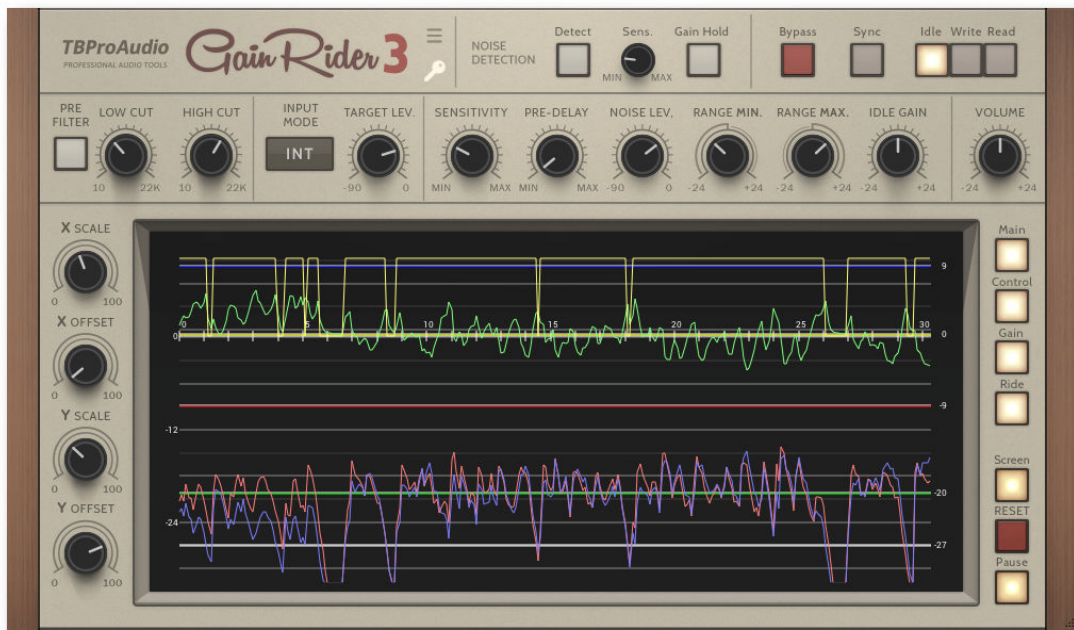


GainRider 3

Manual



TBProAudio 2023

1 Introduction

Vocal (and generally) gain riding is a widely used technique to control loudness of audio tracks with the volume slider instead of compression. Doing this by hand during a critical phase of the mixing session could be very painful. Automatic gain riding within a DAW by using an audio plugin could be very comfortable. And if this plugin gives enough flexibility and control over the riding process it could be useful for a broad range of applications starting from simple vocal/bass riding up to tricky voice over recordings for commercials.

So, **GainRider** gives you this flexibility and the full control over the riding process.

Features:

- 3 ride modes: loudness leveling, ducking, loudness leveling to side-chain.
- Detailed control of gain change (speed, pre-delay, min, max, idle).
- Flexible pre-delay including zero delay mode.
- Loudness measurement based on EBU128-2014 ML
- Large display to monitor impact of plugin parameters.
- Flexible pre filter.
- DAW side chaining (VST3/RTAS/AAX/AU) or channel 3+4 (VST2).
- Read/Write automation data.
- A/B control.
- GUI Scale

2 How GainRider works

The gain adjustment is based on "true loudness" measurement (EBU128 ML). GainRider compares constantly the loudness of the control signal with the target level and adjusts gain of the main signal (mode INT). The gain riding starts as soon as the measured loudness is above the NoiseLevel value and stops if it is below.

The maximum gain adjustment is limited by the RangeMin and RangeMax values just to avoid overemphasis of certain parts of the signal or even "pumping" effects.

The look ahead of the algorithm is controlled by the pre-delay control, starting from 0ms (zero delay) up to 3000ms.

The picture below shows a typical ride process:



- 1) Ride indicator (yellow), shows when gain riding starts and ends. Ride starts when loudness of control signal is higher then the noise level and stops if it is below
- 2) Current gain (green), shows current gain curve, moves between RangeMin and RangeMax values
- 3) Loudness of control signal (blue); could be either the main signal (mode INT) or the side chain signal (mode SC1 or SC2)
- 4) Loudness of outgoing signal (red)

3 Minimum System Requirements

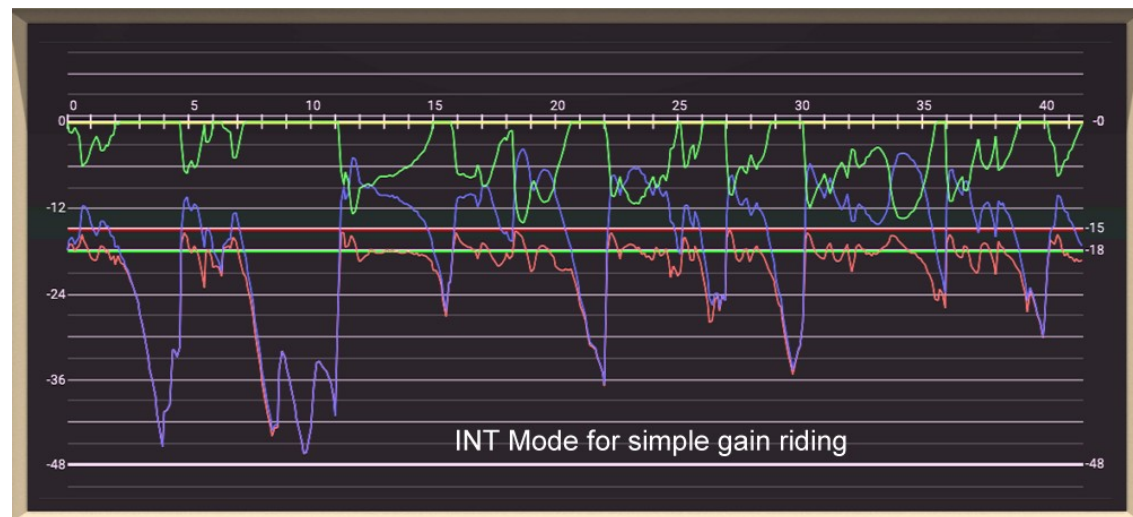
- Windows 7, OpenGL 2 GFX card
- Mac OS X 10.11, Metal GFX card
- SSE2 CPU
- Win: 32/64 Bit VST, 32/64 Bit VST3, 32/64 Bit AAX
- OS X: 64 Bit VST, 64 Bit VST3, 64 Bit AU, 64 Bit AAX
- Tested with: Cockos Reaper, Steinberg Cubase/Nuendo/Wavelab 6+, FL Studio 12+, PT2018+, Reason 9.5+, Studio One, Ableton Live
- For latest information please visit www.tbproaudio.de

4 How to use GainRider

Simple Gain Riding of a (vocal) Track:

Load GainRider plugin into the insert-slot of your (vocal) track. Load GainRider's "default" program and make sure that automation is set to "Idle" and mode is set to "INT". Let the DAW play and watch the display. Adjust the target level (green line) so it is between the local active minimum and maximum levels (e.g. -18dBFS) of the control signal (blue curve). In order to eliminate gain increases at the beginning or end of a ride, set Range Max to 0 dB. This will insure that the source signal is only reduced and not boosted as its level climbs or drops. You can easily see on the plot if the highest control signal level (blue curve) is pulling the output (red curve) above the target setting, in which case you can adjust Range Min to a higher setting if desired.

The Sensitivity control will adjust the speed at which gain changes occur (fastest at the Min setting and slowest at the Max setting) and Pre-Delay will provide a look-ahead mode to help response to rapid changes in the control signal, being continuously variable from zero to 3,000 msec.



Vocal Ducking of an Instrument Track/Bus (SC1):

This ducking mode is intended for voice-over ducking such as announcements over a music background rather than traditional "kick drum-bass" ducking. Load GainRider plugin into the insert-slot of your instrument track/bus. This track/bus must have side chain capability which may be four audio channels (e.g. REAPER) or specific side chain routing (e.g. Studio One – see your DAW user manual). Load GainRider's "default" program and make sure that automation is set to "Idle" and mode is set to "SC1". You should also set Range Min to -24 dB and Range Max to 0 dB. Route the vocal track's side chain signal to the instrument track/bus and play the voice-over track while viewing its curve (blue) on the display. The Noise Level control will select when to duck the music – you want to set the Noise Level (white line) so that the voice signal curve is below it when no speech is present and above it when the speaker is talking. Next set the Target Level (green line) to the desired loudness of the ducked music track. The Idle Gain setting (yellow line) will determine the gain applied to the music signal when it is not ducked while the Target Level will set the absolute level of the music signal during ducking. The music will also be gain-levelled to the Target Level just as with the Internal mode described above.

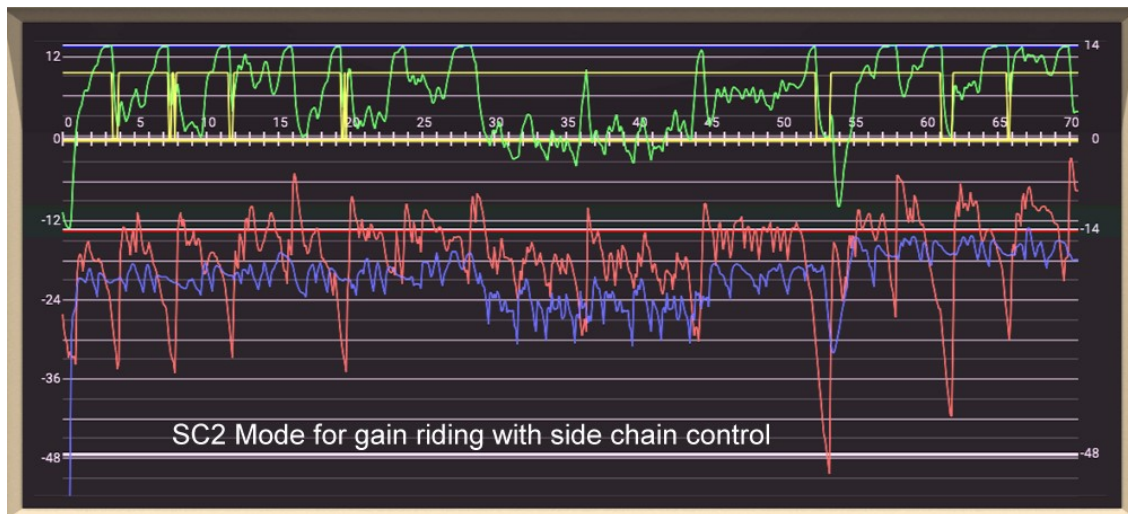


If you want to use the SC1 mode to apply a fixed amount of gain reduction during ducking rather than setting an absolute target level, set the Target Level to a very low value (e.g. -40 dB). In this case the music level will be reduced by the Range Min setting during ducking. Also, the music will not be auto-levelled at a targeted level, but simply gain-reduced according to the Range Min setting so that the signal gain through GainRider will be shifted between the Idle Gain setting and the Range Min setting.

Advanced Gain Riding with Side Chain Control (SC2):

This mode enables the main signal to follow the loudness of a side chain signal so that one track (usually a vocal) can “ride” a constant level above the rest of the instrument backing as it swells or drops. Load GainRider plugin into the insert-slot of your instrument/vocal track. This track must have side chain capability which may be four audio channels (e.g. REAPER) or specific side chain routing (e.g. Studio One – see your DAW user manual). Load GainRider’s “default” program and make sure that automation is set to “Idle” and mode is set to “SC2”. Note that the Target Level control has no effect in this mode – the side chain signal level itself becomes the target level.

Play a portion of the project and observe the blue side chain control signal – this signal should be a good mix of the instrument tracks (though not usually tracks with large transient sounds such as the kick drum, cymbals and maybe the bass). On the display you will see the side chain Control signal (blue curve), the Main output signal (red curve) and the Gain plot (green curve), as well as the Ride indicator (yellow curve) if you have it turned on.



Note that the total gain range must accommodate both variation in the level of the control signal and any variation in the main signal source, so Range Min and Range Max may need to each be “turned up” (Min in a negative direction and Max positive). Adjust the final loudness with the Volume knob (e.g. +6 dB as shown above), so the main signal "sits" above control signal at an appropriate level.

5 Plugin Controls

Mouse usage:

Click and drag horizontally changes parameter value

Shift click and drag changes parameter value slower

Ctrl click rests to default value

Double click or right click open value edit box, finish with enter.

5.1 Pre-Filter

Filters the signal for loudness measurement. This let the loudness measurement focus on the specific frequency range e.g. vocals or bass.



Low/High-Cut Filter:

1 - 22k Hz

5.2 Input Control



Side chain

GainRider can use side-chain (VST3/RTAS/AAX/AU) or channel 3+4 (VST2) as control channel for the ride process.

Input Mode:

- INT (Internal): main signal is leveled towards target level. The blue curve shows the incoming signal, the red curve the outgoing signal.
- SC1 (Side Chain 1): The main signal is leveled to target level as soon control signal is above noise level. This process is called ducking. The blue curve shows the control signal, the red curve the outgoing signal.
- SC2 (Side Chain 2): The main signal is leveled towards control signal as soon main signal is above noise level. The blue curve shows the control signal, the red curve the outgoing signal.

Target Level (dBFS):

Sets the target loudness for the main signal (mode INT) or the control signal (mode SC1)

5.3 Gain Riding Control



Sensitivity (ms):

Sets the speed of the gain changes, lower values let the gain change faster.

PreDelay (ms):

Pre-delay aligns the timing of gain changes with main signal. Higher values delay the outgoing signal more.

NoiseLevel (dBFS):

Gain riding starts above loudness level, and stops below.

RangeMin (dB):

Minimum gain change.

RangeMax (dB):

Maximum gain change.

IdleGain (dB):

Gain during idle (no ride)

5.4 Noise Detection, Gain hold, A/B, Sync, Automation



Noise detection:

Enables noise detection with timing independent from sensitivity.

Noise sensitivity:

Controls noise detection timing

Gain hold:

This will hold the last gain in place of the idle gain when the signal drops below the noise level.

A/B:

Switch between processed and unprocessed signal

Sync:

Enables synchronization with DAW start/stop, display is reset before play.

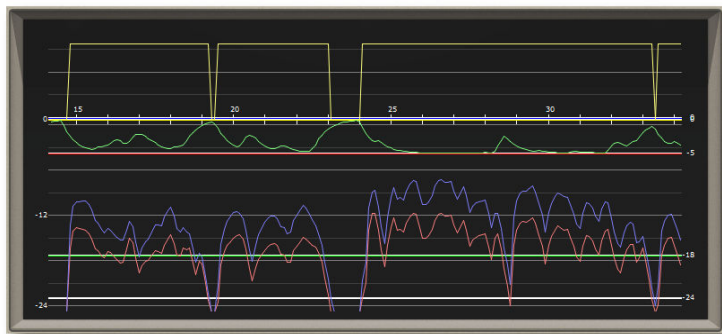
Automation:

Idle: no read or write of automation data.

Write: writes automation data to DAW. Record parameter "Current Gain"

Read: reads automation data from DAW.

5.5 Display



The display provides a detailed view of all measurements and shows the Target/NoiseLevel, RangeMin, RangeMax and IdleGain values.

5.5.1 View Control

XScale/XOffset:

Zoom and move view, time axis, in seconds

YScale/YOffset:

Zoom and move view, loudness axis, in dBFS/dB mixed

5.5.2 Curve Display

CntrlSig:

On/Off (pre filtered) control signal

SrcSig:

On/Off (processed) source signal (= output signal)

Gain:

On/Off gain curve

Ride:

On/Off ride curve

Screen:

On/Off screen

Reset:

Reset content of display

Pause:

Freeze display

5.5.3 Plugin info menu



This control opens the plugin info menu. It provides more information about the plugin, online version check, opens the manual and online change-log.

6 Demo mode versus Registered Mode

In demo mode (without activation) the plug-in mutes audio every 90 seconds for a short period. This could be circumvented by clicking on the "TBProAudio" logo within 90 seconds.

7 Plugin activation

The plugins needs to be registered/activated to remove demo restrictions. Please go to  www.tb-proaudio.de to purchase the activation key. After purchase you will receive an email from TBProAudio with either the (zipped) activation key file or the activation key in text form. Go to the plugin menu->Activate plugin. Please follow the steps described here: <https://www.tbproaudio.de/support/productactivation>. After successful activation the key symbol shown in the GUI appears in golden colour.

8 Notes

VST2 "side-chaining"

VST2 does not support implicitly side chaining. VST3 introduced it for the first time to VST plugin architecture. So in order to use GainRider VST2 plugin a DAW with highly flexible channel routing is required.

9 Conclusion

So finally if you have any questions or suggestions just let us know. And have fun with our tools and visit us here: www.tbproaudio.de

Your team from TBProAudio :-)