

5704GTFX Control Panel Users Guide

1. Overview

DREAM provides an Effect Designing tool with its 5704GTFX Product Development Kit. This Control Panel belongs to an integrated solution, to design factory presets of Multi-Effects and/or Amplifier model. Then this tool permits to generate a new firmware containing presets designed previously that will be ready for further internal flash operation on SAM5704.

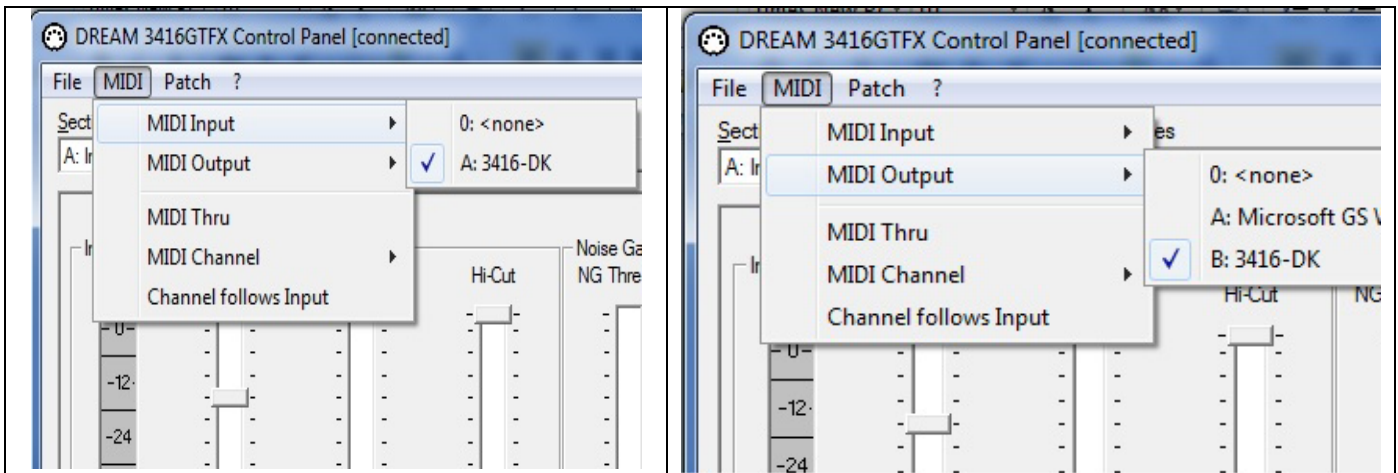
1.1 Board Installation

- Connect the USB cable between the board and Computer (is also power supply for 5704FX- EK board)
- Connect the “FX IN” to an Audio source, e.g. to an electrical Guitar via a Guitar-Preamplifier
- Connect the “FX OUT” to a stereo amplifier/loudspeaker or Guitar amplifier/loudspeaker

1.2 Run the Software

5704GTFX_Control.exe is a Software Control Panel which can be run on any PC having OS Windows XP/Vista/Win7/Win8 installed. You must copy 5704GTFX_Control.exe and the 5704GTFX_Presets.mcp into the same directory on your hard-disk.

Running the 5704GTFX_Control.exe program will open the first page of which named “Input-Processing”. In the first time, you have to select the MIDI input port (“5704FX-EK”) and the MIDI output port (“5704FX-EK”) for the communication in “MIDI” menu. It should show [connected] in the window title if all settings and connections are ok.



If not the right MIDI port is selected, or cables not correctly connected, it is shown [NOT CONNECTED].

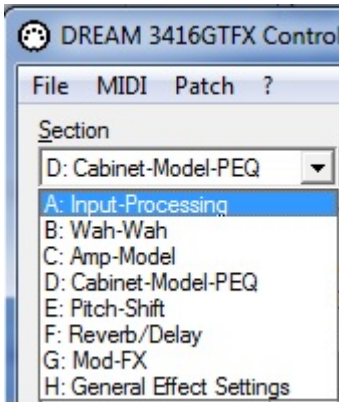
Note: the screenshots in this user guide are based on previous 3416GTFX_Control. The 5704GTFX_Control works basically same.

2. Customize Effect Presets

The software panel is composed of many pages which allow creating or selecting patches that you can select with "Selection" menu. For each page, you can select patches in "Patches" drop down list or save patches with the "Save" button.

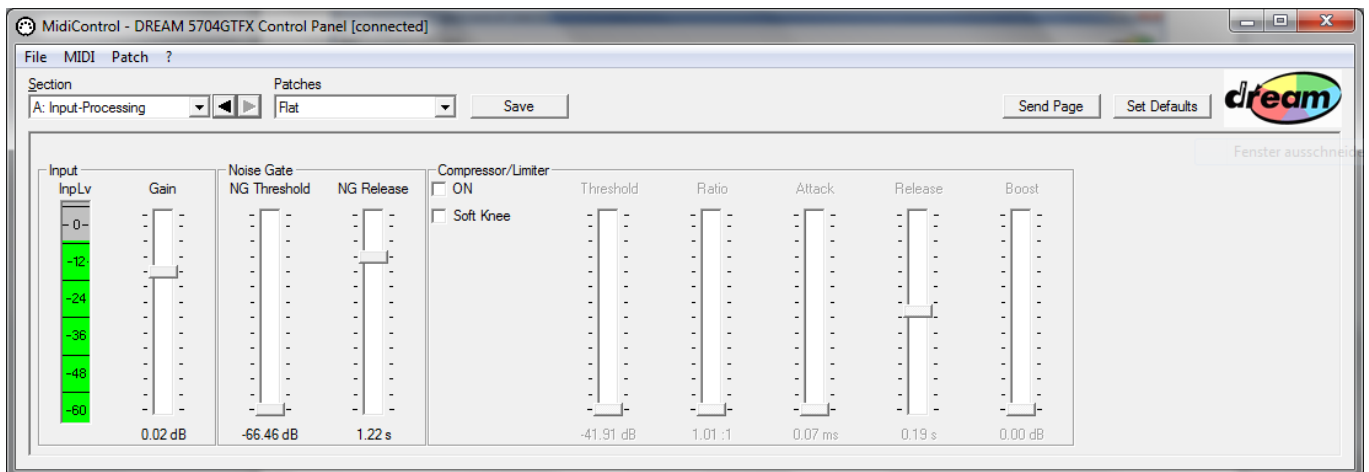
2.1 Input Processing Page

Select in "Selection" menu the page "Input-Processing"



You can set Input Gain, Noise Gate (Threshold and Release time) and Compressor settings (Threshold level, Ratio, Attack and Release time, and Boost gain).

All parameters are stored into the Input Processing Preset, also the Compressor and Soft Knee on/off switches setting.

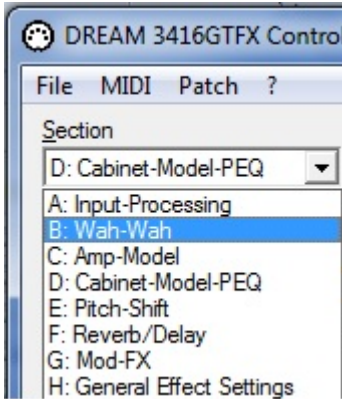


Important:

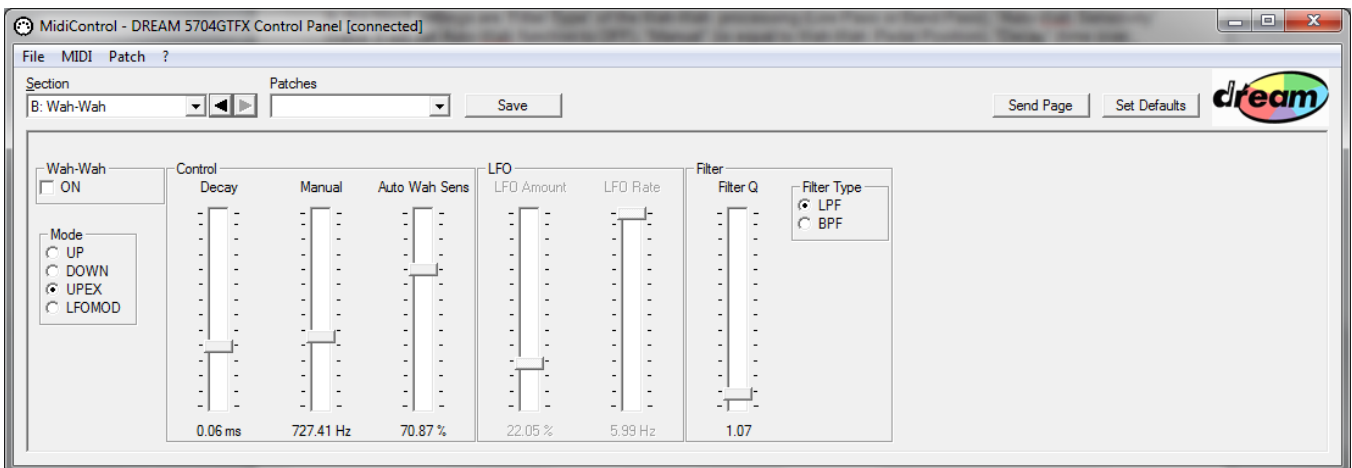
In order to optimize the test conditions, the input level should be set properly. Once the board and 5704GTFX_Control.exe is started and a guitar is plugged, adjust the signal level to the board while playing the guitar so the output is as loud as possible without saturating (distortion is supposed to be produced by the DSP processing, not by input stage clipping!). The "InpLv" meter display on the Input Processing page shows the input signal level, it should be set around 0dB, red color at the top of the Meter will indicate digital clipping.

2.2 Wah-Wah Page

Select in “Selection” menu the page “Wah-Wah”

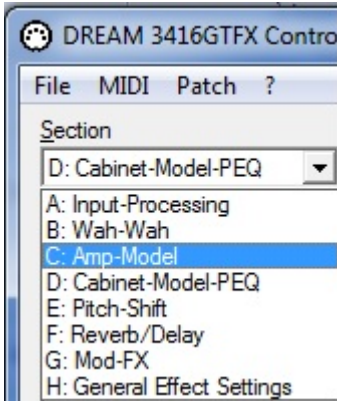


In this block settings are “Filter Type” of the Wah-Wah processing (Low Pass or Band Pass), “Auto-Wah Sensitivity” (value 0 will set Auto-Wah function to OFF), “Manual” (is equal to Wah-Wah Pedal Position), “Decay” (time over which the Wah effect make changes), “LFO Rate” (sets the tempo in LFO mode), “LFO Amount” (sets the depth in LFO mode) and “Mode”: “UP” will open the filter with dynamic playing, “DOWN” will close the filter, “UPEX” is like “UP”, but using a filter with more resonance, “LFOMOD” is enabling the LFO for modulation of the filter frequency.



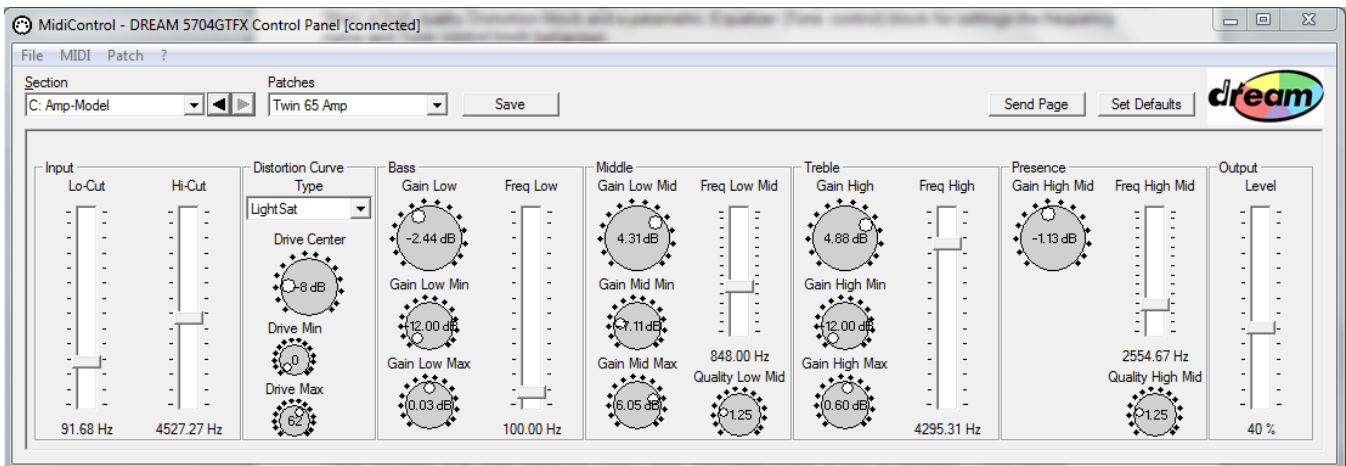
2.3 Amp-Model Page

Select in “Selection” menu the page “Amp-Model”



The Amp-Model page allows simulating some famous amp. It is composed of some Input Filters (Lo-Cut and Hi-Cut filter), a high quality Distortion block and a parametric Equalizer (Tone control) block for settings the frequency curve and Tone control knob behaviour.

The Parametric Equalizer consists of 4 parametric bands with gain and frequency settings for all bands and filter quality (Q-factor, bandwidth) settings for the 2 middle bands.



“Gain Low Max” and “Gain Low Min” defines the “Bass” knob ranges, “Gain Mid Max” and “Gain Mid Min” defines the “Mid” knob ranges and “Gain High Max” and “Gain High Min” defines the “Treble” knob ranges of the Front Panel hardware (e.g. when using the 3703FP-EK2 front panel board, or own UI hardware – note below).

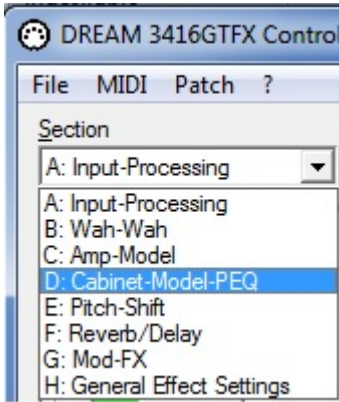
“Drive Min” and Drive Max defines the “Drive” knob ranges on front panel.

Important:

Be aware that the user interface hardware can be customized for your own product. The 5704GTFX-USB firmware is available in C source in the 5704GTFX-C-PDK firmware development kit.

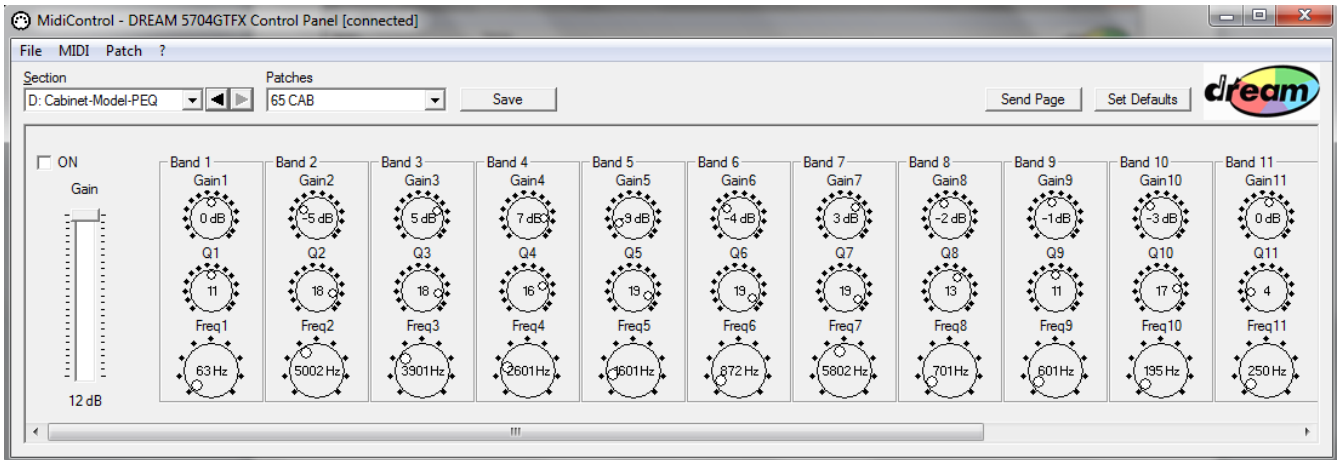
2.4 Cabinet-Model-PEQ Page

Select in “Selection” menu the page “Cabinet-Model-PEQ”



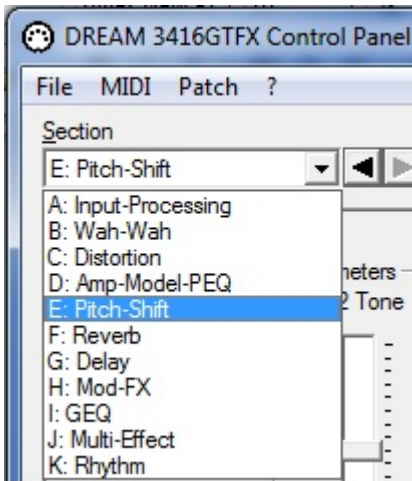
The Cabinet-Model-Page allows simulating some famous loudspeaker cabinets. The module is composed of a fifteen bands parametric equalizer. The first band is a low shell, the last one is a high shell filter, and the others are peak filters.

Thanks to the parametric equalizer you can simulate very detailed the frequency response and characteristics of loudspeakers and cabinets.

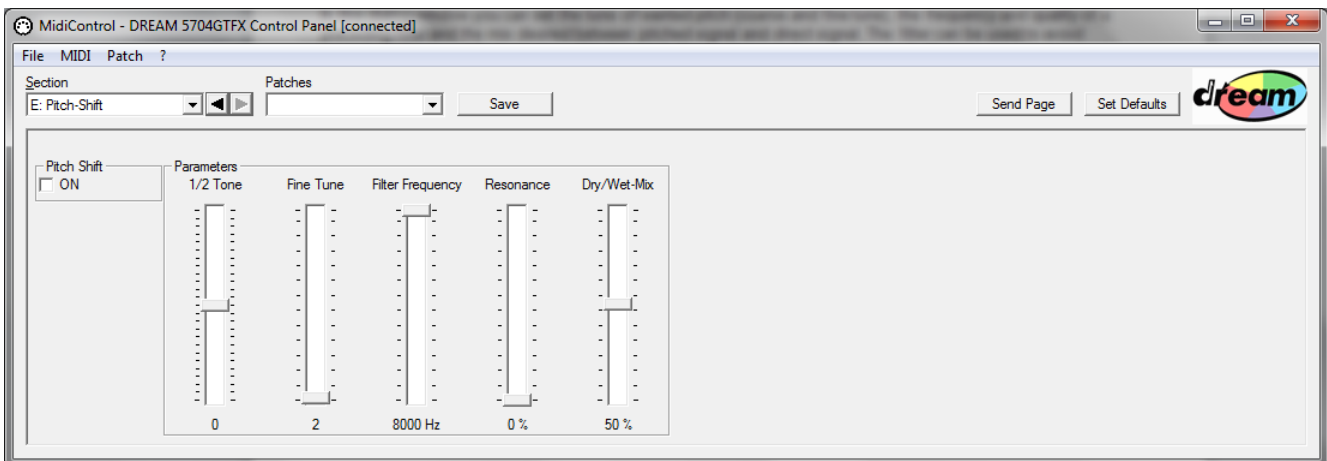


2.5 Pitch-Shift Page

Select in “Selection” menu the page “Pitch-Shift”

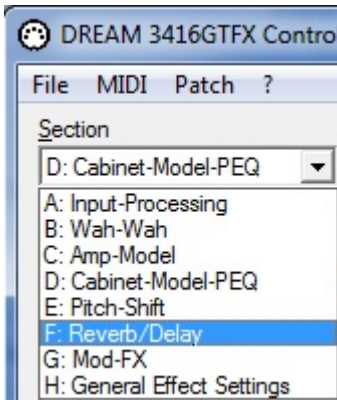


In this dialog window you can set the tune of wanted pitch (coarse and fine tune), the frequency and quality of a preceding filter and the mix desired between pitched signal and direct signal. The filter can be used to avoid unwanted aliasing artifacts in case of higher pitch down values, or for special sound effects.



2.6 Reverb/Delay Page

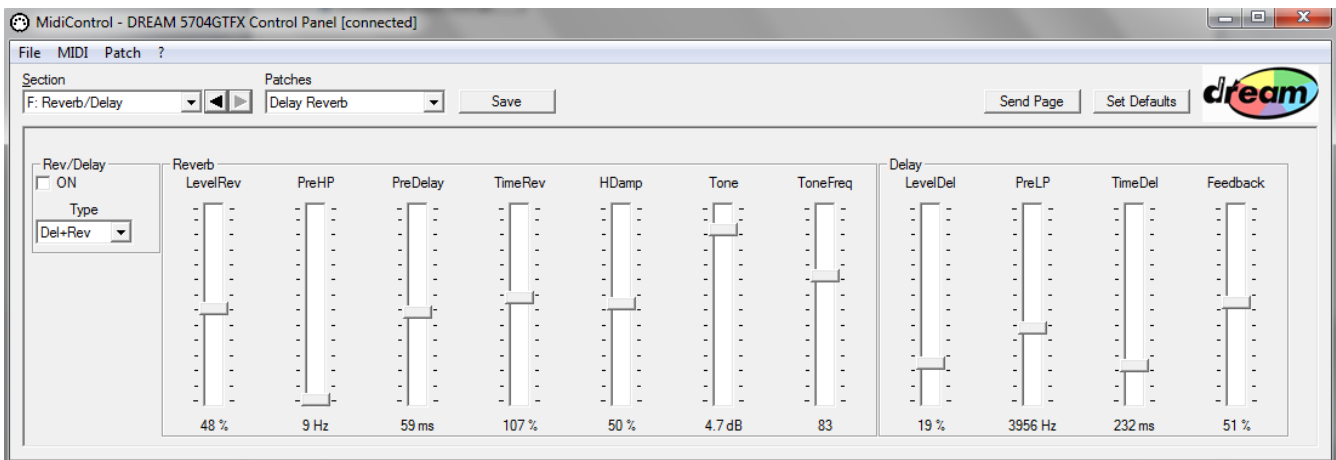
Select in “Selection” menu the page “Reverb/Delay”



For the Reverb part the parameters are frequency of High Pass Filter and Tone (High Shelf Filter) on effect input, Effect Level, Pre-Delay Time, Reverb time and HDamp (6dB Low Pass Filter in feedback lines, e.g. for Reverb effect it reduces the high frequencies with longer time).

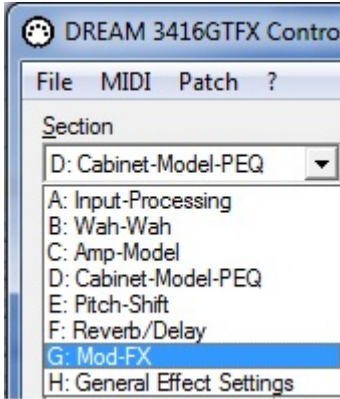
For the Delay part the parameters are frequency of Pre Low Pass Filter (PreLP) on effect input, Effect Level (LevelDel), Delay Time (TimeDel) and Feedback.

You can also have Reverb and Delay in the same time with dedicated Type selected (e.g. “Del-Rev”).

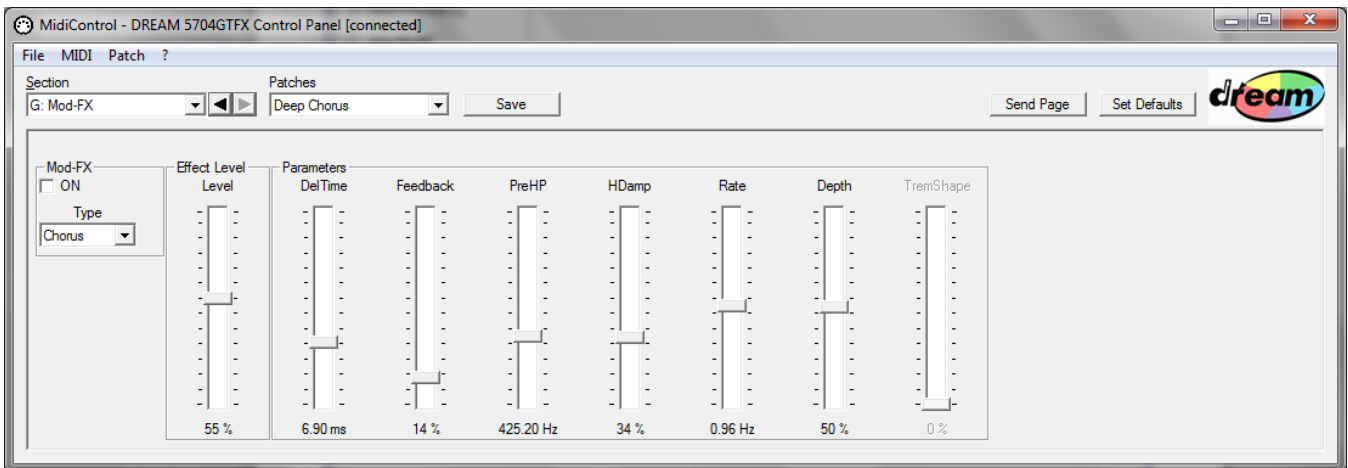


2.7 Mod-FX Page

Select in “Selection” menu the page “Mod-FX”

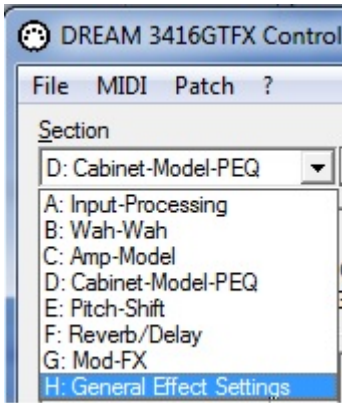


In this dialog some parameter sliders are only enabled for specific effect, e.g. LFO Rate and Depth parameters are available for all modulation effects, Tremolo will additionally have the Shape (LFO shape, from triangle to rectangle) parameter, etc.



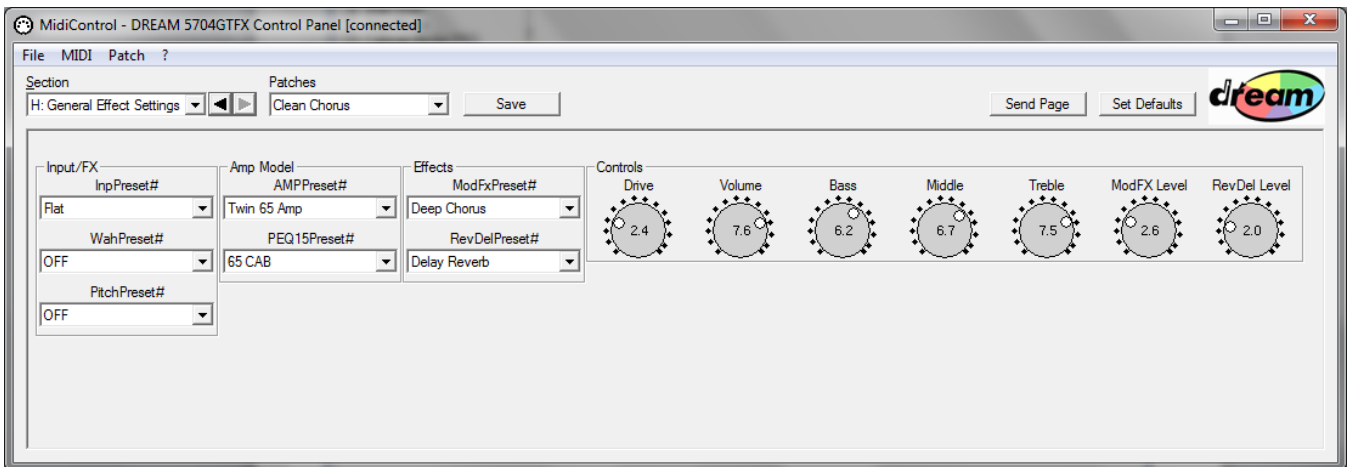
2.10 General Effect Setting Page

Select in “Selection” menu the page “General Effect Setting”



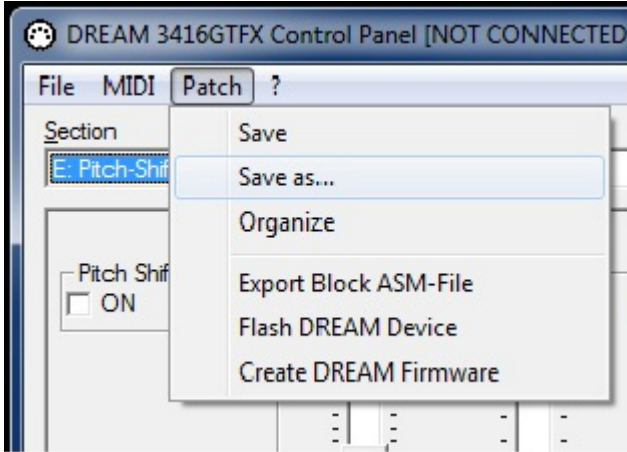
This page allows creating general patches for multi effects and amp models. You can select the different effect presets, each effect preset corresponds to the patches which are defined in the other pages.

You can also define the default Drive, Volume, Bass, Middle, Treble, ModFx and RevDel Level knob settings when calling this general effect (e.g. by UI selector). All these parameters are stored in the patch.

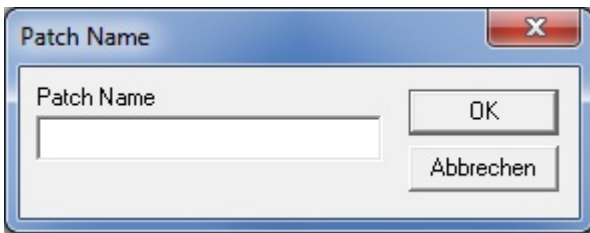


3. Presets Saving and Renaming

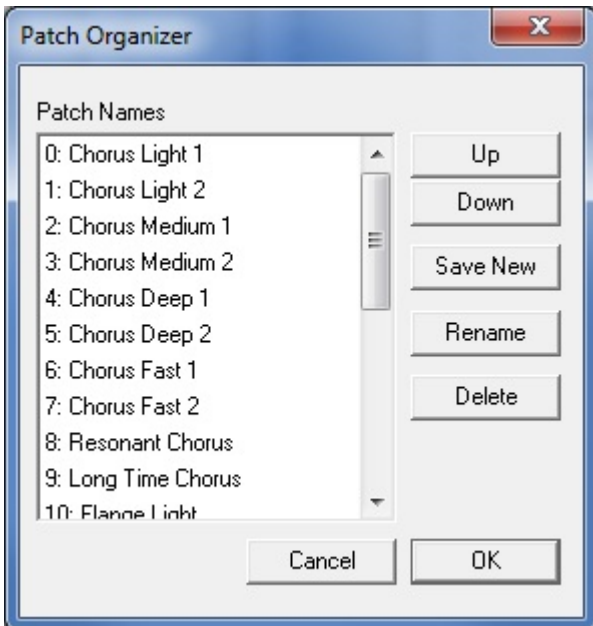
After having designed them, you will certainly would save yours patches. For this simply click on the save button of concerned page, or if you want to create a new preset, select “Save as...” in Patch menu, then the saving window will open.



Choose a name and click on OK button in next dialog box:



You can also change the order of yours patches, rename or delete yours patches selecting “Organize” in Patch menu:

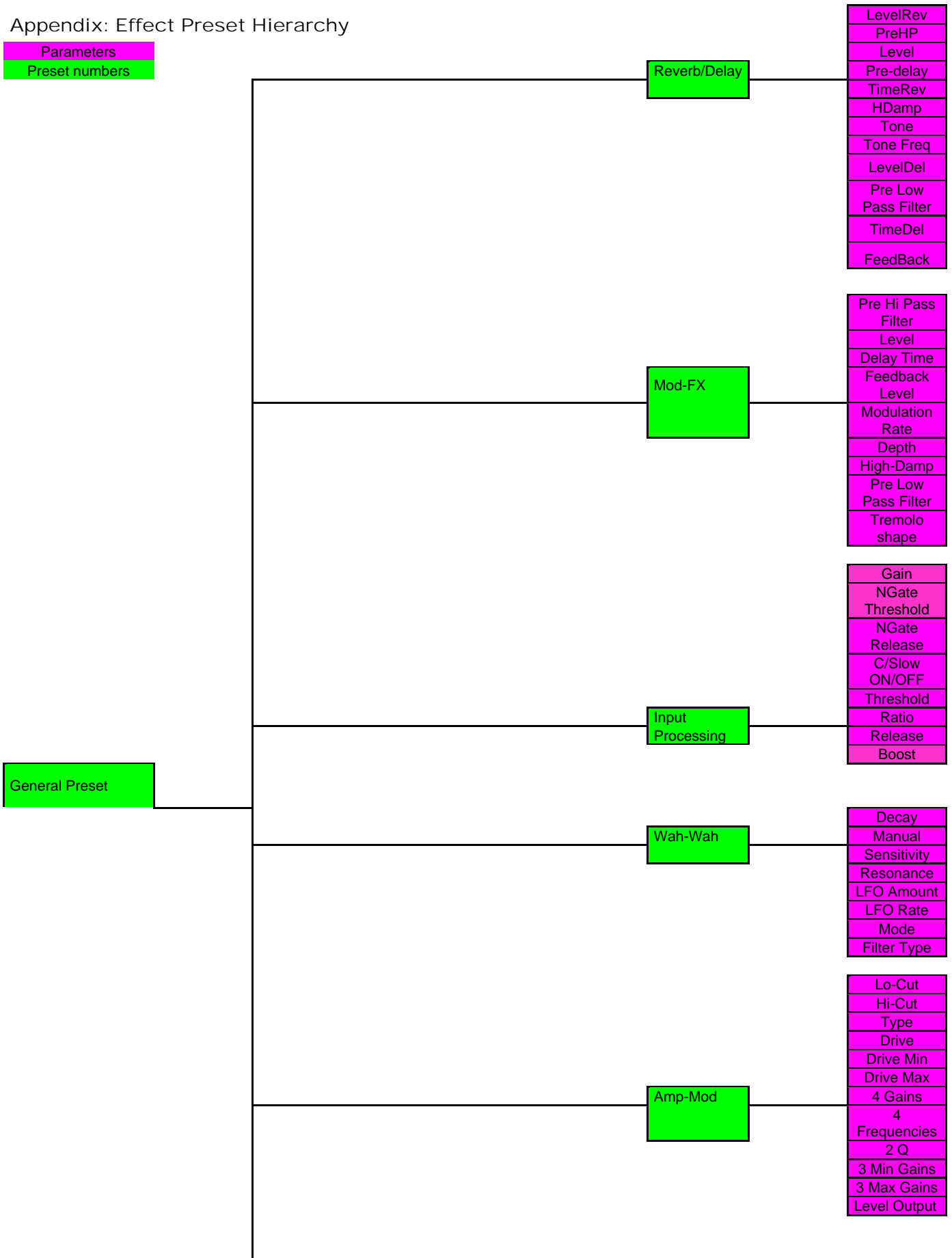


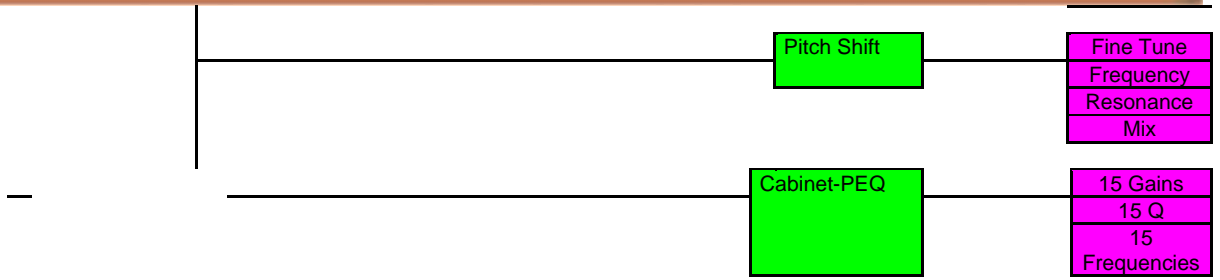
You can use “Export Block ASM-File” for generating the “5704GTFX_Presets.s” file used in the 5704GTFX firmware project (5704GTFX-C-PDK, SamVS needed for recompile the firmware).

“Flash DREAM Device” and “Create DREAM Firmware” are not supported yet by 5704GTFX-Control.

Appendix: Effect Preset Hierarchy

Parameters
Preset numbers





Dream Contact

info@dream.fr

Website

<http://www.dream.fr>

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