Transient Splitter

Operation Manual

QUADELECTRA

Re
Rack Extension

1. Welcome To Transient Splitter

Thank you for your purchase on *Quadelectra Transient Splitter* Rack Extension for Reason. Transient Splitter is the little brother to our previously released Stereo Splitter, and just like the name suggests, Transient Splitter is to transients what Stereo Splitter was to... stereo :)

We really hope you enjoy using Transient Splitter.

1.1. What Are Transients

Transients are short bursts of sound found mostly in percussive sounds or sounds with sharp attacks. The first few milliseconds of a snare hit, or of a picked string for example.

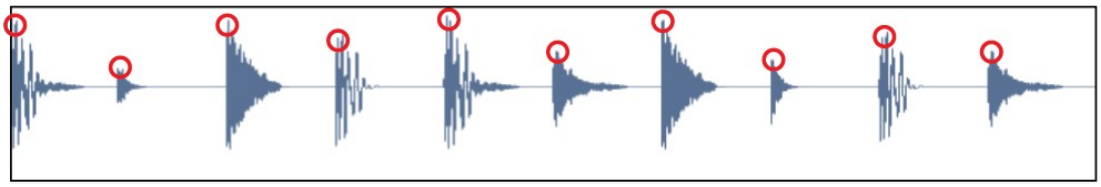

Fig.1.1: An audio signal with its transients circled

In mixing managing the level of the transients of such sounds, can either "push" an instrument, to the front or at the back the mix, or -if added at a group or in the master bus- it can add clarity to the entire track.

1.2. What Is the Transient Splitter by Quadelectra

Usually you tame your transients using a Transient Shaper, that takes an audio input, processes the transients, and outputs the result.

Transient Splitter, although it can be used as a Shaper, takes an input audio signal and splits it into two different parts. The actual transients of a signal, and the body part (the rest).

These two parts can be either mixed together in different levels, which works almost like a transient shaper, or you can also hook up the auxiliary outputs of the unit at the rear panel, and drive each portion -the transient and the body parts- through a different effects chain.

This feature opens entirely new possibilities for processing. Have a lead guitar e.g. with mild saturation in the transient FX chain and a heavy distortion in the body FX chain, in order to make sit better in your mix.

Reduce plosives from vocals without crushing dynamics, add bass to your kicks without muffling the low end of the mix, and many more.

The applications are limitless.

1.3. How Transient Splitter Works

Instead of using a set of envelope followers, Transient Splitter uses an envelope to extract the detected transients from the audio input signal. This method ensures more consistent results. The transients are subtracted from the input signal and the result of that operation produces the body part.

Below is a diagram that explains this operation

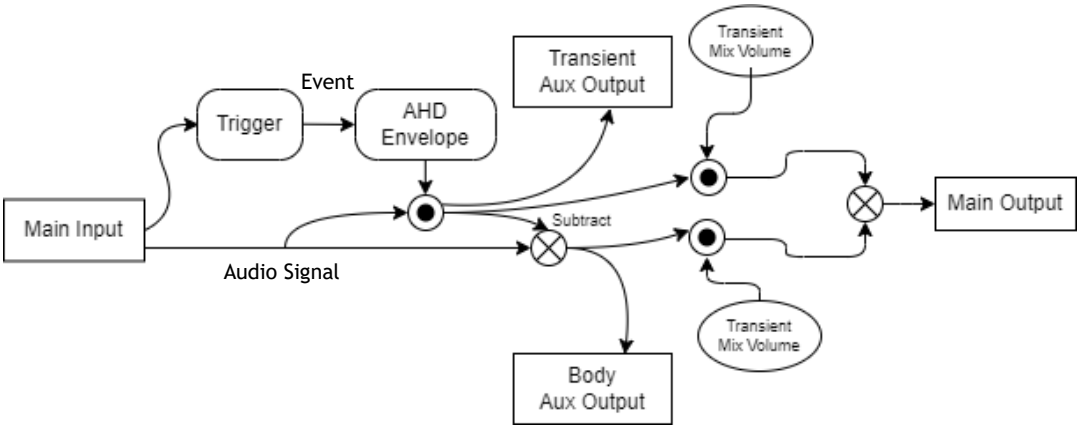

Fig.1.2: The process diagram of the Transient Splitter

2. Front Panel

The front panel is divided into five distinct sections, each with its own background color. Going from left to right these are:

- Basic Controls (Black)
- Detection Controls (Grey)
- Envelope Controls (Orange)
- Transient Controls (Red)
- Body Controls (Blue)

Fig.2.1: Transient Splitter Front Panel

Let's take a closer look to the controls and the functionality of each section.

- **Basic Controls (Black):** These control the most fundamental properties at the beginning and the end of the processed signal.
    - **On / Off / Bypass Switch:** Like in any standard Reason Effect Device, this switch turns the device on, off or puts it in bypass mode.
    - **Input Gain:** This knob controls the gain of the input signal that's being fed to the envelope. Note that ***IT DOES NOT*** change the output amplitude of the signal.

      Normally you'd use Input Gain to rectify the dynamic range that the envelope follower has to work with, if the incoming audio signal is weak.
    - **Output Volume:** The output volume just before the signal leaves the device. The output volume affects only the main output of the device. Auxiliary outputs are not affected.
- **Detection Controls (Grey):** Transient Splitter uses an envelope follower set up to detect transients. This group of controls, deals with the detection aspects of the envelope follower and the input signal.

  Controls of this group are:
    - **Link L/R:** When enabled a single envelope follower is used to detect signals in both Left and Right channels.

      If disabled two different envelopes will detect signals from Left

and Right channels separately, causing different triggers for each channel.

This switch does not produce any results when Transient Splitter is used in mono.

- **Sens (Sensitivity):** Use this knob to dial the desired sensitivity for the trigger. Lower values make the envelope follower more sensitive and catch more transients. Higher values have the opposite effect, reducing the sensitivity and therefore triggering less transients for processing.

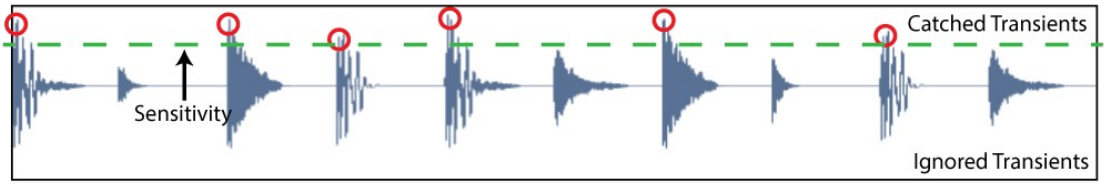

Fig.2.2: Sensitivity determines the level above which, any transients will trigger the effect

- **Recovery:** Recovery knob sets the amount of time the device will suspend any triggering from the envelope, once a trigger is hit.

  You can increase the delay, if for example you want the transients on certain time intervals to be heard in a busy beat, discarding any intermediate ones.

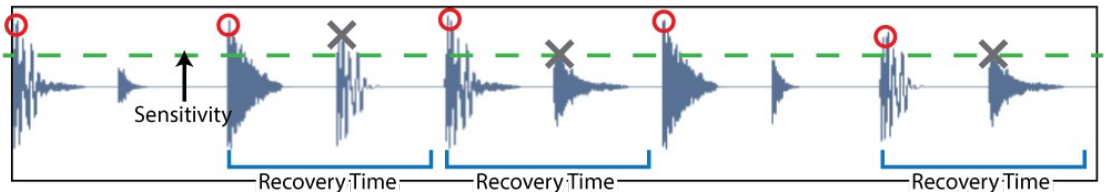

Fig.2.3: Although some transients exceed the sensitivity threshold, they are ignored since they fall inside the recovery time span.

- **Envelope Controls (Orange):** Once a transient is detected, Transient Splitter uses an AHD (Attack, Hold, Decay) envelope to extract it from the rest of the signal.

  The Envelope Controls, affect the properties of this envelope. They are common for both left and right channels, regardless of the L/R Link switch.

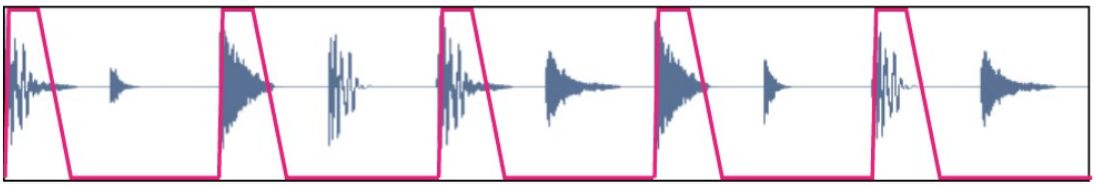

Fig.2.4: The magenta line shows the amplitude applied by the AHD envelope in order to extract the transients from a signal.

(As a result of the previous diagram)

These are the controls for the envelope:

- **Attack Curve:** You can switch between three different settings that define the way the attack rate changes. See below for an explanation of these settings.
- **Attack Time:** The time in milliseconds of the envelope attack stage.
- **Hold Time:** The time in milliseconds that the envelope will hold the gate open, for the signal to pass.
- **Decay Time:** The time in milliseconds of the envelope decay stage.
- **Decay Curve:** You can separately define what kind of curve the Attack and Decay portions of the envelope will have.

Subsequent trigger hits will not retrigger the envelope unless it has entered the decay stage.

Attack / Decay Curves

Each one of the Attack and Decay curves can be set to one of these three settings: (from top to bottom):

- Logarithmic
- Linear
- Exponential

- **Trigger Lamp:** This lamp flashes every time a trigger is detected by the Transient Splitter.

- **Transient Controls (Red) / Body Controls (Blue):** These two groups contain the same set of controls. One is dedicated to the Transient part and the other to the Body part of the processed signal.
  - **Mute Switch:** This switch mutes the portion of the signal from the output. The switch does not affect the signal sent to auxiliary outputs.
  - **Volume / Level:** This knob sets the level of the signal being fed to the output. The knob does not affect the signal sent to auxiliary outputs.

- **Aux Connection Lamp:** This lamp is lit when the auxiliary outputs are connected to another device.

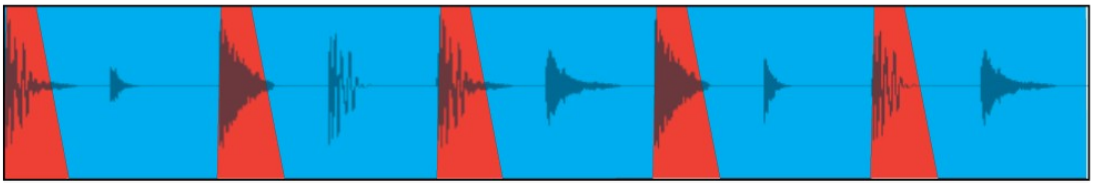

Fig.2.5: The final product with respect to the previous figure. The red area is the transient part of the input audio, while the blue is the body of the signal.

3. The Rear Panel

Figure 3.1: Transient Splitter Rear Panel

Transient Splitter's rear panel, is divided in 5 sections. Starting from left to right, these are:

- **Main Inputs (L/R):** As expected, incoming signal to be processed is connected to this pair of inputs. You can either process a stereo signal, or a mono by connecting only the Left (L) channel.
- **Main Outputs (L/R):** Likewise, these work as expected, but for the outgoing processed signal.
- **Transient Aux Output (L/R):** This pair of outputs forwards the transient parts of the incoming signal for separate processing.
- **Body Aux Output (L/R):** This pair of outputs forwards the body parts of the incoming signal for separate processing.
- **CV Inputs Group:** You can control a set of Transient Splitter's parameters using external devices in real time. These are:
    - **TrL (Transient Level):** Controls the level of the transient part that is fed to the mixer. The setting does not affect the output volume from the signal fed to the Transient auxiliary output.
    - **BoL (Body Level):** Controls the level of the body part that is fed to the mixer. The setting does not affect the output volume from the signal fed to the Body auxiliary output.
    - **Atk (Attack):** Controls the attack time of the AHD envelope, that modulates the transients' amplitude.
    - **Hld (Hold):** Controls the time that the AHD envelope that modulates the transients, stays open.
    - **Dcy (Decay):** Controls the decay of the AHD envelope that modulates the transients' amplitude.
    - **Sens (Sensitivity):** Controls the sensitivity of the trigger.
- **CV Outputs:**

- **Trig CV Out:** Fires a CV Trigger once a transient has been detected by the Rack Extension device.

- **Env CV Out:** Similar to Trigger CV Out, but instead sends the complete AHD envelope level

APPENDIX I: MIDI CC Map

Below you can see the Transient Splitter MIDI Continuous Controls Map.

CC #	Description
12	Envelope Attack Time
13	Envelope Hold Time
14	Envelope Decay Time
15	Envelope Follower Sensitivity
16	Transient Volume
17	Body Volume
18	Input Gain
19	Output Volume
20	Link L/R
21	Transient Mute
22	Body Mute
23	Recovery Time
24	Envelope Attack Curve
25	Envelope Decay Curve

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