



d16 group

Decimort 1.2.0

/ˈdesimɔːt/

Owner's manual

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Chapter 1

Overview

Decimort is a stereo high quality (ultra low aliasing) bit crusher.

After loading the plug-in within a host application, the GUI will appear:

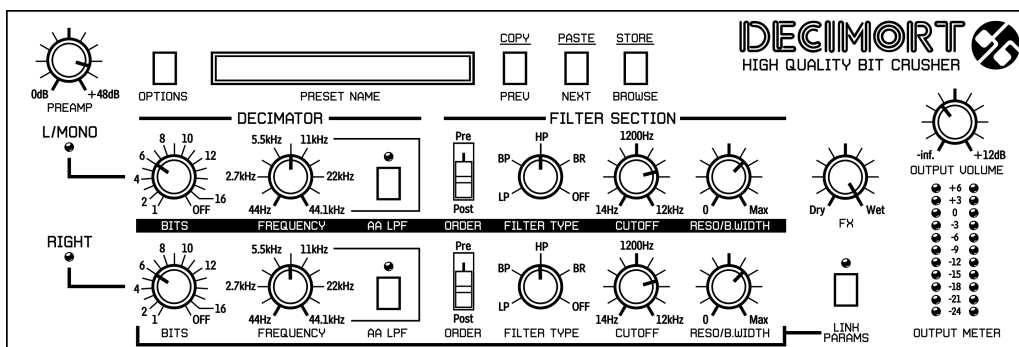


Figure 1.1: Decimort graphical interface

There are two sections:

- Configuration and preset management

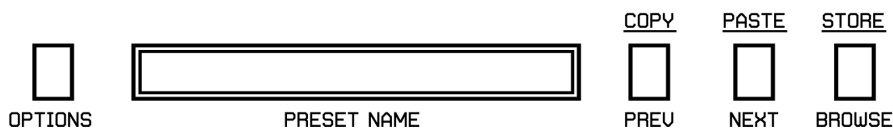


Figure 1.2: Configuration and preset management section

- Signal processing control section consists of the all remaining controls.

Chapter 2

Signal flow

This chapter describes the path of the signal's flow through the Decimort plug-in, presents the basic components of this effect unit and its control parameters.

2.1 Basic modules

The inside of Decimort consist of a few basic components, that correspond to the sections on the graphical interface:

2.1.1 Dual decimation unit

It is able to process two channels separately (left and right of stereo channel) in stereo mode, or only single channel (left) in mono mode.

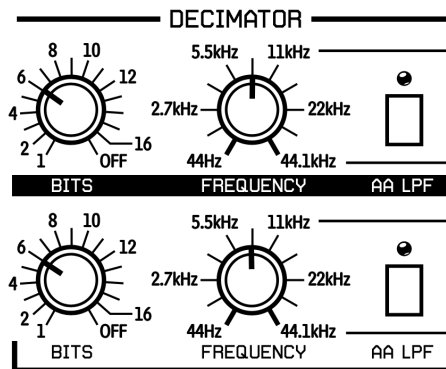


Figure 2.1: Dual decimation unit

Decimator is controlled by two parameters:

Bits - Number of bits the input signal is downgraded to. Values we can choose from range 1 to 16 bits and additional value: Off, which means the input signal won't be degraded in amplitude domain.

Frequency - New sampling frequency to which the is degraded to in time domain.

There's yet another control on a GUI, namely **AA LFP** - *Anti Alias Low Pass Filter*. Turn this button on to set additional lowpass filter synchronized with **Frequency**, to protect the signal against a "resampling images".

2.1.2 Dual filter section

After (or before) crushing signal we can also filter it a bit by analogue-like (pass/reject) filters with adjustable resonance. There're two such units - one for each channel (left and right), connected in series with a bit crusher.

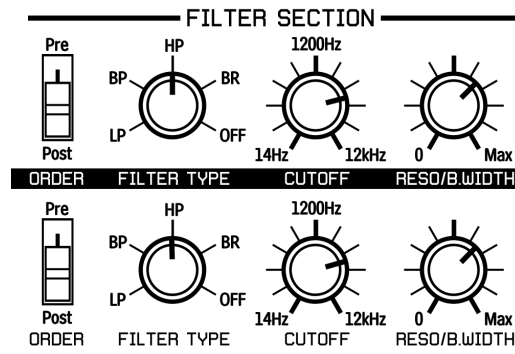


Figure 2.2: Dual filtering unit

Single filter section is controlled by a following parameters:

Filter type - There're 4 types of filters we can choose from: **LP** (low pass), **BP** (band pass), **HP** (high pass) and **BR** (band reject). **OFF** position - turns the filter off.

Cutoff - Cutoff frequency for **LP** and **HP**, and center of the band for **BR** and **BP**.

Reso/B.Width - Resonance for **LP** and **HP**, and band width for **BR** and **BP**.

Order - This switch has two values: when switch set to **Pre**, signal is filtered then decimated, **Post** - in this position, signal is first decimated and then filtered.

2.1.3 Master section

This section controls the end of signal's flow. The **Fx** knob defines the ratio between the processed/unprocessed sound that is sent to an audio out. **Output volume** controls the final amplification.

Link params button works only in stereo mode.

Turning this parameter on, makes all components controllable by the knobs of only left channel. It means that the parameters of the decimator and filters for left channel will be assigned to their equivalents in the right channel as well. The left and right channel will be processed individually with the same parameters.

Turning this parameter off will make processing left and right channel completely independent.

It allows to achieve very interesting stereo effects.

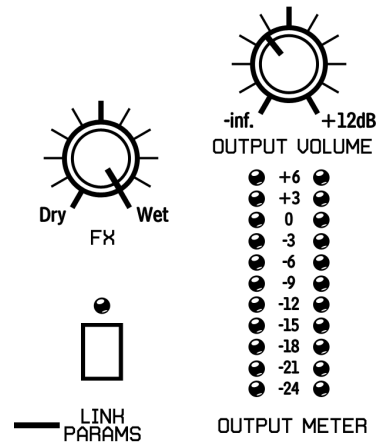


Figure 2.3: Master section

2.2 Path of the signal's flow

See pictures below, that show the signal path inside Decimort.

2.2.1 Signal flow through decimator and filter in mono mode

Decimort inserted into the mono track works in mono mode. To control parameters for signal path in this mode, use GUI controls only for the left channel.

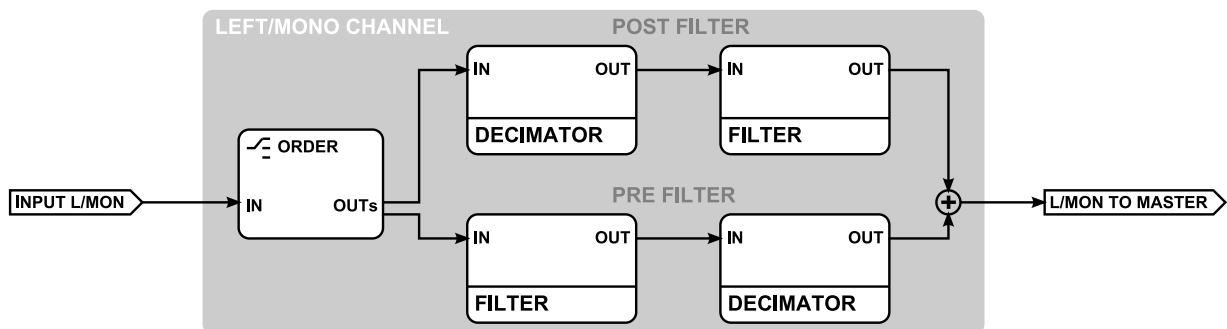


Figure 2.4: Mono signal flow through decimator and filter only

2.2.2 Signal flow through decimator and filter in stereo mode

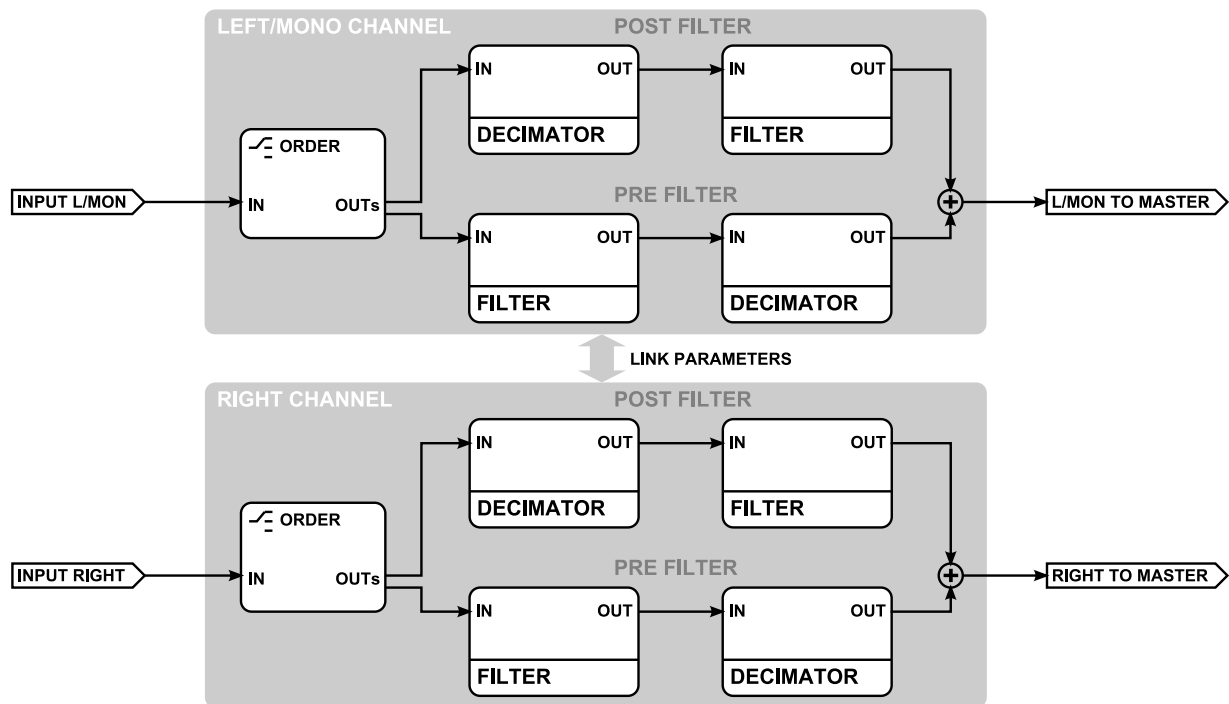


Figure 2.5: Stereo signal flow through decimator and filter only

Chapter 3

Preset management

3.1 Browsing presets

Presets are organized into groups. Storing like this is not compatible with the native method used by the host application. The user can see presets in the browser as being assigned to particular groups (defined by user).

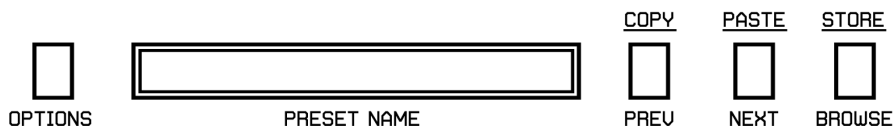


Figure 3.1: Configuration and preset management section

The user interface Preset Management controls are:

Preset name - This displays the name of currently selected preset. It also allows editing of the preset name.

Prev/Next - Those buttons are used to navigate through all presets (whole bank), **Next** button moves to the next slot, and **Prev** button to the previous one. When the end of a group of presets is reached, the first slot of the next group will be chosen when the **Next** button is pressed again. Similar action will be performed if we press the **Prev** button when the beginning of a group is reached.

Prev + Ctrl - **Prev** button pressed with **Ctrl**¹ key, copies current preset slot to buffer.

Next + Ctrl - **Next** button pressed with **Ctrl** key, pastes buffer to current preset slot with postfix *_copy* added to its name.

Browser - Allows selection of presets using a browser menu.

¹On MacOS use **Apple** key instead of **Ctrl** key.

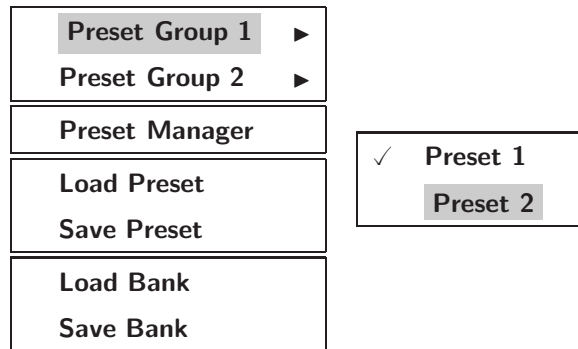


Figure 3.2: Browsing presets via context menu

It is worth mentioning that changing any of the presets is not permanent. After removing and reloading the plug-in again, the factory presets will be recalled. However, saving the project within the host application with Decimort, and reloading that project will cause a recall of all changes we have made in this project.

3.2 Loading and Saving presets

There are some additional options that add functionality to preset management. They are placed in the context menu which is accessible from the **Browse** button:

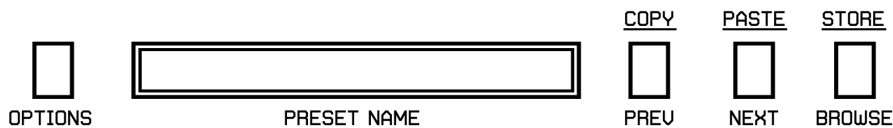


Figure 3.3: Configuration and preset management section

When we click this button, the context menu is unfolded:

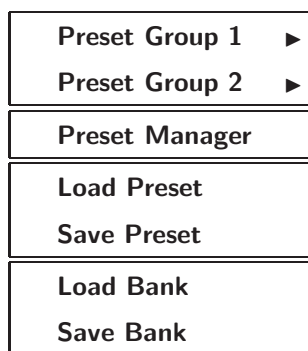


Figure 3.4: Preset management - under Browse button

In this chapter, we'll focus on the first 4 items:

Load Preset - Loading preset and overwrite the active slot from the file (**.dcprs- Decimort Preset**).

Save Preset - Saving current preset as a file (**.dcprs- Decimort Preset**) ².

Load Bank - Loading whole bank of presets from file (**.dcprsb- Decimort Bank**).

Save Bank - Saving whole bank of presets as a file (**.dcprsb- Decimort Bank**).

Note: *Internal files written by a Decimort are in XML format and can be edited in a text editor.*

3.3 Preset manager

As was mentioned earlier, presets in Decimort are organized into groups. Presets can be chosen from the context menu (under the **Browse** button). **Preset manager** is a tool, which allows to easy management of the presets structure. To open it, just click the **Browse** button:

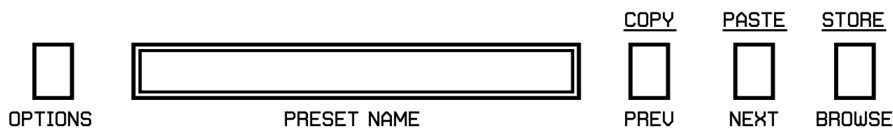


Figure 3.5: Configuration and preset management section

From the context menu choose **Preset Manager**:

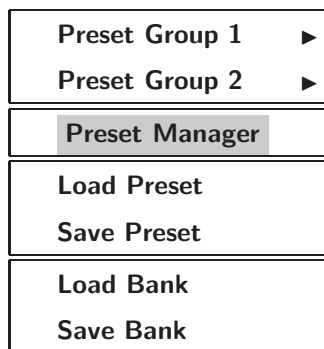


Figure 3.6: Preset manager - Item

The Preset Manager menu will appear.

²Before saving single preset, remember to **Store** it using **Ctrl + Browse** button if **On demand** preset storing is active, which is default behavior.

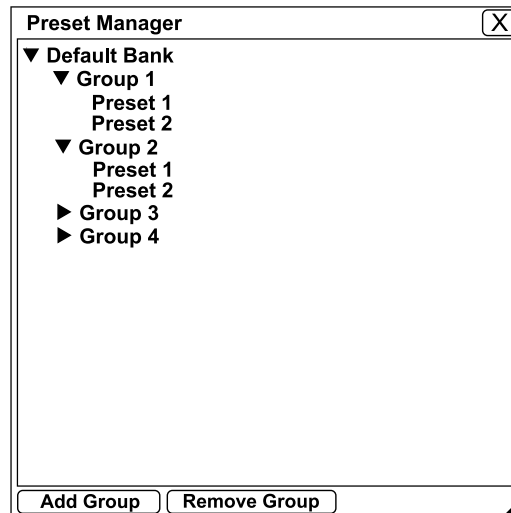


Figure 3.7: Preset manager window

This shows the preset structure with the bank name as the root. A preset represents the deepest level of the structure.

Each of the items can be renamed by double clicking on the item with the mouse.

The preset structure appears as a standard list of presets within the host application making it fully compatible with it. As a result, no matter how the structure is represented (either as a tree structure or flat), the maximum number of presets is 128. The number of presets in this structure cannot be changed. We can only move the presets from one group to another (by dragging) or changing their order in group. The Group order in the bank can also be changed by dragging.

There are two buttons at the bottom of the **Preset Manager** window.

Add group - Adding the empty group in a bank.

Remove group - This removes a group from a bank – but only when it is empty. It means that all preset slots were reallocated among the existing groups.

To exit from the **Preset manager** press the **Cross** button in the top right corner.

3.4 Preset storing

Using **Next**, **Prev** buttons within **Preset Manager** we can navigate through the preset bank. Any change made in preset can be stored automatically or on demand:

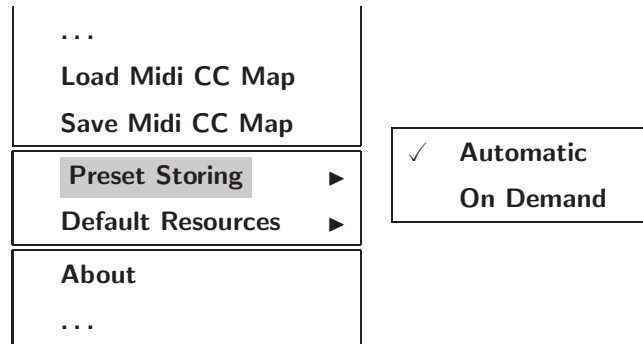


Figure 3.8: Preset storing flag

Automatic - When any parameter in the current preset is changed, it is automatically stored.

On demand - If a parameter is changed, the change is not saved within the preset until the **Store** button is pressed (**Ctrl** key + **Browse** button)³. Navigating to a new preset will cause changes to be lost unless stored. This is the default.

This Preset Storing flag is stored in a configuration file and applies to all newly inserted instances of the plug-in. Saving the configuration file is performed after closing any instance of the plug-in.

³On MacOS use **Apple** key instead of **Ctrl** key

Chapter 4

Configuration

4.1 Midi control

Decimort has an ability to assign its controls (on GUI) to any **MIDI Control Change** code (**MidiCC**), This allows control of the plug-in using external software or hardware.

Note: *This feature works only in VST version, AU effect plug-in has no midi input necessary to receive midi messages.*

4.1.1 Midi learn

To assign a Decimort control to a midi controller:

1. From the context menu under **Options** button, we set **Midi Learn Mode**.

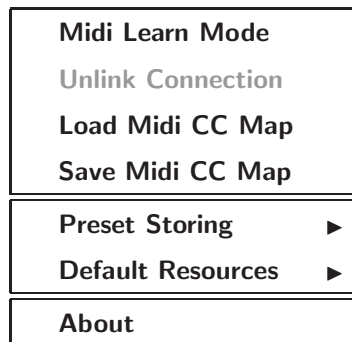


Figure 4.1: Options Menu

2. In the **Preset name** edit box, the *waiting...* message will appear. In this mode, plug-in is waiting for any movement of its controls on GUI or any of controls on the external midi controller connected to a host (with an active midi input channel directed to Decimort). The edit box will display the name of currently modified control.
3. When the control is set, go to the **Options** context menu and uncheck the **Midi Learn Mode** option. Last modified control on GUI will be assigned to the last moved control on the midi controller.

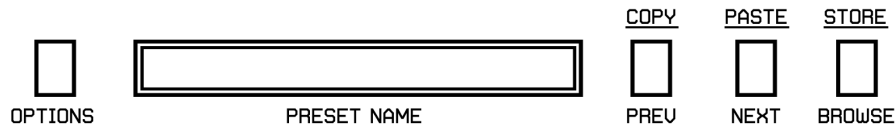


Figure 4.2: Configuration and preset management section

4.1.2 Midi Unlink

To disconnect midi controller and Decimort GUI's control:

1. From the context menu under **Options** button, we set **Midi Learn Mode** first.

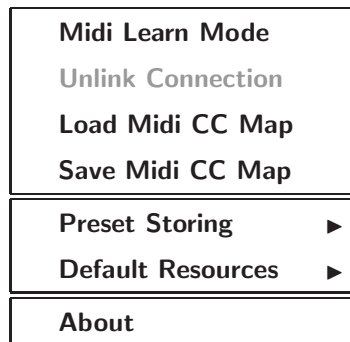


Figure 4.3: Options Menu

2. In the **Preset name** edit box, the *waiting...* message will appear. In this mode, plug-in is waiting for any movement of its controls on GUI or any of controls on the external midi controller connected to a host (with an active midi input channel directed to Decimort). The edit box will display the name of currently modified control.
3. **Unlink Connection** item in **Options** menu is activated now. Click it to disconnect Midi CC and GUI's control. ¹
4. Uncheck the **Midi Learn Mode** option.

4.1.3 Loading and saving Midi Map

To save a Midi Map (mapping of GUI's controls with MidiCC), we can use the option from the context menu, which is accessible under the **Options** button:

¹You're allowed to unlink few connections one by one, by repeating steps 2 and 3.

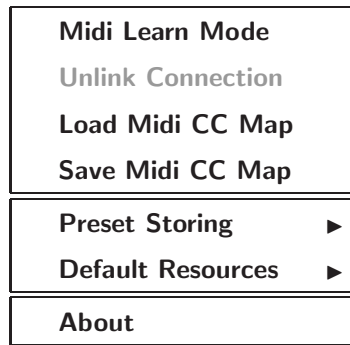


Figure 4.4: Options Menu

Load Midi CC Map - Loading a Midi Map from file (**.dcccmap- Decimort Control Map**).

Save Midi CC Map - Saving a current Midi Map to file (**.dcccmap- Decimort Control Map**).

Note: *Midi Map files written by a Decimort are XML standardized, it means You can re-edit them within any text editor.*

4.2 Default resources

There're included some default presets with Decimort or empty Midi CC map. These are loaded every time it is started. This can be changed to point to user default presets or default Midi CC map.

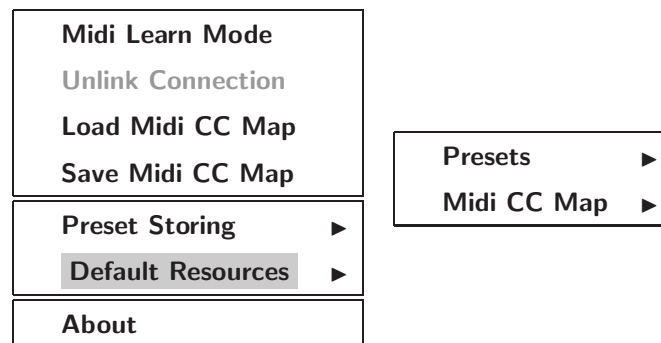


Figure 4.5: Default resources

The following types of resources can be replaced by user's ones and those will be loaded every time new instance of plug-in be loaded:

Presets - Default Decimort's Preset Bank (**.dcprsb**)

Midi CC Map - Default Decimort's Midi CC Map (**.dcccmap**)

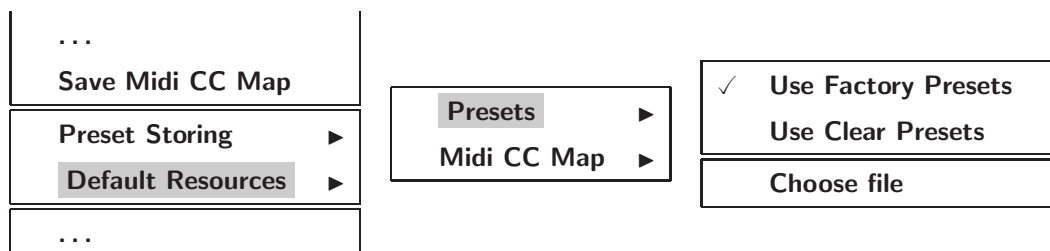


Figure 4.6: Default presets

4.2.1 Default presets

To set the default bank of presets, use the options from the **Presets** submenu: We can choose one of following options:

Use Factory Presets - This is default one after installation of Decimort. If You choose this option, default bank of presets becomes the factory one provided within plug-in by producer.

Use Clear Presets - After choosing this item from menu, the default bank will contain all presets consisting of zeroed parameters.

Choose File - It's possible to set by user his own default bank of presets he previously made, by using this option. **Choose File** opens a file dialog to browse a location where the bank of presets made by user is saved. When user confirms, the path to that bank is stored in the Decimort's configuration file. And this bank becomes the default one.

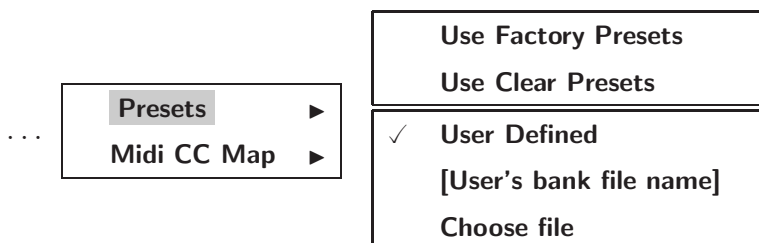


Figure 4.7: User's default presets

When the user's bank is set as a default preset bank, the menu indicates this fact by showing the checked **User Defined** menu item, and one row below the file name of user's preset bank.

4.2.2 Default Midi CC Map

The option used to set the default Midi CC map. Only two options are available in this submenu:

No Mapping - It is the default one, mean no default Midi CC mapping is available after loading Decimort into the host application.

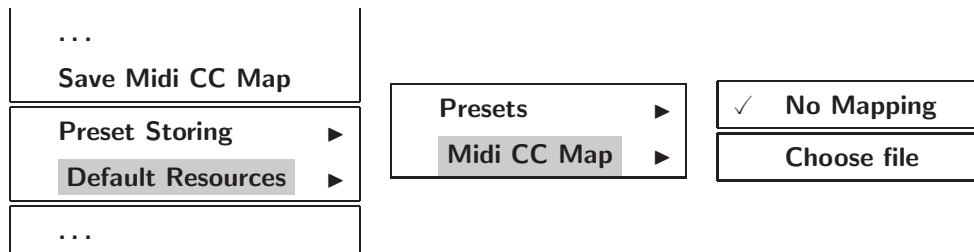


Figure 4.8: Default Midi CC Map

Choose file - Similarly to selecting default preset resource, this options is used to set the default Midi CC Map, which will be loaded every time we load Decimort in the host application. When we set the path to Midi CC Map using this options, it's indicated by showing Midi CC Map file name in this submenu:

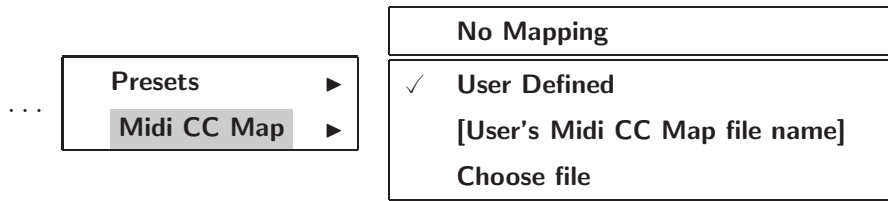


Figure 4.9: User's default Midi CC Map

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DECIMORT

HIGH QUALITY BIT CRUSHER



0dB PREAMP +48dB

L/MONO

OPTIONS

PRESET NAME

COPY PASTE STORE

PREV NEXT BROWSE

DECIMATOR

8 10 12 16 OFF

4 2 1

5.5kHz 11kHz 22kHz 44.1kHz

44kHz

FILTER SECTION

HP BP LP OFF

14kHz 12kHz 0 Max

Pre Post

Dry FX Wet

-inf. +12dB

OUTPUT VOLUME

FREQUENCY

8 10 12 16 OFF

4 2 1

5.5kHz 11kHz 22kHz 44.1kHz

44kHz

ORDER FILTER TYPE CUTOFF RESO/B.WIDTH

HP BP LP OFF

14kHz 12kHz 0 Max

Pre Post

RIGHT

OUTPUT METER

LINE PARAMS

+6 +3 0 -3 -6 -9 -12 -15 -18 -21 -24