COMPONENTS REFERENCE

Components Reference Guide written by Alexander Stamm, edited by Patryk Kroman

Document Version: 1.0 (07/2009)

Product Version: 4.0 (07/2009)

Special thanks to the Beta Test Team, who were invaluable not just in tracking down bugs, but in making this a better product.

Germany

Native Instruments GmbH
Schlesische Str. 28
D-10997 Berlin
Germany
info@native-instruments.de
www.native-instruments.de

USA

Native Instruments North America, Inc.
5631 Hollywood Boulevard
Los Angeles, CA 90028
USA
sales@native-instruments.com
www.native-instruments.com

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1 Introduction

This manual provides an in-depth description of each of the GUITAR RIG 4 components. Its goal is both to give an overview of the sound-shaping possibilities they offer, and to serve as a reference for all the knobs and controls you will encounter. In the following chapters, all amps, effects and tools of GUITAR RIG 4 are discussed, ordered by the category in which they appear in the Component Pool.

To learn the basics of GUITAR RIG 4, we recommend working through the “Getting Started” manual first. The “Software Reference” allows exploiting the software’s full potential, and you can also find useful tips regarding certain components and how to build your rack. Like all the documentation files, they can be accessed through the program menu by selecting Help > Open Manual > Your Language.

As GUITAR RIG 4 comes in different flavors, you may find several components that are not available in your version of the software. You can always switch to Demo Mode to try out the full set of components for 30 minutes by selecting Help > Switch to full version Demo Mode from the program menu. Visit http://www.native-instruments.com/ for information on upgrading.

2 Amplifiers

For any guitar and bass tone, the amp sound is the core piece, and in most cases the starting point for any further sonic explorations. GUITAR RIG 4 offers a selection of 12 meticulously modeled classics which are controlled by the same knobs you may know from the original amp. As in real life, many of the controls heavily interact with each other, so playing around with them is essential to explore all the variations of sound they can produce.

Moreover, there are some expert controls that extend the flexibility of each amp far beyond their prototype. As they are the same for any of the tube amplifier stages, they are dealt with in a preliminary chapter. Mind that mastering them is a bit trickier than dealing with the standard controls.

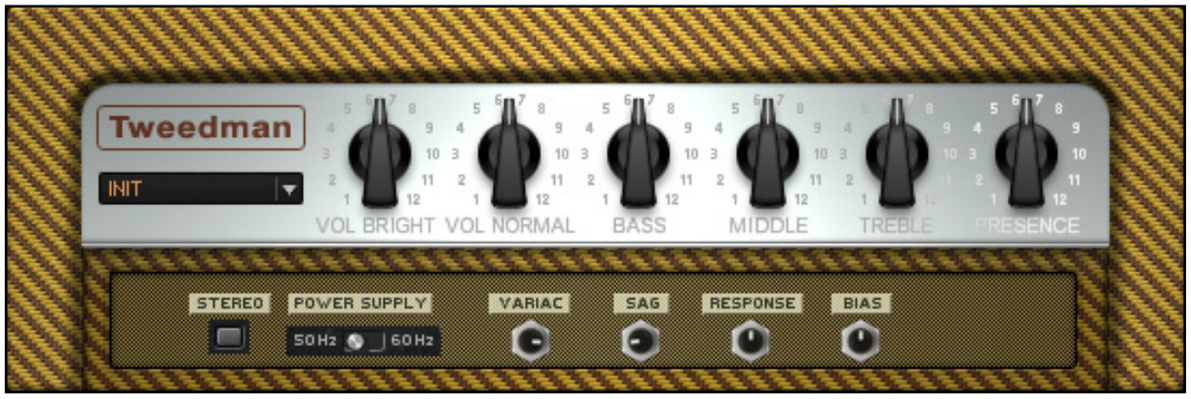
2.1 Expert controls

Click on the small arrow symbol in the upper-right corner of each component to display its expert panel. It features the following controls for most of the amps. See the single amps' descriptions to learn about their additional expert controls.

- Power Supply switches between 50 and 60Hz for the frequency of the mains AC voltage of the amp's power supply. The DC power voltage inside the modeled amp has a ripple at this frequency, which imparts a very subtle modulation to the sound.
- Variac emulates the effect of inserting a variable transformer in the AC line, thus reducing the supply voltage (for the famous "brown sound") or increasing it above normal (making the sound bolder).
- Sag simulates what happens to the power supply when you hit it with a loud signal, and the supply voltage sags for a fraction of a second because it cannot deliver the necessary power. Increasing Sag results in the power supply becoming more "spongy", as would occur with a tube-based rectifier circuit. Tuning it down makes the power supply harder, like a silicon diode-based rectifier circuit.

- ▶ Response changes the power storing capacity of the power supply capacitors. Turning down Response increases their capacity, so that the supply voltage reacts more slowly to playing dynamics. Turning it up will result in the amp's power supply reacting more rapidly.
- ▶ Bias adjusts the virtual tube's grid bias, which influences crossover distortion. Some real tube amps allow adjusting the bias, but it is also naturally changing as a result of the aging of the tubes. You may wish to adjust Bias after changing the Variac and Sag settings.
- ▶ Stereo activates true stereo processing for this component. As this consumes considerably more CPU power, it should only be activated when you need it!

2.2 Tweedman



About

Back in the 60s the "Tweedman was designed as a bass amp. Since then, it has made its way as a classic guitar amp, and a highly coveted one. Of course, it still works equally in its originally intended role. When compared to the Bass PRO amp, the sound of the Tweedman is a bit smoother and more "well-behaved."

Controls

- ▶ Volume Bright sets the level for the bright channel.
- ▶ Volume Normal sets the level for the normal channel, creating a warmer sound.
- ▶ Both channels can be used simultaneously and blended via these volume controls.
- ▶ The Bass knob adjusts the low frequency response.
- ▶ The Middle knob adjusts the midrange frequency response.
- ▶ The Treble knob adjusts the high frequency response.
- ▶ The Presence control boosts the frequency response in the upper midrange.

2.3 AC Box

About

The AC Box models that famous 1981 ‘ultra-electric’ amp sound that powered the second British Invasion of pop music. There were many versions of this original amp made, yet, each was created with a slightly different flavor. We chose a particular model that stands out and not only features a unique flavor but also some nice circuit wizardry adding a Brilliant channel! The basic Normal channel has no tonal control aside from the Top Cut. Top Boost blends in the Brilliant channel, which offers Treble and Bass controls.

Controls

- Normal Volume sets the level for the Normal channel. The Treble and Bass controls have no effect in this channel.
- Brilliant Volume sets the level for the Brilliant channel. Both channels can be mixed for a great variety of sounds.
- The Treble knob adjusts the high frequency response for the Brilliant channel.
- The Bass knob adjusts the low frequency response for the Brilliant channel.
- Tone-Cut is a control unique to this type of amp. Turning it up is imposing a high cut filter, reducing the amount of treble in the output of the Normal channel.
- Tremolo Speed sets the rate of periodic volume modulation.
- Tremolo Depth controls the amount of tremolo applied to the sound, switching it off when fully turned down.

2.4 Twang Reverb

About

The Twang Reverb simulates the rich tube sound of a classic amp from decades ago. It is ideal for screaming blues leads, crunchy rhythm guitar and for clean sounds rich in personality. Mind that, to overdrive this amp, it is best to precede it with a module that amplifies the signal, e.g. the volume pedal.

Controls

- Volume sets the amp's master volume.
- The Treble knob adjusts the high frequency response.
- The Mid knob adjusts the midrange frequency response.
- The Bass knob adjusts the low frequency response.
- The Bright switch accentuates the high frequencies.
- Reverb adds an emulated spring reverb effect.
- The Reverb On switch allows turning off the reverb. Like all good software reverbs, the spring reverb uses a fair amount of processing power; turn it off if you're not using it.
- Speed controls the tremolo speed (authentically called Vibrato on this amp).
- Intensity controls the extent to which the tremolo modulates the sound – from a mild pulsing to a deep throbbing.
- Vibrato On switches the tremolo effect on and off.

Expert controls

- Reverb Time allows you to set the duration of the reverb decay tail.
- Reverb Size changes the size of the room emulated by the reverb. While this interacts with Reverb Time, as a larger size leads to a longer decay, Size is more about the sound's character.

2.5 Plex

About

The classic Plex sound probably needs no introduction – it is the vintage amp sound that has powered too many hit records to mention.

Controls

- Volume I sets the preamp gain for the bright channel.
- Volume II sets the preamp gain for the warm channel.
- Both channels can be used simultaneously and blended via these volume controls.
- The Bass knob adjusts the low frequency response.
- The Mid knob adjusts the midrange frequency response.
- The Treble knob adjusts the high frequency response.
- The Presence control boosts the frequency response in the upper midrange.

2.6 Jazz Amp

About

Modeled after an amp produced by a highly-respected synthesizer manufacturer, the Jazz Amp produces a warm, clean tone. An essential part of its sound is the Ensemble effect, which adds chorusing or vibrato. As a result, the Ensemble is built into the Jazz Amp.

If you want to hear the Vibrato/Chorus effect in true stereo, then it's best to turn off the effect built into the Jazz Amp and insert the Ensemble Component (provides true stereo) after any Cabinets & Mics Component.

Controls

- Volume sets the amp's master volume.
- The Bass knob adjusts the low frequency response.
- The Mid knob adjusts the midrange frequency response.
- The Treble knob adjusts the high frequency response.
- The Bright switch accentuates the high frequencies.
- The Vibrato/Off/Chorus switch activates Vibrato or Chorus. In the middle position both effects are turned off.
- Rate controls the speed of the Vibrato effect.
- Depth controls the intensity of the Vibrato and Chorus effects.

2.7 Lead 800

About

This smooth, intense lead sound cuts like a knife and offers plenty of flexibility. While the Plex works very well for both chunky rhythm sounds and leads, the Lead 800 gives a brighter, more edgy sound.

Controls

- Boost significantly increases the pre-amp's gain potential.
- Master adjusts the amp's master volume.
- Pre-Amp sets the preamp gain. Turning it more clockwise adds drive, distortion, and edge to the sound.
- The Bass knob adjusts the low frequency response.
- The Mid knob adjusts the midrange frequency response.
- The Treble knob adjusts the high frequency response.
- The Presence control boosts the frequency response in the upper midrange.

2.8 Instant Gratifier

About

The Gratifier emulates a famous multi-channel solo head with a tube power amp. A fourth channel has been added to span the tonal range from clean to over-the-top distortion. To switch between its four channels, click on their LEDs Clean, Raw, Vintage and Modern.

Controls

- Master sets the master level of the amp. Setting this to a high level causes the power amp stage to overdrive.
- Gain determines the amount of preamp overdrive. Use this to dial in the desired crunch and timbre.
- The Bass knob adjusts the low frequency response.
- The Mid knob adjusts the midrange frequency response.
- The Treble knob adjusts the high frequency response.
- The Presence control boosts the frequency response in the upper midrange.

2.9 Bass PRO

About

This bass amp can deliver that gritty, growling sound that really makes a bass stand out in a mix. In addition to the unique tonal qualities, there's also a graphic equalizer to allow tailoring the sound more precisely.

Controls

- Volume sets the amp's volume.
- The Gain control increases the amount of distortion as you turn it clockwise.
- Drive controls gain specifically in the midrange frequencies, simultaneously affecting the sound's character.
- The Bass knob adjusts the low frequency response.
- The Mid knob adjusts the response of a band of frequencies as set by the Mid-Freq control.
- The Mid-Freq control adjusts the center of the frequency band boosted or cut by the Mid control. It is adjustable from 200Hz to 3200Hz.
- The Treble knob adjusts the high frequency response.
- The Ultra Hi switch boosts treble, but over a much wider frequency range than the Bright switch. It therefore has a more obvious effect.

- When activated, the Ultra Lo switch cuts out some of the midrange while increasing the lower frequency response.
- The Graphic EQ switch enables or disables the graphic EQ processor, which is visible in the expert panel. Click on the arrow button in the upper right corner to reveal it.
- Turning the Bright switch on accentuates the very high frequencies.
- Graphic EQ Volume adjusts the overall impact of the graphic EQ processor. Moving the slider up from the center increases gain, while moving the slider downward decreases gain. You will probably need to decrease overall gain if you boost several frequency bands.
- The Graphic EQ Band Level controls boost or cut response at nine specific frequency bands: 40Hz, 90Hz, 180Hz, 300Hz, 500Hz, 1kHz, 2kHz, 4kHz, and 10kHz. When a slider is centered, there is neither a boost nor cut at that slider's frequency band. Moving the slider up increases gain up to +12dB, while moving the slider down decreases gain up to -12dB.

2.10 Citrus

About

If you're yearning for that 70's British sound with a bunch of flavor, the Citrus amp is for you! Its tones range from the edge of clean to gritty distortion when master and gain controls are cranked.

Controls

- The Master knob sets the amp's master volume.
- The Gain knob controls gain for the preamp section. Turn clockwise to add distortion.
- The Lo Cut knob adjusts a cut-off filter special to this amp. The lower it is set, the more bass will pass through. Turning the knob clockwise will cut off the bass, bringing the higher frequencies to the front.
- The Bass knob adjusts the low frequency response.
- The Treble knob adjusts the high frequency response.
- The Presence control boosts the frequency response in the upper midrange.

2.11 Ultrasonic

About

Über-modern, über-high-gain, über-cool – that's the Ultrasonic. This boutique amp covers all the modern tones you could ask for.

Controls

- The Overdrive/Clean toggle switches between the amp's clean and overdrive channel.
- Master controls the master volume for both channels.
- Volume sets the level of the currently selected channel.
- Gain controls the amount of preamp overdrive. Use this to dial in the desired crunch and timbre, but use Master to regulate the overall output.
- The Bass knob adjusts the low frequency response.
- The Middle knob adjusts the mid frequency response.
- The Treble knob adjusts the high frequency response.
- The Presence control boosts the frequency response in the upper midrange.

2.12 High White

About

Are you seeking the signature British sound in the flavor of David Gilmour and Pete Townsend? Then you should spend some time with the High White! This amp features a normal input and a brilliant input, which you can blend using the respective volume controls.

Controls

- The Master knob sets the amp's master volume.
- The Normal knob sets the volume for the normal channel. It has a smoother clean sound.
- The Brilliance knob sets the volume for the brilliant channel. It has a slightly more edgy and aggressive tone.
- The Bass knob adjusts the low frequency response.
- The Middle knob adjusts the mid frequency response.
- The Treble knob adjusts the high frequency response.
- The Presence control boosts the frequency response in the upper midrange.

2.13 Tweed Delight

About

There is nothing like the oomph of an amp covered in tweed! This amp, based on an American legend, is designed to go from glassy clean to bluesy roaring – with only three knobs! Both channels can be used together to achieve some power amp overdrive.

Controls

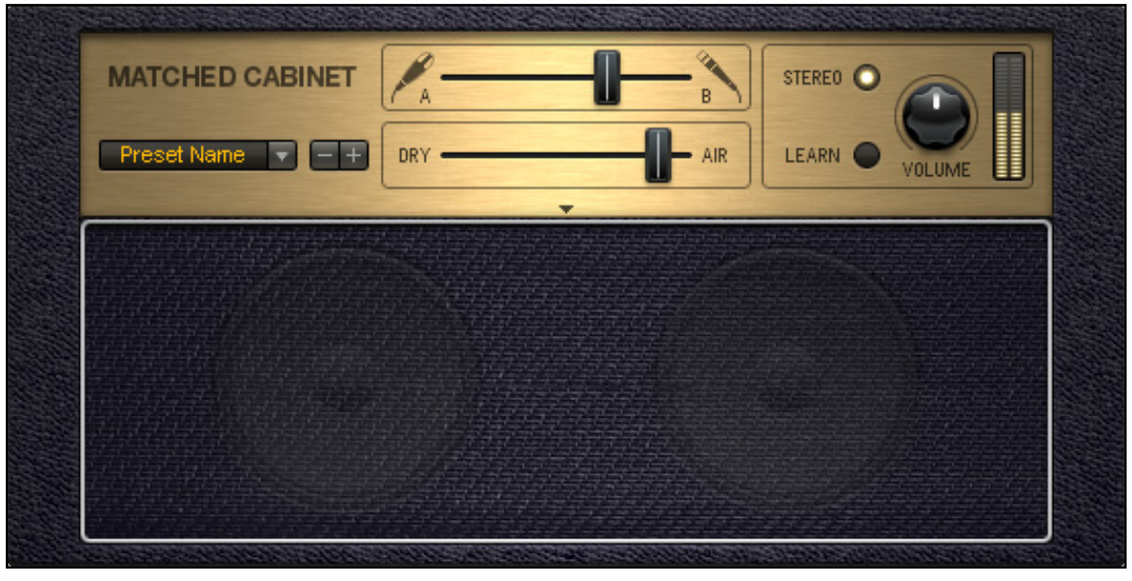
- The Volume Bright knob controls the gain of the bright channel of the amp. It produces slightly edgy, distorted sounds when the gain is raised.
- The Volume Normal knob controls the gain for the normal channel on the amp. It is designed for smoother sounds that will distort when cranked up.
- The Tone knob is your only tone control for this amp. With the knob fully turned down, the high frequencies will be attenuated leaving you with a warm, but muddy sound. As you raise the control, the high end will blend in, adding boost and definition to your sound.

3 Cabinets

No amp setup is complete without a cabinet – it acts as a dynamic filter giving the amp's tone its essential final touch. With GUITAR RIG 4, you have the choice between going the easy way, having (virtually) unlimited options and using a setup recommended by one of the top recording guitarists with the all-new Control Room module.

When adding any amp to your rack, it will automatically be provided with a Matched Cabinet, which creates a setup we feel being a good match. For those who really want to tweak, we have the Cabinets & Mics module, allowing you to combine any cabinet type with any microphone and to tweak EQ, the position of the mic and the amount of room it picks up. The Control Room provides you with the recording expertise of studio professionals, as it offers 8 microphone positions which have been meticulously tweaked and balanced by guitar legend Peter Weihe. As they are all in phase, you can blend them to your liking, to create a perfect mix of your own.

3.1 Matched Cabinet



About

When adding any amplifier to the rack, a Matched Cabinet will also be added right below it. It provides a cabinet fitting the amp you chose, as well as two mic settings which can be blended at any ratio, and an intuitive Dry/Air control.

Controls

- The Cabinet selector allows you to switch between the different flavors of the Matched Cabinet component, allowing them to be combined with any of the amps.
- The A/B Mix slider blends between the two microphones picking up the cabinet. They are different with each Matched Cabinet, offering two fitting variations of it. The general characteristics of both are opposed, giving you an edgy and a mellow option. You can mix between the two to achieve your desired blend.
- Volume sets the volume of the matched cabinets output.
- Volume Learn: Automatically learn the best output volume by activating this button and playing as loud as you can. GUITAR RIG 4 will automatically select the maximum volume while avoiding clipping. Once the volume has been adjusted, the learn function will automatically turn off.
- Dry/Air controls the amount of early reflections picked up by the microphone, simulating the response of the room.
- Stereo activates true stereo processing for this component. As this consumes a lot of CPU power, it should only be activated when you need it!

3.2 Cabinets & Mics

About

The Cabinets & Mics component gives you full control over all the (post-amp) stages of recording a guitar tone: type of cabinet, position and type of microphone and room response. Moreover, it allows you to set up parallel recording chains: Click on the small Add button to add as many independent signal paths as you like, with the same set of options and controls.

List of available cabinets

1	1 x 12 Tweed Alnico	15	4 x 12 High White
2	1 x 12 Custom	16	4x12 Gratifier
3	2 x 12 Tweed Blue	17	4x12 Ultrasonic
4	2 x 12 Tweed Green	18	1 x 15 Bass-PRO
5	2 x 12 Tweed Ceram	19	1 x 15 Bass-WR
6	2 x 12 Brit 60s	20	4 x 10 Bass-PRO
7	2 x 12 Chief V-30	21	4 x 10 Bass-WR
8	2 x 12 Custom	22	8 x 10 Bass-PRO
9	2 x 12 Jazz	23	8 x 10 Bass-WR
10	4 x 10 Tweed Alnico	24	Rotator Horn Closed
11	4 x 12 UK 60s Tall	25	Rotator Horn Open
12	4 x 12 UK 60s	26	Rotator Bass Close
13	4x12 UK 80's	27	Rotator Bass Open
14	4 x 12 UK 70s	28	DI Box

Microphone positions:

- 1/5 On Axis
- 2/5 Off Axis
- 3/5 Edge
- 4/5 Far
- 5/5 Back (Open back cabinets only, always Condenser 87)
- 5/5 Horn (Where available, always Condenser 460)

Microphones for cabinets 1-17 (Guitar):

- 1/5 Dynamic 57
- 2/5 Dynamic 421
- 3/5 Dynamic 609
- 4/5 Condenser 87
- 5/5 Tube Condenser

Microphones for cabinets 18-23 (Bass):

- 1/5 Dynamic 7
- 2/5 Dynamic 421
- 3/5 Dynamic 609
- 4/5 Dynamic 20
- 5/5 Condenser 47

Microphones for cabinets 24-27 (Rotator):

- Horn (24,25) Condenser 460
- Bass (26,27) Condenser 87

Controls

- Master Volume sets the component's overall level. This is helpful if you have used the Add button to create multiple recording chains which have been balanced mutually. The Master Volume control allows bringing all their levels up or down as a group, for example to avoid clipping.
- Master Volume Learn: Automatically learn the best output volume by activating this button and playing as loud as you can. GUITAR RIG 4 will automatically select the maximum volume while avoiding clipping. Once the volume has been adjusted, the learn function will automatically turn off.
- Volume sets the microphone's output level.

- Pan determines the position of the signal in the stereo panorama.
- Bass boosts or cuts the level of the lower frequencies.
- Treble boosts or cuts the level of the higher frequencies.
- Air controls the level of early reflections picked up by the mic, simulating the response of the room.
- Size (the slider below the cabinet graphic) virtually grows or shrinks the size of the selected cabinet. For example, a 1x10 cabinet set to +20% becomes something like a 1x12. This allows for interesting experiments, just try it out.
- Distance is relevant when more than one recording chain is active. It sets the each one's delay caused by the distance between the microphone and the cabinet. Mixing together the signals from multiple microphones can result in cancellation and emphasis of certain frequencies, depending on their relative distances.
- Phase +/- flips the microphone polarity. This can help to solve phase problems.

3.3 Control Room

About

The Control Room is a major leap in mating recording techniques of professional analogue studios with the versatility and convenience of GUITAR RIG. Choose among five outstanding guitar cabinets, and you are offered up to 8 classic microphones to create a unique blend of tonal characteristics – perfect custom tone! The modelled setup is the outcome of decades of guitar recording experience: Each cabinet is paired with perfectly chosen and positioned microphones which are all in phase, so you can mix them as you please. They offer a large variety of tonal colors and are an invitation to experiment! Be sure to check out the Component Presets, as they offer some decent classic tones which you can use as a starting point.

Controls

The Cabinet Model Selector on the right side of the component shows a small picture of the current cabinet model. Click on the arrows below to switch between them.

The mixing console offers 6-8 channel strips, each consisting of the same set of controls:

- The Headline gives an indication of the type of microphone used.
- The L/R knob controls the panning of this microphone's signal, i.e. the position in the stereo panorama.
- The Fader controls the volume of this channel, all Faders together determine the mix.
- M(ute) and S(olo) are standard controls of a mixing desk. M mutes the according channel, S mutes all others to hear it solo.
- The Control Room offers some master controls to shape the sum of all the signals:
- Air controls the level of early reflections picked up by the mic, simulating the response of the room.
- Bass boosts or cuts the level of the lower frequencies.
- Treble boosts or cuts the level of the higher frequencies.

- Volume controls the master volume for all microphones, allowing to adjust their level after you have balanced them to your liking.
- L(earn): After pressing the small button right of the Volume knob, the output volume is “learned” automatically: Just play as loud as you can for a few seconds. Once the volume has been adjusted to the maximum while avoiding clipping, the learn function will automatically turn off.
- Stereo activates true stereo processing for this component. As this consumes quite a lot of CPU power, you should only activate it if needed!

4 Distortion and Overdrive

Distortion is historically the first guitar effect and still one of the essential elements of many popular guitar sounds. First discovered when amplifiers were pushed beyond their capacity, the harmonic enrichment provided by the addition of strong overtones quickly became fashionable. Today, a wide variety of distortion flavors is available in stomp boxes that are generally inserted between guitar and amp. As most of them amplify the signal, they can be used to enhance the amp's own overdrive, as well as blend in their own characteristic of distortion.

The distortion and overdrive components of GUITAR RIG 4 are accurate reproductions of classic hardware devices of such kind. Therefore, just like the transistorized originals, these effects can sound somewhat thin and artificial by themselves – especially when driven hard. Feed them into an amp/cabinet combination to create a beefy and realistic sound.

Distortion tips

Here are some hints on how to achieve a special distortion tonality. These apply to the various distortion Components.

- Smooth sound: Use the neck pickup with the Tone Control set for minimum treble.
- Raunchier sound: Use the Bridge Pickup.
- Using optional guitar switches: If your guitar has a series/parallel pickup switch, the series position will give the thickest fuzz sound. If your guitar has a phase switch, the "out of phase" position will provide the thinnest sound.
- Brighter sound: On some guitars (particularly Fender solid body types), turning down the volume control attenuates the low frequencies more than the high frequencies. Thus, if you turn it down about 3/4 of the way, the upper strings will distort more than the lower ones. This gives a bright, lively type of distortion.
- Balancing the sound: The adjustment of your pickup's height is crucial for getting a consistent distortion sound. If the sound is too boomy, angle the pickups slightly so that the bottom three strings are further away from the pickup than the top three strings. Also, note that newer strings will sustain longer than older strings.

4.1 Fuzz

About

Looking for that special 60's fuzz sound? The Fuzz's rather thin and sharp tone will make your leads cut through a mix like a chain saw. As a bonus, you can create buzzing vintage rhythm guitar sounds, too.

Controls

- ▶ Volume is the master volume control for this component.
- ▶ The Fuzz control controls the distortion's fuzziness.

Expert controls

- ▶ The Bass knob adjusts the low frequency response.
- ▶ The Treble knob adjusts the high frequency response.
- ▶ Stereo activates true stereo processing for this component.

4.2 Big Fuzz

About

Stretch sustain to the max, like a 1970s guitar hero or add some serious grunge to your tone. This is the distortion of choice for some serious rock and roll sounds.

Controls

- Volume is the master volume control for this component.
- Sustain affects the sound's sustain by controlling the amount of gain going to the distortion circuitry.
- Turn Tone clockwise to emphasize low frequencies and reduce higher frequencies, or counter-clockwise to attenuate the bass range and enhance the high frequencies.

Expert controls

- The Bass knob adjusts the low frequency response.
- The Treble knob adjusts the high frequency response.
- Stereo activates true stereo processing for this component.

4.3 Cat

About

If you want a responsive overdrive for blues and rock (rhythm or lead), the Cat is your component of choice. But beware: Kick the Cat hard, and you will be facing an angry punk!

Controls

- Volume is the master volume control for this component.
- Filter affects the sound's color. For a darker sound, turn clockwise to enhance the low frequency range; turn counter-clockwise for a brighter, sharper sound.
- Distortion controls the amount of distortion applied.

Expert controls

- Turn the Balls control clockwise to add low-end punch. Turning it counter-clockwise creates a flatter, more biting sound.
- The Bass knob adjusts the low frequency response.
- The Treble knob adjusts the high frequency response. In the low end of the range (from 0.00 to 3.00) can add a wah-wah like effect.
- Tone adjusts the frequency range influenced by the built-in pre-distortion midrange booster.
- Stereo activates true stereo processing for this component.

4.4 Skreamer

About

This warm, smooth-sounding overdrive works great for rhythm guitar and smooth leads.

Controls

- Volume is the master volume control for this component.
- Turning Tone clockwise gives bright, screaming leads and biting rhythms. Counterclockwise gives a mellower, darker sound.
- Drive controls the “crunch factor”. Turn clockwise for more distortion.

Expert controls

- The Bass knob adjusts the low frequency response.
- The Bright knob adjusts the high frequency response.
- Clean adds some of the unprocessed sound to the output, from none to maximum.
- Stereo activates true stereo processing for this component.

4.5 Distortion

About

Whenever you need the kind of distortion that will scare animals or clear a room of unwanted guests, insert this baby and turn it up to 11.

Controls

- Volume is the master volume control for this component.
- Turning Tone clockwise accents the midrange while dropping the bass. Counterclockwise takes off the highs and boosts the bass for a warmer sound.
- Distortion is the main grunge control. Turn it clockwise to dirty up the sound.

Expert controls

- The Bass knob adjusts the low frequency response.
- The Mid knob adjusts the midrange frequency response.
- The Treble knob adjusts the high frequency response.
- Stereo activates true stereo processing for this component.

4.6 Mezone

About

This component delivers pure Metal. Pre- and post-distortion tone controls let you tailor the sound just about any way you want.

Controls

- Volume is the master volume control for this component.
- The Bass knob adjusts the low frequency response. It is especially powerful in this component.
- Mid controls the amount of the Mezone's midrange frequency boost.
- Mid Freq sets the center frequency for the Mid boost.
- The Treble knob adjusts the high frequency response.
- Distortion controls the amount of distortion applied.

Expert controls

- The Expert controls provide filters applied before the distortion stage, greatly influencing the distortion's character.
- Bass controls how much bass is passed through to the distortion.
- Mid-Q controls the amount of the midrange boost.
- Mid Freq sets the center frequency for the Mid boost.
- Turning Treble clockwise lets through high frequencies to the distortion section.
- Stereo activates true stereo processing for this component.

4.7 Demon Distortion

About

Definitely a piece of hard rocker's gear, the Demon Distortion provides you with razor-sharp, long-sustaining leads and speaker-blasting rhythm sounds.

Controls

- Volume is the master volume control for this component.
- The Bass knob adjusts the low frequency response.
- The Mid knob adjusts the midrange frequency response.
- The Treble knob adjusts the high frequency response.
- Gain controls the amount of distortion.
- The Scoop switch drastically attenuates the midrange frequencies, which produces a typical modern metal sound. With Scoop on, the Mid control has no effect.

Expert controls

- The Bottom knob controls how much bass passes through to the distortion section. If the distortion lacks definition, lower this knob to tighten the sound.
- Boost sets the center frequency of the built-in pre-distortion midrange booster.
- Bass determines the center frequency of the equalizer's Bass control.
- Mid determines the center frequency of the equalizer's Mid control.
- Treble determines the center frequency of the equalizer's Treble control.
- Bright fine-tunes the signal's presence by attenuating or enhancing the highest frequencies.
- Stereo activates true stereo processing for this component.

4.8 TransAmp

About

This versatile, analog distortion box set the stage for the later generation of digital wonderboxes. When you need a one-for-all fuzz solution, TransAmp delivers a wide variety of tones – from cool sounds on the verge of distortion to biting, raging heat.

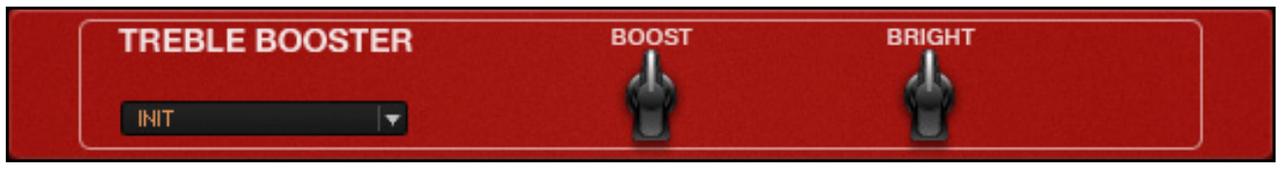
Controls

- ▶ Volume is the master volume control for this component.
- ▶ The Bass knob adjusts the low frequency response.
- ▶ The Treble knob adjusts the high frequency response.
- ▶ Drive controls the amount of overdrive, from slight crunch to hardcore distortion.
- ▶ The Amp control blends between three classic amp characters: Tweed, British, and California.

Expert controls

- ▶ The Clean switch reduces overall gain, producing interesting variations of the amp types.
- ▶ Cab&Mic activates speaker cabinet and miking simulation.
- ▶ MicPos has an effect only if the Cab&Mic function is enabled. It places the mic at in off-axis position of a variable degree when turned counter-clockwise, and at a variable distance from the speaker when turned clockwise.
- ▶ Hot has an effect only if the Cab&Mic function is enabled. Turning the control more clockwise produces a brighter, hotter sound.
- ▶ Stereo activates true stereo processing for this component.

4.9 Treble Booster



About

Treble Boosters were used by Brian May from Queen, as well as Eric Clapton to push their tube amps into creamy distortion. Tony Iommi, Rory Gallagher, Ritchie Blackmore, and David Gilmour are other guitarists who used this technique.

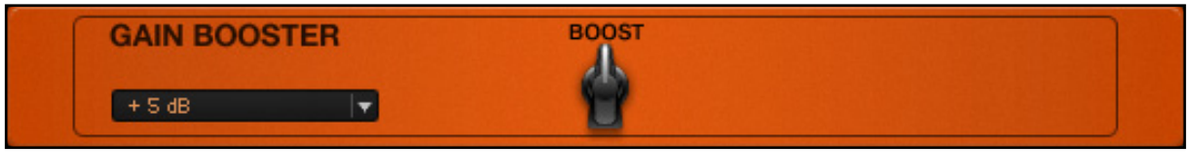
Controls

- ▶ Bright, when turned down, reduces the boosting in the highest frequency range.
- ▶ Boost sets the degree of treble boosting.

Expert control

- ▶ Stereo activates true stereo processing for this component.

4.10 Gain Booster



About

This component can add gain where you need it – for insane amounts of overdrive, to compensate for settings that reduce level, or simply to get your amp up to 11.

Controls

- ▶ Boost sets the degree of gain boosting.

Expert control

- ▶ Stereo activates true stereo processing for this component.

4.11 Sledgehammer

About

If you want your guitar to clear its way through a mix, try the Sledgehammer. This effect is downright brutal and will give you as much presence as you need.

Controls

- Volume is the master volume control for this component.
- The Bass knob adjusts the low frequency response.
- The Treble knob adjusts the high frequency response.
- Contour scoops out a range of frequencies depending on the Freq settings. The amount of attenuation is controlled by this knob. When it is completely turned down, the Freq knob has no effect.
- The Freq knob sets the center of the frequency range affected by the Contour knob, from midrange to treble.
- Gain controls the amount of distortion.
- The Distortion/Drive switch changes the distortion characteristics from softer overdrive to harder, more edgy tones.

Expert control

- Stereo activates true stereo processing for this component.

5 Modulation

A modulator introduces motion into formerly static sounds. Common modulation devices in hardware rigs are chorus, tremolo and flanger. GUITAR RIG 4 provides you with a vast array of modulators than can be inserted anywhere in your rig! The majority of modulation components have the ability to sync either to the host clock or the metronome clock.

5.1 Tremolo

About

This component provides a periodic amplitude change creating a pulsing effect.

Controls

- Intensity controls the tremolo effect depth.
- Rate sets the modulation frequency. Fast settings add a shimmering effect to the sound.
- Tempo Sync will synchronize the tremolo rate to the host tempo or the Metronome tempo, depending on your sync settings.
- Stereo Pan activates a stereo tremolo effect: When the level increases in one channel, it decreases in the other one and vice-versa.

Expert controls

- Width controls the ratio between the phases of high and low amplitude. Turning it up increases the “gaps” between the times the signal is at full amplitude. In stereo mode, turning this knob to the left decreases the time the signal is panned to the left and vice versa. Turning it to the right does the same in the opposite direction.
- Down controls the decay time of the tremolo, i.e. the time it takes to go from the highest to the lowest volume level.
- Up changes the attack time, i.e. the time it takes to go from the lowest to the highest volume level. Turning both down creates an edgy stutter effect.

5.2 Ensemble

About

This unique effect is based on a popular vintage processor. It adds slightly detuned voices to the signal and thus creates a polyphonic sound. Also, it provides a vibrato effect.

Controls

- Volume sets the master level of this component.
- Chorus Intensity sets the effect depth and is only active in Chorus mode
- Mode switches between chorus and vibrato mode.
- Depth sets the amount of pitch deviation and is only active in Vibrato mode.
- Rate sets the vibrato speed and is active only in Vibrato mode.

Expert controls

- ▶ Temp Sync synchronizes the Rate setting to the metronome or host tempo, depending on the Sync setting.
- ▶ Dry/Wet sets the ratio of dry to processed sound.
- ▶ Bass controls the level of the lower frequencies.
- ▶ Mid controls the level of the midrange frequencies.
- ▶ Treble controls the level of the high frequencies.
- ▶ Delay sets the chorus circuit's delay time, i.e. the time until the effect affects the signal.
- ▶ Stereo adjusts the panning of the chorus voices from mono to full stereo.

5.3 Chorus/ Flanger

About

This delay-based unit can create chorusing, flanging, and pitch modulation effects, depending on the Mode switch:

- ▶ Chorusing adds slightly detuned voices to the signal and thus creates a polyphonic sound.
- ▶ Flanging produces a spacey whooshing sound due to a mix of the original signal with one processed with a constantly varying delay time.
- ▶ Pitch Modulation is better known as vibrato and causes a cyclic pitch change.

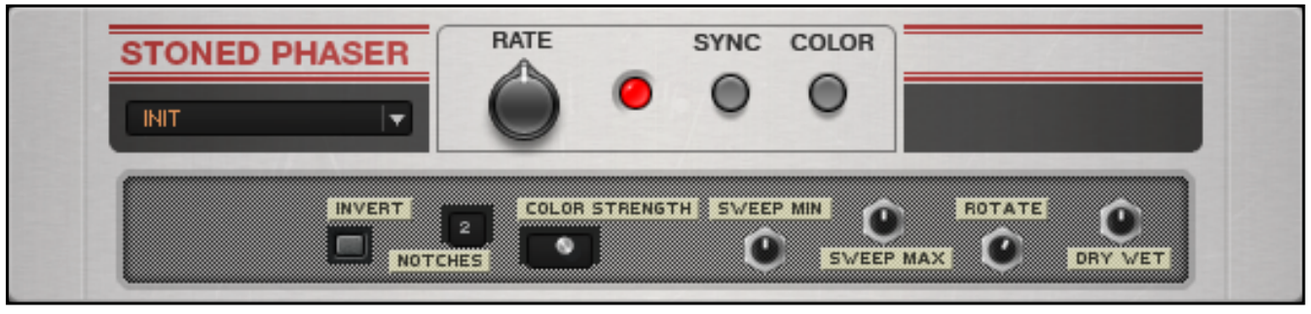
Controls

- ▶ Speed varies the modulation rate of the chosen effect mode.
- ▶ Intensity controls the ratio of unprocessed to processed signal and creates a different effect depending on the chosen mode – it's best to try it out!
- ▶ Width determines the range of each effect, i.e. the difference between both extremes of modulation.
- ▶ Mode switches between the Chorus, Flanger, and Pitch Modulation mode.

Expert controls

- ▶ Sync synchronizes the Rate setting to the metronome or host tempo, depending on the Sync setting.
- ▶ Stereo creates an extra-wide stereo effect.

5.4 Stoned Phaser



About

The Stoned Phaser adds a swirling effect to the sound especially known from Psychedelic Rock music. This component is modeled after a popular phaser from the 1970s.

Controls

- ▶ Rate controls the speed of the phaser effect.
- ▶ Sync synchronizes the phaser rate to the metronome or host, depending on the Sync setting.
- ▶ The Color switch provides a timbral change to the standard phaser sound.

Expert controls

- ▶ Invert changes the phase of the shifted signal, producing a yet another coloration.
- ▶ Notches determines the number of stages of the phase shifter. Click on the number and drag to select from 1 to 5 notches.
- ▶ Color Strength controls how much the Color Button affects the sound.
- ▶ Sweep Min sets the sweep's lower frequency limit.
- ▶ Sweep Max sets the sweep's upper frequency limit.
- ▶ Rotate alters the phase difference between the LFOs feeding the left and right channels for a stereo effect.
- ▶ Dry/Wet adjusts the mix of the dry and processed sound.

5.5 Rotator

About

This effect simulates the effect of miking a rotating speaker. A true rotating speaker has two separate elements – the lower rotor and upper rotor – and this module faithfully emulates both, providing separate controls for each one

Controls

- ROTATOR allows switching the speed of the rotating speaker from slow to fast.
- BALANCE sets the ratio between the sound produced by the rotating speaker's high frequency horn and the low frequency woofer. Turning clockwise gives more highs, while turning counterclockwise gives a bassier sound.
- PAN changes the treble and bass rotors' location in the stereo field. Turning clockwise moves treble right while bass moves left and vice versa.
- DISTANCE sets the distance between the virtual microphones and the rotating speaker. The closer they are, the stronger the rotating effect is perceived.
- DRY/WET controls the effect's strength; turn fully clockwise to hear the rotating speakers only.

Expert controls

- CAB TONE allows deactivating the Rotator's own cabinet simulation for more customization possibilities. For the most authentic sound, insert the Cabinets & Mics component preceding the Rotator with two signal chains. One holds the Rotator Bass cabinet panned to the left, the other the Rotator Horn cabinet panned to the right. Generally, the Rotator routes the left incoming channel to the bass rotor and the right incoming channel to the treble rotor and by its function creates a new stereo field.
- Each rotor (treble and bass) has a set of identical controls.
- SLOW sets the rotor speed in slow mode.
- FAST sets the rotor speed in fast mode.
- ACCEL controls the acceleration of the rotors when switching from slow to fast mode and vice versa. It spans from a very sedate speed change to almost instant switching.
- SPREAD controls the width of the stereo image by setting the distance between the virtual microphones.

5.6 Oktaver

About

This component adds two signals to the original pitch that are one and two octaves below. Please mind:

The Oktaver works well only with single notes, not with chords. Insert the Oktaver near the beginning of your rack's signal chain. Do not precede it with reverb, delay, or other modulation effects, as these will confuse its pitch tracking. However, it usually works well behind the Tube Compressor, Stomp Compressor and EQs.

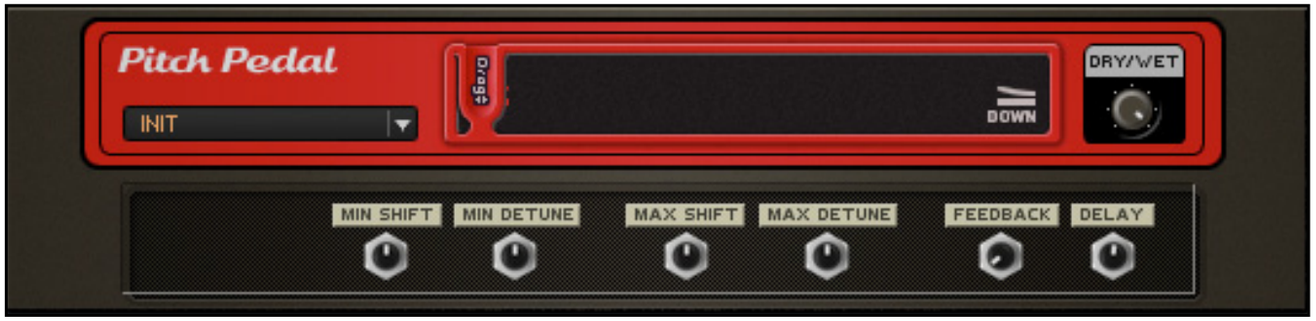
Controls

- Direct sets the level of the dry signal.
- Oct 1 sets the level of the signal one octave below.
- Oct 2 sets the level of the signal two octaves below.

Expert controls

- Cutoff changes the timbre for Oct 1 and 2 seperately. Turn up to increase brightness.
- Reso sets the filter resonance for Oct 1 and 2 seperately.
- Stereo activates true stereo processing for this module.

5.7 Pitch Pedal



About

The Pitch Pedal basically has the same effect as a guitar's vibrato tailpiece, except that all the strings stay in tune as you bend up and down. Controlling the pitch shift with a controller pedal is highly recommended for hands-free control over pitch changes.

The expert mode offers many controls to tweak the effect for your particular bending needs. If you don't want to get involved in these, simply choose one of the component presets for common string-bending effects.

Controls

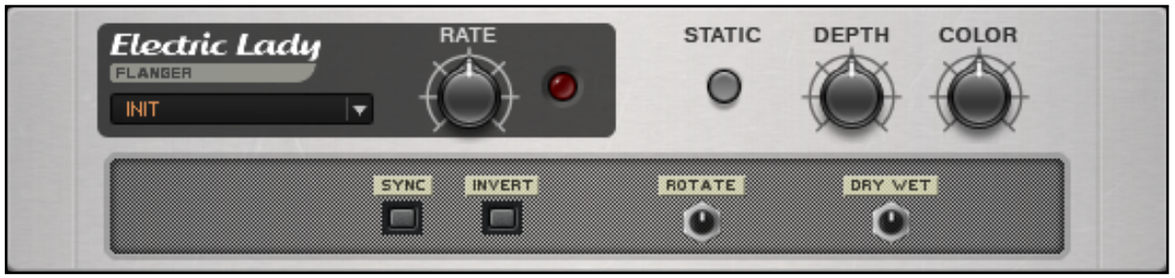
- Drag changes pitch within the range set in the expert controls.
- Dry/Wet controls the blend of dry and processed sound.

Expert controls

- Min Shift sets amount and direction of the pitch shift when the slider is set to the extreme left. The range is ±24 semitones.
- Min Detune allows fine-tuning the pitch shift for the left position of the slider. The range is ±100 cents.
- Max Shift sets amount and direction of the pitch shift when the slider is set to the extreme right. The range is ±24 semitones.
- Max Detune allows fine-tuning the pitch shift for the right position of the slider. The range is ±100 cents.

- ▶ Feedback determines the amount of the output signal to be looped back to the input, offering interesting effects. If the Pitch Pedal is set to transpose the signal +1 semitone, that signal is looped to be transposed another semitone, and so on, producing an ascending series of tones.
- ▶ Delay controls the amount of delay in the feedback path, from 10 to 50 ms. The longer the delay, the more it creates a discreet series of notes; with shorter delays the result is a smooth reverberation.

5.8 Electric Lady



About

The Electric Lady adds a very versatile stereo flanger to your effects rack. Modeled after an all-time classic, the Electric Lady produces sounds that range from subtle flanging and chorusing to weird metallic timbres and extreme flanger swooshes. In static mode, the unit acts as a filter allowing for chime-like tones and various effects.

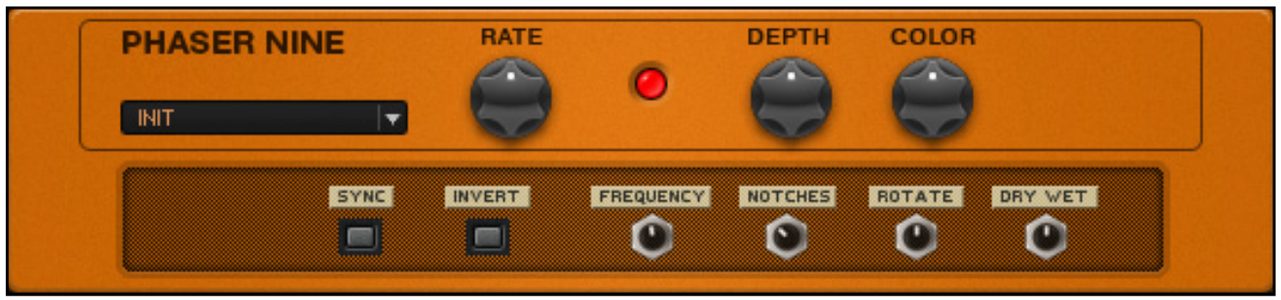
Controls

- ▶ Rate controls the speed of the LFO causing the flanger modulation.
- ▶ Static disables the modulating LFO and thus puts the unit in static mode. The unit becomes a static filter with the characteristics of the extreme position of the flanger, set by the Depth knob.
- ▶ Depth controls the intensity of the modulation. With higher values a broader frequency range is affected.
- ▶ Color controls the frequency of the filters, varying the general timbre of the effect.

Expert controls

- ▶ Sync synchronizes the LFO speed to the metronome or host, depending on the Sync setting.
- ▶ Invert shifts the phase of the effect signal, creating a different timbre.
- ▶ Rotate alters the phase difference between the LFOs feeding the left and right channels for a stereo effect.
- ▶ Dry/Wet adjusts the mix of the dry and processed sound.

5.9 Phaser Nine



About

This phaser is based on another well-known effect design, adding all kinds of animated shimmering to your guitar sounds.

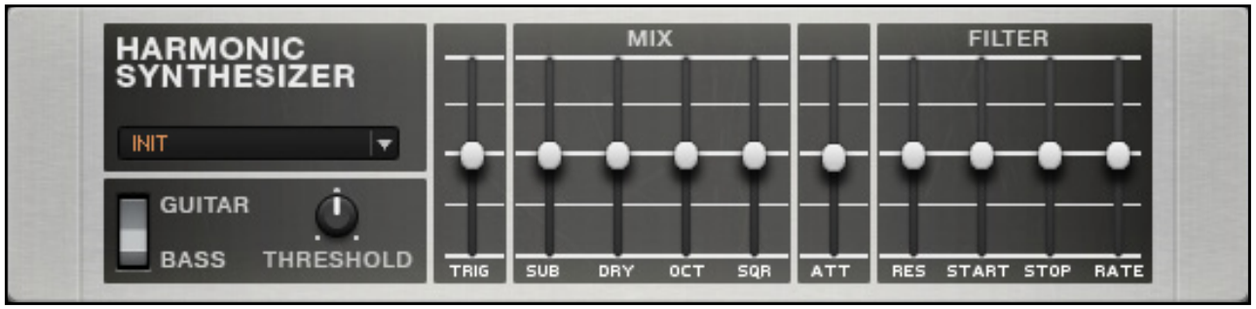
Controls

- ▶ Rate controls the speed of the LFO causing the phaser modulation.
- ▶ Depth determines the intensity of the phasing.
- ▶ Color controls the timbre of the phasing as caused by the feedback of the effect. Higher settings put more emphasis on the harmonics.

Expert controls

- ▶ Sync synchronizes the LFO speed to the metronome or host, depending on the Sync setting.
- ▶ Invert shifts the phase of the effect signal, creating a different timbre.
- ▶ Frequency controls the base frequency around which the LFO modulation will take place.
- ▶ Notches sets the number of notches the effect applies to the frequency range.
- ▶ Rotate alters the phase difference between the LFOs feeding the left and right channels for a stereo effect.
- ▶ Dry/Wet adjusts the mix of the dry and processed sound.

5.10 Harmonic Synthesizer



About

The Harmonic Synthesizer opens up a whole world of synthesizer sounds, controlled simply by playing your guitar. It can produce faithful re-creations of classic sounds but is also well-suited for generating effects never heard before.

The effect creates adds three synthetic voices to the dry signal – sub-octave, octave and square wave – that can be freely mixed. Envelope shaping as well as coloring is achieved by a swept filter.

Mind that this component is only fully functional when you're playing single notes, allowing it to track the exact pitch.

Controls

- Guitar/Bass is used for switching the filter sweep range to be fed by a guitar or a bass.
- Threshold acts as a noise gate for the input signal. Only signals above the threshold will get through and trigger the volume envelope and the filter sweep. Dial in a setting according to your individual instrument and playing style.
- The Trigger fader controls the sensitivity of the filter's trigger, reducing the signal volume needed to activate it. If you set it too high it may result in a stuttering filter due to multiple triggering. Experiment a bit to find the setting that suits your needs.
- Sub controls the volume of the sub-octave added by the synthesizer. Only works with single notes.
- Dry controls the volume of the original guitar signal.
- Oct controls the volume of the upper octave added by the synthesizer. Only works with single notes.
- Sqr mixes in a square wave signal that can be controlled by dynamic playing.
- Att shapes the attack of the synthesizer envelope. The higher it is set, the slower the signal will be faded in, attenuating the attack sound of the instrument.
- Res controls resonance and width of the filter. With higher values you get a broader frequency range and a more pronounced peak around the filtered frequencies.
- Strt sets the frequency at which the filter sweep starts.
- Stop sets the destination and resting frequency of the filter sweep. If Start and Stop are set to the same value, the filter will emphasize that particular frequency without sweeping.
- Rate determines the speed of the filter sweep from the start frequency to the stop frequency.

5.11 Ring Modulator

About

A ring modulator is one of the seminal effects from the era of analogue noisemaking. The basic idea is very simple, nothing more than taking two signals and mixing the sum and difference of both, but the result is a large variety of unique sounds.

Controls

- The Mod section offers the following controls:
- Ring is a dry/wet control and blends the original and the ring-modulated sound.
- FM Control controls the amount of frequency modulation applied to the original signal.
- The Freq knob controls the frequency of the oscillator's signal being mixed with the original signal.
- HI/LO sets the frequency range of the oscillator, influencing the range of the FM and Freq knobs.
- The LFO Section allows to add movement to the sound by periodically changing the frequency of the oscillator used in the Mod section:
- The Amount knob controls the amount of modulation the LFO applies on the oscillator.
- The Rate knob controls the rate of periodic modulation through the LFO.
- Sine/Square switches the LFO's signal between a sine wave or square wave, creating either soft or sudden changes of the oscillator's frequency.

Expert controls

- ▶ Sync synchronizes the LFO speed to the metronome or host, depending on the Sync setting.
- ▶ Edge modifies the waveform of the oscillator. You can add overtones resulting in a more aggressive sound.

6 Filter

Filtering is the process of boosting or attenuating parts of a frequency spectrum. It is one of the most powerful ways to shape your sound, and GUITAR RIG 4 offers several great tools to do it.

6.1 EQ Shelving

About

A shelving equalizer combines a hi-pass and a low-pass filter to boost or attenuate the frequency ranges above and below their frequency limits, while the midrange frequencies remain untouched.

This EQ easily corrects issues like a lack of high frequency “sparkle” or a boomy bass. The graph illustrates the response, while the tool tips for each dot show the exact frequency in Hz and amount of boost/cut in dB.

Controls

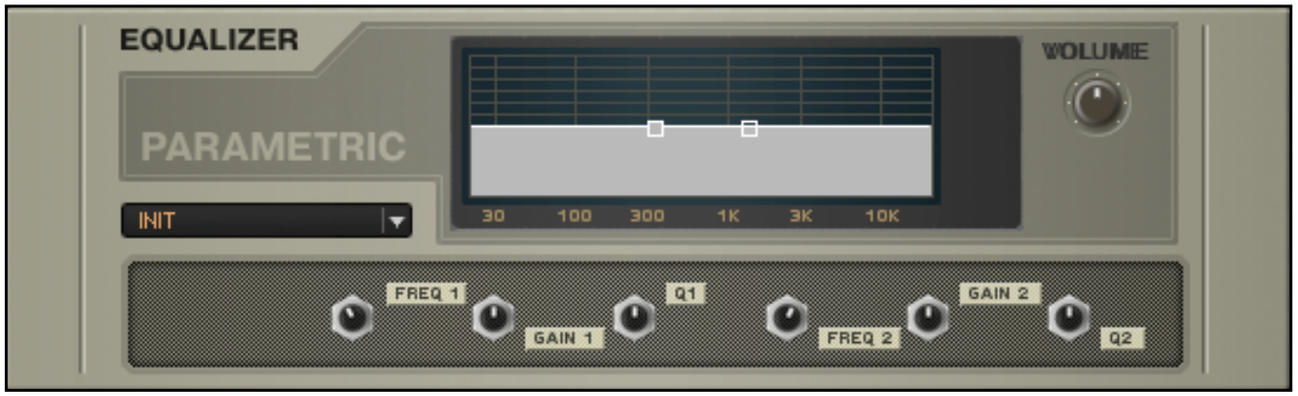
There are two ways to adjust this component:

- Click on one of the boxes in the graph and drag them: up to increase gain, down to decrease gain, sideways to change the frequency limit.
- Adjust these same parameters using the knobs in expert mode.

Expert controls

- Lo Freq sets the upper frequency limit for Gain1 (low shelf).
- Lo Gain controls the amplification of the low shelf – in center position, it is neutral. Turning it clockwise boosts the response, turning it counterclockwise attenuates it.
- Hi Freq sets the lower frequency limit for Gain2 (high shelf).
- Hi Gain controls the amplification of the high shelf – in center position, it is neutral. Turning it clockwise boosts the response, turning it counterclockwise attenuates it.

6.2 EQ Parametric



About

A parametric equalizer is a highly sophisticated form of tone control, as it allows boosting or attenuating a continuously adjustable range of frequencies with a variable bandwidth from broad to sharp. The graph illustrates the response created by the controls, while the tool tips for each dot show the exact frequency in Hz and amount of boost/cut in dB.

EQ Parametric includes two complete parametric EQ stages, allowing – for example – to boost the bass frequencies around 100 Hz and to add a midrange notch.

Controls

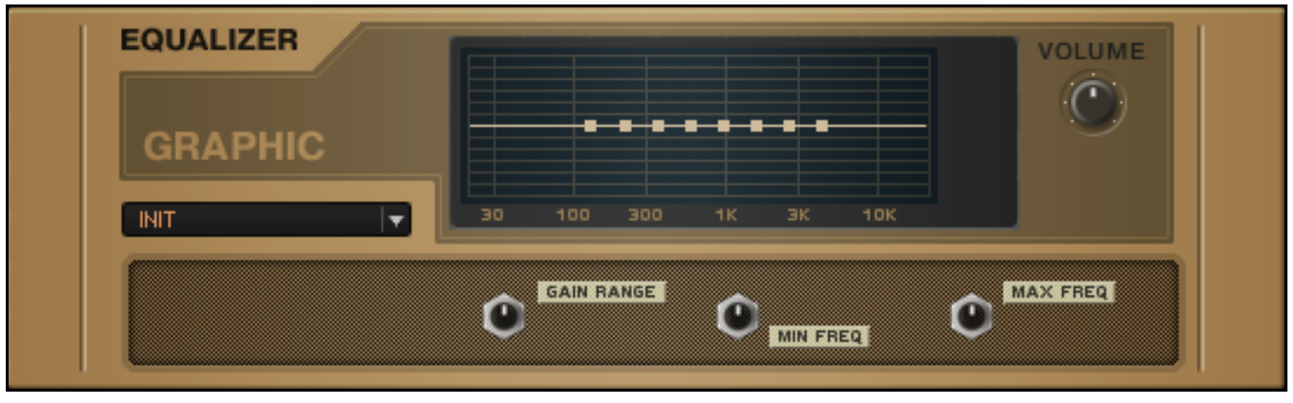
There are two ways to adjust this component:

- Click on one of the boxes in the graph and drag them: up to increase gain, down to decrease gain, sideways to change the according center frequency.
- Adjust these same parameters using the knobs in expert mode.

Expert controls

- Freq1 and Freq2 set the center frequencies for each EQ stage. The amplification set by Gain1 and Gain2 affects the surroundings of these frequencies, as further defined by Q1 and Q2.
- Gain1 and Gain2 set the amount by which the according frequency ranges are boosted or attenuated, the center position is neutral.
- Q1 and Q2 set the bandwidth of the frequency range affected by the according EQ stage. They allow to control how broad or precise the effect works by choosing higher or lower settings.

6.3 EQ Graphic



About

This module uses multiple band pass filters to split the audio spectrum into eight bands and provides an individual gain control for each band.

Controls

- The Boxes set the gain applied to each frequency band. Drag the dot up to increase amplification, down to decrease it. Double-clicking on a handle restores it to zero gain.

Expert controls

- Range sets the maximum amount of boost and cut, influencing the effect of the gain settings. It ranges from ±1dB (very fine adjustment) to ±30dB (very intense effect).
- Min/Max set the lowest and highest band's frequencies, thereby defining the position of the intermediate frequency bands. Those are spaced equally by logarithmic ratios.

6.4 Custom EQ

About

The Custom EQ is the emulation of a "boutique" EQ, which is very popular in the studio these days. It has a particularly colorful, warm EQ sound.

Controls

- The Tone knob controls the balance between treble and bass sound. When turned down, the low frequencies are boosted and the high frequencies are suppressed, when turned up it is the other way round.
- Freq sets the center frequency for the midrange attenuation of this EQ, as controlled by the Scoop knob.
- Scoop controls the amount of midrange attenuation in the EQ response.
- Volume sets the master volume of this component.

6.5 Pro-Filter

About

The Pro-Filter is based on a filter included in Native Instruments' popular software synthesizer Pro-53. It has a fat, rich sound that works very well as a tone control, but tying the Cutoff to a controller pedal also allows for great wah-wah sounds.

For advanced effects, you should try modulating the cutoff using the various Modifier components. For example, you can produce filtered effects that sync to the beat using the Step Sequencer.

Controls

Cutoff sets the operation frequency of the filter. Filtering occurs above and/or below it as defined by the LFP/BPF/HPF knob.

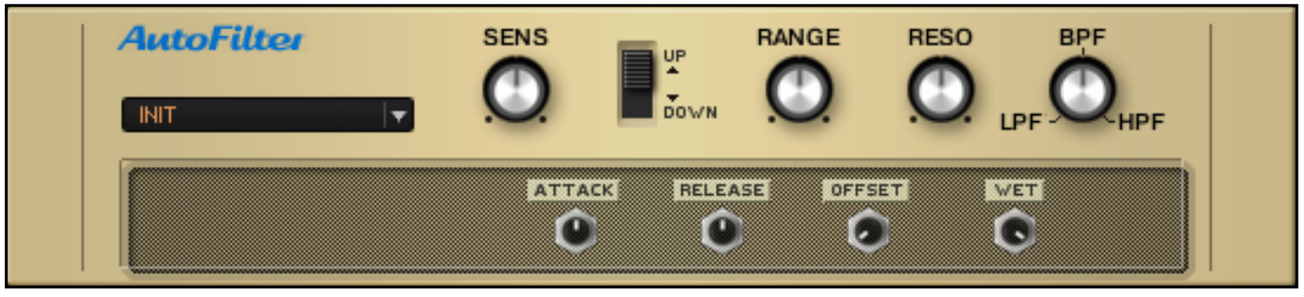
Reso sets the filter bandwidth – turning it up narrows the frequency range and thus increases accentuation of the center frequency.

Slope controls the rate at which frequencies are attenuated past the cutoff frequency. When turned down, frequencies are attenuated softly, at a rate of 12dB per octave. When turned up, frequencies are attenuated at a rate of 24dB per octave, producing an intense filter sound.

LFP/BPF/HPF blends continuously between three different filter modes:

- Lowpass (LFP) – the filter passes low frequencies and attenuates high frequencies
- Bandpass (BPF) – the filter passes a band of frequencies and attenuates frequencies above or below that band
- Highpass (HPF) – the filter passes high frequencies and attenuates low frequencies

6.6 AutoFilter



About

The AutoFilter is basically a wahwah that responds to the dynamics of your playing. The AutoFilter sound is very popular in funk music, particularly from the 1970s.

Controls

- Sens controls the sensitivity of the AutoFilter and should be tuned to match your guitar's level. If the filter isn't triggered or doesn't sweep sufficiently, increase the sensitivity. If the filter is triggered too easily, turn the sensitivity down.
- With the Up/Down switch set to "down", playing harder drives the filter down to a lower frequency; as the string decays, the filter returns to a higher frequency. When set to "up", playing harder drives the filter up to a higher frequency; as the string decays, the filter returns to a lower frequency.
- Range sets the width of the filter sweep. Turn it clockwise to sweep over a wider range.
- Reso controls the sharpness of the filter response.
- LFP/BPF/HPF blends continuously between three different filter modes:
- Lowpass (LFP) – the filter passes low frequencies and attenuates high frequencies
- Bandpass (BPF) – the filter passes a band of frequencies and attenuates frequencies above or below that band
- Highpass (HPF) – the filter passes high frequencies and attenuates low frequencies

Expert controls

- ATTACK sets the time the filter takes to complete the sweep, from 5ms to 80ms.
- RELEASE sets the time the filter takes to return to its initial setting after the sweep, from 50ms to 800ms. With short release times, the AutoFilter tracks even slight level changes. This can produce a choppy sound; turn up the release time for a smoother decay.
- OFFSET adjusts the filter's center frequency, i.e. the starting point for the filter sweep.
- WET controls the blend between dry and filtered signal. This is particularly useful with a bass guitar, as the filter might thin out the sound. By turning this knob down, you can add some of the dry signal to prevent this from happening.

6.7 Wah-Wah Pedal

About

The classic wah-wah pedal is a filter that sweeps a response peak over a frequency range; the wah-wah in GUITAR RIG 4 is perhaps the most versatile execution of this idea! Independent settings for filter frequency, resonance, and level at the high, mid, and low positions of the pedal allow for meticulous customization of the response and feel of the pedal.

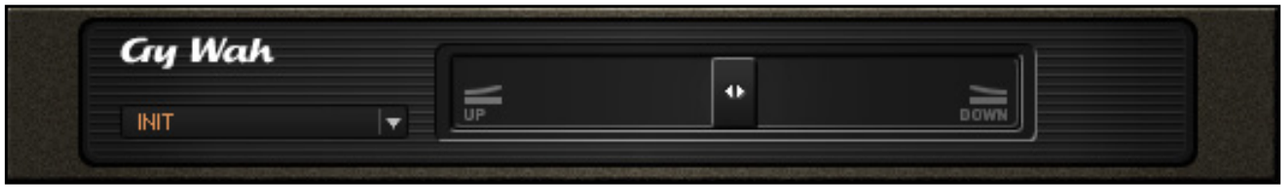
Controls

- The slider controls the peak frequency. Moving the slider toward the left lowers the frequency, and moving it toward the right raises the frequency. The RIG KONTROL expression pedal is ideal for controlling this.

Expert controls

- ▶ Stereo activates true stereo processing for this module.
- ▶ Lp/Bp/Hp controls the filter's characteristics (low pass, band pass, and high pass) and allows to continuously blend between them. Lowpass has the response of a typical cutoff filter, band pass works more like a traditional wahwah, and high pass attenuates low frequencies as you move the slider to the right.
- ▶ Dry controls the blend between dry and filtered signal. By turning this knob up, you add more of the dry signal to the mix.
- ▶ Freq Min sets the filter frequency with the slider set all to the left.
- ▶ Freq Mid sets the filter frequency with the slider at its middle position.
- ▶ Freq Max sets the filter frequency with the slider set all to the right.
- ▶ Res Min sets the amount of filter resonance with the slider set all to the left.
- ▶ Res Mid sets the amount of filter resonance with the slider at its middle position.
- ▶ Res Max sets the amount of filter resonance with the slider set all to the right.
- ▶ Volume Min sets the filter level with the slider set all to the left.
- ▶ Volume Mid sets the filter level with the slider at its middle position.
- ▶ Volume Max sets the filter level with the slider set all to the left.

6.8 Cry Wah



About

The Cry Wah is based on the most popular wah-wah of all times. This pedal has been modeled as an exact replica, therefore it provides no expert controls.

Controls

- The slider is used to control the wah-wah frequency. Moving the slider toward the left lowers the frequency, moving it toward the right raises the frequency.

6.9 Real Wah

About

The Real Wah is based on a custom wah-wah pedal that became an instant classic when it appeared in the late 90's.

Controls

- The slider is used to control the wah-wah frequency. Moving the slider toward the left lowers the frequency, moving it toward the right raises the frequency.

6.10 Talkwah

About

This is similar to a wah-wah, but utilizes a different filter type emulating the way vowels are shaped by the human mouth. The result is similar to the "talk box" effect that was very popular in the 70s.

Controls

- The slider controls the filter's frequency. Moving the slider toward the left produces a sound like the vowel "o"; moving it toward center morphs into more of an "a", going further to the right creates an "e" sound. Control this with the RIG KONTROL's foot pedal and you'll be amazed at the sounds you are able to coax out of your guitar.

Expert controls

- Stereo activates true stereo processing for this module.
- The Bright switch accentuates the high frequencies.
- Volume controls the overall level of this component.
- Size adjusts the size of the "virtual mouth", influencing the overall sound of the filter.

7 Volume

Volume effects are capable of much more than just simple loudness control! In GUITAR RIG 4, you'll find a range of tools to dynamically or interactively adjust levels to create an incredible range of sounds with really cool practical, musical, and even psychoacoustic properties.

7.1 Volume Pedal

About

This simple volume control can attenuate or boost the level at any point in the signal chain.

Controls

- The slider controls volume from the minimum (when fully left) to the maximum level (when fully right). This is perfectly suited to be controlled by the RIG KONTROL or any MIDI foot pedal.
- Volume is the master volume control of this component. Use it to adjust the level when the slider is set to the extreme right.

Expert controls

- Min Volume sets the volume when the slider is fully left.
- Half Volume sets the volume when the slider is in the middle position. You can give pedals a more comfortable feel by adjusting the overall curve of the volume change with this knob.

7.2 Limiter

About

A limiter works like a compressor with an infinitely high compression ratio and an infinitely short attack time. Its main use is to prevent subsequent stages from overloading, but it can also be used for tone-shaping.

Controls

- Volume controls the master volume of this component.
- Limit sets the level at which the limiter is triggered, i.e. the level input signals cannot exceed.
- Hold sets a minimum time that limiting will be applied when the signal exceeds the Limit threshold.
- Release sets the time it takes to return to normal state after limiting. Longer release times will sound smoother, but they can cause unwanted volume fluctuations.

7.3 Noise Gate

About

A noise gate helps remove noise and hiss, but can also be used as a special effect. Although there is a simple gate at the input stage of GUITAR RIG 4, the Noise Gate component can be useful for more sophisticated applications.

To kill hum and buzz, a noise gate mutes all signals below a certain level (threshold). While you're playing, the musical part of your signal is much stronger than the noise and practically renders it inaudible. When you pause, however, the noise will still be there and get all the attention. At that point, a noise gate turns down the volume to create silence.

The threshold can be seen as the borderline between what is considered noise and what is considered signal.

Controls

- Threshold determines the reference level above which the gate opens, and below which it closes. Setting it very low accommodates signals with little noise; higher threshold levels are useful for special effects, such as removing substantial amounts of a string's decay to create a more percussive or gated sound.
- Hold sets a minimum amount of time the gate stays open. With a high threshold, this prevents the gating effect from stuttering.
- Attack controls the time the gate takes to open up after it has been triggered. The higher it is set, the softer the attack will be.
- Release prevents the gate from closing down abruptly when triggered, setting the time the noise gate takes to close completely when triggered.
- Learn automatically sets the threshold. While not playing anything, click on Learn. Your signal is analyzed, the threshold is set just above the residual noise and the Button pops out again.

7.4 Noise Reduction

About

The Noise Reduction component works similarly as the Noise Gate, but with a softer effect. One function is that of an expander, attenuating signals below the threshold without cutting them out completely. At the same time, a low-pass filter is triggered, attenuating the higher frequencies, where noise usually occurs. It is very easy to adjust.

Controls

- Threshold determines the level above which the gate opens, and below which it closes.
- Learn automatically sets the threshold. While not playing anything, click on Learn. Your signal is analyzed, the threshold is set just above the residual noise and the Button pops out again.

Expert controls

- Release determines how long it takes for the filter to close down after the input signal falls below the threshold.
- De-Hiss controls the strength of the filter reducing high frequencies.

7.5 Stomp Compressor

About

The Stomp Compressor provides a different type of compression compared to the Tube Compressor, but – as any compressor – follows the same principle of operation: It evens out dynamic contrasts by attenuating signals above a threshold. The effect might be characterized as a tighter and cleaner than that of the Tube Compressor.

Controls

- Volume is the master volume control of this component.
- Sustain is simultaneously affecting the threshold and the gain of the compressor. Turning it up will increase compression and boost the compressed signal, creating a longer constant amplitude as the string decays. Note that also other low-level signals like noise and hum will be boosted.
- The meter shows how much the signal strength is currently being attenuated.

Expert controls

- Attack sets the time it takes for the compressor to come to full effect. A longer attack time retains more of a signal's original dynamics, for example picking.
- Release sets the time it takes for the compressor to return to its normal state after the signal falls below the threshold. With very short release times, the compressor tracks even slight level changes, possibly producing a choppy sound.
- Threshold sets the level above which signals will be compressed. A lower threshold increases compression leading to greater sustain.

7.6 Tube Compressor

About

A compressor evens out dynamic contrasts by attenuating signals above a threshold. This creates a more controlled sound with narrower dynamic range, a higher average level, and more sustain.

Controls

- Input sets the level of the signal at the input of the compressor. Increasing it causes a signal to exceed the threshold more likely and therefore be compressed. Turning this control up too much can lead to distortion.
- Threshold sets the level above which signals will be compressed. A lower threshold increases compression leading to greater sustain.
- Ratio controls how the output signal is attenuated in relation to the input signal when the compressor is triggered. The higher the ratio, the greater is the amount of compression, and the more the dynamics get evened out.
- Attack sets the time it takes for the compressor to come to full effect. A longer attack time retains more of a signal's original dynamics, for example picking.
- Release sets the time it takes for the compressor to return to its normal state after the signal falls below the threshold. With very short release times, the compressor tracks even slight level changes, possibly producing a choppy sound.
- Gain controls the amount of amplification of the compressed signal. It should be set so that the peaks of your playing have the same level whether the compressor is bypassed or active. Note that the compressed sound will appear louder in total, even if the peaks are the same, because the average level is increased.

Expert controls

- ▶ Saturation adds some distortion to the tube characteristics.
- ▶ Knee adjusts the compressor response from soft knee (gentler compression effect) to hard knee (more squeezed, harder-sounding compression)
- ▶ Dynamic controls the dynamic response of the virtual tube used in this component. Turning it up flattens dynamics a bit.

8 Reverbs and Delays

Reverbs and delays are time-based effects that repeat parts of the signal, recreating natural acoustic reflections or different types of echoes. In the world of guitar effects, they have been staples since the beginning of electric amplification. Whether you want to warm up your sound with some spring reverb, or use complex tempo-synced delays, you'll find your treat in the Reverb and Delay Bank.

8.1 Spring Reverb

About

This is the classic reverb effect found in older amps, before the advent of solid-state reverb units. But luckily, the classic noise and hum is missing in this component.

Controls

- Reverb sets the amount of the signal being fed into the reverb section, controlling the intensity of the effect.
- Time controls the reverb decay time. Turn clockwise to increase decay.
- Bass controls the low-frequency response characteristics. Turn up for a bassier sound.
- Input Mute shuts off the signal going through the reverb section, but lets only the dry signal pass through. This button can be used to trigger the reverb for single "splash" effects. When the Reverb control is turned fully up, you will hear no more sound, because no signal is allowed into the dry section.

Expert controls

- Spring Length adjusts the length of the virtual spring. Shorter springs produce a tighter, more metallic effect, and longer springs create a diffused sound with a longer decay.
- High Damp reduces the decay time for high frequencies in relation to the Time setting.
- Low Damp reduces the decay time for low frequencies in relation to the Time setting.

8.2 Studio Reverb

About

The Studio Reverb provides a realistic emulation of halls and rooms.

Controls

- Dry/Wet sets the amount of the signal being fed into the reverb section, controlling the intensity of the effect.
- Pre Delay sets the delay time before the reverberated signal sets in.
- Room Size sets the cubic volume of the virtual room. Turn clockwise for a large concert hall, counterclockwise for a small auditorium or room.
- Bright boosts high frequencies in the reverberated signal.
- Mute shuts off the signal going through the reverb section, but lets only the dry signal pass through. This button can be used to trigger the reverb for single “splash” effects. When the Reverb control is turned fully up, you will hear no more sound, because no signal is allowed into the dry section.

Expert controls

- ▶ Stereo controls the stereo width of the reverberated signal.
- ▶ Treble, controls the decay time for high frequencies in relation to the Time setting.

8.3 Quad Delay

About

The Delay module takes the input signal and plays it back through four delayed stages distributed to the stereo channels, allowing for impressive modulation possibilities. The output can be fed back to the input, producing a series of echoes,

Controls

- ▶ Dry/Wet sets the amount of the signal being fed into the delay section, controlling the intensity of the effect.
- ▶ Time sets the amount of delay time, i.e. the time interval between the straight sound and the appearance of the echo. When the component is synchronized (see below), the scale turns from milliseconds into note values.
- ▶ Feedback determines how much of the output feeds back into the input. Minimum feedback gives a single echo; increasing this parameter produces repeating echoes.
- ▶ Rate sets the frequency of the four LFOs with which the delay times are modulated. The modulation works much like a chorus or flanger effect: A slower rate produces a slow, gradual detuning while faster rates produce a pulsating effect. When the component is synchronized (see below), the scale turns from milliseconds into note values.

- Depth determines how much the modulation section varies the delay time. Turning this up will increase the detuning effect of the modulation.
- Tap allows tapping in the delay time. When you click on the Tap button repeatedly, the average time between the clicks is measured and used this to derive the tempo. When synchronized, the tempo will be quantized to the nearest setting.
- Mute shuts off the signal going through the delay section, but lets only the dry signal pass through. Delays currently being processed will be ringing out even after the button is pressed. If the Dry/Wet control is turned fully up, you will hear no more sound, because no signal is allowed into the dry section.

Expert controls

- Tempo Sync synchronizes the time controls of this module to the metronome or host, depending on the Sync setting.
- Invert changes the phase of the delayed signal, affecting the elimination of frequencies in the mix of dry and processed signal. The result is particularly noticeable with short delays.
- Sync Delays synchronizes the four LFOs modulating the delays as controlled by the Rate and Depth parameters. When turned off, they are out of phase, causing a shifted modulation of each of the delay times. The result is a more complex effect spread out to both stereo channels.
- Diffusion controls how much the delay time is spread out between the four stages. Turning it up creates a stereo effect with four distinct delay signals.
- Bass adjusts a high pass filter; turn down to reduce low frequencies in the delay section.
- Treble adjusts a low pass filter; turn down to reduce high frequencies in the delay section.

8.4 Psychedelay

About

This stereo delay creates sounds that range from standard echo/ambient sounds, to reversed effects that recall the “backwards tape” sounds of the 1960s.

Controls

- Dry/Wet sets the amount of the signal being fed into the delay section, controlling the intensity of the effect.
- Time sets the amount of delay time, i.e. the time interval between the straight sound and the appearance of the echo. When the component is synchronized (see below), the scale turns from milliseconds into note values.
- Reverse plays back subsequent echoes in reverse.
- Detune detunes echoes up to ±50 cents. Combining this with feedback causes successive echoes to have ever-increasing amounts of detuning.
- Feedback determines how much of the output feeds back into the input. Minimum feedback gives a single echo; increasing this parameter produces repeating echoes.
- Tap allows tapping in the delay time. When you click on the Tap button repeatedly, the average time between the clicks is measured and used this to derive the tempo. When synchronized, the tempo will be quantized to the nearest setting.
- Mute shuts off the signal going through the delay section, but lets only the dry signal pass through. Delays currently being processed will be ringing out even after the button is pressed. If the Dry/Wet control is turned fully up, you will hear no more sound, because no signal is allowed into the dry section.

Expert controls

- ▶ Pitch adds a more extreme amount of detuning by transposing the echo in semitones, from –12 to +12. It interacts with the feedback control in the same way as Detune as each successive echo will be transposed an upward or downward.
- ▶ Stereo Time controls the time shift between the stereo channels for stereo echo effects. When turned down, the delay time for both channels is equally set by the Time control. Turning it up places echoes in the stereo field by bringing forward the delay for one of the channel: A setting of 0.50 means that the extra echoes will happen at half the time of the main delay setting.
- ▶ Reverse causes these additional delays to play back in reverse relative to the setting of the Main Reverse Button. If the latter is turned on, this button will reverse the second delay again, restoring the original signal.
- ▶ Detune allows the main Detune parameter to affect the added stereo echoes as well.
- ▶ Cross creates feedback paths that cross between the two channels – right feeds back into the left channel, and left feeds back into the right channel. This creates a more complex, polyrhythmic type of echo effect.
- ▶ Tempo Sync synchronizes the time controls of this module to the metronome or host, depending on the Sync setting.

8.5 Delay Man

About

The Delay Man is an extremely warm and flexible delay unit with built-in chorus and vibrato. It faithfully recreates the sound of esteemed classic hardware modules that are a standard in any advanced effects rig.

Controls

- Mute shuts off the signal going through the delay section, but lets only the dry signal pass through. Delays currently being processed will be ringing out even after the button is pressed. If the Dry/Wet control is turned fully up, you will hear no more sound, because no signal is allowed into the dry section.
- The Input knob sets the amplification of the incoming signal. Set this so that the loudest peaks do not engage the overload LED next to it if you want to avoid overdrive.
- Dry/Wet sets the amount of the signal being fed into the delay section, controlling the intensity of the effect.
- Time sets the amount of delay time, i.e. the time interval between the straight sound and the appearance of the echo. When the component is synchronized (see below), the scale turns from milliseconds into note values.
- Feedback determines how much of the output feeds back into the input. Minimum feedback gives a single echo; increasing this parameter produces repeating echoes. Turning the knob fully clockwise will overload the delay and produce a distorted, oscillating sound.

- The Chor/Vib switch sets the modulation section of this component to chorus or vibrato mode.
- Depth controls the intensity of the modulation section.
- Tap allows tapping in the delay time. When you click on the Tap button repeatedly, the average time between the clicks is measured and used this to derive the tempo. When synchronized, the tempo will be quantized to the nearest setting.

Expert controls

- Sync Delay synchronizes the Time control to the metronome or host, depending on the Sync setting.
- Sync Mod synchronizes the modulation speed to the metronome or host, depending on the Sync setting.
- Chorus Rate sets the frequency of modulation of the chorus module. When modulation is synchronized, the scale turns from milliseconds into note values.
- Vibrato Rate sets the frequency of modulation of the vibrato module. When modulation is synchronized, the scale turns from milliseconds into note values.
- Acceleration controls how fast the delay algorithm adapts to changes of the Time setting.
- Bass controls a low shelf filter affecting the bass frequencies. Turning it up will boost them, turning it down will attenuate them.
- Treble controls a high shelf filter affecting the treble frequencies. Turning it up will boost them, turning it down will attenuate them.

8.6 Tape Echo

About

The Tape Echo recreates the sound of tape based delay modules. This module has two tape heads and also includes a spring reverb module, making it a sound shaping tool of a kind.

Controls

- The Peak LED in the upper-left corner indicates overload of this component, which can be caused by feeding it with a too strong input signal, or by feedback.
- Input Mute shuts off the signal going through the Tape Delay, but lets only the dry signal pass through. Sounds currently being processed will be ringing out even after the button is pressed. If the Dry/Wet control is turned fully up, you will hear no more sound, because no signal is allowed into the dry section.
- Dry Mute will mute the dry sound, leaving only the processed sound. If the Dry/Wet control is turned fully down, you will hear no more sound, because no signal is allowed into the delay section.
- Tap allows tapping in the delay time. When you click on the Tap button repeatedly, the average time between the clicks is measured and used this to derive the correct position for the Speed knob and the Head knobs. When synchronized, these will be quantized to the nearest setting.

- The Head A and Head B knobs have five positions for varying delay times for each virtual tape head. They set the relation between both delay stages while the Speed setting sets the overall tempo of the virtual tape. Position 0 has no delay, the subsequent head positions will increase delay time by a constant amount, depending on the current Speed setting.
- Bass adjusts the low frequency response of the delayed signal.
- Treble adjusts the high frequency response of the delayed signal.
- Rev Vol controls the amount of reverb added to dry signal by the component's spring reverb module.
- Speed sets the speed of the virtual tape loop, influencing the delay times of Head A and Head B.
- Feedb determines how much of the output feeds back into the input. Minimum feedback gives a single echo; increasing this parameter produces repeating echoes. It will also impart modulation and eventually distortion to the signal.
- Echo Vol controls the volume of the delayed output added to the dry signal. When turned down completely, the delay will have no audible effect.

Expert controls

- Sync synchronizes the Speed control to the metronome or host, depending on the Sync setting.
- Tape Bass controls the amount of bass response on the virtual tape.
- Tape Treble controls the amount of bass response on the virtual tape.
- Dropouts controls the simulation of dropouts occurring on a real tape after long periods of use.
- Noise controls the amount of tape noise that is added by the virtual tape.
- Warble controls the simulation of mechanical problems causing the delay tapes to slip, causing – among others – a modulation of pitch also known as "flutter"
- Headroom controls the amount of saturation the tape can take before distorting.
- Motor Accel controls how fast the tape speed adapts to changes of the Speed setting.

- Head Mix controls the mix between the outputs of head A and B.
- Stereo controls the stereo width of the delayed signal.
- Revtime sets the decay time of the reverb added to the dry signal.
- Spring Length adjusts the length of the virtual spring.

8.7 Grain Delay

About

The Grain Delay is much more than just another delay effect. With its innovative granular approach it allows for a spacious refinement of your tones as well as massive walls of echoing sound – its interdependent controls are an invitation to experiment in order to achieve really individual effects. The signal is sliced into samples of arbitrary length which are delayed, transformed and repeated in manifold ways, including a powerful stereo feature. With the Grain Delay, it gets just as weird as you like, at the same time the effect is perfectly controllable on all levels.

Controls

- Dry/Wet sets the amount of the signal being fed into the delay section, controlling the intensity of the effect.
- Modulation controls the amount of periodical pitch shift (vibrato) applied to the delayed signal.
- Pitch controls the pitch shift applied to the delayed signal. The amount of shifting is set in chromatic steps, spanning 4 octaves in both directions. Simultaneously, the duration of the sample in each "grain" is time-stretched by the according amount – think of a record player playing at different speeds! Other than the Psychedelay, this pitch shift is not applied to the feedback channel, so it will not produce ever-ascending scales, but a constantly pitched delay.
- Fine allows changing the pitch shift by the amount of cents to refine the setting of the Pitch control.
- Size sets the duration of the samples that are fed into the delay section. The original signal is sliced into snippets ("grains") of this duration and repeated. If the slices are time-stretched using the Pitch control, the contained sample will be repeated within each grain or cut off, keeping the overall duration of the grain constant.
- Space controls the amount of time between the repetitions of each grain relative to the Size parameter. When set to 100%, the first repetition will start just when the grain is completely buffered. Reducing Space will start the repetition sooner and vice versa. The former leads to overlapping delays, the latter to gaps between the repetitions.
- Density controls how much of the output feeds back into the input. Minimum feedback gives a single echo; increasing this parameter produces repeating echoes that are modulated and distorted, depending on the according expert controls.
- Drive controls the amount of overdrive created when the signal feeds back repeatedly and causes the component to overload.
- HiCut sets the threshold frequency of a filter applied to the delayed signal. Frequencies above the threshold are strongly attenuated.
- LoCut sets the frequency of a filter applied to the delayed signal. Frequencies below the threshold are strongly attenuated.

- ▶ Reverse plays back the delayed signal in reverse.
- ▶ Freeze stops sampling new slices of the signal and will repeat the current grain as long as it is activated.
- ▶ Mute shuts off the signal going through the delay section, but lets only the dry signal pass through. Delays currently being processed will be ringing out even after the button is pressed. If the Dry/Wet control is turned fully up, you will hear no more sound, because no signal is allowed into the dry section.

Expert Controls

- ▶ Sync synchronizes the Size control to the metronome or host, depending on the Sync setting.
- ▶ Jitter varies the durations of each sampled grain by a small amount, creating a more lively texture.
- ▶ Stereo controls the amount by which the delayed signal is distributed to the stereo channels. Turning this up oscillates the signal between the stereo channels creating a ping-pong effect.

8.8 Twin Delay

About

The Twin Delay combines two parallel delay modules to provide advanced stereo effects. Each of the delayed signal chains is assigned to one of the stereo channels and features a full set of controls. It works like a charm for bouncing the sound from left to right in any imaginable way.

Controls

- ▶ Dry/Wet sets the amount of the signal being fed into the delay sections, controlling the intensity of the effect.
- ▶ Time (L/R) sets the amount of delay time for each channel, i.e. the time interval between the straight sound and the appearance of the echo. When synchronized (see below), the scale turns from milliseconds into note values.
- ▶ Feedback (L/R) determines how much of the output feeds back into the input for each channel. Minimum feedback gives a single echo; increasing this parameter produces repeating echoes.
- ▶ Level (L/R) sets the volume for each channel, controlling both the mix and the overall volume of this component.
- ▶ Tap allows tapping in the delay time for both channels. When you click on the Tap button repeatedly, the average time between the clicks is measured and used this to derive the correct position for the Time knobs.
- ▶ Mute shuts off the signal going through the delay sections, but lets only the dry signal pass through. Sounds currently being processed will be ringing out even after the button is pressed. If the Dry/Wet control is turned fully up, you will hear no more sound, because no signal is allowed into the dry section.

Expert Controls

- ▶ X-Feedback controls the amount of cross feedback, i.e. how much the output of the left channel feeds back into the input of the right channel and vice versa.
- ▶ Stereo Width controls the stereo panorama: When turned fully clockwise, the channels are completely separated. When centered, the processing is mono. When turned fully down, the channels are inverted, meaning that the left channel of the Dual Delay is routed to the right output channel and vice versa.
- ▶ Pre-Delay (LEFT/RIGHT) determines an initial delay for each channel, which is independent of the Time setting. This means you can have a quickly repeating delay which starts up to two seconds after the original signal. To achieve the typical ping-pong effect, set both channels to the same delay time and create an offset by increasing one of the channels' Pre-Delays.

- ▶ Sync synchronizes the Time controls to the metronome or host, depending on the Sync setting.
- ▶ Pre-Sync synchronizes the Pre-Delay controls to the metronome or host, depending on the Sync setting.

8.9 Octaverb

About

The Octaverb is a powerful stereo reverb, precisely emulating the early acoustic reflections of eight different rooms. Besides the usual reverb parameters such as room size, it also offers some unique features that can be used both for subtle tone shaping and for extreme effects.

Controls

- ▶ Dry/Wet sets the amount of the signal being fed into the reverb section, controlling the intensity of the effect.
- ▶ Er Mode selects the room shape, which determines the character of the reverb by emulating different patterns of early acoustic reflections. These are perceived as more or less distinct echoes, before their further reflection in the room creates a diffuse mix. This control offers realistic presets such as “Concrete Room” and completely virtual ones like “Strange Localization” – just try them out and play with the Size parameter to see what they are about.
- ▶ Size sets the amount and duration of diffuse reverberation following the early reflections. The perception of room size is mainly influenced by this setting.

- Hi-Damp controls how much high frequencies are attenuated in the process of reverberation.
- Basstrap controls to what extent low frequencies get “caught” in the reverberation. Turning it up gives the reverb a thicker bottom end.
- Mute shuts off the signal going through the reverb section, but lets only the dry signal pass through. Sounds currently being processed will be ringing out even after the button is pressed. If the Dry/Wet control is turned fully up, you will hear no more sound, because no signal is allowed into the dry section.

Expert Controls

- EQ is an additional tone control for the reverberated signal, mainly useful for boosting or attenuating higher frequencies.
- Wetlevel controls the level of the processed signal, allowing changing the mix while preserving the volume of the dry signal.
- Source controls the position of the dry signal in the stereo panorama. Turning it clockwise brings it to the right channel, turning it counterclockwise brings it to the left channel.
- Width adjusts the stereo panorama of the processed signal: When turned clockwise, the effect is fully distributed across both channels. When centered, the processing is mono. When turned fully down, the channels are inverted, meaning that the left part of the reverb signal is routed to the right output channel and vice versa.
- Freeze completely shuts off the dry signal and simultaneously increases the volume of the reverberation. This function can be triggered to create impressive stops that are followed by a majestic, fading reverb sound.

8.10 Iceverb

About

The Iceverb is a very colorful reverb that can sound like you're playing in a giant icy cave – or in an igloo! Seriously, it offers a wide range of hall characteristics and a filter that can even be used like a very special wahwah effect when controlled with a foot pedal.

Controls

- Dry/Wet sets the amount of the signal being fed into the reverb section, controlling the intensity of the effect.
- Size controls the duration of the reverberation, which creates a varying perception of the room size.
- Color sets the frequency range that is emphasized in the filter preceding the reverberation. This control resembles a wahwah pedal a bit, as it allows sliding a strong frequency peak up and down the spectrum.
- Ice controls the intensity of the filter by setting the resonance of the filtered frequency band.
- Mute shuts off the signal going through the reverb section, but lets only the dry signal pass through. Sounds currently being processed will be ringing out even after the button is pressed. If the Dry/Wet control is turned fully up, you will hear no more sound, because no signal is allowed into the dry section.

9 Tools

The Tools components are at the heart of GUITAR RIG 4's extreme flexibility. From split modules that allow parallel signal processing with different effect chains, to the powerful loop machine - the tools are the key to creating fresh, extraordinary sounds.

9.1 Loop Machine

About

The Loop Machine allows recording, playing back, and overdubbing multiple layers of sound. The loops can be synchronized with the host, or to the metronome tempo in stand-alone mode. Furthermore, individual layers as well as the complete loop can be exported as WAV files.

Controls

The four LEDs on the left of the component indicate which mode the Loop Machine is currently in:

- Rec: The first layer is being recorded, determining the overall length of the loop (see also Overdub Multiply).
- Play: The loop is playing back, recording is disabled.
- Overdub: The loop is playing back, recording is enabled for the uppermost layer.
- Empty: Nothing has been recorded yet.

When nothing has been recorded into the Loop Machine, the Play / Record button has a red outline. Pressing the Play / Record button has different functions depending on the Loop Machine mode.

1. Press once to start the recording. The button turns red.
2. Press again to stop recording and begin loop playback from the beginning. The button turns green.
3. Press again to enter overdub mode. The button turns yellow. Existing material plays back and you can record the next layer. When the loop repeats, you can continue overdubbing.

From this point on, pressing the Play button toggles between Play and Overdub modes. Each time you do this, a new layer is created. The Layers display shows how many layers have been recorded.

It's convenient to go into Play mode to practice your part for the next loop, then return to Overdub mode.

1. Click on the Stop button once to stop the loop from playing. The Play button now has a red outline to indicate that something has been recorded.
2. To delete all layers, double-click on the Stop button.
3. The Beat button enables a flashing indicator of the beat after the first layer has been recorded. It is trying to match a 4/4 beat with a common number of bars to the loop length.
4. The meter shows the progress of the loop. Loop Time is the total loop time, while Rec Time is the current time within the loop.

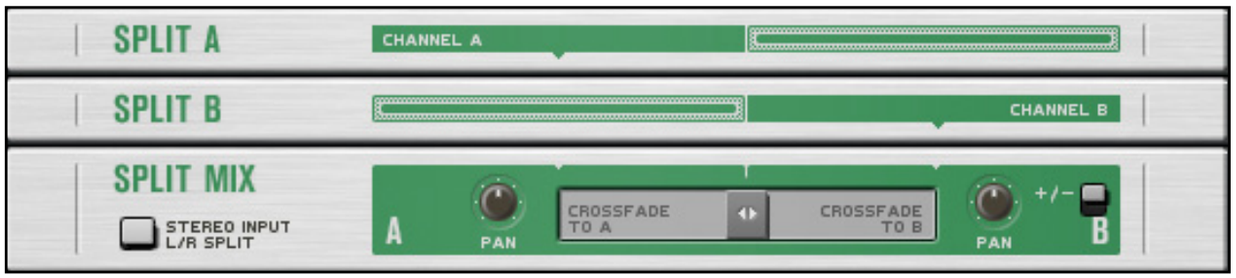
- Rec Vol sets the input level.
- Play Vol controls the playback level.
- Undo deletes the current layer. Pressing Undo repeatedly deletes layers starting from the most recent. Although you can Undo multiple layers, you can Redo only to the most recent layer.

- ▶ Redo restores the last deleted layer.
- ▶ Load (folder icon) allows loading up Loop Machine files, which have an .ls suffix. They consist of the audio files and all settings for a particular loop.
- ▶ Save (floppy disk icon) saves Loop Machine files, which have an .ls suffix and consist of the audio files and all settings for a particular loop.
- ▶ Exp Mix exports the entire loop as a single mixed WAV file.
- ▶ Exp Lay exports the loop into a series of WAV files, each consisting of one of the layers.

Expert controls

- ▶ If Autostart is turned on, recording won't start immediately after you press the Play/Record button, but right when you start playing.
- ▶ Overdub Multiply allows recording a part that is longer than the current loop. When the end of the loop is exceeded in Overdub mode, the overall duration of the loop will be doubled.
- ▶ If Reverse is activated, the loop will be played back in reverse, starting from the next run.
- ▶ Rec Pan places the recorded signal in the stereo field. This works independent for each recorded layer.
- ▶ Sync synchronizes the Loop Machine to the metronome or host, depending on the Sync setting.
- ▶ Loop A/B toggles between two completely independent instances of the loop machine. When one loop is complete, use this button to start another one from scratch and to switch between both.

9.2 Split

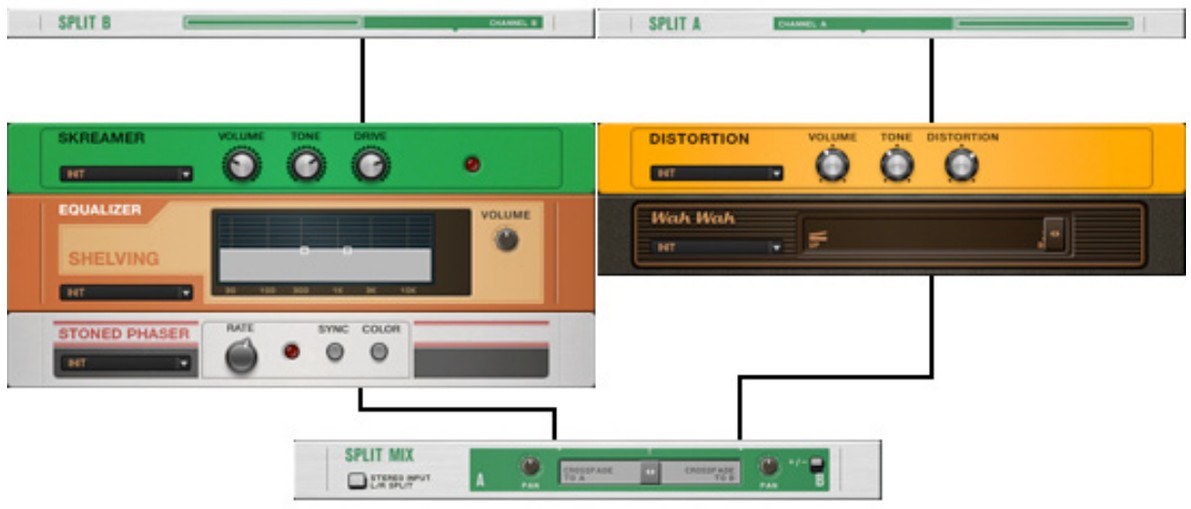


About

This component splits the signal into two parallel paths, which is especially useful for stereo effects and to mix the sound of two independent effect chains. For more information on parallel effects as well as the optimal position of effects in the signal chain, see Appendix C, “Tips on Creating Your Own Rig.”

Using the Split

The Split inserts three components into your rack, labeled SPLIT A, SPLIT B and SPLIT MIX. Even though they appear in the same vertical order as any GUITAR RIG 4 components, the signal doesn’t go this way using the Split. It is divided into two parallel paths running through the SPLIT A and SPLIT B sections, which are mixed in the SPLIT MIX component.



This diagram shows the Split’s signal flow.

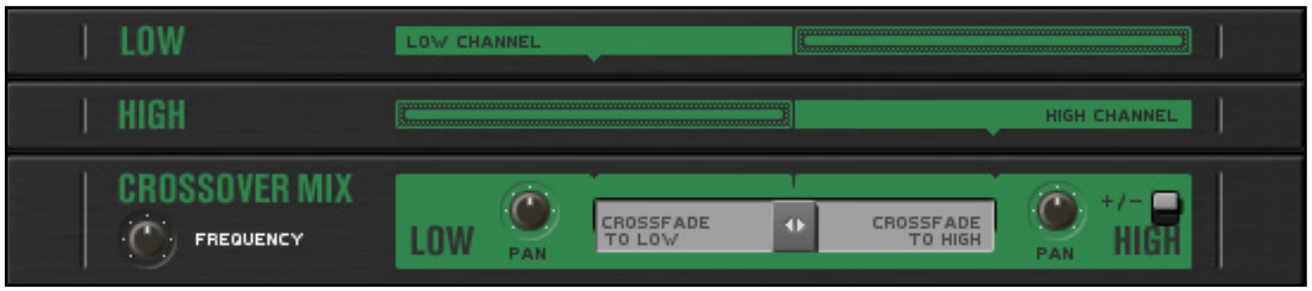
To assign components to each of the signal paths, just drag them below the SPLIT A or SPLIT B components in the rack. To distinguish the signal paths, we will call them section A and B. You can create completely independent rigs within each section, or use them to add two effect chains to your current rack. Even using more than two signal paths is possible by nesting another Split or a Crossover Mix (see below) in one of the sections of the first one.

The SPLIT MIX offers various controls determining how these two signal chains are brought together.

Controls

- The Crossfader controls the mix between both signal chains. When fully left, you'll only hear section A. When fully right, you'll only hear section B.
- Pan controls the position of each signal chain in the stereo panorama and offers various mixing possibilities. For example, you can create completely different sounds for section A and B and pan them to the left and right, creating the impression of two guitars playing in unison.
- Stereo Input L/R Split assigns the left incoming channel to section A, and the right channel to section B. When deactivated, both sections are processing the exact stereo input feeding the split. Activating this switch is useful if you use GUITAR RIG 4 with two guitars and want two different sounds.
- The "+/-" switch inverts the polarity (also called "phase") of section B's signal. This can change the sound of the mix because of different phase elimination phenomena.

9.3 Crossover Mix



About

This component is similar to the Split, as it splits the signal path into two independent sections, allowing parallel effects. However, not the complete signal is doubled for each path, but only the lower parts of the signal enter the first section and the higher ones enter the second section. There is a freely adjustable threshold frequency that divides between high and low. A straightforward example is that you can create rich effect chains that only affect the high frequencies and mix with a more solid natural foundation of the sound. For more information on parallel effects as well as the optimal position of effects in the signal chain, see Appendix C, “Tips on Creating Your Own Rig.”

Using the Crossover Mix

The Crossover Mix inserts three components into your rack, labeled LOW, HIGH and CROSSOVER MIX. Even though they appear in the same vertical order as any GUITAR RIG 4 components, the signal doesn’t go this way using the Crossover Mix. It is divided into the lower and the higher parts of the frequency spectrum, running through the LOW and HIGH sections, which are mixed in the CROSSOVER MIX component.

This diagram shows the Crossover Mix's signal flow.

To assign components to each of the signal paths, just drag them below the LOW or HIGH components in the rack. To distinguish the signal paths, we will call them low section and high section. You can create completely independent rigs within each section, or use them to add two effect chains to your current rack. Even using more than two signal paths is possible by nesting another Crossover Mix or a Split in one of the sections of the first one.

The CROSSOVER MIX offers various controls determining how these two signal chains are brought together.

Controls

- The Crossfader controls the mix between both signal chains. When fully left, you'll only hear the low section. When fully right, you'll only hear the high section.
- Pan controls the position of each signal chain in the stereo panorama and offers various mixing possibilities.
- Frequency sets the crossover point frequency, where the spectrum is divided and routed into the low and high sections.
- The "+/-" switch inverts the polarity (also called "phase") of section B's signal. This can change the sound of the mix because of different phase elimination phenomena.

10 Modifiers

If you have ever programmed a synthesizer, you have used modifiers like an LFO or a step sequencer, as these elements are typical for synthetic sound design. In the hands of a guitarist, those modifiers can open up a world of possibilities to discover. If you are into cutting-edge sound design, these are tools for you.

10.1 Modifier Basics

The concept of a modifier can be understood easily by looking at a basic tremolo effect. The amplitude is periodically increasing and decreasing because it is modulated with a control signal that can be pictured like a sine wave.

You can control speed and intensity of the effect by changing the “shape” of the control signal, i.e. by making it go up and down faster or slower, to a greater or lesser extent. The (internal) volume control of the tremolo effect is the target for this modulation.

Modulation with GUITAR RIG 4’s Modifiers components works just the same: They all generate a control signal that can be assigned to any of the controllable sound parameters, causing them to change their value in the same way the control signal does. They are much more powerful, though, as they can modify multiple parameters simultaneously to a freely adjustable extent and offer a multitude of ways to influence the shape of the control signal.

Once you insert a Modifier into the rack (the position is irrelevant), you can assign its control signal to almost any component parameter. Simply click on the Modifier’s Assign button and drag it onto the button or knob of the parameter you want to modify. A hand cursor will indicate that the parameter is eligible for modifier control. The modulation will happen in relation to the manually set position of the parameter.

Each Modifier lists its targets along with intensity faders to adjust to what extent the target value is influenced. The blue meter above the targets list gives a visual representation of the control signal.

10.2 LFO

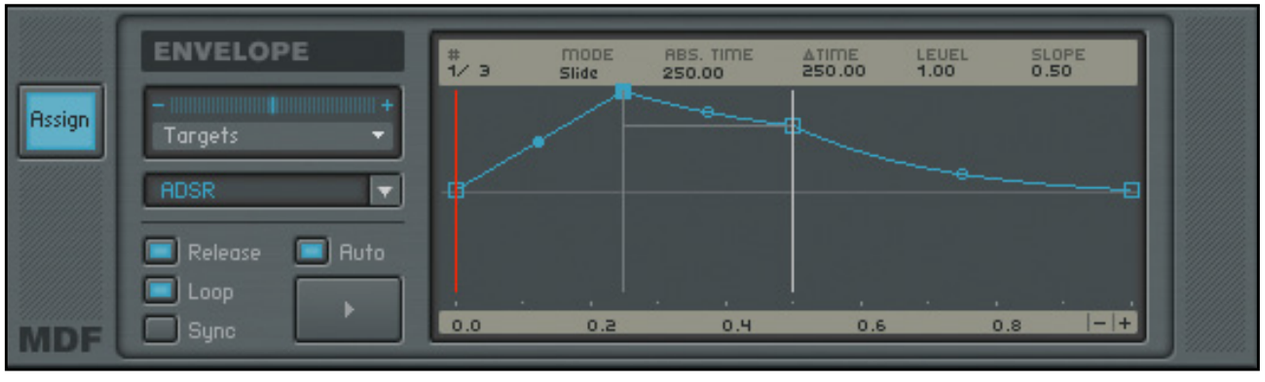
About

The term LFO (Low Frequency Oscillator) refers to a periodic waveform at a subsonic rate. As a Modifier, this is useful to create constantly changing parameter values, its most popular application being the famous tremolo effect.

Controls

- Rate sets the LFOs frequency, from 0.01Hz (oscillations per second) to 10.24Hz. When the component is synchronized (see below), the scale turns from Hz into note values.
- Tempo Sync synchronizes the Loop Machine to the metronome or host, depending on the Sync setting.
- Waveform provides a graphic display of the control signal. By clicking on the arrows on the right side of the graph you can choose among sine, triangle, square, saw tooth, and random waveforms.
- Polarity inverts the waveform's polarity and thereby all its value changes with one click.
- Play restarts the LFO, which otherwise keeps on running without interrupting. To automatically trigger this button by hitting a note, activate the small Auto button above the Play button.
- Start Phase sets the point within the waveform hitting the Play button jumps to. The actual value depends on the waveform. With a sine wave at 0 degree (Start Phase at center), the value of the control signal starts at 0 (neutral) and increases first. At 180 degrees (Start Phase turned fully clockwise), the value of the control signal starts at 0 and decreases first.

10.3 Envelope



About

The envelope generates a very flexible control signal, whose shape you can edit accurately using a graphical editor. In most cases (if Auto is activated), it will be triggered with each note you play, shaping the envelope of assigned controls as the sound rings out. Of course, you can also use the Play button to trigger it manually or with a controller.

Editing the Envelope graph

In the central graph, you see a blue line representing the development of the control signal (vertical axis) over time (horizontal axis). A red vertical line indicates the position of the current control signal.

The default envelope consists of four small squares (called breakpoints or nodes) setting the vertices of the control signal at a certain time after the envelope has been triggered. You can move them up or down to increase or decrease the control signal, and left or right to change their point in time. The first and last node are tied together, because the envelope always starts from where it ended. If Sync is activated, the nodes will snap to a grid representing the beat.

To add a node: Right-click (Mac: ctrl-click) anywhere on the envelope curve. To remove a breakpoint: Right-click (Mac: ctrl-click) on it. By dragging the small dot between nodes, you can bend the segment's shape into concave and convex form.

The left-most node is where the envelope starts when triggered. If Loop is inactive, the control signal will follow the Envelope once and then reside on the final/initial value as long as a triggering signal is present.

If Loop is active, the sustain/loop segment of the envelope is repeated as long as a triggering signal is present. This segment is defined by vertical lines crossing two of the central nodes. When repeated, the node on the left is ignored, as the loop starts again from the value of its ending node (shown by a phantom node being the origin of a second blue line). If there are only two nodes in the sustain/loop segment, the left of those lines is grey. Consequently, the control signal then resides on the level reached at the second line for the length of the loop.

If there are three or more central nodes (other than the start and end), the sustain/loop segment can be shifted by clicking on one of its defining lines and dragging it to another node. When dragged, so that the sustain/loop segment consists of only two nodes, the control signal resides on the level reached at the second line for the length of the loop.

As soon as the envelope is not triggered anymore, the envelope continues from the second vertical line, if release is active. The control signal then resides on the final/initial value until triggered again. If release is inactive, the envelope will be followed until the right vertical line, no matter how long a triggering signal is present. The part right of the second vertical line is ignored and the control signal resides on the sustain level until the envelope is triggered again.

The Parameter Strip

The Parameter Strip above the envelope provides a variety of data and additional parameters to edit. Clicking on a numerical and dragging up or down changes its value, thereby updating the graph of the envelope.

At the left of the strip, the value below # shows which of the nodes is being edited.

Mode offers two options; Slide and Fixed. If you move a node left or right in Slide mode, the envelope right of it moves as well to maintain the same times and levels. In Fixed mode, the total envelope time doesn't change.

Abs. Time shows the amount of time in seconds from the start of the envelope to the breakpoint being edited.

Delta Time shows the duration in seconds from the node currently edited to the one left of it.

Level shows the level of the node currently edited in reference to the center line.

Slope shows the state of the line arriving at the currently edited node. 0.5 indicates a straight line. 0.999 indicates a maximally convex curve. 0.001 indicates a maximally concave curve.

Envelope Ruler and Zoom

The ruler below the envelope is scaled in seconds if Sync is deactivated, in note values if Sync is activated. If the envelope extends past the envelope's visible range, click on the ruler and drag to the left or right to scroll. Double-click on the ruler to fit the envelope exactly within the visible window.

To change the range of the ruler by zooming in or out, click on the (+) and (-) symbol in the lower right. This also sets the quantization time for nodes if Sync is activated.

10.4 Step Sequencer

About

The Step Sequencer generates up to 16 sequential control signals, which can have rhythmic values of quarter notes to 1/32nd notes. Note that you cannot set the level of these steps; they are on/off triggers, intended to create rhythmic effects.

Creating a sequence of steps

The horizontal bar consisting of 16 numbered buttons is the core of the Step Sequencer. The buttons are addressed from 1 to 16 as shown by an orange outline, moving synchronously to the beat of the Metronome. Active buttons are blue and trigger the control signal for the assigned controls as defined in the Targets list. Clicking on the buttons turns them on and off.

Parameters

- ▶ Resolution sets the rhythmic value of each of the 16 steps, effectively changing the speed at which the buttons are triggered. Available options are 1/4, 1/8, 1/16, and 1/32 notes.
- ▶ Seq Length allows adjusting the length of the sequence by reducing the number of steps.
- ▶ Enable Legato to tie adjacent steps to each other, thus creating longer steps.

Expert controls

- ▶ Width sets the length of the control signal, when triggered. When fully clockwise, the width equals the note-value set as Resolution.
- ▶ Attack controls how long the control signal takes to reach its maximum value after having been triggered (from 4 to 1233ms).
- ▶ Decay controls how long the control signal takes to reach its minimum value after having been triggered (from 4 to 2197ms)
- ▶ Offset increases all control signal values as the control when turned up.

10.5 Analog Sequencer

About

The Analog Sequencer works much like the Step Sequencer, as it generates 16 sequential control signals, which can have rhythmic values of quarter notes to 1/32nd notes. But with the Analog Sequencer, you can change the value of each control signals to create a complex rhythmic control signal.

Creating a sequence of steps

The 16 numbered columns with vertical faders represent the 16 steps cycled through synchronously to the beat of the Metronome. They are addressed from 1 to 16 as shown by an orange dot, moving below the faders. To set a step's level, move its fader upward or downward. Each step changes the value of the control signal according to its fader's position, while the central position sends a neutral value.

Controls

- Resolution sets the rhythmic value of each of the 16 steps. Available options are 1/4, 1/8, 1/16, and 1/32 notes.
- Seq Length allows adjusting the length of the sequence by reducing the number of steps.
- Slide controls the amount of glissando, i.e. the time the control signal takes to reach the next value.

10.6 Input Level Modifier

About

The Input Level Modifier generates a control signal based on the input level of the rack. This is commonly called an "envelope follower" as the signal tracks changes in the amplitude. The most common application for this is to control filters; this is already built in to the AutoFilter component.

Parameters

- VOLUME sets the overall strength of the control signal, affecting the amount of parameter changes caused by it.
- OFFSET sets the control signal's minimum value. By default, the control signal covers a range from –1 to +1, with 0 as the midpoint. When Offset is at maximum, the baseline is 0.
- ATTACK sets how long the control signal takes to reach its target value (from 1 to 978ms). Setting the attack time too short can create pops when the signal first kicks in; increasing Attack can soften this effect.
- DECAY sets how long the control signal takes to fall back to its initial setting in the absence of an input signal (from 10 to 9863ms).