

# *VELOCITY* *Curve*



A N D R E W



R U S S E L L

# Overview



a player device by Andrew Russell

Compatible with Reason 9.2 and later

Velocity Curve takes incoming notes, and transforms their velocities based on a curve that you specify.

Numeric values in Velocity Curve are specified in terms of MIDI velocities.

MIDI note velocities range from 0 to 127, with 0 meaning note-off, and 1 to 127 meaning varying levels of intensity.

# Front Panel

## Low In / Low Out

*[Curve Mode]*

Position the Low endpoint of the curve

## High In / High Out

*[Curve Mode]*

Position the High endpoint of the curve

## Velocity Curve

*[Curve Mode]*

Change the shape of the curve



## Draw

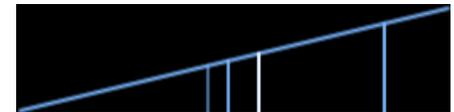
Toggle between Curve Mode and Draw Mode

## Low Cut

Enable note muting

## Interactive Display

- Shows currently playing notes, indicating their input and output velocities as a bar graph
- *[Curve Mode]* Modify curve controls
- *[Draw Mode]* Edit the curve directly
- In “fine-edit” mode, shows the current coordinate as an X, Y [input, output] pair
- See the mode pages for keyboard modifiers



# Back Panel

## CV Scale

Scale output velocities

## CV Scale Unipolar

Changes the interpretation of CV Scale values  
(see table)

| Velocity Scale | Bipolar (default) | Unipolar   |
|----------------|-------------------|------------|
| 0% (min)       | $\leq -1.0$       | $\leq 0.0$ |
| 50%            | -0.5              | 0.25       |
| 100%           | 0.0               | 0.5        |
| 150%           | 0.5               | 0.75       |
| 200%           | 1.0               | 1.0        |
| 1000% (max)    | $\geq 9.0$        | $\geq 5.0$ |



## CV Curve

*[Curve Mode]*

Value in the range -1.0 to 1.0 to add to the Velocity Curve parameter

## CV Curve Inverse

*[Curve Mode]*

Invert the value of CV Curve before adding it

NOTE: The normal range of the Velocity Curve parameter is -100% to 100%.

By using CV Curve, you can expand that range to -200% to 200%.

NOTE: Velocity scaling operates in the range of 1 to 127, so scaling to 0% will produce a velocity of 1, not 0.

To achieve velocity scaling down to 0 (mute), add a second Velocity Curve device with Low In set to 2, and Low Cut enabled.

# Curve Mode



Curve Mode provides an quick and easy way to specify a velocity transformation, using only a handful of controls

## Velocity Output Specification

- An input velocity equal to Low In produces an output velocity equal to Low Out
- An input velocity equal to High In produces an output velocity equal to High Out
  - Low In takes priority, if Low In and High In are equal
- Input velocities between Low In and High In produce output velocities between Low Out and High Out
- The shape of the curve between the Low and High endpoints is controlled by the Velocity Curve parameter
- Input velocities outside of High In produce an output velocity equal to High Out
- Input velocities outside of Low In produce an output velocity equal to Low Out, or zero (muted) if Low Cut is active
- Note that Low In and Low Out values do not have to be less than High In and High Out values

## Display Interactions

- You can move the Low and High endpoints by clicking and dragging them in the display
- You can change the Velocity Curve parameter by clicking and dragging the centre of the curve up and down
- Hold SHIFT while clicking and dragging display elements to use fine-edit mode
- Hold CONTROL while clicking display elements to reset them to their defaults

# Draw Mode



Draw Mode allows you to fully specify a velocity transformation by directly drawing onto the display  
You can specify output velocities (from 0 to 127) for all possible input velocities (1 to 127)

## Low Cut Behaviour

- Low Cut must be enabled to draw an output velocity of 0 (mute note)
- If Low Cut is subsequently disabled, drawn velocities of 0 will be output as 1
- If Low Cut is re-enabled, velocities drawn as 0 will be remembered

## Copying the curve from Curve Mode

- When first entered, Draw Mode uses the curve from Curve Mode
- You can continue to modify the curve using the Curve Mode controls, until you interact with the display
- After interacting with the display, using the Curve Mode controls will show a “Draw is On” warning on the display

## Display Interactions

- Click and drag in the display to directly draw a velocity transformation
- Hold SHIFT while drawing to use fine-edit mode
- Hold ALT while clicking and dragging in the display to read values without modifying them
- Hold ALT + SHIFT while drawing or reading to lock to an input velocity, editing only its output velocity
- Hold CONTROL and click the display to reset to copying the curve from Curve Mode (see above)

# About Andrew Russell

Andrew Russell is a former computer game developer from Australia, bringing his experience developing high-performance game engines and designing fun, intuitive and delightful user experiences to the world of music software.

## Also from Andrew Russell

