.

Push the "Inc" button.

Your song is now stored in the selected location, and it is automatically selected.

# **MIDI Implementation**

## **Notes on/off**

When pushing any of the Trigger and Step buttons, which has their sequencer note track set to “Internal” mode, and has a sampling or an oscillator assigned to it, Little deFormer will transmit a note on, when the button is pushed, and a note off, when the button is released.

The stepbuttons that has samples/oscillator assigned to them, can also be triggered from external MIDI gear, connected to MIDI in on Little deFormer. The velocity part of an incoming note message are received, and used if it is assigned to anything in the “MODULATION” section.

This receiving and transmitting of notes, is always done on the common midi channel, set in the “COMMON” section.

Sequencer tracks, that are in Internal mode, does not transmit any MIDI note on's or off's, from the sequencer playback. MIDI notes are only transmitted, when directly hitting a step button.

The internal assigned step buttons are assigned to these note numbers:

**Step button Note Number**

1 -C	36
2 -C#	37
3 -D	38
4 -D#	39
5 -E	40
6 -F	41
7 -F#	42
8 -G	43
9 -G#	44
10 -A	45
11 -A#	46
12 -B	47
13 -C	48
14 -C#	49
15 -D	50
16 -D#	51
17 -E	52
18 -F	53
19 -F#	54
20 -G	55
21 -G#	56
22 -A	57
23 -A#	58
24 -B	59
25 -C	60
26 -C#	61
27 -D	62
28 -D#	63
29 -E	64
30 -F	65
31 -F#	66
32 -G	67

### **Trigger and step buttons in external mode:**

Step buttons, which has their sequencer track set up to external mode, will transmit note on's and off's on the note number selected for the sequencer track, on the midi channel selected for this.

Notes recorded on the sequencer will also be transmitted at sequencer playback.

These step buttons does not receive note on's and off's.

### **MIDI controllers (MIDI CC's)**

MIDI controllers assigned to edit knob 1 to 8 in the "KNOB CC" section, are received and used, if they are assigned to anything in the "MODULATION" section.

These cc's are also transmitted, when turning edit knob 1 to 8 on the preset select screen, the song select screen and the edit group select pages.

MIDI cc's 12 to 17 are always received, and used if they are assigned to anything in the "MODULATION" section.

They are always transmitted and received on the common midi channel, set in the "COMMON" section.

### **MIDI clock, start, continue and stop**

Are received if the "Clck" parameter in the "COMMON" section is set to "Ext", and transmitted if the "Xmit" parameter is set to "On". Unlike many other MIDI devices, Little deFormer will re-transmit a clock coming from an external device, if Xmit is on.

When receiving these messages, the internal sequencer will sync to the clock, and start or stop.

## **Transmit and receive presets via MIDI**

If you would like to share some of your presets with other deFormer users, or your second deFormer, or if you would like to back up your presets, or try some of the new presets on the GotharMusic site, that is possible.

### **Transmit preset:**

Connect the MIDI out of your Little deFormer, to MIDI in of a computer, your second Little deFormer, or any other device that can record MIDI sysex.

Select the preset you would like to transmit, on the preset select screen.

Enter the "FLASH" section. The first function in this section is: "Send Preset?".

Push the "Edit" button, and Little deFormer will transmit all the parameter settings and sequences from the selected preset.

### **Receive preset:**

Connect the MIDI in of your Little deFormer, to MIDI out of a computer, your second Little deFormer, or any other device that can transmit MIDI sysex (.syx) files.

Select the preset location, on Little deFormers preset select screen, on which you want the preset transferred to.

Transmit the preset file to your Little deFormer.

The name of the transferred preset will appear as the current preset name.

Listen to the preset.

To keep the transferred preset, you must remember to save it.

# Updating the Little deFormer firmware

**IMPORTANT: Before you update your Little deFormer firmware, please perform a SRAM test, as described on page 54. If your Little deFormer fails the SRAM test, you should not perform the firmware update, but ship it in for service first.**

Occasionally there will be firmware updates available at:

<http://www.gotharman.dk/deformer.htm>

These will be bug fixes or adding of additional functions or effects, so it might be a good idea getting familiar with, how to update the firmware of your Little deFormer.

You will need:

- Your Little deFormer
- A computer with internet connection
- A MIDI interface connected to your computer
- A MIDI cable

1. Go to the abovementioned deFormer website, and download the latest firmware to your computer. The firmware will usually consist of 2 files, named t.ex:

ldefd1\_268.syx  
and  
ldefd2\_135.syx

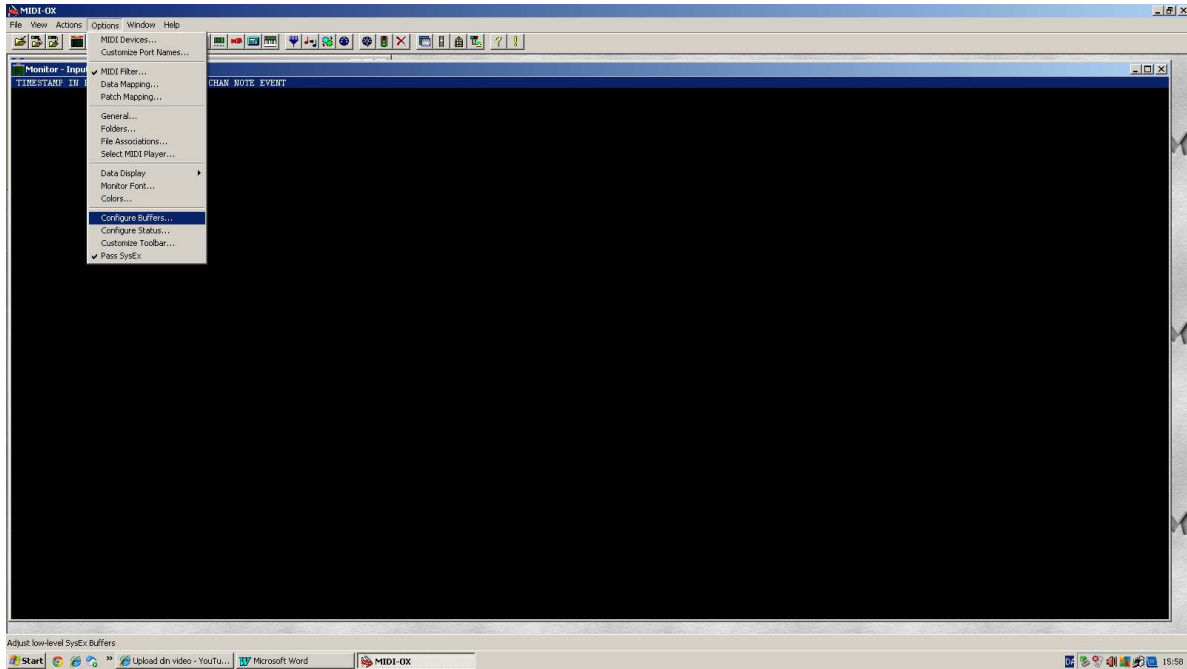
2. If you haven't done it already, go to:

<http://www.midiox.com/>

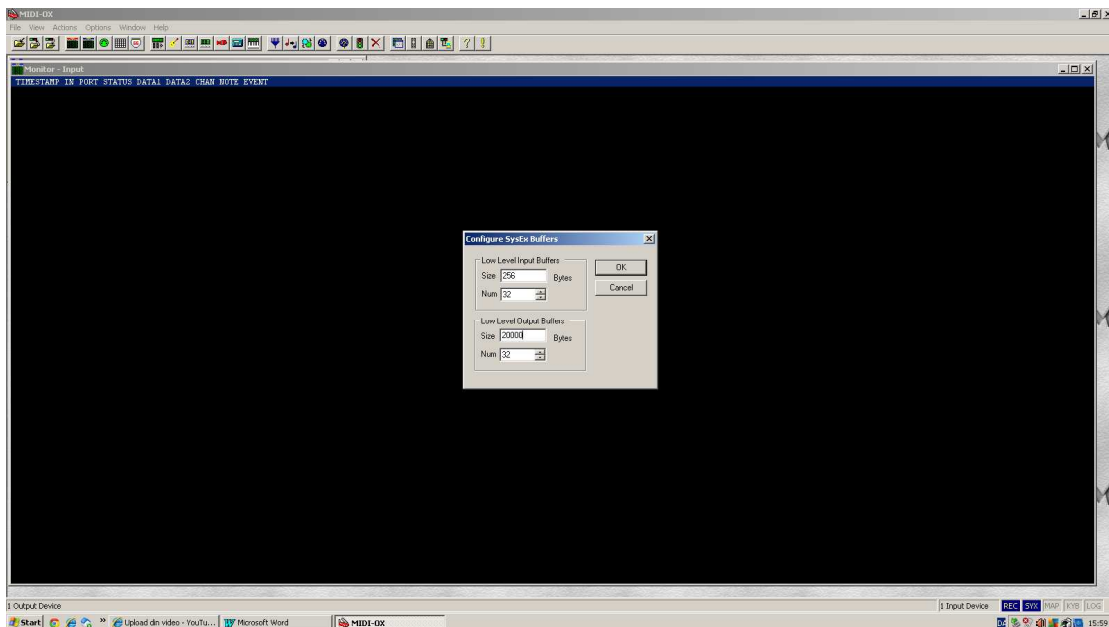
and download the free MIDI utility program MIDI-OX. And please donate, if you feel like. It is probably also possible to use other programs that supports .syx files, but the Little deFormer firmware updates has been created using MIDI-OX, so this program is for sure the one that will work best.

3. Install MIDI-OX on your computer. You shall be very welcome to skip this step, if you have already done this.

4. After installing MIDI-OX, open the program, and click on "Options" > "Configure Buffers":

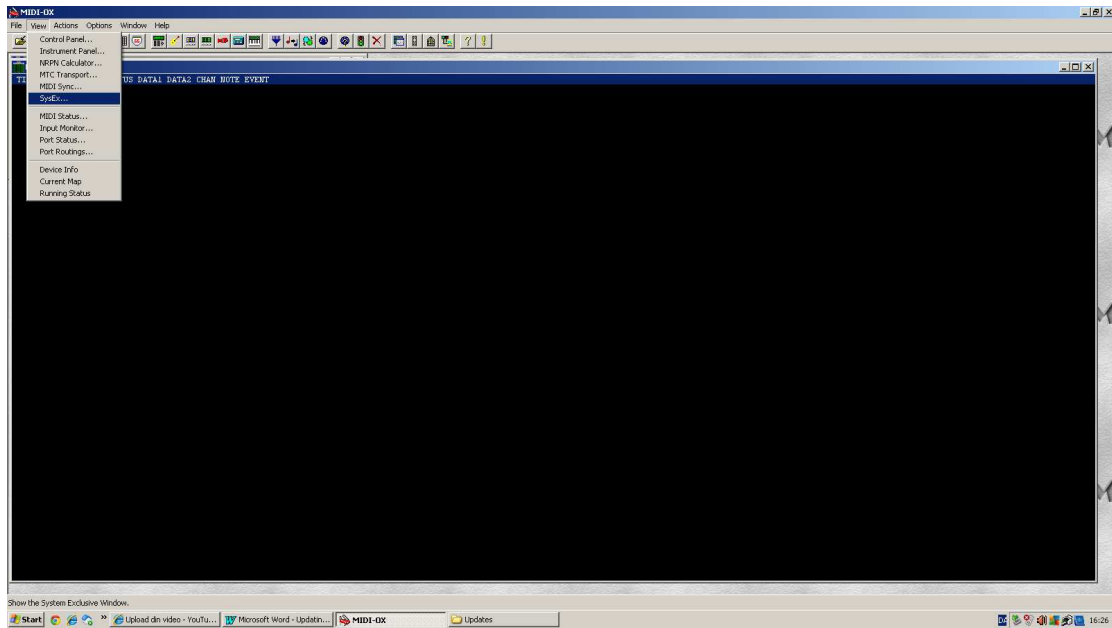


5. Enter the number "20000" in the "Bytes" box under "Low Level Output Buffers"

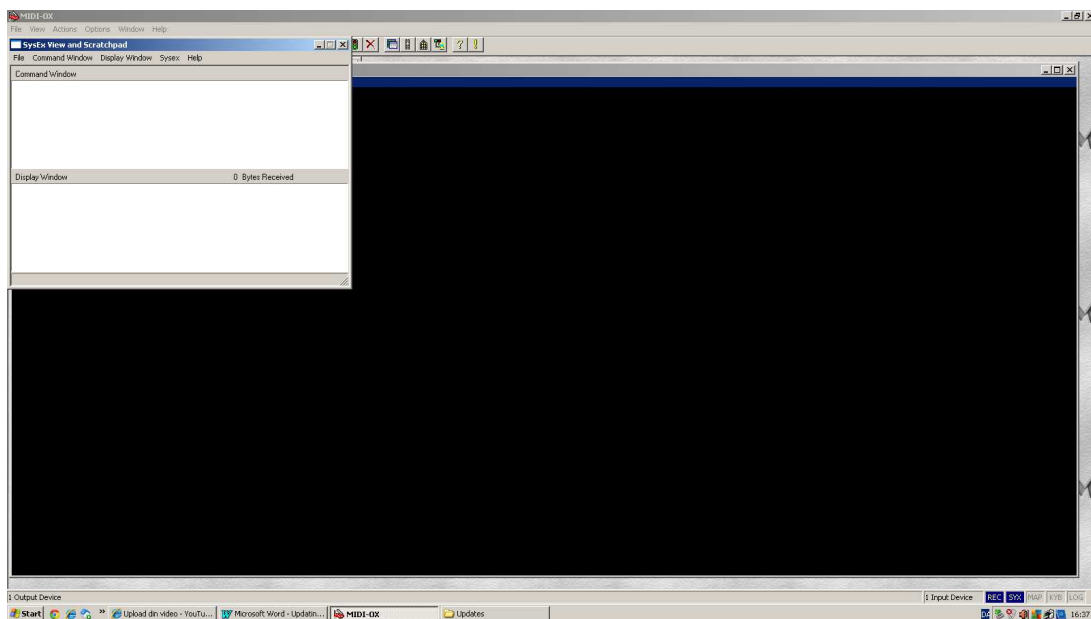


6. Click "OK".

7. Go to "Options" > "MIDI devices", and select the MIDI interface you intend to use for the updating, as your output device.
8. Connect MIDI out on the selected MIDI interface to MIDI in on your Little deFormer.
9. Click on "View" > "Sysex"



12. It now should look like this:





13. On your Little deFormer:

-Turn it off.

-Hold down the "Edit" button, while turning it on.

-The display should now read:

Waiting for  
MIDI data...

## OR:

-From the preset select screen, push the "Edit" button one time.

[AnaBeat           ]           A01       (0- 0)  
Kn1 Kn2 Kn3 Kn4 Kn5 Kn6 Kn7 Kn8

-Push the "Inc" button until the display reads:

FLASH

-Push the "Edit" button one time.

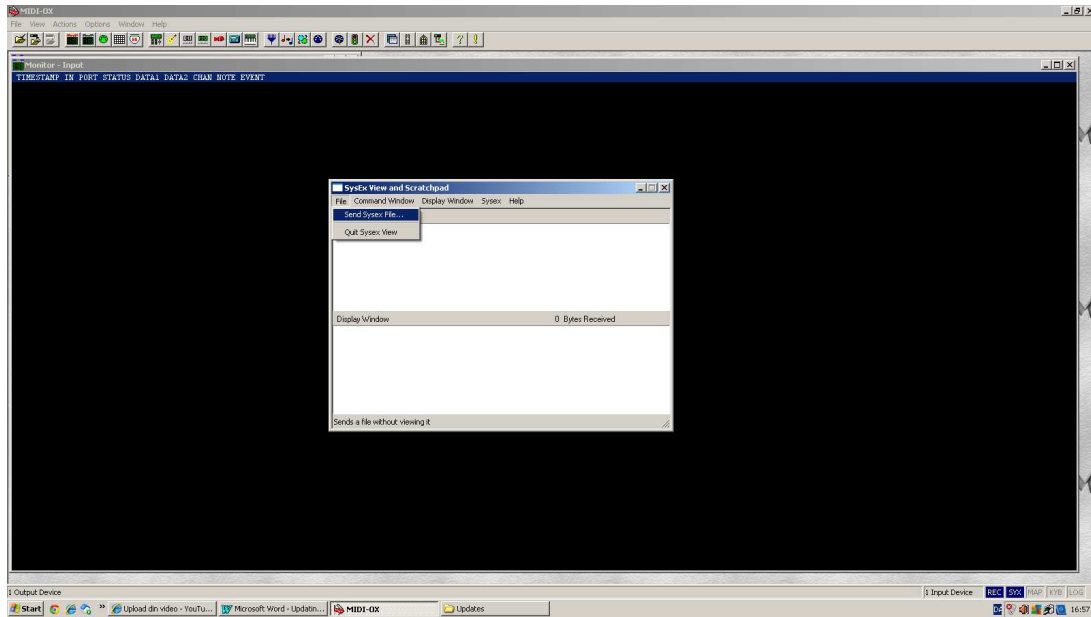
-Push the "Inc" button until the display reads:

UPDATE OS?  
Push <edit>

-Push the "Edit" button one time, and the display will read:

Waiting for  
MIDI data...

14. On MIDI-OX, in the Sysex view: Click "File" > "Send sysex file".



15. A file browser will open. Locate the .syx files you downloaded from the deFormer site, select one of them, and click "Open".

MIDI-OX will now transfer the file to your computers MIDI out, where you have, hopefully, connected your Little deFormer.

If you have, its display will now read:

```
Receiving...
0A
```

The hex number in the bottom of the display will be constantly incrementing. This indicates, that it is receiving the MIDI data. If this number stops incrementing, there might be something wrong with your MIDI connection, and you should turn off your Little deFormer, and check it out. If you are sure your connections are ok, try to go back to step 5, and put a higher number in the "Low level output buffers" box, for instance "40000".

When all data is received successfully, the display will change to:

```
Programming...
```

It will stay there for some seconds, and then it will change to:

```
UPDATE SUCCESSFUL
Pls turn me off
```

16. Turn off your Little deFormer, and turn it on again. Go back to step 13, and repeat the process, for transmitting the other .syx file. When you have done that, your Little deFormer is updated.

If your Little deFormer any where in the process reads:

CHECKSUM ERROR!

Something has went wrong somewhere. If it does this repeatedly, your MIDI cable might be bad, or your MIDI interface might not be stable enough to perform an update.

## List Of Included Samplings

All samplings starting with **"dm"** is from **Gotharman's deMOON**.

All samplings starting with **"an"** is from **Gotharman's anAmono**.

All samplings starting with **"mg"** is from **Gotharman's microGOTHAR**.

All samplings starting with **"mt"** is from **Gotharman's microGOTHAR 2**.

All samplings starting with **"mv"** is from **Gotharman's microVOTHAR**.

All samplings starting with **"v8"** is from **Gotharman's Vothar 8**.

All samplings starting with **"cs"** is from **Gotharman's rebuild Yamaha CS-20M**.

All samplings starting with **"gc"** is from some special **Gotharman circuits**, build for a special sound purpose.

- 01 dmBass3
- 02 dmBpAdd
- 03 dmValve
- 04 dmValve 2
- 05 dmValve 3
- 06 dmValve 4
- 07 dmTalkinValv
- 08 dmDenver
- 09 dmChorus
- 10 dmFroggy
- 11 dmGran
- 12 dmBass0
- 13 dmUnisonBass
- 14 dmLeadSound
- 15 dmChorus2
- 16 dm1000bass
- 17 dmWhoi
- 18 dmWishstring
- 19 dmSteps
  
- 20 anSweep
- 21 anBass4
- 22 anFeedSound
- 23 anFeedSeq
- 24 anOyba
- 25 anFass
- 26 anDessSolo
- 27 anBass1
- 28 anSweep2
- 29 anBass3
- 30 anBass5
- 31 anGlitch
- 32 anGlitch2
- 33 anGlitchBass

34 anGlitchBas2  
35 anMouthHarp  
36 anUglyCan  
37 anDriveBass  
38 anDriveLead  
39 anSoloSofia  
40 anVintageDis  
41 anVintageDs2  
42 anDarkFeeD  
43 anNoiseTalk

44 mgHpf Rezo  
45 mgContraNoiz  
46 mgHard  
47 mgFuneral  
48 mgExpBass  
49 mgChorus  
50 mgChorus 2  
51 mgSineBazz  
52 mgSineBazz 2  
53 mgPolice  
54 mgSomeTzhing  
55 mgHumanLead  
56 mgVoxman  
57 mgLpf Rezo  
58 mgConspiracy  
59 mgHumanSynth  
60 mgMetalClavi  
61 mgVoiceCkav2  
62 mgFMclav  
63 mgOverVoxBas  
64 mgNoiseBox  
65 mgSizzBass  
66 mgLayerBass  
67 mgPveerBass  
68 mgVibraTone  
69 mgBlackNight  
70 mgBirdMare  
71 mgTolkar  
72 mgGothBabe  
73 mgGothBabe 2  
74 mgRobot  
75 mgWhipBass  
76 mgAcid  
77 mgHpf Reso 2  
78 mgRingNoise  
79 mgCrowded  
80 mgUndrRezo

81 mvRingBass  
82 mvSlapVox  
83 mv70'sBass  
84 mvMetalmanBs  
85 mvAhhh  
86 mvAhhh 2  
87 mvOrchestral  
88 mvSubmarine  
89 mvChoirT  
90 mvFeedBconga  
91 mvWhoi  
92 mvRingSweep  
93 mvSweepBass  
94 mvFat Choir  
95 mvMessChoir  
96 mvTalkNoise  
97 mvTalkMetal  
98 mvBass

99 mtBeaj  
100 mtWalkBass  
101 mtThim  
102 mtMaiden  
103 mtUnison  
104 mtUnivox  
105 mtWind  
106 mtMetalLine  
107 mtClickLine  
108 mtFeedAtmo  
109 mtMad Alien  
110 mtMad Alien2  
111 mtNoise  
112 mtRainBow  
113 mtScaryMan  
114 mtScaryMan2  
115 mtHellKids  
116 mtFormahhnt  
117 mtTalkBox  
118 mtWideBass  
119 mtWideBanc  
120 mtBlowOrch  
121 mtFormahhnt0  
122 mtWastePeak  
123 mtDistortion  
124 mtFlt Choir  
125 mtDistort 2  
126 mtKeepChoir  
127 mtPeak

128 mtPeak 2  
129 mtWintherChor  
130 mtBass  
131 mtMetalBass  
132 mtGunBass  
133 mtSpring  
134 mtSpringBass  
135 mtVocoder  
136 mtAngel  
137 mtNoisyBass  
138 mtDirty  
139 mtScratchy  
140 mtChurch  
141 mtCrasch  
142 mtScary Man4

143 csSpazeChoir  
144 csTied  
145 csAllpLp  
146 csAllpLp2  
147 csAllpLp3  
148 csMedievChor  
149 csMedievChr2  
150 csTrueChoir  
151 csSplatBass  
152 csStrings  
153 csSweep  
154 csSyncChoir  
155 csSyncChoir2  
156 csSyncFMlead  
157 csRumbling  
158 csMonoLead  
159 csItoldYOU  
160 csVintageVox  
161 csMaskChoir  
162 csUgne  
163 csHorror  
164 csMental  
165 csDrillinh  
166 csTbass  
167 csVoltage  
168 csOnAcid  
169 csCryaziD

170 v8Morphpsweep  
171 v8Peaker  
172 v8YowHarp  
173 v8Rangle

174 v8Noise1  
175 v8FeedNoise  
176 v8Basu  
177 v8Basu 2  
178 v8Tomy  
179 v8Metaltomy

## **Drums**

180 dmKick1  
181 dmKick2  
182 anKick1  
183 anKick2  
184 anKick3  
185 mgCrowdKick  
186 mgKick  
187 mtKick  
188 gcCemKick 1  
189 gcCemKick 2  
190 gcCemKick 3  
191 gcCemKick 4  
192 gcKick  
193 gcKick2  
194 gcKick3  
195 gcKick4  
196 gcKick5  
197 gcKick6  
198 gcKick7  
199 gcKick8  
200 gcKick9

201 dmSnare1  
202 dmSnare2  
203 anFeedSnare  
204 anFeedSnare2  
205 anFeedSnare3  
206 anFeedSnare4  
207 anRipApart  
208 anSnare1  
209 anSnare2  
210 anSnare3  
211 mgSnare  
212 mgSnare 2  
213 gcCemSnare 1  
214 gcCemSnare 2  
215 gcCemSnare 3  
216 gcCemSnare 4



217 anLofiClap  
218 gcClap  
219 gcNoise  
220 mgNoiseDrum  
221 mgNoiseDrum2  
222 dmBlok  
223 dmTom1  
224 dmTom2  
225 gcCemTom  
226 gcClosed Hat  
227 gcOpen Hat  
228 gcCymbal  
229 dmHihat  
230 anCymbal  
231 anCymbal 2  
232 anCymbal 3  
233 anCymbal 4  
234 anFeedDrum1  
235 anFeedDrum2  
236 anFeedDrum3  
237 anFeedDrum4  
238 anFeedDrum5

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