

Drumstrip™

User Guide

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1. Introduction

The Drumstrip plug-in for Duende brings a unique blend of tools to the Duende DSP platform, which provides an unprecedented amount of control over the transient and spectral elements of drum and percussion tracks. Manipulation which previously may have been time-consuming or impossible with traditional EQ and dynamics processing becomes elegant and rewarding with SSL Drumstrip.

Features

- Transient shaper capable of drastically changing the attack characteristics of rhythmic tracks. An audition mode makes for easy setup
- Highly controllable Gate featuring both open and close thresholds, attack, hold, release and range control
- SSL Listen Mic Compressor as featured in LMC-1 with extra functionality
- Separate high and low frequency enhancers provide spectral control not achievable with traditional EQ
- Peak and RMS metering on both input and output
- Wet/dry controls on both the main output and the LMC, allow parallel processing to be easily dialled in
- Process order control over all five sections gives complete flexibility over the serial signal chain
- Latency-free bypass of all processing

Please be aware that Drumstrip will only install and run when Duende hardware is present, containing V2 or higher firmware. The host computer must be running at least Duende V2 or later software.



- 1 Input section
- 2 Latency free plug-in bypass
- 3 Gate
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For product news and software updates please register at www.solid-state-logic.com/duende. Don't forget to join the www.mixbuss.com community, the on-line resource for sharing knowledge on better music production!

2. System Requirements

Windows/PC

- SSL Duende running V2 software and firmware
- Minimum of Intel Pentium IV 1GHz or equivalent
- 512Mb RAM (*1Gb recommended*)
- Windows XP
- 80Mb of free hard disk space
- Approved VST or RTAS* compatible host application
- 17" or larger colour monitor with screen resolution of 1024 x 768 or higher recommended
- Internet Connection
(*for product registration and software updates*)

Apple Macintosh

- SSL Duende running V2 software and firmware
- Mac PowerPC G4/G5 or Intel 1GHz or higher
- 512Mb RAM (*1Gb recommended*)
- Mac OS X (*Version 10.4.8 or higher*)
- 60Mb of free hard disk space
- Audio Units, VST or RTAS* compatible host application
- 17" or larger colour monitor with screen resolution of 1024 x 768 or higher recommended
- Internet Connection
(*for product registration and software updates*)

Plug-in formats

VST and RTAS* versions are provided for use under Windows XP on the PC platform

VST, AU and RTAS* formats are provided in a universal binary format for Intel based and PowerPC Macs.

As with other Duende plug-ins, Drumstrip will take one 'slot' at 44.1/48kHz in mono. Please see the Duende manual for more information on DSP resource management.

* RTAS support is provided by the included FXpansion VST-RTAS wrapper: www.fxansion.com

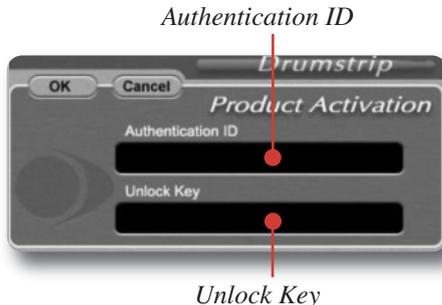
3. Installation & Authorisation

A time limited trial version of Drumstrip will be installed during the Duende V2 software update.

This allows for Drumstrip to be run in evaluation mode, which means the plug-in can be used with full functionality until a certain number of samples of audio have been processed. At 48 kHz this gives about 10 hours of continuous use for either stereo or mono plug-ins.

At the point where 10 minutes of the evaluation period remains, the countdown timer will turn red. Once the timer reaches '0h 0m 0s' the sample count has been reached and the plug-in will cease to process audio.

If you wish to continue using Drumstrip after this period, you should purchase the full version from <http://solid-state-logic.locotalk.com>. Once the authorisation procedure has been carried out, you will have an unrestricted version of Drumstrip.



To obtain an authorised version of Drumstrip please do the following:

1. Navigate to <http://solid-state-logic.locotalk.com> and log in to your SSL account. If you do not already have an account, please create one.
2. Under the 'SSL Products and Admin' section, proceed to the Online Shop.
3. Add Drumstrip to your cart and confirm your identity in the next step.
4. In step 3 you will be asked to enter your Authentication ID. This is found in the Drumstrip Production Activation box. 'Ctrl + click' (PC) or 'Command + click' (Mac) on the Duende logo in the Drumstrip GUI to open this box.
5. If your Duende hardware is not already registered you will be asked to register it here.
6. Enter your payment details and your order will be completed and you will be provided with the Unlock Key.
7. Return to the Product Activation box and enter the Unlock Key – Drumstrip is now authorised for continuous use.

Please note that Drumstrip will only run on the particular Duende hardware for which it is authorised.

4. Operational Overview

Knobs

All rotary controls on Drumstrip feature a dual function display below the knob. During normal operation the display shows the function of the knob, such as Gain, Freq, etc. However, when the mouse cursor is hovered over the knob the display changes to inform you of the current value.

Drumstrip parameters are changed by dragging, rotating or clicking knobs and buttons, whose behaviour varies slightly depending on which software is being used to host the plug-ins. Generally the further away the mouse pointer is from the knob, the more resolution is available for parameter adjustment.

Keyboard Commands

Windows XP

To reset a knob to its default value '*Ctrl + click*' on that knob. For very fine adjustment, hold '*Shift*' whilst dragging

OS X

To reset a knob to its default value hold '*Command + click*' on that knob. For very fine adjustment, hold '*Shift*' whilst dragging.

Mouse Wheel Control

All Drumstrip knobs can be adjusted with the mouse wheel. This provides a very intuitive way of adjusting parameters, and aids the creative process by removing the need to constantly look at the screen whilst adjusting parameters.

Simply place the mouse cursor over any knob, and the mouse wheel will then adjust its value. Hold '*Shift*' for more resolution.

Automation

Every Drumstrip plug-in parameter can be automated so long as parameter automation is supported by the host application. The method for recording and editing automation varies from host to host. For specific instructions on using automation with the host consult the host application documentation.

5. Metering

The Drumstrip input and output meters displays are in fact three meters in one. They offer various ways to easily read the peak and RMS levels of a signal over time, and the 'dynamic history' meter allows you to see at a glance how the amplitude has been changing over the past second. A 30dB range from 0dB FS downwards gives adequate information about the amplitude of the signal.

Peak Meter and Clip indicator

The wide meter bar to the right is a responsive peak meter which allows you to observe the exact input level at any point in time.

A red clip light at the top of the meters indicates that three consecutive samples are at maximum which is taken to mean that the input is higher than 0dB FS and therefore clipping. It will stay illuminated for 1 second following clip detection, after which it will automatically clear. It can also be cleared at any point with a mouse click.



RMS Meter

The thinner bar to the right of this shows the RMS (*average*) level. This is useful in graphically judging the 'loudness' of the signal and when used in conjunction with the peak meter can give a good idea of the peak to RMS ratio of the signal.

Dynamic History Meter

The thin white bracket on the far right of the meter shows the recent dynamic range. The top of this bracket will exactly follow the peak meter in an upwards direction and fall at a slower rate.

The bottom of this bracket is an inverse of this, quickly following any downward movement in the input level and rising up at a slower rate.

By observing the height and position of the bracket, it can easily be seen at a glance what the dynamic range of the signal has been over the past second or so. If the bracket is long it indicates that the signal has a large swing in dynamic range, and if it is short the range is small. If the top and bottom points of the bracket are quickly moving around, it can be assumed that the dynamic range is quickly changing, which could be interpreted as an 'energetic' signal.



In the example shown right, you can see that there is only a small difference between the peak and RMS meters, which indicates a low peak to RMS ratio.

The dynamic history reading is also small which confirms that the amplitude is not changing considerably over time.

This signal is in fact a heavily limited version of example shown left.

6. Drumstrip Processing

A total of five processing blocks are incorporated into Drumstrip. These can be arranged in any order using the Process Order controls. In addition to these are the input and output sections.

6.1 Input Section

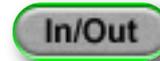
This provides a ± 20 dB input gain control along with a comprehensive meter display.

6.2 Output Section

Similar to the input section, but with the addition of a mix (*wet/dry*) control so the processed signal can be mixed in with the dry signal which appears at the input.

6.3 Bypass

Because Duende plug-ins cause noticeable latency at high host buffer settings, using the bypass button provided by the DAW can cause an undesirable shift in time. For this reason a latency free global bypass is included. When this is engaged the audio is still passed to and from Duende, but is unchanged as all Drumstrip processing including input and output gains are bypassed. This gives a smooth, glitch free bypass function and we recommend that you use this method every time.



process
(illuminated in green)



bypass



in circuit
(illuminated in green)



out circuit

In addition to this global bypass, each of the five processing blocks can be switched on and off separately. As this occurs within the plug-in, it is again latency free. When a section is turned off, the audio is routed round the section and is therefore unchanged so the remainder of the signal path is not affected.

6.4 Gate

The gate is suitable for many applications which include:

- Shortening drum hits to obtain a 'tighter' sound
- Control of ambience on live drums tracks
- Manipulation of attack and decay characteristics
- Increasing dynamic range using the gate as a downward expander



The Drumstrip gate provides six controls, a process In/Out button and a comprehensive multi-function meter.

6.4.1 Gate Meter

The meter is made up of five components:

- The left hand column is the incoming signal level
- The green ']' shape on the left hand column represents the open threshold
- The red '[' shape on the left hand column represents the close threshold
- The right hand column is the amount of attenuation applied to the signal by the gate
- The white ']' shape on the right hand column is the range value, sometimes referred to as the 'floor'

Thresholds

The open threshold varies from 0dB FS down to -30dB FS. Because the green line shows this against the input level, it is easy to see if the signal is exceeding the open threshold, therefore opening the gate. If the incoming signal rises above the green line, the gate will open.

Once the gate is in its open state, it will stay there until the signal level falls below the close threshold, again ranging from 0 to -30dB FS. As with the open threshold, you can clearly see the close threshold (*red line*) against the input level, therefore making it easy to set.

If the close threshold is higher than the open threshold, the close threshold is ignored because this condition cannot exist. This creates a situation where the open threshold then becomes the only gate threshold and can be a good starting point for setting up.

Range

The range (0 to -80dB FS) is the amount of attenuation applied to the signal when the gate is closed. This is indicated by the white line in the right hand column, and the meter can be seen coming down to this level when the gate is closing. If you require a true gating action then the range should be set to -80dB FS, which is effectively silence. By reducing the range, the gate takes on some of the characteristics of a downward expander where the signal is lowered in level set by the range amount, rather than being completely silenced. This can be useful in cleaning up a drum track containing reverb,

where silencing the reverb would sound too artificial but attenuating it by a few dB would push it down to an acceptable level.

Time Constants

The attack, release and hold controls can be thought of as an envelope shaper acting on the signal.

- The attack time (0 – 0.1ms) is the amount of time taken for the gate to open once the signal level exceeds the open threshold
- The hold time (0 – 4s) is the duration the gate stays open before it enters the release phase, once the signal has dropped below the close threshold
- The release time is the amount of time (0 – 1s) taken for the gate to close once it has finished the hold phase

6.5 Transient Shaper

Have you ever imagined a processor that could add attack to the *start* of a drum hit? Well... now you have one!

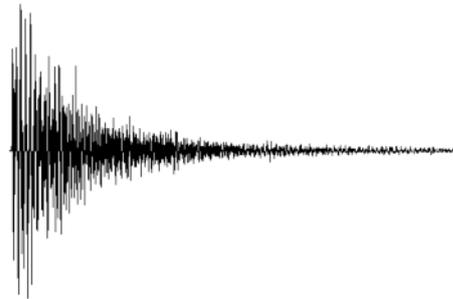
The transient shaper will look at the incoming audio and increase the amplitude of the attack portion of the signal whilst leaving the decay unchanged. The increased attack portion is then added to the unprocessed signal.

The right hand waveform is a processed version of the one on the left. It has been passed through the transient shaper where the amplitude of the attack portion has been increased.

The transient shaper uses a detector circuit which is separate from the audio circuit. The detector circuit can be manipulated by the **G**ain, **S**peed and **I**nv parameters so the process can be fine tuned to alter the incoming transients.



Unprocessed signal



Processed signal

Gain

This controls only the level into the transient detector circuit, but has no direct audible effect. It offers $\pm 20\text{dB}$ of gain reduction and should be set so that the detector recognises only the particular attack transients that you wish to increase in amplitude.

If this is set too low then the detector circuit will not recognise any part of the signal as an attack transient, therefore no processing will take place and the signal will be unaltered.

Set too high and the detector will recognise too many of the attack transients. This will result in an exaggerated process, and the attack may then appear too long, which could result in a less 'snappy' signal.

The default setting of 0dB should be a good starting point presuming the output of the previous section is at a healthy level.

Meter

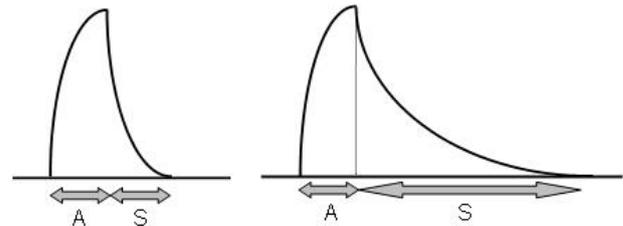
This gives visual feedback on how much attack is being added and is dependant on the **Gain** and **Amount** controls. If this rises to the top red section then clipping is probably occurring. Under severe clipping some undesirable artifacts may be heard. Please back off the **Amount** control in this case.

Amount

This varies the amount of the processed 'transient' signal that you wish to add to or subtract from the unprocessed signal. Set this to taste, but watch the output meter of Drumstrip for clip indication. This process can increase the peak level of a signal significantly.

Speed

This controls the length of time the added attack takes to fall back down to the normal signal level once it has reached the top of the attack phase. Turning the knob clockwise (towards 1) results in a slower speed, therefore a longer transient. Setting the speed to a low value will a shorter transient.



The diagrams above show the amplitude of the 'added' transient signal. This demonstrates the effect of altering the speed from '0' to '1'. 'A' is the attack time which is dependant on the incoming transient information, and 'S' is the speed value.

Inv

This stands for invert. Here a phase inverted version of the amplified attack is added to original, giving a ‘subtractive’ mode. This has the effect of softening the attack, and when this is mixed in with the original signal (*by using the **Mix** control on the output section*), can give the drums some extra body.

Audition

This is a solo mode which allows you to listen to only the added transient information. It is very useful in setting up the process.

*Note that when the **Inv** and **Audition** buttons are both pressed, the **Inv** process will have no effect.*

6.6 HF Enhancer

This adds a combination of 2nd and 3rd harmonics which has the effect of enriching the high. This overdrive characteristic will work from the frequency set by the **Cutoff** control upwards with a varying amount of harmonic content.



This process is not possible with a standard EQ, as instead of raising the relative level of a set of frequencies, it is adding harmonics to those frequencies therefore producing a more pleasing effect.

Cutoff

Ranging from 2kHz up to 20kHz, this sets the frequency above which harmonics are generated. To add air or sparkle to a signal, push this frequency towards the higher end of the range. To give more presence to a signal, use the lower end of the range.

Drive

Ranging from 0 – 100% this is the amount of overdrive and consequently controls the density and amount of harmonic content.

Amount

This adds the enhanced signal to the unprocessed signal. It ranges from 0 – 100%.

The HF Enhancer effect will not be heard when until both the **Drive** and **Amount** knobs are set to a non-zero value.

Also bear in mind that when the **Cutoff** control is in the 15kHz to 20kHz range, the effect may not be noticed even though it is present, because this is near to the top of the range of human hearing.

6.7 LF Enhancer

This is similar to the HF Enhancer, but works on the low frequency range from the **T.Over** (*turnover*) frequency downwards. Its great for adding depth and weight to kick drums, snare or toms.



The incoming signal is low-pass filtered, harmonically enriched using the **Drive** control and added to the unprocessed signal using the **Amount** control.

6.8 Listen Mic Compressor

The Listen Mic Compressor was first found in the classic SL 4000 E Series console. More recently it was reincarnated in the digital domain as the LMC-1 plug-in. This now been enhanced and included in Drumstrip.



It now features the familiar Listen Mic Compressor sound, but with the option of EQ by-pass, offering full range compressor action. The addition of a **Mix** control gives the option to mix the compressed sound in with the uncompressed sound to taste, providing parallel or upwards compression.

The **Comp** control offers varying amount of compression, from subtle right through to full-on, with a range of 0 – 100%.

The **MakeUp** control is used to compensate for the gain reduction, and when used in conjunction with the **Mix** knob allows both balancing of the dry/wet signal and an output level control. The **MakeUp** control will only act upon the ‘wet’ part of the signal, and will not affect the ‘dry’ component.

Please be aware that the Listen Mic Compressor features very quick fixed time constants. This means it is easily capable of producing distortion on low frequency material.

7.9 Process Order

The five processing blocks in Drumstrip can be configured in any serial order. The signal passes from left to right through the chain.

To move a block either to the right or left in the signal chain, simply highlight it and click the appropriate cursor on either side to move.

You may, for example, wish to place the gate first in the chain so it is able to act on the full dynamic range of the signal before the signal is processed by the Listen Mic Compressor.



7. Drumstrip Support

Support FAQs

To access the latest support information on Duende, please visit our online support site. The information there is kept up to date by our support staff to make sure all information is accurate. All information is available to you 24/7.

URL: <http://solid-state-logic-en.custhelp.com>

If you can't find your answer or a solution to your issue, you can submit a question on the site to our support staff for resolution.

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