

NEWFANGLED AUDIO

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P/N: 141384, Rev 1

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Invigorate proudly uses the PFFFT library, which is available at <https://bitbucket.org/jpommier/pffft>.

Newfangled Audio

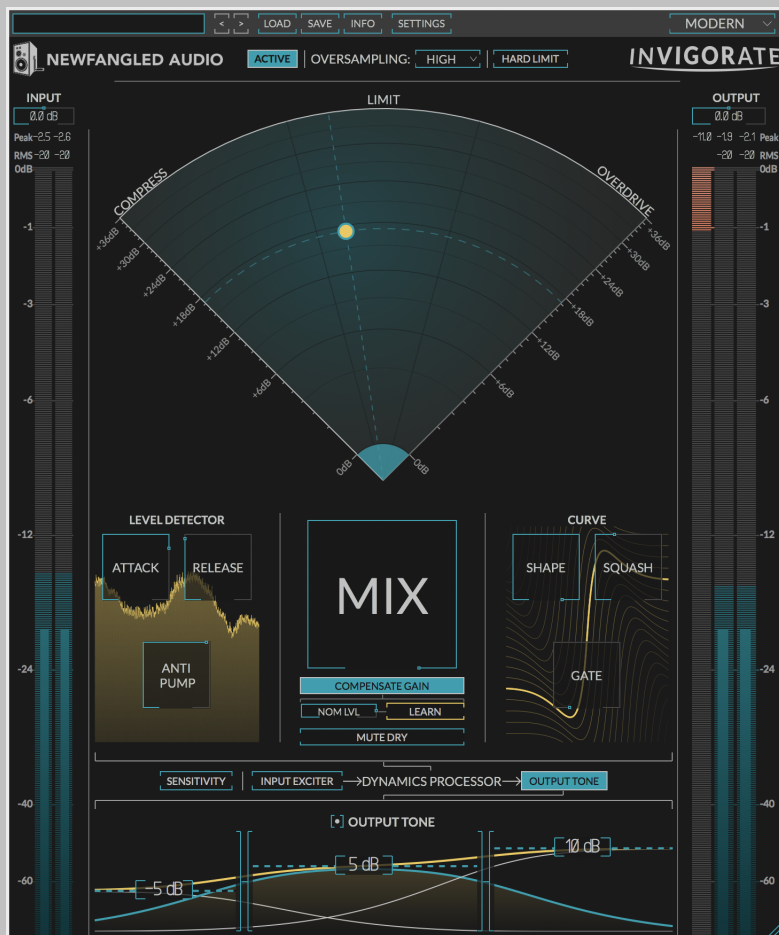
www.newfangledaudio.com

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Chapter 1

Newfangled Audio Invigorate



Invigorate is a deconstructed compressor, limiter, and overdrive distortion fine tuned to add life to your mix, drum bus, or any other element. The unique radar control interface of Invigorate facilitates seamless transformation from smooth pumping compression to hard limiting to overdrive, allowing you to find the perfect processing for your mix anywhere in between. The result brings forward your mix to give it the energy you're expecting from a finished record. This ain't your granddad's bus compressor.

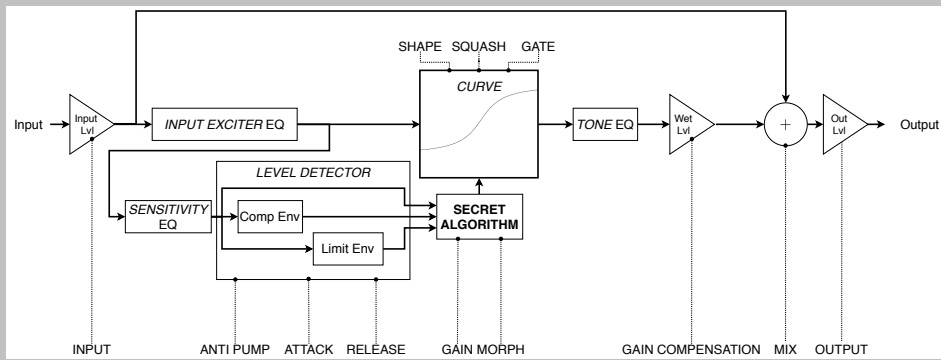


Figure 1.1: Block Diagram of Invigorate

Chapter 2

Installation and Instantiation

Newfangled Audio plug-ins are distributed by Eventide and like other plug-ins Eventide distributes, Invigorate uses PACE's iLok.com licensing system, with or without an iLok hardware dongle. Each license provides two activations which can reside on either your computer or on an iLok license dongle. Once you've purchased your plug-in, you'll need to register it on Eventide's website, activate your license, and install the plug-in on to your computer.

2.1 Registering Your Plug-in

When you purchase Invigorate, you'll receive a Serial Number and License Key. The Serial Number will be two letters followed by 6 numbers. If you have an individual Invigorate license, the Serial Number will start with NQ (i.e. NQ-#####). The License Key will be 3 sets of 4 characters, a letter or a number, each; like XXXX-XXXX-XXXX.

Once you've received these codes, you can register your plug-in on the Eventide website. To do so, please log in to <http://www.eventideaudio.com>, navigate to My Account in the top right corner, and select Register a New Product. Then, fill out the form by selecting Native Plug-in (VST, AU, AAX) in the Product Category field, select Invigorate in the Product list, and enter your Serial Number, License Key, and iLok.com account name. If you don't yet have an iLok.com account, you can create one for free at <http://www.ilok.com>. Once you've done so, press Register.

Once you've entered this information and pressed the Register button, Eventide will send the applicable plug-in license to your iLok.com account, which you will need to activate to your computer or iLok dongle.

2.2 Activating Your License

To activate and manage your plug-in licenses you'll need to install PACE's iLok License Manager software which you can download from <http://www.ilok.com>. If you don't have this software installed, please download and install it now.

Once you have installed and launched iLok License Manager you should be able to log in to your account by clicking the large "Sign In" button in the upper left hand corner of the application. Once you have, you should be able to see available licenses by choosing the Available tab at the top of the iLok License Manager application. If you have successfully registered your plugin, your Invigorate Native license will be available in this list. Please activate this license by dragging it to either your computer or iLok dongle listed on the left. When you do so, you will be asked to confirm the activation, and you will be able to see it by clicking on the location you have chosen. At this point your license is activated.

2.3 Installing Your Plug-In

You should have been given a link to the Invigorate plug-in installer when you purchased your plug-in, but if you haven't, you can find downloads for all of our plug-ins at <http://www.newfangledaudio.com/downloads>. Please download and launch the correct installer for your system.

Once you've launched the plug-in installer, it will take you through several pages of options. We have tried to choose defaults for these options which will best serve the majority of users, but it is worth a minute to make sure you understand these options before clicking through to the next page. A common issue with Windows VST plug-ins is choosing the correct VST directory, which can be different on each system. Please pay special attention to this setting. Once you have followed through the installer, your plug-ins and presets should be in your chosen locations, and you can hit finish to end the installer application.

At this point, you should be ready to use your Invigorate Plug-In.

2.4 Moving or Removing an Activation

If at any point, you decide to move your plug-in activation, you can do so in iLok license manager. To move an activation between an iLok dongle and your computer, simply plug in the iLok, locate the license in its current location, and drag it to its new location. To deactivate a license, find it in its location, right click on it, and choose deactivate.

Remember that each Invigorate Plug-In License comes with two activations, which can be used on either a computer or iLok dongle, meaning you can use Invigorate in two locations at the same time.

2.5 Removing or Uninstalling your Plug-In

We're sure you'll love your Newfangled Audio plug-ins, but if you ever want to remove them from your machine it's as easy as removing the following files.

For Mac:

- Macintosh HD/Library/Audio/Plug-Ins/Components/<Plug-In Name>.component
- Macintosh HD/Library/Audio/Plug-Ins/VST/Newfangled Audio/<Plug-In Name>.vst
- Macintosh HD/Library/Audio/Plug-Ins/VST3/Newfangled Audio/<Plug-In Name>.vst3
- Macintosh HD/Library/Application Support/Avid/Audio/Plug-Ins/Newfangled Audio/<Plug-In Name>.aaxplugin
- /Music/Newfangled Audio/<Plug-In Name>/

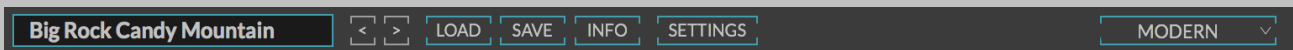
For Windows:

- c:\Program Files\Common\Steinberg\VST2\Newfangled Audio\<Plug-In Name>.dll
- c:\Program Files\Common\VST3\Newfangled Audio\<Plug-In Name>.vst3
- c:\Program Files\Common\Avid\Audio\Plug-Ins\Newfangled Audio\<Plug-In Name>.aaxplugin
- My Documents\Newfangled Audio\<Plug-In Name>\

Chapter 3

Preset Bar

At the very top of the Invigorate plug-in is a preset bar which allows you to load and save a preset, as well as a couple other features. These are the preset bar sections.



3.1 Preset Selector

On the far left is a drop-down menu which allows you to select preset from a tree structure. You shouldn't need to access these presets on your computer, however, if you do, on the Mac these presets are stored in your <User>/Music/Newfangled Audio/Invigorate/Presets folder. On Windows these presets are stored in your <Documents>/Newfangled Audio/Invigorate/Presets folder.

Next to the preset drop-down menu is a left and right arrow, which allow you to quickly scroll through presets.

3.2 Preset Load and Save Buttons

To the right of the preset selection arrows is a LOAD and SAVE button. LOAD will allow you to load a .tide preset from anywhere on your computer. Save will allow you to save a new preset to anywhere on your computer, however, we suggest that you place it somewhere in the presets folder so you can access it from the file drop-down.

3.3 Info

The INFO button will open this manual for you to read about the plug-in.

3.4 Update

If there is a software update available an UPDATE button will appear in the preset bar. Clicking it will bring you to a web page where you can download the new installers.

3.5 SETTINGS

The SETTINGS button pops down a settings page which contains additional options.

3.5.1 OPENGL

The OPENGL button allows you to toggle between two different rendering engines. Most people will want to use OPENGL set to on, which will select a rendering engine that uses your computer's onboard GPU to do all graphics rendering for Invigorate. However, some computers do not have a separate GPU processor, or have a GPU that doesn't use the specific OpenGL features used by Invigorate. In these cases, having OPENGL set to "on" may cause graphics errors or an extreme load on your computer's CPU. To turn OpenGL rendering off, set the OPENGL button to "off", close the plug-in window, then open it again. Closing and opening the plug-in windows is necessary because the rendering engine can only be changed when the plug-in window is closed.

3.6 Color Scheme

On the far right is a drop-down labeled COLOR SCHEME. This will allow you to choose one of several different color schemes for your viewing pleasure.

3.7 Resize

The bottom right corner of the UI will allow you to resize the plug-in. To change the default plug-in size drag the plug-in to the desired size and save over the default preset.

Chapter 4

Parameters and Metering

Invigorate has several main controls and features helpful metering to visually monitor its underlying processing. These controls and features are described here.

4.1 Controls

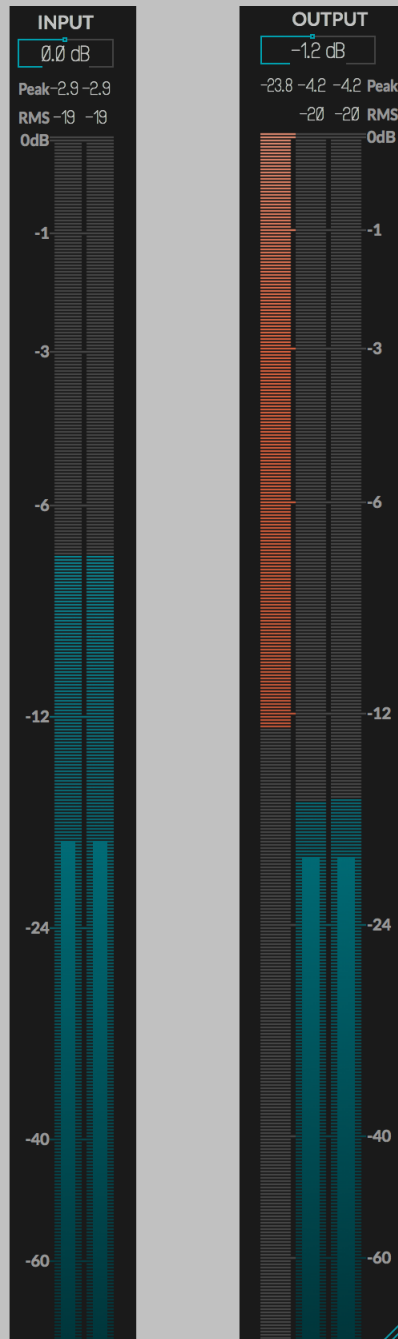
Invigorate has several control types, including familiar varieties like vertical sliders, rotary knobs and toggle buttons, and the brand new radar control. All controls have helpful tool-tips which reveal information about their function if you hover your mouse pointer above them.

In general, all sliders and knobs can be double clicked to type in a specific value, option-clicked to return them to their default value, or command-clicked or control-clicked to enter a vernier mode for fine tuning.

Where appropriate, many controls have a related on/off button which will deactivate this control, or even the entire section.

4.2 Global Parameters

4.2.1 INPUT AND OUTPUT LEVEL AND BAR METERS



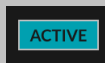
The left and right hand sides of the plug-in have matching vertical bar meters which display the INPUT (on the left) and OUTPUT (on the right)

levels in levels in Peak (horizontal ticks), RMS (solid bar and numerical display), and Peak Hold (numerical display) formats. These meters are always present in the display and clicking the Peak Hold section, or bypassing the plug-in will clear the held peak value. Besides the OUTPUT meter is the GAIN REDUCTION meter which shows the amount of GAIN REDUCTION being applied by the algorithm, and shows the peak amount of GAIN REDUCTION as a text value above it.

Above the INPUT meter is a knob for the MASTER INPUT LEVEL. Similarly, above the OUTPUT meter is a knob for the MASTER OUTPUT LEVEL.

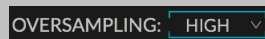
4.2.2 GLOBAL CONTROLS

ACTIVE



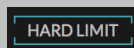
The ACTIVE toggle button is located near the top left of the plug-in UI near the NEWFANGLED AUDIO label in the header. It activates or bypasses all the processing in the plug-in.

OVERSAMPLING



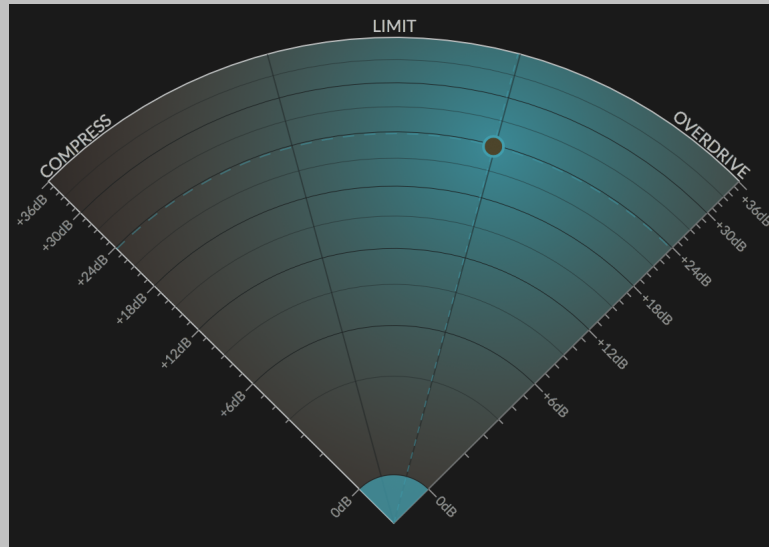
The OVERSAMPLING drop-down menu allows you to select between LOW, HIGH and MAX oversampling. Distortion generates harmonics, and extreme harmonics can lead to aliasing. While the technology within In-vigorate mitigates the effect of aliasing, additional oversampling can almost completely eliminate it. Of course, increasing the sampling rate adds an additional load to your computer, so the option is left to you to decide the amount of oversampling for your project.

HARD LIMIT



The HARD LIMIT button engages a limiter on the output to clamp transients or other signal components that exceed 0dBFS. This is a hard limiter, ensuring the output is limited below full scale, but it happens after the sample rate conversion and may introduce distortion and aliasing artifacts. If you're concerned about true peak limiting or overs on your final master bus we recommend you use a dedicated true peak limiter like Elevate.

4.2.3 RADAR



The RADAR display controls two parameters, the amount of GAIN you're applying to the CURVE and the MORPH between COMPRESSION on the left side, LIMITING in the middle and DISTORTION on the right. The GAIN position in the RADAR will modify the CURVE display in the CURVE section, depicted in the bottom right graph (see 4.2.6 CURVE for more details).

You can lock the MORPH and control only the GAIN by command-clicking and dragging on the RADAR. Alternatively, you can lock the GAIN and control only the MORPH by option-clicking and dragging on the RADAR display. Finally, we've linked the RADAR display to the all important MIX control and you can change the MIX amount by shift-dragging or right-click-dragging on the RADAR display. You will notice that the center of the RADAR dot will be brighter the higher the MIX value is.

If you wish to automate the RADAR controls they will show up in your DAW as GAIN and MORPH.

4.2.4 MIX SECTION

Directly below the RADAR display is a large MIX knob and some associated parameters. Invigorate can generate a lot of exciting sounds, but they're best when blended in with the dry signal.

MIX



Front and center is the MIX knob. The MIX blends the effected signal with the input. This MIX value can also be controlled by right clicking and dragging on the RADAR display, or by shift-clicking and dragging.

COMPENSATE GAIN



While it's certainly possible to use Invigorate to make your audio louder, the main goal is to make it sound louder, even at the same level. Unfortunately, our ears are very susceptible to even small changes in overall level, so we've built a sophisticated gain compensation engine to allow you to hear what Invigorate is doing to the timbre of your sound without effecting the loudness.

The COMPENSATE GAIN button engages this gain compensation which adjusts the WET level only to keep that level at the desired nominal RMS level. This has the effect of keeping the WET level and MIX amount consistent for most settings, and allows you to hear what you're doing.

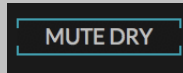
NOM LVL and LEARN

In order for the gain compensation engine to work best it must know the nominal level of your audio, which you can set with the NOM LVL control. You can simply turn this knob to set the level, or you can double click and type in a value. However, to make setting this level easiest we've added a LEARN button.

The best workflow is to find the loudest section of your audio, press learn, and let it play on repeat until the NOM LVL control settles. Once this happens, press LEARN again to lock this value in. If needed you can adjust it higher or lower from there.

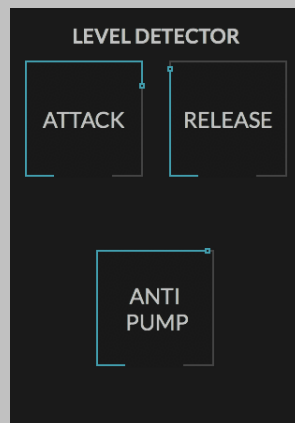
Note that while the NOM LVL setting is stored with your session, it is not loaded with a new preset. So once you set the level of your audio correctly you can flip through many presets without problem. However, if you change your mix, or change other plug-ins in front of Invigorate you may need to LEARN the nominal level again.

MUTE DRY



You can always toggle the ACTIVE button on and off to hear what Invigorate is doing, but sometimes you want to hear only what it's adding. The MUTE DRY button allows you to hear the effect alone with no dry signal blended with the output - similar to a DELTA control.

4.2.5 LEVEL DETECTOR



The LEVEL DETECTOR section has three controls which change how quickly the dynamics processor changes the signal. Please note that because these control only apply to the compressor and limiter level detectors the further you have the MORPH over toward overdrive the less effect they'll have on your sound output.

ATTACK

The ATTACK knob controls the time it takes for the detector to rise to the level of a louder signal. A faster ATTACK squishes transients, while a slower ATTACK ignores lets transients through. If you want to hear more transients raise the ATTACK time, if you want to hear less, lower it.

RELEASE

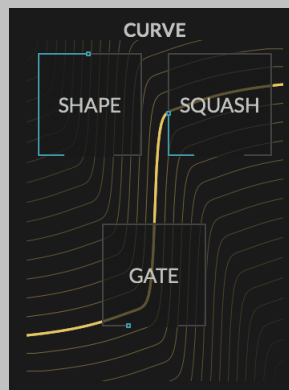
The RELEASE knob controls the time it takes for the detector to fall to the level of a quieter signal. A very fast ATTACK and RELEASE will create audible distortion. A medium RELEASE can give a pumping and breathing effect, where you can hear the compressor audibly changing the audio level with each loud sound, while a slower RELEASE gives a smoother compression.

ANTI PUMP

There is a physical phenomenon where low frequencies have a much higher amplitude than mids and highs. This means that compressors are often over sensitive to low frequencies and things like kick drums can cause an audible pumping effect. You might enjoy this, but if you don't you can turn up the ANTI PUMP filter. The ANTI PUMP knob controls the cutoff of a high-pass filter which filters the signal before level detection, which gives you the power to control its presence in the detection circuit and mitigate the *pumpy* quality.

Note that because the ANTI PUMP filter is in the level detector for the compressor and limiter only, it has the effect of overdriving the bass, rather than compressing it, which can be quite nice. If, however, you want to pass the low frequencies through untouched, please pull down the low band on the SENSITIVITY EQ.

4.2.6 CURVE



The CURVE section is home to the level saturation controls. We've designed this curve to sound good as an overdrive, as well as a compression and limiting curve. It has several controls which you can use to tailor the sound.

SHAPE (aka KNEE)

The SHAPE knob changes the curve shape from very soft to much harder, this is similar to the SHAPE control on a soft clipper, or the KNEE control on a compressor. A higher value on the SHAPE knob means a harder knee and more "snap" or "bite" as well as more harmonics when used as an overdrive.

SQUASH

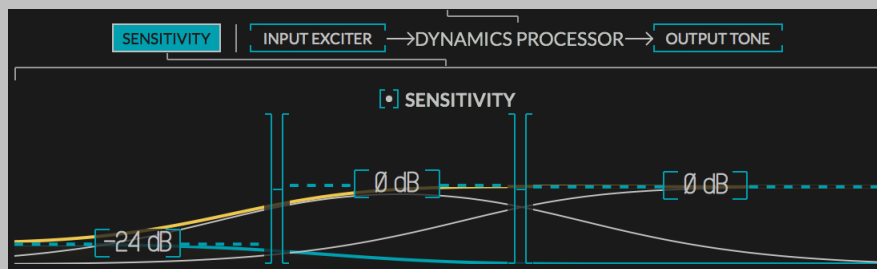
The SQUASH knob puts downward pressure on the of the curve, leading to an audibly "over-compressed" sound when the RADAR morph is

set to either the COMPRESSOR or OVERDRIVE side. Turning squash up with generally add more harmonics, but also, it interacts with the SHAPE control to create a more aggressive hard knee, or a more aggressive soft knee.

GATE

The GATE knob clips the center of the curve, which can create a wonderful gate-like effect. This is very useful if you're enjoying the character of the compression or overdrive, but don't want to bring up quiet sounds quite so much. When the RADAR is set to the COMPRESSOR side, this will sound like a gate or expander. When the RADAR is set closer to the DISTORTION side, the effect can sound like a familiar fuzz tone.

4.2.7 TONE CONTROLS



At the bottom of the plug-in UI are three separate tone controls. Each of these tone controls have a low, mid, and high band which are adjustable between +12dB and -100dB by clicking and dragging in the area of each band. Pulling the bands to -100 dB basically mutes that band, turning the filters into low pass, or high pass filters, respectively.

The EQ curve of each band is drawn in the background, as well as the resultant curve. The three tone controls also share low and high crossover points which can be adjusted by clicking and dragging the crossover widget (it will highlight when the mouse is over it).

Note that these tone controls do introduce phase shift to your signal, which is compensated for by phase shifting the dry path by the same amount. This will not cause you any problems unless you are using Invigorate as a parallel effect on an existing, non phase compensated track. If you want to use Invigorate in this manner we suggest that you turn off ALL THREE of these tone controls and use linear phase filters for any of your tone shaping. This can be done using the small button next to each Tone Control Label.

SENSITIVITY TONE CONTROL

The SENSITIVITY tone control sits in the sidechain of the the DYNAMICS PROCESSOR that is in the wet path of this plug-in. Pulling down the gain

in this powerful control allows you to reduce the amount of dynamics processing being introduced to a band - this is great for passing a clean bass but overdriving the mids and highs, for instance. Push up the gain in this control allows you to over effect a given band. For instance, pushing up the highs here will overdrive or overcompress them harder, but without boosting the overall level.

INPUT EXCITER TONE CONTROL

The INPUT EXCITER tone control sits in the WET branch at the input of the DYNAMICS PROCESSOR. Increasing gain here will cause the DYNAMICS processor to overdrive or overcompress that band further. Decreasing a band will have the opposite effect, driving or compressing it less. Boosting the highs into an overdrive, for instance, can give you a nice airy sound that isn't too harsh. On the other hand, overcompressing the mids can really bring the room sound out on a drum bus and add a lot of presence.

OUTPUT TONE CONTROL

The OUTPUT TONE control is after all the nonlinear processing and has the effect of simply changing the tone of the wet channel Invigorate. You can use it to compensate for moves made in the INPUT EXCITER, scoop the mids for that good old "smiley face" EQ curve, or cut the highs of an overdriven signal for warmer tone.

Chapter 5

Conclusion

We hope you enjoy Newfangled Audio's Invigorate plug-in. If you have any questions, comments, or concerns please write us at support@newfangledaudio.com

Chapter 6

About Newfangled Audio

The Oxford English Dictionary defines Newfangled as "objectionably new".

Music technology can sometimes be a backward looking pursuit. This is understandable, the purpose of music technology should be to help musicians make great music. There have been many great pieces of gear in the past and we should seek to keep these pieces and make them available to people who want to use them, and the time and dedication required to master a musical instrument means that changes in their design are often evolutionary rather than revolutionary.

However, the great pieces of gear from yesteryear are more often than not those that contained new ideas in their time. The reverence we have for these pieces can sometimes turn into fetishism, and mindless re-creation of classic gear can fail to inspire musicians and artists to take new risks. It's important to make sure artists and engineers have access to good tools that inspire them and don't stand in their way, but these tools should never be used as a security blanket to stand in the way of an artist or engineers ears and taste.

Newfangled Audio seeks to only make gear that incorporates new ideas. We want to make gear that is great, but only using ideas that others are not. We realize that deviation from the norm might sometimes be objectionable. The Oxford English Dictionary defines Newfangled as "objectionably new".