Project Description

I have a total of 5 user parameters, and they have the following ranges and reasons for them to be in the ranges:
Wet Gain: -20dB to 2dB, with default of -6dB. The reason of the wet gain has this range is because it allows the user to have a broader range of modifications to the modified wet output. The default value is the typical, most useful -6 dB in world of the music making. (Also, it sounds good as well).
Dry Gain: -10dB to 2dB, with default of 0dB. The range of dry gain is smaller, which is because I don't want the plugin to serve too much of a purpose of a gain plugin.
Low Pass FC: 1000Hz to 22000Hz and default of 22000Hz. The 22000Hz default basically means off, and that is why it has an upper limit of 22000Hz. The lower limit is set to 1000Hz, which is intended to not make the high cut too low, which will then cut off too much of the delay frequency.
Feedback Gain: 0dB to -20dB, with default -4dB. The default is set to -4dB after multiple experiments with multiple different values. I kept the upper limit below 0dB because I wanted to keep it by not making the feedback sound grow bigger.
Decay Time: 0ms to 5000ms, with default of 40ms. When mixing vocals, most useful decay time is 40ms, so that is my default. My 5000ms upper limit is I wanted my delay to be more flexible, suits to multiple different scenarios.

When it comes to extra features, I have a textbox to enter the BPM, so it can calculate and set the decay time to 1/4, and 1/2 notes' time, which are two of my most used time in delays. I also fixed my filter's Q to 0.707, which is a more versatile, critically damped filter. I also made my GUI pretty, with a good layout and a clean color design.

Verification

The audio file consists of two parts. The first part of the audio is the original file without the delay bypassed. In the second part, I enable the delay. In the first phrase "Yuanshen", I turned the decay time lower, so it more like speaking in a big room. In the second phrase "Qidong", I turned up the decay time longer, and it felt like speaking in a empty valley, with lots of echo.

Verification

The ecological example is where I used the delay in my most used scenario: mixing vocals. In this song (I also made the instrumental part), the first intro vocals, with the low pass enabled, had a ¼ delay. All the rest of the vocals are dry vocals, which I used my delay effect and stock reverb with around 25% sends to create wet, mixed vocals. I also added the delay to my rhythm guitar track, which is a common practice in playing/mixing the guitar. I would say I prefer this delay over my big, fat, over complicated stock delay plugin. Since I compose with my tiny laptop, my screen space is saved with this small plugin, and it has all the features I need.

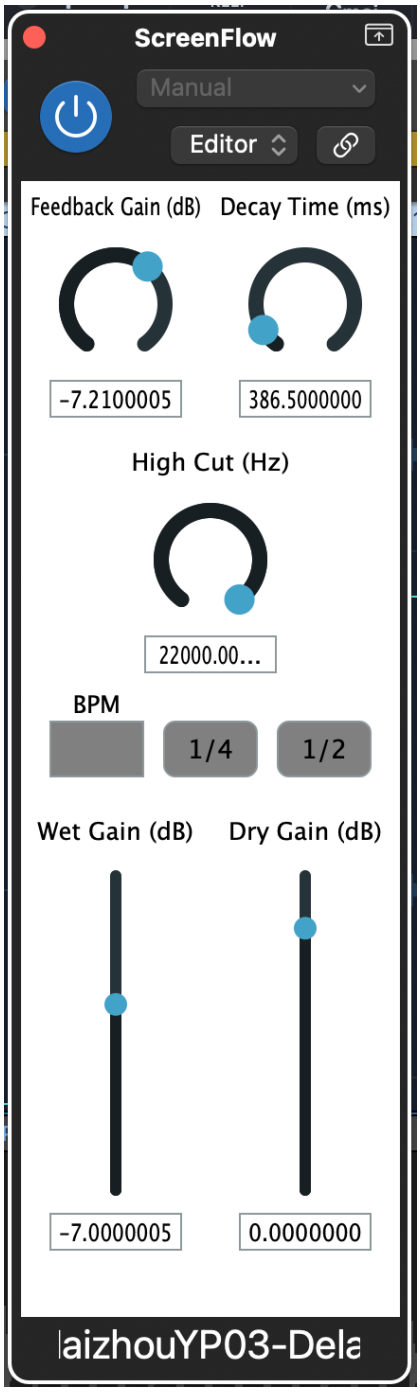

Figure: Project Plugin's GUI