



d16 group

Toraverb 1.2.1

/ˈtoravəɪb/

Owner's manual

Acknowledgement: Sebastian Bachliński
Gary Brennan

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Chapter 1

Overview

Toraverb is a studio quality reverberating effect unit with modulated tail.

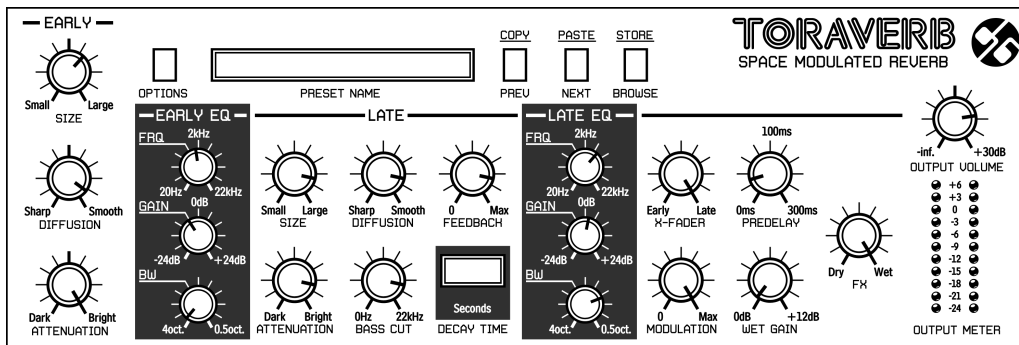


Figure 1.1: Toraverb graphical interface

We can distinguish two sections there:

- Configuration and preset management

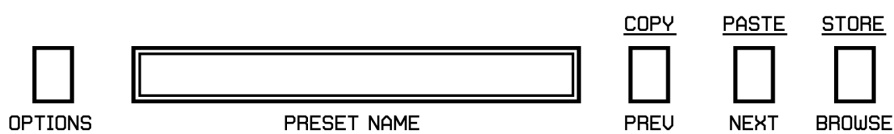


Figure 1.2: Configuration and preset management section

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

Chapter 2

Signal flow

This chapter describes the signal path through Toraverb. It explains the basic components of the unit and its control parameters. Basic modules.

2.1 Basic modules

Internally Toraverb consists of a few basic components. These correspond to the sections on the graphical user interface:

Early reflections - This section controls the early reflections of reverb.

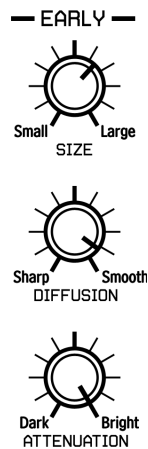


Figure 2.1: Early reflections

There're three parameters to control this section:

Size - Size of the room for early reflections only.

Diffusion - It's the reflecting surface's ability to spread the echo out. If this parameter is set to *Sharp*, reflecting surface is perfectly flat and doesn't distort reflected wave. In a case of setting this value to *Smooth*, reflecting surface distorts wave and spread out into different directions.

Attenuation - This parameter changes the characteristic of the wall's surface, its dumping properties.

Early EQ - Single peak parametric EQ for early reflections' output:



Figure 2.2: Early reflections - Parametric EQ

It's controlled within following parameters:

Frq - Centre frequency of a peak.

Gain - Gain value for a band $[-24\text{ dB} \dots 24\text{ dB}]$.

Bw - Width of the band $[4\text{ octaves} \dots 0.5\text{ octave}]$.

Late reflections - Parameters controlling the late reflections of reverb.

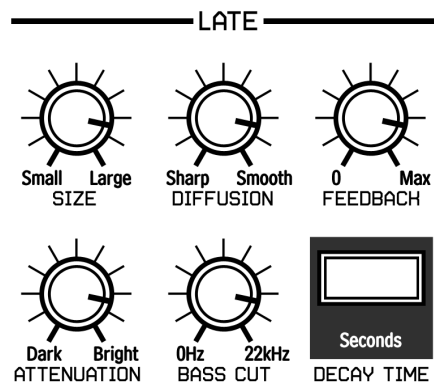


Figure 2.3: Late reflections

Size - Size of the room for late reflections only.

Diffusion - It's the reflecting surface's ability to spread the echo out. If this parameter is set to *Sharp*, reflecting surface is perfectly flat and doesn't distort reflected wave. In a case of setting this value to *Smooth*, reflecting surface distorts wave and spread out into different directions.

Feedback - Controls how much of wave energy is consumed every reflection. The less value the more energy consumes every reflection, that means the feedback is weaker then.

Attenuation - This parameter changes the characteristic of the wall's surface, its dumping properties.

Bass cut - It's another parameter, that controls other property of reflecting surface; what frequencies below the set one are absorbed by the surface. We can choose frequency from the range: $[0 \text{ Hz} \dots 22 \text{ kHz}]$

Decay time - It shows the current decay time of the whole reverberation path. Following parameters have influence on decay time:

- Early reflections: **Size**,
- Early reflections: **Diffusion**,
- Late reflections: **Size**,
- Late reflections: **Diffusion**,
- Late reflections: **Feedback**

Attenuation parameters for early and late reflections have also effect on **Decay time**, but it's not taken into account for calculations.

Late EQ - Single peak parametric EQ for late reflections' output:



Figure 2.4: Late reflections - Parametric EQ

It's controlled within following parameters:

Frq - Centre frequency of a peak.

Gain - Gain value for a band $[-24 \text{ dB} \dots 24 \text{ dB}]$.

Bw - Width of the band $[4 \text{ octaves} \dots 0.5 \text{ octave}]$.

Master section - There're global reverberation parameters

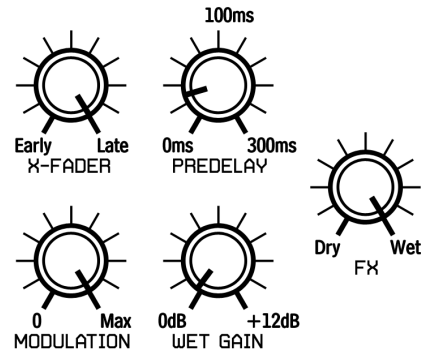


Figure 2.5: Master section

X-fader - Crossfade between early reflections output and late reflections output.

Pre-delay - Delay between dry signal and reverberation in milliseconds.

Modulation - It's a parameter, which controls delay lines disturbance.

Wet gain - Reverberated signal amplification. [0 dB ... +12 dB]

FX - Crossfade between Dry and reverberated signal.

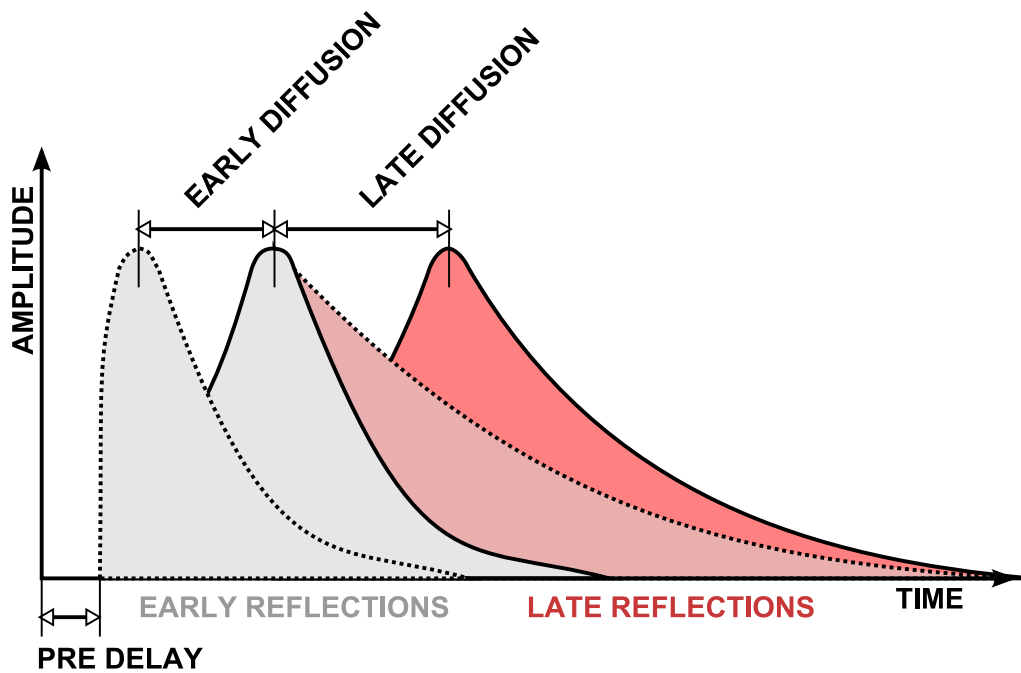


Figure 2.6: Signal reverberation

2.2 Path of the signal's flow

The picture below shows the signal flow through the plug-in:

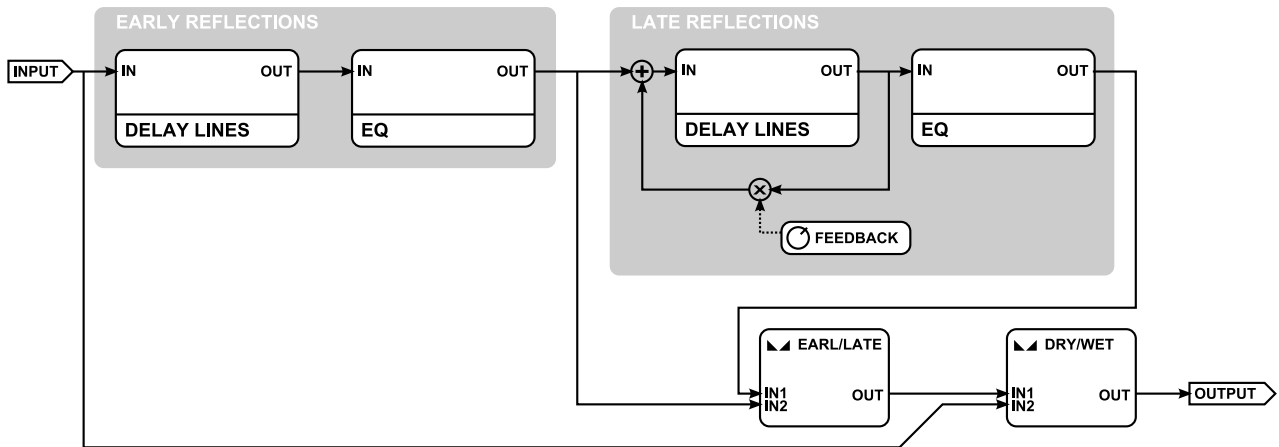


Figure 2.7: Signal flow through the plug-in

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).

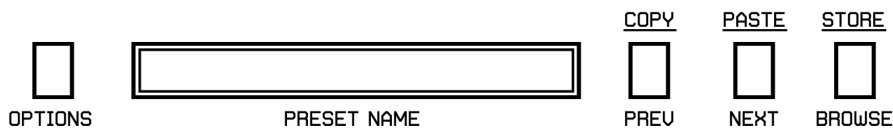


Figure 3.1: Configuration and preset management section

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 Toraverb, 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:

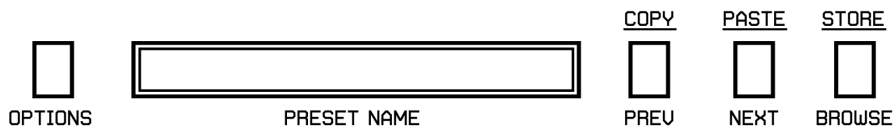


Figure 3.3: Configuration and preset management section

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

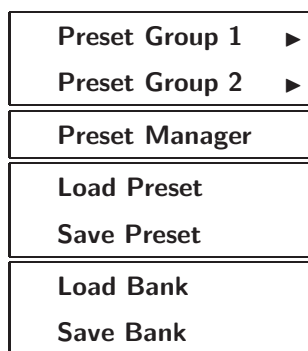


Figure 3.4: Preset management - under Browse button

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

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

Save Preset - Saving current preset as a file (**.trprs- Toraverb Preset**)².

Load Bank - Loading whole bank of presets from file (**.trprsb- Toraverb Bank**).

Save Bank - Saving whole bank of presets as a file (**.trprsb- Toraverb Bank**).

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

3.3 Preset manager

As was mentioned earlier, presets in Toraverb 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:

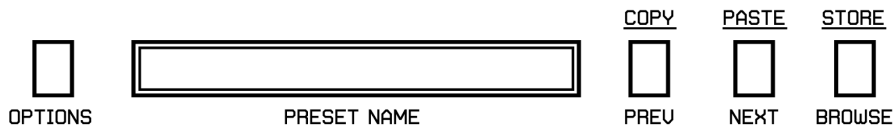


Figure 3.5: Configuration and preset management section

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

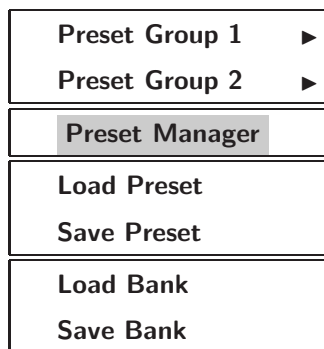


Figure 3.6: Preset manager - Item

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.

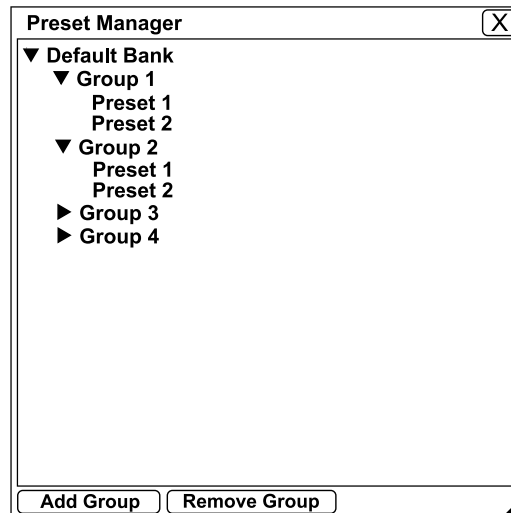


Figure 3.7: Preset manager window

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:

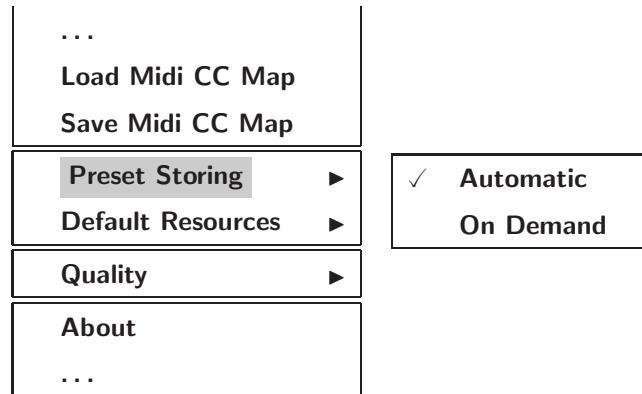


Figure 3.8: Preset storing flag

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

Toraverb 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 Toraverb control to a midi controller:

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

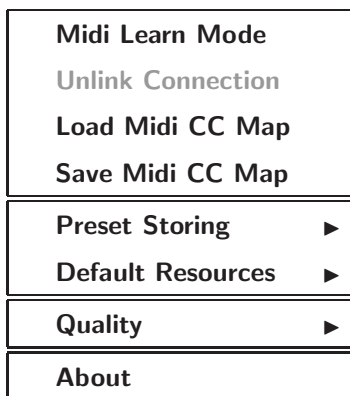


Figure 4.1: Options Menu

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 Toraverb). 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.

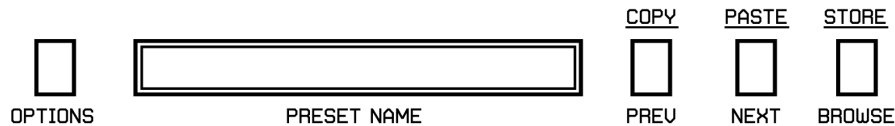


Figure 4.2: Configuration and preset management section

4.1.2 Midi Unlink

To disconnect midi controller and Toraverb GUI's control:

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

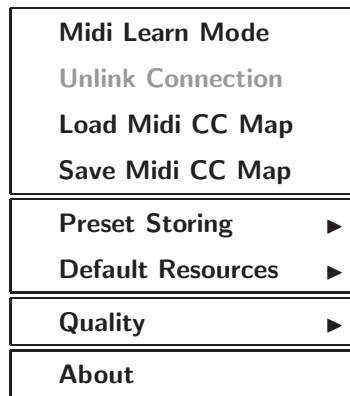


Figure 4.3: Options Menu

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 Toraverb). 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.

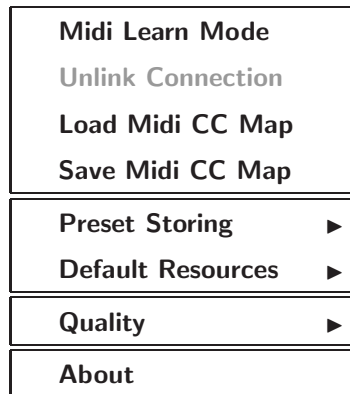


Figure 4.4: Options Menu

Load Midi CC Map - Loading a Midi Map from file (**.trccmap-** Toraverb Control Map).

Save Midi CC Map - Saving a current Midi Map to file (**.trccmap-** Toraverb Control Map).

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

4.1.4 Sound processing quality

We have to our disposal following possible grades:

Low (linear) - Linear interpolation of delay lines.

Medium (SINC8) - Sinc8 interpolation of delay lines.

Higher (SINC16) - Sinc16 interpolation of delay lines.

Highest (SINC32) - Sinc32 interpolation of delay lines.

That can be chosen from the **Quality** submenu:

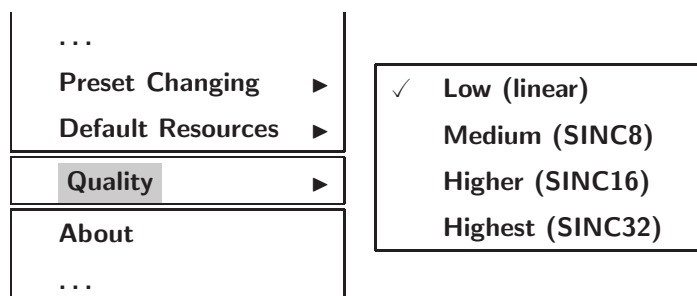


Figure 4.5: Quality control

The higher the quality of processing, the more CPU resources are required by the plug-in, but the better the sound quality. This setting is stored per single plug-in instance in the project file (in host application). It is not stored within the preset.

4.2 Default resources

There're included some default presets with Toraverb 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.

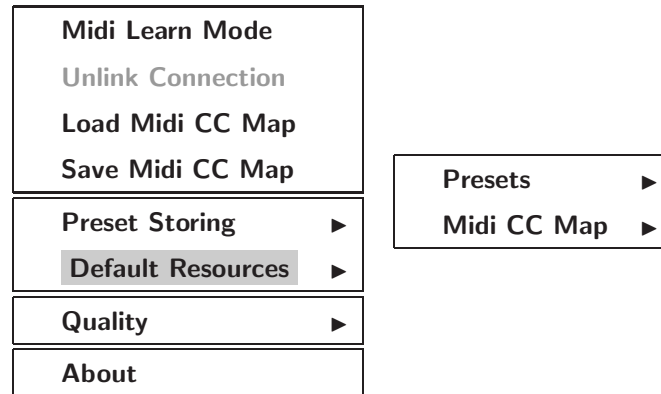


Figure 4.6: Default resources

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 Toraverb's Preset Bank (**.trprsb**)

Midi CC Map - Default Toraverb's Midi CC Map (**.trccmap**)

4.2.1 Default presets

To set the default bank of presets, use the options from the **Presets** submenu:

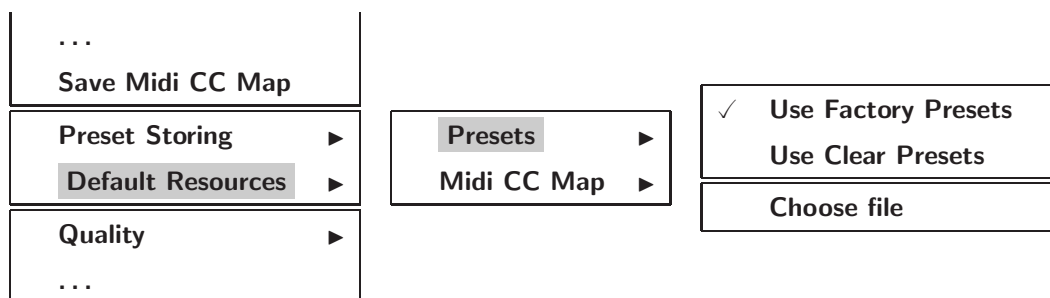


Figure 4.7: Default presets

We can choose one of following options:

Use Factory Presets - This is default one after installation of Toraverb. 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 Toraverb's configuration file. And this bank becomes the default one.

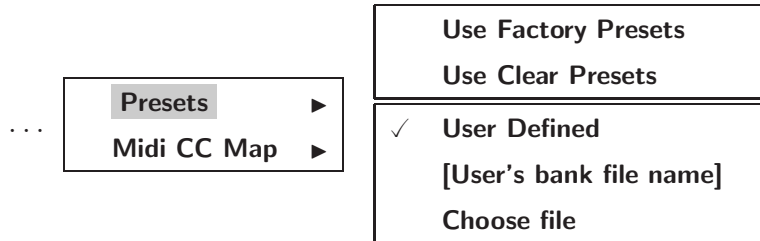


Figure 4.8: User's default presets

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.

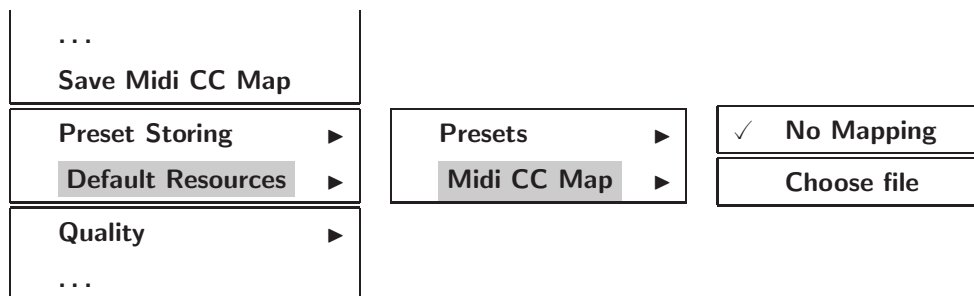


Figure 4.9: Default Midi CC Map

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 Toraverb into the host application.

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 Toraverb 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:

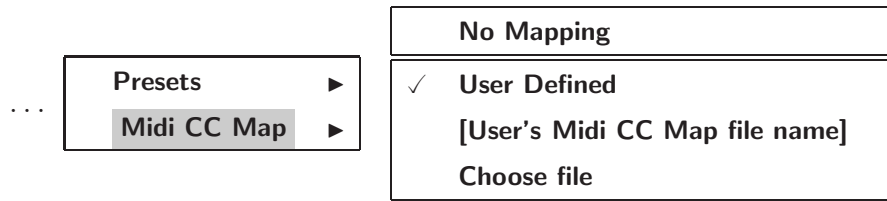


Figure 4.10: User's default Midi CC Map

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TOR AVERIB


SPACE MODULATED REVERB

— EARLY —

Small SIZE



Large SIZE



Sharp DIFFUSION



Smooth DIFFUSION



Dark ATTENUATION



Bright ATTENUATION



OPTIONS

PRESET NAME




— LATE —

— EARLY EQ —


FRQ 2kHz 20Hz 22kHz

GAIN 0dB -24dB +24dB


BLW 4oct. 0.5oct.




Small Large SIZE




Sharp Smooth DIFFUSION




Dark Bright ATTENUATION




0h 22kHz BASS CUT



Max FEEDBACK



Seconds DECAY TIME






— LATE EQ —

FRQ 2kHz 20Hz 22kHz

GAIN 0dB -24dB +24dB

BLW 4oct. 0.5oct.



COPY

PREV


PASTE

NEXT


STORE

BROWSE

Early X-FADER



Late X-FADER




0 Max MODULATION




0dB +12dB WET GAIN



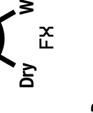
100ms 300ms PREDELAY




Dry FX



Wet FX



-inf. +30dB OUTPUT VOLUME



+6

+3

0

-3

-6

-9

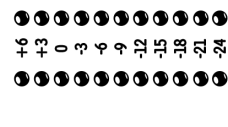
-12

-15

-18

-21

-24



OUTPUT METER