Oenkenstein Audio

DICE ANALOG SYNTHESIZER

Operation Manual

DICE Analog Synthesizer Operation Manual

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Content

1 Introduction

Dice Analog Synthesizer is a polyphonic synthesizer with a randomize function on the front and back panels, but also a web based randomize function.

1.1 Description

Dice Analog Synthesizer has 6 oscillators to generate sound without the use of samples. This device comes with a Sine, PWM (Pulse Width Modulation), Triangle, Sub, Noise and Saw oscillator.

To alter the sound generated by each oscillator, the synthesizer is provided with tuning, volume and panning knobs. It has an amplitude envelope section with AHDSR faders, a filter section, a Bode frequency shifter and an oscillator output routing section.

Dice Analog Synthesizer also contains 3 sections to change the tuning of the oscillators: Pitch Wheel control, Bend and Glide. A Low Frequency Oscillator (LFO) is used to modulate the filters cutoff and the glide time.

Dice Analog Synthesizer has 3 effects: Delay, reverb and chorus.

The back panel of the Dice Analog Synthesizer has audio outputs for each oscillator, a main stereo output, solo and mute buttons, a randomize configuration section, 53 CV inputs and 2 CV outputs.

Dice Analog Synthesizer comes with 160 instrument patches. Please notice: 30 combinator patches require Reason 12.

New to version 1.3.8 is the implementation of a on board randomize play and edit system.

Dice Analog Synthesizer also uses a web based form where the user can randomize patches, which can be loaded and altered in the Dice Analog Synthesizer.

1.2 Specifications

1. Minimal requirements for the Rack Extension: Duo Core based computer with at least 2 GHz processor, 4 GB of RAM and Reasonstudios Reason 10.2 or higher running on Windows or Mac OSX.
2. Type of device: Polyphonic Analog synthesizer.
3. Method of synthesis: Additive 16 bit.
4. Amount of oscillators: 6.
5. Pitch Wheel control.
6. Bend.
7. LFO (Low Frequency Oscillator).
8. Glide.
9. Sound modulation:
   - 6 Filter types.
   - Amplitude envelope (AHDSR)
   - Bode Frequency Shifter.
10. Effects:
    - Delay, Linear Reverb and Chorus,
11. Amount of modulation matrixes: 3
    - 1 slot in the Filters Cutoff section.
    - 1 slot in the Bode Frequency Shifter.
    - 1 slot in the Glide section.
12. Control Voltage In (CV In): 53.
13. Control Voltage Out (CV Out): 2.
    - Key.
    - Velocity (Vel).
14. Modulation Envelopes: 2.

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Dice Analog Synthesizer front panel:

Dice Analog Synthesizer back panel:

2 Front Panel

2.1 Panels Overview

- **Randomize Switch and Seed Percentage knob** (**1**).
- **Patch Browser.**
- **Logo.**
- **Device name.**
- **MIDI Note indicator**.
- **Oscillators** Panel (**2**) with:
  - Sine oscillator.
  - PWM (Pulse Width Modulation) oscillator.
  - Triangle oscillator.
  - Sub oscillator.
  - Noise oscillator.
  - Saw oscillator.
- **Oscillator Tuning Modulation and LFO** panel (**3**) with:
  - Pitch Wheel control.
  - Bend.
  - LFO.
  - Glide.
- **Effects** and **Output** panel (**4**) with:
  - Delay.
  - Reverb.
  - Chorus.
  - Output.

2.2 1 - Randomize and Seed Percentage

- **Randomize Switch:** Toggles between to randomize Dice Analog Synthesizer or not (Scale: Red dice = Off / Marine Blue.dice = On. Default = On).
- **Seed Percentage:** The Percentage determines the Seed Percentage to apply when randomisation is active. A low percentage setting (15 %) wil change the sound of the current patch slighty. A high percentage (90 %) wil change the sound drastically (Scale: 0 % / 100 %. Default = 50 %).

2.3 2 - Oscillators Panel Overview

The oscillators section consists of 6 rows

- **Oscillators** Rows (**1 - 6**) with:
  - 6 Oscillator types:
    - Sine oscillator.
    - PWM (Pulse Width Modulation) oscillator.
    - Triangle oscillator.
    - Sub oscillator.
    - Noise oscillator.
    - Saw oscillator.

The 6 oscillators are divided in smaller sections:

- **Oscillator Type** (**1**).

- **Oscillator Tune** (**2**):
  - Semi Tune,
  - Fine Tune,
- **Oscillator Volume** (**3**).
- **Oscillator Panning** (**4**).
- **Oscillator Amplitude Envelope** (**5**):
  - Attack,
  - Attack Curve.
  - Hold,
  - Decay,
  - Decay Curve.
  - Sustain,
  - Release,
  - Release Curve.
- **Oscillator Filterts** (**6**):
  - Filter Mode,
  - Filter Key to Cutoff.
  - Filter Cutoff.
  - Filter Cutoff Modulation Source.
  - Filter Cutoff Modulation Amount
  - Filter Resonance,

- **Oscillator Bode Frequency Shifter** (**7**):
  - Shifter Mix,
  - Shifter Shift.
  - Shifter Shift Modulation Source.
  - Shifter Shift Modulation Amount.
  - Shifter Range,
  - Shifter Feedback.
  - Shifter Mode.
- **Oscillator Output Send To** (**8**):
  - Send To Output Mode,
  - Bend Switch.

2.4 3 - Oscillator Tuning Modulation and LFO Panel Overview

- **Pitch Wheel Control** (**1**):
  - Pitch Wheel Amount,
  - Pitch Wheel Destination.
- **Bend** (**2**):
  - Bend Depth,
  - Bend Modulation Envelope,
- **LFO** (**3**):
  - LFO Shape,
  - LFO Rate Free,
  - LFO Rate Switch.
  - LFO Rate Synced.
  - LFO Retrig Switch.
- **Glide** (**4**):

- Glide Time,
- Glide Time Modulation Source,
- Glide Time Modulation Amount,
- Glide Mode.

2.5 4 - Effects and Output Panel Overview

- **Delay** section (**1**):
  - Delay Switch.
  - Delay Time Free.
  - Delay Time Switch.
  - Delay Time Synced.
  - Delay Feedback.
  - Delay Ratio.
  - Delay Damp.
  - Delay Mix dry / wet.
  - Delay Output Send To.
- **Linear Reverb** section (**2**):
  - Reverb Switch.
  - Reverb Time.
  - Reverb Pre Delay.
  - Reverb Damp.
  - Reverb Mix dry / wet.
- **Chorus** sectionl (**3**):
  - Chorus Switch.
  - Chorus Type.
  - Chorus Rate.
  - Chorus Depth.
  - Chorus Delay Time.

  - Chorus Voices Amount.
  - Chorus Mix dry / wet
  - Chorus Output Sent To.
- **Output** section (**4**):
  - Polyphonic/Monophonic Switch.
  - Limiter Switch.
  - Key To Panning
  - Tuning.
  - Volume.

3 Panels, rows and sections

Dice Analog Synthesizer is divided in panels, each with one or more rows with sections which are separated by vertical lines in the panel. A section provides and displays a set of various automatable controllers like rotating knobs, display's, pop up menus, On / Off buttons or switches and faders.

3.1 Panel 1, Randomize and Seed Percentage

- **Randomize Switch:** Toggles between to randomize Dice Analog Synthesizer or not (Scale: Red dice = Off / Marine Blue.dice = On. Default = Off).
- **Seed Percentage:** The Percentage knob on the front panel or the Percentage fader on the back panel determines the Seed Percentage to apply when randomisation is active. A low percentage setting (15 %) wil change the sound of the current patch slighty. A high percentage (90 %) wil change the sound drastically (Scale: 0 % / 100 %. Default = 50 %).

3.2 Panel 2, Row 1: Sine Oscillator

The Sine oscillator row has 8 sections:

- **Oscillator Type** (**1**).
- **Oscillator Tune** (**2**):
  - Semi Tune,
  - Fine Tune,
- **Oscillator Volume** (**3**).
- **Oscillator Panning** (**4**).
- **Oscillator Amplitude Envelope** (**5**):
  - Attack,
  - Attack Curve.
  - Hold,
  - Decay,
  - Decay Curve.
  - Sustain,
  - Release,
  - Release Curve.
- **Oscillator Filterts** (**6**):
  - Filter Mode,
  - Filter Key to Cutoff.
  - Filter Cutoff.
  - Filter Cutoff Modulation Source.
  - Filter Cutoff Modulation Amount
  - Filter Resonance,
- **Oscillator Bode Frequency Shifter** (**7**):

- Shifter Mix,
- Shifter Shift.
- Shifter Shift Modulation Source.
- Shifter Shift Modulation Amount.
- Shifter Range,
- Shifter Feedback.
- Shifter Mode.

- **Oscillator Output Send To** (**8**):
  - Send To Output Mode,
  - Bend Switch.

3.2.1 Section 1: Oscillator Type (1)

Shows the type and name of the oscillator.

3.2.2 Section 2: Oscillator Tune (2)

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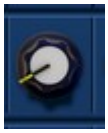
- **1: Smi - Sine Tuning**: Determines the tuning or pitch of the oscillator in semitones (Scale: -36 / +36. Default: 0).
- **2: Fin - Sine Fine Tuning**. Provides precise pitch adjustment (Scale: -50 / +50 cents. Default: 0).

3.2.3 Section 3: Oscillator Volume (3)



- **1: Sine Volume - Vol**: Determines the oscillator volume (Scale: -∞ / 0,0 dB. Default: -∞ dB).

3.2.4 Section 4: Oscillator Panning (4)

- **1: Sine Pan - Pan**: Determines the panning of the output (Scale: -100 / 100. Default: 0).

3.2.5 Section 5: Oscillator Amplitude Envelope (5)

- **1: A - Sine Attack**: Determines the time that a sound takes to peak. When you press a key on your keyboard, the envelope is triggered. The attack parameter then controls how long it should take before the controlled parameter (pitch or filter) reaches the maximum value, when you press a key. By setting attack to a value of 0, the destination parameter would reach the maximum value instantly. By raising the Envelope Attack parameter, the value will instead

slowly slide to its maximum (Scale: 0 seconds / 16 seconds. Default: 0 seconds). Values in seconds (s) shown in the tool tip are based on the Sine Attack Curve set to 0 %.

- **2: H - Sine Hold**: Determines how long the controlled parameter should stay at its maximum value before starting to decrease again. This can be used in combination with the Envelope Attack and Envelope Decay parameters to make a value reach its maximum level, stay there for a while (Envelope Hold) and then start dropping gradually down to the Envelope Sustain level (Scale: 0 seconds / 16 seconds. Default: 0 seconds).
- **3: D - Sine Decay**: Determines the time that the sound takes to fall from the peak to the Envelope Sustain level. After the maximum value for a destination has been reached and the Envelope Hold time has expired, the controlled parameter will start to gradually drop down to the Envelope Sustain level. How long it should take before it reaches the Envelope Sustain level is controlled with the Envelope Decay parameter. If the Envelope Decay is set to 0, the value will immediately drop down to the Envelope Sustain level (Scale: 0 seconds / 16 seconds. Default: 385 ms). Values in miliseconds (ms) shown in the tooltip are based on the Envelope Decay Curve set to 50 %.
- **4: S - Sine Sustain**: Determines the volume (relative to the peak) when the key is held down. The Envelope Sustain parameter determines the value the Amp Envelope should drop back to after the Envelope Decay. If you set Envelope Sustain to full level however, the Envelope Decay setting doesn't matter since the value will never decrease. A combination of Envelope Decay and Envelope Sustain can be used for creating envelopes that rise up to the maximum value, then gradually decrease to, and stay on a level somewhere in-between zero and maximum (Scale: -∞ / 0 dB. Default: 0 dB).
- **5: R – Sine Release**: Determines the time the sound takes to die out after the key is released. This works just like the Envelope Decay parameter, with the exception that it determines the time it takes for the value to fall back to zero after the key is released (Scale: 0 seconds / 16 seconds. Default: 59,8 ms).
- **6: AC – Sine Attack Curve**: Determines the curve for the Envelope Attack from a slow reach to the final value, following a linear curve, to a fast reach of the final value, following a logarithmic curve (Scale: -100 % / +100 %. Default: 0 %). Typically 75 - 90% for logarithmic curves.
- **7: DC – Sine Decay Curve**: Determines the curve for the Envelope Decay from a slow reach to the final, following a linear curve, to a fast reach of the final value, following a logarithmic curve (Scale: -100 % / +100 %. Default: -50 %). Typically 75 - 90% for logarithmic curves.
- **8: RC – Sine Release Curve**: Determines the curve for the Envelope Release from a slow reach to the final, following a linear curve, to a fast reach of the final value, following a logarithmic curve (Scale: -100 % / +100 %. Default: -50 %). Typically 75 - 90% for logarithmic curves.

3.2.6 Section 6: Filters (6)

These are standard synthesizer filter modules, so you should already be familiar with their function and characteristics. In version 1.0.1 the flters cuttoff and resonance are limited. In the updated version 1.1.2 the limiter on the filters is removed, making Dice Analog Synthesizer brighter and aggresive. A Filters Compatible Switch is placed on the back panel.

- **1: Sine Filter Mode**:: Determines the filter type. There are 6 filter types (Default: LP24).
  - LP6 1-pole Lowpass filter.
  - LP12 2-pole lowpass filter
  - LP24 4-pole lowpass filter
  - HP6 1-pole highpass filter
  - HP12 2-pole highpasas filter
  - BP6 2-pole bandpass filter
- **2: Sine Key Filter Tracking**: the filter key tracking is a feature that allows the filter cutoff frequency to follow the pitch of the keyboard. This means that as you play higher or lower notes on the keyboard, the filter cutoff frequency changes proportionally to maintain the same

relative harmonic content in the sound. Set the amount to 31 for full keyboard tracking. (Scale: 0 / 31. Default: 0).

- **3: Sine Filter Cutoff**: Detemines the frequency point above which the filter starts attenuating or reducing the amplitude of the sound's harmonic components. In other words, it controls the amount of frequency content that is allowed to pass through the filter. (Scale: 20 Hz / 25 kHz seconds. Default: 25 kHz).
- **4: Sine Filter Cutoff Mod Source**: Determines the source of the filter modulation. Choose one source from the following option list:
    - Cons = Constant maximum value, which is also the default option.
    - Rnd = Random bipolar value between -1 and +1.
    - Rnd+ = Random unipolar value between 0 and 1.
    - PB = Pitch Bend, incoming MIDI pitch bend.
    - Aft = Aftertouch, incoming MIDI channel pressure.
    - MW = Modulation Wheel.
    - Key = Keyboard position relative to C3. Value increases by 1.0 per octave.
    - Vel = Velocity, incoming MIDI velocity.
    - Amp = Amp Envelope curve shaped by the Delay, Attack, Hold, Decay, Sustain and Release settings.
    - LFO = LFO or Low Frequency Oscillator.
    - Md1 = Mod 1 Envelope curve shaped by the Attack, Hold, Decay, Sustain and Release settings in the Mod 1 Envelope section on the back panel.
    - Md2 = Mod 2 Envelope curve shaped by the Attack, Hold, Decay, Sustain and Release settings in the Mod 2 Envelope section on the back panel.
    - Gli = Glide curve.
    - NB = Note Bend envelope curve.
- **5: Sine Filter Cutoff Mod Amount**: Determines the amount of modulation (Scale: -100 / +100. Default: 0).
- **6: Sine Filter Reso**: Determines the amount of emphasis or boost given to the frequencies around the filter cutoff point. The resonance can give the sound a more pronounced, "nasal" or "vocal" character and can be used creatively in sound design to add character or complexity to a sound. (Scale: 0 % / 100 %. Default: 0 %).

3.2.7 Section 7: Bode Frecuency Shifter (7)

The Bode frequency shifter is an analog circuit that produces a natural, warm sound that is popular with many sound designers and musicians. It is often used to create a range of effects, including metallic, bell-like sounds, and chorus-like textures. The Bode frequency shift (inharmonic shift in Hertz, not pitch) is applied individually to each voice.

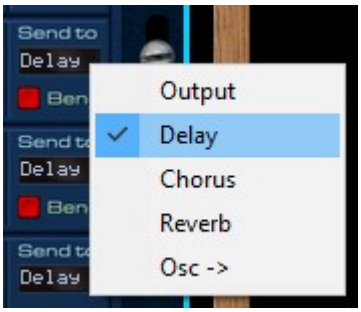
- **1: Sine Shifter Mix**: Determines the Dry / Wet mix. (Scale: 0 % / 100 %. Default: 0 %).
- **2: Sine Shifter**: Detemines the amount of linear scaling of shift, (Scale: 0% / 100 %. Default: 50 %).
- **3: Sine Shifter Mod Source**: Determines the source of the shifter modulation. Choose one source from the following option list:
    - Cons = Constant maximum value, which is also the default option.
    - Rnd = Random bipolar value between -1 and +1.
    - Rnd+ = Random unipolar value between 0 and 1.
    - PB = Pitch Bend, incoming MIDI pitch bend.
    - Aft = Aftertouch, incoming MIDI channel pressure.
    - MW = Modulation Wheel.
    - Key = Keyboard position relative to C3. Value increases by 1.0 per octave.
    - Vel = Velocity, incoming MIDI velocity.
    - Amp = Amp Envelope curve shaped by the Delay, Attack, Hold, Decay, Sustain and Release settings.

  - Md1 = Mod 1 Envelope curve shaped by the Attack, Hold, Decay, Sustain and Release settings in the Mod 1 Envelope section on the back panel.
  - Md2 = Mod 2 Envelope curve shaped by the Attack, Hold, Decay, Sustain and Release settings in the Mod 2 Envelope section on the back panel.
  - Gli = Glide curve.
  - NB = Note Bend envelope curve.
- **4: Sine Shifter Mod Amount**: Determines the amount of modulation (Scale: -100 / +100. Default: 0).
- **5: Sine Shifter Range**: Determines the Frequency shift in Hertz. Low values result in barber's pole phasing when Mix is set to 50% (Scale: 0,05 Hz / 5 kHz. Default: 50 Hz).
- **6: Sine Shifter Feedback**: Determines the feedback to add overtones or increase depth of phasing. (Scale: 0 % / 100 %. Default: 0 %).
- **7: Sine Shifter Mode**: Shifts frequencies up, down, or left and right channels in opposite directions. (Scale: 0 % / 100 %. Default: 0 %).

3.2.8 Section 8: Send Sine To and Bend (8)

The Send To determines the signal path of the oscillator. The Bend switch determines if the Bend modulation is applied to the oscillator.

- **1: Sine Send To**: Determines the destination of the oscillator sound.



  You have the following options:
  - Output: The oscillators sound goes straight to the Output section, bypassing all the effects.
  - Delay: The oscillators sound goes to the Delay effects section, which is the default option.
  - Chorus: The oscillators sound goes to the Chorus effects section.
  - Reverb: The oscillators sound goes to the Linear Reverb effects section.
  - Osc -> or Osc Out. On the back panel of the Dice Analog Synthesizer you can connect audio cables and route the oscillators output to an external device, such as a Line Mixer or an effect of your choice. Once connected, set the Send To to Osc Out to hear the result. Once set, the connected oscillator is subtracted from the main output internally.

- **2: Sine Bend**: A switch to detemines if the Bend section is applied to the oscillator (Scale: On / Off. Default: Off).

3.3 Panel 2, Row 2: PWM Oscillator

The PWM (Pulse Width Modulation) oscillator row has 8 sections:

- **Oscillator Type** (**1**):
  - PWM Width,
- **Oscillator Tune** (**2**):
  - Semi Tune,
  - Fine Tune,
- **Oscillator Volume** (**3**).
- **Oscillator Panning** (**4**).
- **Oscillator Amplitude Envelope** (**5**):
  - Attack,
  - Attack Curve.
  - Hold,
  - Decay,
  - Decay Curve.
  - Sustain,
  - Release,
  - Release Curve.
- **Oscillator Filterts** (**6**):
  - Filter Mode,
  - Filter Key to Cutoff.
  - Filter Cutoff.
  - Filter Cutoff Modulation Source.
  - Filter Cutoff Modulation Amount
  - Filter Resonance,
- **Oscillator Bode Frequency Shifter** (**7**):
  - Shifter Mix,
  - Shifter Shift.
  - Shifter Shift Modulation Source.
  - Shifter Shift Modulation Amount.
  - Shifter Range,
  - Shifter Feedback.
  - Shifter Mode.
- **Oscillator Output Send To** (**8**):
  - Send To Output Mode,
  - Bend Switch.

3.3.1 Section 1: Oscillator Type (1)

Shows the type and name of the oscillator.

- **1: PWM Width**: Determines the Width (duty cycle) of the pulse wave. Square when set to 50% (Scale: 0 % / 100 %. Default: 50 %).

3.3.2 Section 2: Oscillator Tune (2)

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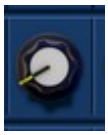
- **1: Smi - Pulse Tuning**: Determines the tuning or pitch of the oscillator in semitones (Scale: -36 / +36. Default: 0).
- **2: Fin - Pulse Fine Tuning**. Provides precise pitch adjustment (Scale: -50 / +50 cents. Default: 0).

3.3.3 Section 3: Oscillator Volume (3)



- **1: Pulse Volume - Vol**: Determines the oscillator volume (Scale: -∞ / 0,0 dB. Default: -∞ dB).

3.3.4 Section 4: Oscillator Panning (4)

- **1: Pulse Pan - Pan**: Determines the panning of the output (Scale: -100 / 100. Default: 0).

3.3.5 Section 5: Oscillator Amplitude Envelope (5)

- **1: A - Pulse Attack**: Determines the time that a sound takes to peak. When you press a key on your keyboard, the envelope is triggered. The attack parameter then controls how long it should take before the controlled parameter (pitch or filter) reaches the maximum value, when you press a key. By setting attack to a value of 0, the destination parameter would reach the maximum value instantly. By raising the Envelope Attack parameter, the value will instead slowly slide to its maximum (Scale: 0 seconds / 16 seconds. Default: 0 seconds). Values in seconds (s) shown in the tool tip are based on the Pulse Attack Curve set to 0 %.
- **2: H - Pulse Hold**: Determines how long the controlled parameter should stay at its maximum value before starting to decrease again. This can be used in combination with the Envelope Attack and Envelope Decay parameters to make a value reach its maximum level, stay there for a while (Envelope Hold) and then start dropping gradually down to the Envelope Sustain level (Scale: 0 seconds / 16 seconds. Default: 0 seconds).
- **3: D - Pulse Decay**: Determines the time that the sound takes to fall from the peak to the Envelope Sustain level. After the maximum value for a destination has been reached and the Envelope Hold time has expired, the controlled parameter will start to gradually drop down to the Envelope Sustain level. How long it should take before it reaches the Envelope Sustain level is controlled with the Envelope Decay parameter. If the Envelope Decay is set to 0, the value will immediately drop down to the Envelope Sustain level (Scale: 0 seconds / 16 seconds. Default: 385 ms). Values in miliseconds (ms) shown in the tooltip are based on the Envelope Decay Curve set to 50 %.
- **4: S - Pulse Sustain**: Determines the volume (relative to the peak) when the key is held down. The Envelope Sustain parameter determines the value the Amp Envelope should drop back to after the Envelope Decay. If you set Envelope Sustain to full level however, the Envelope Decay setting doesn't matter since the value will never decrease. A combination of Envelope Decay and Envelope Sustain can be used for creating envelopes that rise up to the maximum value, then gradually decrease to, and stay on a level somewhere in-between zero and maximum (Scale: -∞ / 0 dB. Default: 0 dB).
- **5: R – Pulse Release**: Determines the time the sound takes to die out after the key is released. This works just like the Envelope Decay parameter, with the exception that it determines the time it takes for the value to fall back to zero after the key is released (Scale: 0 seconds / 16 seconds. Default: 59,8 ms).
- **6: AC – Pulse Attack Curve**: Determines the curve for the Envelope Attack from a slow reach to the final value, following a linear curve, to a fast reach of the final value, following a logarithmic curve (Scale: -100 % / +100 %. Default: 0 %). Typically 75 - 90% for logarithmic curves.

- **7: DC – Pulse Decay Curve**: Determines the curve for the Envelope Decay from a slow reach to the final, following a linear curve, to a fast reach of the final value, following a logarithmic curve (Scale: -100 % / +100 %. Default: -50 %). Typically 75 - 90% for logarithmic curves.
- **8: RC – Pulse Release Curve**: Determines the curve for the Envelope Release from a slow reach to the final, following a linear curve, to a fast reach of the final value, following a logarithmic curve (Scale: -100 % / +100 %. Default: -50 %). Typically 75 - 90% for logarithmic curves.

3.3.6 Section 6: Filters (6)

These are standard synthesizer filter modules, so you should already be familiar with their function and characteristics. In version 1.0.1 the flters cuttoff and resonance are limited. In the updated version 1.1.2 the limiter on the filters is removed, making Dice Analog Synthesizer brighter and aggresive. A Filters Compatible Switch is placed on the back panel.

- **1: Pulse Filter Mode**:: Determines the filter type. There are 6 filter types (Default: LP24).
  - LP6 1-pole Lowpass filter.
  - LP12 2-pole lowpass filter
  - LP24 4-pole lowpass filter
  - HP6 1-pole highpass filter
  - HP12 2-pole highpasas filter
  - BP6 2-pole bandpass filter
- **2: Pulse Key Filter Tracking**: the filter key tracking is a feature that allows the filter cutoff frequency to follow the pitch of the keyboard. This means that as you play higher or lower notes on the keyboard, the filter cutoff frequency changes proportionally to maintain the same relative harmonic content in the sound. Set the amount to 31 for full keyboard tracking. (Scale: 0 / 31. Default: 0).
- **3: Pulse Filter Cutoff**: Detemines the frequency point above which the filter starts attenuating or reducing the amplitude of the sound's harmonic components. In other words, it controls the amount of frequency content that is allowed to pass through the filter. (Scale: 20 Hz / 25 kHz seconds. Default: 25 kHz).
- **4: Pulse Filter Cutoff Mod Source**: Determines the source of the filter modulation. Choose one source from the following option list:
  - Cons = Constant maximum value, which is also the default option.
  - Rnd = Random bipolar value between -1 and +1.
  - Rnd+ = Random unipolar value between 0 and 1.
  - PB = Pitch Bend, incoming MIDI pitch bend.
  - Aft = Aftertouch, incoming MIDI channel pressure.
  - MW = Modulation Wheel.
  - Key = Keyboard position relative to C3. Value increases by 1.0 per octave.
  - Vel = Velocity, incoming MIDI velocity.
  - Amp = Amp Envelope curve shaped by the Delay, Attack, Hold, Decay, Sustain and Release settings.
  - LFO = LFO or Low Frequency Oscillator.
  - Md1 = Mod 1 Envelope curve shaped by the Attack, Hold, Decay, Sustain and Release settings in the Mod 1 Envelope section on the back panel.
  - Md2 = Mod 2 Envelope curve shaped by the Attack, Hold, Decay, Sustain and Release settings in the Mod 2 Envelope section on the back panel.
  - Gli = Glide curve.
  - NB = Note Bend envelope curve.
- **5: Pulse Filter Cutoff Mod Amount**: Determines the amount of modulation (Scale: -100 / +100. Default: 0).
- **6: Pulse Filter Reso**: Determines the amount of emphasis or boost given to the frequencies around the filter cutoff point. The resonance can give the sound a more pronounced, "nasal" or

"vocal" character and can be used creatively in sound design to add character or complexity to a sound. (Scale: 0 % / 100 %. Default: 0 %).

3.3.7 Section 7: Bode Frecuency Shifter (7)

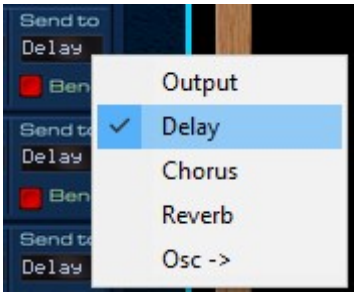
The Bode frequency shifter is an analog circuit that produces a natural, warm sound that is popular with many sound designers and musicians. It is often used to create a range of effects, including metallic, bell-like sounds, and chorus-like textures. The Bode frequency shift (inharmonic shift in Hertz, not pitch) is applied individually to each voice.

- **1: Pulse Shifter Mix**: Determines the Dry / Wet mix. (Scale: 0 % / 100 %. Default: 0 %).
- **2: Pulse Shifter**: Detemines the amount of linear scaling of shift, (Scale: 0% / 100 %. Default: 50 %).
- **3: Pulse Shifter Mod Source**: Determines the source of the shifter modulation. Choose one source from the following option list:
    - Cons = Constant maximum value, which is also the default option.
    - Rnd = Random bipolar value between -1 and +1.
    - Rnd+ = Random unipolar value between 0 and 1.
    - PB = Pitch Bend, incoming MIDI pitch bend.
    - Aft = Aftertouch, incoming MIDI channel pressure.
    - MW = Modulation Wheel.
    - Key = Keyboard position relative to C3. Value increases by 1.0 per octave.
    - Vel = Velocity, incoming MIDI velocity.
    - Amp = Amp Envelope curve shaped by the Delay, Attack, Hold, Decay, Sustain and Release settings.
    - Md1 = Mod 1 Envelope curve shaped by the Attack, Hold, Decay, Sustain and Release settings in the Mod 1 Envelope section on the back panel.
    - Md2 = Mod 2 Envelope curve shaped by the Attack, Hold, Decay, Sustain and Release settings in the Mod 2 Envelope section on the back panel.
    - Gli = Glide curve.
    - NB = Note Bend envelope curve.
- **4: Pulse Shifter Mod Amount**: Determines the amount of modulation (Scale: -100 / +100. Default: 0).
- **5: Pulse Shifter Range**: Determines the Frequency shift in Hertz. Low values result in barber's pole phasing when Mix is set to 50% (Scale: 0,05 Hz / 5 kHz. Default: 50 Hz).
- **6: Pulse Shifter Feedback**: Determines the feedback to add overtones or increase depth of phasing. (Scale: 0 % / 100 %. Default: 0 %).
- **7: Pulse Shifter Mode**: Shifts frequencies up, down, or left and right channels in opposite directions. (Scale: 0 % / 100 %. Default: 0 %).

3.3.8 Section 8: Send Pulse To and Bend (8)

The Send To determines the signal path of the oscillator. The Bend switch determines if the Bend modulation is applied to the oscillator.

- **1: Pulse Send To**: Determines the destination of the oscillator sound.



You have the following options:

- Output: The oscillators sound goes straight to the Output section, bypassing all the effects.
- Delay: The oscillators sound goes to the Delay effects section, which is the default option.
- Chorus: The oscillators sound goes to the Chorus effects section.
- Reverb: The oscillators sound goes to the Linear Reverb effects section.
- Osc -> or Osc Out. On the back panel of the Dice Analog Synthersizer you can connect audio cables and route the oscillators output to an external device, such as a Line Mixer or an effect of your choice. Once connected, set the Send To to Osc Out to hear the result. Once set, the connected oscillator is subtracted from the main output internally.

- **2: Pulse Bend**: A switch to detemines if the Bend section is applied to the oscillator (Scale: On / Off. Default: Off).

3.4 Panel 2, Row 3: Triangle Oscillator

The Triangle oscillator row has 8 sections:

- **Oscillator Type** (**1**):
- **Oscillator Tune** (**2**):
  - Semi Tune,
  - Fine Tune,
- **Oscillator Volume** (**3**).
- **Oscillator Panning** (**4**).
- **Oscillator Amplitude Envelope** (**5**):
  - Attack,
  - Attack Curve.
  - Hold,
  - Decay,
  - Decay Curve.
  - Sustain,
  - Release,
  - Release Curve.
- **Oscillator Filterts** (**6**):
  - Filter Mode,
  - Filter Key to Cutoff.
  - Filter Cutoff.
  - Filter Cutoff Modulation Source.
  - Filter Cutoff Modulation Amount
  - Filter Resonance,
- **Oscillator Bode Frequency Shifter** (**7**):
  - Shifter Mix,
  - Shifter Shift.
  - Shifter Shift Modulation Source.

- Shifter Shift Modulation Amount.
- Shifter Range,
- Shifter Feedback.
- Shifter Mode.

- **Oscillator Output Send To** (**8**):
  - Send To Output Mode,
  - Bend Switch.

3.4.1 Section 1: Oscillator Type (1)

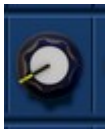
Shows the type and name of the oscillator.

3.4.2 Section 2: Oscillator Tune (2)

.

- **1: Smi - Triangle Tuning**: Determines the tuning or pitch of the oscillator in semitones (Scale: -36 / +36. Default: 0).
- **2: Fin - Triangle Fine Tuning**. Provides precise pitch adjustment (Scale: -50 / +50 cents. Default: 0).

3.4.3 Section 3: Oscillator Volume (3)



- **1: Triangle Volume - Vol**: Determines the oscillator volume (Scale: -∞ / 0,0 dB. Default: -∞ dB).

3.4.4 Section 4: Oscillator Panning (4)

- **1: Triangle Pan - Pan**: Determines the panning of the output (Scale: -100 / 100. Default: 0).

3.4.5 Section 5: Oscillator Amplitude Envelope (5)

- **1: A - Triangle Attack**: Determines the time that a sound takes to peak. When you press a key on your keyboard, the envelope is triggered. The attack parameter then controls how long it should take before the controlled parameter (pitch or filter) reaches the maximum value, when you press a key. By setting attack to a value of 0, the destination parameter would reach the maximum value instantly. By raising the Envelope Attack parameter, the value will instead slowly slide to its maximum (Scale: 0 seconds / 16 seconds. Default: 0 seconds). Values in seconds (s) shown in the tool tip are based on the Triangle Attack Curve set to 0 %.

- **2: H - Triangle Hold**: Determines how long the controlled parameter should stay at its maximum value before starting to decrease again. This can be used in combination with the Envelope Attack and Envelope Decay parameters to make a value reach its maximum level, stay there for a while (Envelope Hold) and then start dropping gradually down to the Envelope Sustain level (Scale: 0 seconds / 16 seconds. Default: 0 seconds).
- **3: D - Triangle Decay**: Determines the time that the sound takes to fall from the peak to the Envelope Sustain level. After the maximum value for a destination has been reached and the Envelope Hold time has expired, the controlled parameter will start to gradually drop down to the Envelope Sustain level. How long it should take before it reaches the Envelope Sustain level is controlled with the Envelope Decay parameter. If the Envelope Decay is set to 0, the value will immediately drop down to the Envelope Sustain level (Scale: 0 seconds / 16 seconds. Default: 385 ms). Values in miliseconds (ms) shown in the tooltip are based on the Envelope Decay Curve set to 50 %.
- **4: S - Triangle Sustain**: Determines the volume (relative to the peak) when the key is held down. The Envelope Sustain parameter determines the value the Amp Envelope should drop back to after the Envelope Decay. If you set Envelope Sustain to full level however, the Envelope Decay setting doesn't matter since the value will never decrease. A combination of Envelope Decay and Envelope Sustain can be used for creating envelopes that rise up to the maximum value, then gradually decrease to, and stay on a level somewhere in-between zero and maximum (Scale: -∞ / 0 dB. Default: 0 dB).
- **5: R – Triangle Release**: Determines the time the sound takes to die out after the key is released. This works just like the Envelope Decay parameter, with the exception that it determines the time it takes for the value to fall back to zero after the key is released (Scale: 0 seconds / 16 seconds. Default: 59,8 ms).
- **6: AC – Triangle Attack Curve**: Determines the curve for the Envelope Attack from a slow reach to the final value, following a linear curve, to a fast reach of the final value, following a logarithmic curve (Scale: -100 % / +100 %. Default: 0 %). Typically 75 - 90% for logarithmic curves.
- **7: DC – Triangle Decay Curve**: Determines the curve for the Envelope Decay from a slow reach to the final, following a linear curve, to a fast reach of the final value, following a logarithmic curve (Scale: -100 % / +100 %. Default: -50 %). Typically 75 - 90% for logarithmic curves.
- **8: RC – Triangle Release Curve**: Determines the curve for the Envelope Release from a slow reach to the final, following a linear curve, to a fast reach of the final value, following a logarithmic curve (Scale: -100 % / +100 %. Default: -50 %). Typically 75 - 90% for logarithmic curves.

3.4.6 Section 6: Filters (6)

These are standard synthesizer filter modules, so you should already be familiar with their function and characteristics. In version 1.0.1 the flters cuttoff and resonance are limited. In the updated version 1.1.2 the limiter on the filters is removed, making Dice Analog Synthesizer brighter and aggresive. A Filters Compatible Switch is placed on the back panel.

- **1: Triangle Filter Mode**:: Determines the filter type. There are 6 filter types (Default: LP24).
  - LP6 1-pole Lowpass filter.
  - LP12 2-pole lowpass filter
  - LP24 4-pole lowpass filter
  - HP6 1-pole highpass filter
  - HP12 2-pole highpasas filter
  - BP6 2-pole bandpass filter
- **2: Triangle Key Filter Tracking**: the filter key tracking is a feature that allows the filter cutoff frequency to follow the pitch of the keyboard. This means that as you play higher or lower notes on the keyboard, the filter cutoff frequency changes proportionally to maintain the same relative harmonic content in the sound. Set the amount to 31 for full keyboard tracking. (Scale: 0 / 31. Default: 0).

- **3: Triangle Filter Cutoff**: Detemines the frequency point above which the filter starts attenuating or reducing the amplitude of the sound's harmonic components. In other words, it controls the amount of frequency content that is allowed to pass through the filter. (Scale: 20 Hz / 25 kHz seconds. Default: 25 kHz).
- **4: Triangle Filter Cutoff Mod Source**: Determines the source of the filter modulation. Choose one source from the following option list:
    - Cons = Constant maximum value, which is also the default option.
    - Rnd = Random bipolar value between -1 and +1.
    - Rnd+ = Random unipolar value between 0 and 1.
    - PB = Pitch Bend, incoming MIDI pitch bend.
    - Aft = Aftertouch, incoming MIDI channel pressure.
    - MW = Modulation Wheel.
    - Key = Keyboard position relative to C3. Value increases by 1.0 per octave.
    - Vel = Velocity, incoming MIDI velocity.
    - Amp = Amp Envelope curve shaped by the Delay, Attack, Hold, Decay, Sustain and Release settings.
    - LFO = LFO or Low Frequency Oscillator.
    - Md1 = Mod 1 Envelope curve shaped by the Attack, Hold, Decay, Sustain and Release settings in the Mod 1 Envelope section on the back panel.
    - Md2 = Mod 2 Envelope curve shaped by the Attack, Hold, Decay, Sustain and Release settings in the Mod 2 Envelope section on the back panel.
    - Gli = Glide curve.
    - NB = Note Bend envelope curve.
- **5: Triangle Filter Cutoff Mod Amount**: Determines the amount of modulation (Scale: -100 / +100. Default: 0).
- **6: Triangle Filter Reso**: Determines the amount of emphasis or boost given to the frequencies around the filter cutoff point. The resonance can give the sound a more pronounced, "nasal" or "vocal" character and can be used creatively in sound design to add character or complexity to a sound. (Scale: 0 % / 100 %. Default: 0 %).

3.4.7 Section 7: Bode Frecuency Shifter (7)

The Bode frequency shifter is an analog circuit that produces a natural, warm sound that is popular with many sound designers and musicians. It is often used to create a range of effects, including metallic, bell-like sounds, and chorus-like textures. The Bode frequency shift (inharmonic shift in Hertz, not pitch) is applied individually to each voice.

- **1: Triangle Shifter Mix**: Determines the Dry / Wet mix. (Scale: 0 % / 100 %. Default: 0 %).
- **2: Triangle Shifter**: Detemines the amount of linear scaling of shift, (Scale: 0% / 100 %. Default: 50 %).
- **3: Triangle Shifter Mod Source**: Determines the source of the shifter modulation. Choose one source from the following option list:
    - Cons = Constant maximum value, which is also the default option.
    - Rnd = Random bipolar value between -1 and +1.
    - Rnd+ = Random unipolar value between 0 and 1.
    - PB = Pitch Bend, incoming MIDI pitch bend.
    - Aft = Aftertouch, incoming MIDI channel pressure.
    - MW = Modulation Wheel.
    - Key = Keyboard position relative to C3. Value increases by 1.0 per octave.
    - Vel = Velocity, incoming MIDI velocity.
    - Amp = Amp Envelope curve shaped by the Delay, Attack, Hold, Decay, Sustain and Release settings.
    - Md1 = Mod 1 Envelope curve shaped by the Attack, Hold, Decay, Sustain and Release settings in the Mod 1 Envelope section on the back panel.

- Md2 = Mod 2 Envelope curve shaped by the Attack, Hold, Decay, Sustain and Release settings in the Mod 2 Envelope section on the back panel.
- Gli = Glide curve.
- NB = Note Bend envelope curve.

- **4: Triangle Shifter Mod Amount**: Determines the amount of modulation (Scale: -100 / +100. Default: 0).
- **5: Triangle Shifter Range**: Determines the Frequency shift in Hertz. Low values result in barber's pole phasing when Mix is set to 50% (Scale: 0,05 Hz / 5 kHz. Default: 50 Hz).
- **6: Triangle Shifter Feedback**: Determines the feedback to add overtones or increase depth of phasing. (Scale: 0 % / 100 %. Default: 0 %).
- **7: Triangle Shifter Mode**: Shifts frequencies up, down, or left and right channels in opposite directions. (Scale: 0 % / 100 %. Default: 0 %).

3.4.8 Section 8: Send Triangle To and Bend (8)

The Send To determines the signal path of the oscillator. The Bend switch determines if the Bend modulation is applied to the oscillator.

- **1: Triangle Send To**: Determines the destination of the oscillator sound.

You have the following options:

- Output: The oscillators sound goes straight to the Output section, bypassing all the effects.
- Delay: The oscillators sound goes to the Delay effects section, which is the default option.
- Chorus: The oscillators sound goes to the Chorus effects section.
- Reverb: The oscillators sound goes to the Linear Reverb effects section.
- Osc -> or Osc Out. On the back panel of the Dice Analog Synthersizer you can connect audio cables and route the oscillators output to an external device, such as a Line Mixer or an effect of your choice. Once connected, set the Send To to Osc Out to hear the result. Once set, the connected oscillator is subtracted from the main output internally.

- **2: Triangle Bend**: A switch to detemines if the Bend section is applied to the oscillator (Scale: On / Off. Default: Off).

3.5 Panel 2, Row 4: Sub Oscillator

The Sub oscillator row has 8 sections:

- **Oscillator Type** (**1**):
- **Oscillator Tune** (**2**):
  - Semi Tune,

    - Fine Tune,
- **Oscillator Volume** (**3**).
- **Oscillator Panning** (**4**).
- **Oscillator Amplitude Envelope** (**5**):
    - Attack,
    - Attack Curve.
    - Hold,
    - Decay,
    - Decay Curve.
    - Sustain,
    - Release,
    - Release Curve.
- **Oscillator Filterts** (**6**):
    - Filter Mode,
    - Filter Key to Cutoff.
    - Filter Cutoff.
    - Filter Cutoff Modulation Source.
    - Filter Cutoff Modulation Amount
    - Filter Resonance,
- **Oscillator Bode Frequency Shifter** (**7**):
    - Shifter Mix,
    - Shifter Shift.
    - Shifter Shift Modulation Source.
    - Shifter Shift Modulation Amount.
    - Shifter Range,
    - Shifter Feedback.
    - Shifter Mode.
- **Oscillator Output Send To** (**8**):
    - Send To Output Mode,
    - Bend Switch.

3.5.1 Section 1: Oscillator Type (1)

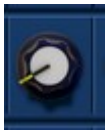
Shows the type and name of the oscillator.

3.5.2 Section 2: Oscillator Tune (2)

.

- **1: Smi - Sub Tuning**: Determines the tuning or pitch of the oscillator in semitones (Scale: -36 / +36. Default: 0).
- **2: Fin - Sub Fine Tuning**. Provides precise pitch adjustment (Scale: -50 / +50 cents. Default: 0).

3.5.3 Section 3: Oscillator Volume (3)



- **1: Sub Volume - Vol**: Determines the oscillator volume (Scale: -∞ / 0,0 dB. Default: -∞ dB).

3.5.4 Section 4: Oscillator Panning (4)

- **1: Sub Pan - Pan**: Determines the panning of the output (Scale: -100 / 100. Default: 0).

3.5.5 Section 5: Oscillator Amplitude Envelope (5)

- **1: A - Sub Attack**: Determines the time that a sound takes to peak. When you press a key on your keyboard, the envelope is triggered. The attack parameter then controls how long it should take before the controlled parameter (pitch or filter) reaches the maximum value, when you press a key. By setting attack to a value of 0, the destination parameter would reach the maximum value instantly. By raising the Envelope Attack parameter, the value will instead slowly slide to its maximum (Scale: 0 seconds / 16 seconds. Default: 0 seconds). Values in seconds (s) shown in the tool tip are based on the Sub Attack Curve set to 0 %.
- **2: H - Sub Hold**: Determines how long the controlled parameter should stay at its maximum value before starting to decrease again. This can be used in combination with the Envelope Attack and Envelope Decay parameters to make a value reach its maximum level, stay there for a while (Envelope Hold) and then start dropping gradually down to the Envelope Sustain level (Scale: 0 seconds / 16 seconds. Default: 0 seconds).
- **3: D - Sub Decay**: Determines the time that the sound takes to fall from the peak to the Envelope Sustain level. After the maximum value for a destination has been reached and the Envelope Hold time has expired, the controlled parameter will start to gradually drop down to the Envelope Sustain level. How long it should take before it reaches the Envelope Sustain level is controlled with the Envelope Decay parameter. If the Envelope Decay is set to 0, the value will immediately drop down to the Envelope Sustain level (Scale: 0 seconds / 16 seconds. Default: 385 ms). Values in miliseconds (ms) shown in the tooltip are based on the Envelope Decay Curve set to 50 %.
- **4: S - Sub Sustain**: Determines the volume (relative to the peak) when the key is held down. The Envelope Sustain parameter determines the value the Amp Envelope should drop back to after the Envelope Decay. If you set Envelope Sustain to full level however, the Envelope Decay setting doesn't matter since the value will never decrease. A combination of Envelope Decay and Envelope Sustain can be used for creating envelopes that rise up to the maximum value, then gradually decrease to, and stay on a level somewhere in-between zero and maximum (Scale: -∞ / 0 dB. Default: 0 dB).
- **5: R – Sub Release**: Determines the time the sound takes to die out after the key is released. This works just like the Envelope Decay parameter, with the exception that it determines the time it takes for the value to fall back to zero after the key is released (Scale: 0 seconds / 16 seconds. Default: 59,8 ms).
- **6: AC – Sub Attack Curve**: Determines the curve for the Envelope Attack from a slow reach to the final value, following a linear curve, to a fast reach of the final value, following a logarithmic curve (Scale: -100 % / +100 %. Default: 0 %). Typically 75 - 90% for logarithmic curves.
- **7: DC – Sub Decay Curve**: Determines the curve for the Envelope Decay from a slow reach to the final, following a linear curve, to a fast reach of the final value, following a logarithmic curve (Scale: -100 % / +100 %. Default: -50 %). Typically 75 - 90% for logarithmic curves.
- **8: RC – Sub Release Curve**: Determines the curve for the Envelope Release from a slow reach to the final, following a linear curve, to a fast reach of the final value, following a logarithmic curve (Scale: -100 % / +100 %. Default: -50 %). Typically 75 - 90% for logarithmic curves.

3.5.6 Section 6: Filters (6)

These are standard synthesizer filter modules, so you should already be familiar with their function and characteristics. In version 1.0.1 the flters cuttoff and resonance are limited. In the updated version 1.1.2 the limiter on the filters is removed, making Dice Analog Synthesizer brighter and aggresive. A Filters Compatible Switch is placed on the back panel.

- **1: Sub Filter Mode**:: Determines the filter type. There are 6 filter types (Default: LP24).
    - LP6 1-pole Lowpass filter.
    - LP12 2-pole lowpass filter
    - LP24 4-pole lowpass filter
    - HP6 1-pole highpass filter
    - HP12 2-pole highpasas filter
    - BP6 2-pole bandpass filter
- **2: Sub Key Filter Tracking**: the filter key tracking is a feature that allows the filter cutoff frequency to follow the pitch of the keyboard. This means that as you play higher or lower notes on the keyboard, the filter cutoff frequency changes proportionally to maintain the same relative harmonic content in the sound. Set the amount to 31 for full keyboard tracking. (Scale: 0 / 31. Default: 0).
- **3: Sub Filter Cutoff**: Detemines the frequency point above which the filter starts attenuating or reducing the amplitude of the sound's harmonic components. In other words, it controls the amount of frequency content that is allowed to pass through the filter. (Scale: 20 Hz / 25 kHz seconds. Default: 25 kHz).
- **4: Sub Filter Cutoff Mod Source**: Determines the source of the filter modulation. Choose one source from the following option list:
    - Cons = Constant maximum value, which is also the default option.
    - Rnd = Random bipolar value between -1 and +1.
    - Rnd+ = Random unipolar value between 0 and 1.
    - PB = Pitch Bend, incoming MIDI pitch bend.
    - Aft = Aftertouch, incoming MIDI channel pressure.
    - MW = Modulation Wheel.
    - Key = Keyboard position relative to C3. Value increases by 1.0 per octave.
    - Vel = Velocity, incoming MIDI velocity.
    - Amp = Amp Envelope curve shaped by the Delay, Attack, Hold, Decay, Sustain and Release settings.
    - LFO = LFO or Low Frequency Oscillator.
    - Md1 = Mod 1 Envelope curve shaped by the Attack, Hold, Decay, Sustain and Release settings in the Mod 1 Envelope section on the back panel.
    - Md2 = Mod 2 Envelope curve shaped by the Attack, Hold, Decay, Sustain and Release settings in the Mod 2 Envelope section on the back panel.
    - Gli = Glide curve.
    - NB = Note Bend envelope curve.
- **5: Sub Filter Cutoff Mod Amount**: Determines the amount of modulation (Scale: -100 / +100. Default: 0).
- **6: Sub Filter Reso**: Determines the amount of emphasis or boost given to the frequencies around the filter cutoff point. The resonance can give the sound a more pronounced, "nasal" or "vocal" character and can be used creatively in sound design to add character or complexity to a sound. (Scale: 0 % / 100 %. Default: 0 %).

3.5.7 Section 7: Bode Frecuency Shifter (7)

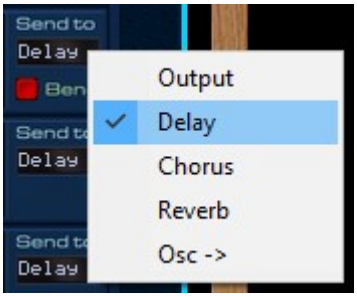
The Bode frequency shifter is an analog circuit that produces a natural, warm sound that is popular with many sound designers and musicians. It is often used to create a range of effects, including metallic, bell-like sounds, and chorus-like textures. The Bode frequency shift (inharmonic shift in Hertz, not pitch) is applied individually to each voice.

- **1: Sub Shifter Mix**: Determines the Dry / Wet mix. (Scale: 0 % / 100 %. Default: 0 %).
- **2: Sub Shifter**: Detemines the amount of linear scaling of shift, (Scale: 0% / 100 %. Default: 50 %).
- **3: Sub Shifter Mod Source**: Determines the source of the shifter modulation. Choose one source from the following option list:
    - Cons = Constant maximum value, which is also the default option.
    - Rnd = Random bipolar value between -1 and +1.
    - Rnd+ = Random unipolar value between 0 and 1.
    - PB = Pitch Bend, incoming MIDI pitch bend.
    - Aft = Aftertouch, incoming MIDI channel pressure.
    - MW = Modulation Wheel.
    - Key = Keyboard position relative to C3. Value increases by 1.0 per octave.
    - Vel = Velocity, incoming MIDI velocity.
    - Amp = Amp Envelope curve shaped by the Delay, Attack, Hold, Decay, Sustain and Release settings.
    - Md1 = Mod 1 Envelope curve shaped by the Attack, Hold, Decay, Sustain and Release settings in the Mod 1 Envelope section on the back panel.
    - Md2 = Mod 2 Envelope curve shaped by the Attack, Hold, Decay, Sustain and Release settings in the Mod 2 Envelope section on the back panel.
    - Gli = Glide curve.
    - NB = Note Bend envelope curve.
- **4: Sub Shifter Mod Amount**: Determines the amount of modulation (Scale: -100 / +100. Default: 0).
- **5: Sub Shifter Range**: Determines the Frequency shift in Hertz. Low values result in barber's pole phasing when Mix is set to 50% (Scale: 0,05 Hz / 5 kHz. Default: 50 Hz).
- **6: Sub Shifter Feedback**: Determines the feedback to add overtones or increase depth of phasing. (Scale: 0 % / 100 %. Default: 0 %).
- **7: Sub Shifter Mode**: Shifts frequencies up, down, or left and right channels in opposite directions. (Scale: 0 % / 100 %. Default: 0 %).

3.5.8 Section 8: Send Sub To and Bend (8)

The Send To determines the signal path of the oscillator. The Bend switch determines if the Bend modulation is applied to the oscillator.

- **1: Sub Send To**: Determines the destination of the oscillator sound.



You have the following options:

- Output: The oscillators sound goes straight to the Output section, bypassing all the effects.

- Delay: The oscillators sound goes to the Delay effects section, which is the default option.
- Chorus: The oscillators sound goes to the Chorus effects section.
- Reverb: The oscillators sound goes to the Linear Reverb effects section.
- Osc -> or Osc Out. On the back panel of the Dice Analog Synthersizer you can connect audio cables and route the oscillators output to an external device, such as a Line Mixer or an effect of your choice. Once connected, set the Send To to Osc Out to hear the result. Once set, the connected oscillator is subtracted from the main output internally.

- **2: Sub Bend**: A switch to detemines if the Bend section is applied to the oscillator (Scale: On / Off. Default: Off).

3.6 Panel 2, Row 5: Noise Oscillator

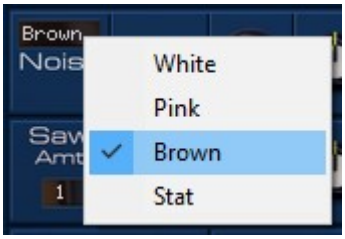
The Noise oscillator row has 7 sections:

- **Oscillator Type** (**1**):
  There are 4 noise oscillator types:
  - White Noise.
  - Pink Noise.
  - Brown Noise.
  - Static Noise.
- **Oscillator Tune** (**2**):
  - Semi Tune,
  - Fine Tune,
- **Oscillator Volume** (**3**).
- **Oscillator Panning** (**4**).
- **Oscillator Amplitude Envelope** (**5**):
  - Attack,
  - Attack Curve.
  - Hold,
  - Decay,
  - Decay Curve.
  - Sustain,
  - Release,
  - Release Curve.
- **Oscillator Filterts** (**6**):
  - Filter Mode,
  - Filter Key to Cutoff.
  - Filter Cutoff.
  - Filter Cutoff Modulation Source.
  - Filter Cutoff Modulation Amount
  - Filter Resonance,
- **Oscillator Bode Frequency Shifter** (**7**):
  - Shifter Mix,
  - Shifter Shift.
  - Shifter Shift Modulation Source.
  - Shifter Shift Modulation Amount.
  - Shifter Range,
  - Shifter Feedback.
  - Shifter Mode.
- **Oscillator Output Send To** (**8**):
  - Send To Output Mode,
  - Bend Switch.

3.6.1 Section 1: Oscillator Type (1)

Shows the type and name of the oscillator.

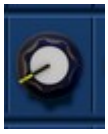
- **1: Noise Type**: Determines the type of noise oscillator (Scale: White Noise, Pink Noise, Brown Noise and Static Noise.. Default: Brown Noise).



There are 4 different noise oscillator types:

- White Noise.
- Pink Noise.
- Brown Noise.
- Static Noise.

3.6.2 Section 2: Oscillator Volume (3)



- **1: Noise Volume - Vol**: Determines the oscillator volume (Scale: -∞ / 0,0 dB. Default: -∞ dB).

3.6.3 Section 3: Oscillator Panning (4)

- **1: Noise Pan - Pan**: Determines the panning of the output (Scale: -100 / 100. Default: 0).

3.6.4 Section 4: Oscillator Amplitude Envelope (5)

- **1: A - Noise Attack**: Determines the time that a sound takes to peak. When you press a key on your keyboard, the envelope is triggered. The attack parameter then controls how long it should take before the controlled parameter (pitch or filter) reaches the maximum value, when you press a key. By setting attack to a value of 0, the destination parameter would reach the maximum value instantly. By raising the Envelope Attack parameter, the value will instead slowly slide to its maximum (Scale: 0 seconds / 16 seconds. Default: 0 seconds). Values in seconds (s) shown in the tool tip are based on the Noise Attack Curve set to 0 %.
- **2: H - Noise Hold**: Determines how long the controlled parameter should stay at its maximum value before starting to decrease again. This can be used in combination with the Envelope Attack and Envelope Decay parameters to make a value reach its maximum level, stay there

for a while (Envelope Hold) and then start dropping gradually down to the Envelope Sustain level (Scale: 0 seconds / 16 seconds. Default: 0 seconds).

- **3: D - Noise Decay**: Determines the time that the sound takes to fall from the peak to the Envelope Sustain level. After the maximum value for a destination has been reached and the Envelope Hold time has expired, the controlled parameter will start to gradually drop down to the Envelope Sustain level. How long it should take before it reaches the Envelope Sustain level is controlled with the Envelope Decay parameter. If the Envelope Decay is set to 0, the value will immediately drop down to the Envelope Sustain level (Scale: 0 seconds / 16 seconds. Default: 385 ms). Values in miliseconds (ms) shown in the tooltip are based on the Envelope Decay Curve set to 50 %.
- **4: S - Noise Sustain**: Determines the volume (relative to the peak) when the key is held down. The Envelope Sustain parameter determines the value the Amp Envelope should drop back to after the Envelope Decay. If you set Envelope Sustain to full level however, the Envelope Decay setting doesn't matter since the value will never decrease. A combination of Envelope Decay and Envelope Sustain can be used for creating envelopes that rise up to the maximum value, then gradually decrease to, and stay on a level somewhere in-between zero and maximum (Scale: -∞ / 0 dB. Default: 0 dB).
- **5: R – Noise Release**: Determines the time the sound takes to die out after the key is released. This works just like the Envelope Decay parameter, with the exception that it determines the time it takes for the value to fall back to zero after the key is released (Scale: 0 seconds / 16 seconds. Default: 59,8 ms).
- **6: AC – Noise Attack Curve**: Determines the curve for the Envelope Attack from a slow reach to the final value, following a linear curve, to a fast reach of the final value, following a logarithmic curve (Scale: -100 % / +100 %. Default: 0 %). Typically 75 - 90% for logarithmic curves.
- **7: DC – Noise Decay Curve**: Determines the curve for the Envelope Decay from a slow reach to the final, following a linear curve, to a fast reach of the final value, following a logarithmic curve (Scale: -100 % / +100 %. Default: -50 %). Typically 75 - 90% for logarithmic curves.
- **8: RC – Noise Release Curve**: Determines the curve for the Envelope Release from a slow reach to the final, following a linear curve, to a fast reach of the final value, following a logarithmic curve (Scale: -100 % / +100 %. Default: -50 %). Typically 75 - 90% for logarithmic curves.

3.6.5 Section 5: Filters (6)

These are standard synthesizer filter modules, so you should already be familiar with their function and characteristics. In version 1.0.1 the flters cuttoff and resonance are limited. In the updated version 1.1.2 the limiter on the filters is removed, making Dice Analog Synthesizer brighter and aggresive. A Filters Compatible Switch is placed on the back panel.

- **1: Noise Filter Mode**:: Determines the filter type. There are 6 filter types (Default: LP24).
  - LP6 1-pole Lowpass filter.
  - LP12 2-pole lowpass filter
  - LP24 4-pole lowpass filter
  - HP6 1-pole highpass filter
  - HP12 2-pole highpasas filter
  - BP6 2-pole bandpass filter
- **2: Noise Key Filter Tracking**: the filter key tracking is a feature that allows the filter cutoff frequency to follow the pitch of the keyboard. This means that as you play higher or lower notes on the keyboard, the filter cutoff frequency changes proportionally to maintain the same relative harmonic content in the sound. Set the amount to 31 for full keyboard tracking. (Scale: 0 / 31. Default: 0).
- **3: Noise Filter Cutoff**: Detemines the frequency point above which the filter starts attenuating or reducing the amplitude of the sound's harmonic components. In other words, it controls the amount of frequency content that is allowed to pass through the filter. (Scale: 20 Hz / 25 kHz seconds. Default: 25 kHz).

- **4: Noise Filter Cutoff Mod Source**: Determines the source of the filter modulation. Choose one source from the following option list:
    - Cons = Constant maximum value, which is also the default option.
    - Rnd = Random bipolar value between -1 and +1.
    - Rnd+ = Random unipolar value between 0 and 1.
    - PB = Pitch Bend, incoming MIDI pitch bend.
    - Aft = Aftertouch, incoming MIDI channel pressure.
    - MW = Modulation Wheel.
    - Key = Keyboard position relative to C3. Value increases by 1.0 per octave.
    - Vel = Velocity, incoming MIDI velocity.
    - Amp = Amp Envelope curve shaped by the Delay, Attack, Hold, Decay, Sustain and Release settings.
    - LFO = LFO or Low Frequency Oscillator.
    - Md1 = Mod 1 Envelope curve shaped by the Attack, Hold, Decay, Sustain and Release settings in the Mod 1 Envelope section on the back panel.
    - Md2 = Mod 2 Envelope curve shaped by the Attack, Hold, Decay, Sustain and Release settings in the Mod 2 Envelope section on the back panel.
    - Gli = Glide curve.
    - NB = Note Bend envelope curve.
- **5: Noise Filter Cutoff Mod Amount**: Determines the amount of modulation (Scale: -100 / +100. Default: 0).
- **6: Noise Filter Reso**: Determines the amount of emphasis or boost given to the frequencies around the filter cutoff point. The resonance can give the sound a more pronounced, "nasal" or "vocal" character and can be used creatively in sound design to add character or complexity to a sound. (Scale: 0 % / 100 %. Default: 0 %).

3.6.6 Section 6: Bode Frecuency Shifter (7)

The Bode frequency shifter is an analog circuit that produces a natural, warm sound that is popular with many sound designers and musicians. It is often used to create a range of effects, including metallic, bell-like sounds, and chorus-like textures. The Bode frequency shift (inharmonic shift in Hertz, not pitch) is applied individually to each voice.

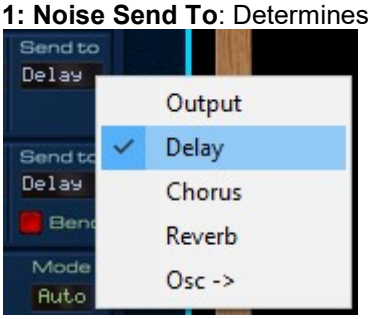
- **1: Noise Shifter Mix**: Determines the Dry / Wet mix. (Scale: 0 % / 100 %. Default: 0 %).
- **2: Noise Shifter**: Detemines the amount of linear scaling of shift, (Scale: 0% / 100 %. Default: 50 %).
- **3: Noise Shifter Mod Source**: Determines the source of the shifter modulation. Choose one source from the following option list:
    - Cons = Constant maximum value, which is also the default option.
    - Rnd = Random bipolar value between -1 and +1.
    - Rnd+ = Random unipolar value between 0 and 1.
    - PB = Pitch Bend, incoming MIDI pitch bend.
    - Aft = Aftertouch, incoming MIDI channel pressure.
    - MW = Modulation Wheel.
    - Key = Keyboard position relative to C3. Value increases by 1.0 per octave.
    - Vel = Velocity, incoming MIDI velocity.
    - Amp = Amp Envelope curve shaped by the Delay, Attack, Hold, Decay, Sustain and Release settings.
    - Md1 = Mod 1 Envelope curve shaped by the Attack, Hold, Decay, Sustain and Release settings in the Mod 1 Envelope section on the back panel.
    - Md2 = Mod 2 Envelope curve shaped by the Attack, Hold, Decay, Sustain and Release settings in the Mod 2 Envelope section on the back panel.
    - Gli = Glide curve.
    - NB = Note Bend envelope curve.

- **4: Noise Shifter Mod Amount**: Determines the amount of modulation (Scale: -100 / +100. Default: 0).
- **5: Noise Shifter Range**: Determines the Frequency shift in Hertz. Low values result in barber's pole phasing when Mix is set to 50% (Scale: 0,05 Hz / 5 kHz. Default: 50 Hz).
- **6: Noise Shifter Feedback**: Determines the feedback to add overtones or increase depth of phasing. (Scale: 0 % / 100 %. Default: 0 %).
- **7: Noise Shifter Mode**: Shifts frequencies up, down, or left and right channels in opposite directions. (Scale: 0 % / 100 %. Default: 0 %).

3.6.7 Section 7: Send Noise To and Bend (8)

The Send To determines the signal path of the oscillator. Notice that the noise oscillator has no Bend switch.

- **1: Noise Send To**: Determines the destination of the oscillator sound.



You have the following options:

  - Output: The oscillators sound goes straight to the Output section, bypassing all the effects.
  - Delay: The oscillators sound goes to the Delay effects section, which is the default option.
  - Chorus: The oscillators sound goes to the Chorus effects section.
  - Reverb: The oscillators sound goes to the Linear Reverb effects section.
  - Osc -> or Osc Out. On the back panel of the Dice Analog Synthersizer you can connect audio cables and route the oscillators output to an external device, such as a Line Mixer or an effect of your choice. Once connected, set the Send To to Osc Out to hear the result. Once set, the connected oscillator is subtracted from the main output internally.

3.7 Panel 2, Row 6: Super Saw Oscillator

The Saw oscillator row has 8 sections:

- **Oscillator Type** (**1**):
  - Super Saw Amount,
- **Oscillator Tune** (**2**):
  - Semi Tune,
  - Fine Tune,
- **Oscillator Volume** (**3**).
- **Oscillator Panning** (**4**).
- **Oscillator Amplitude Envelope** (**5**):
  - Attack,
  - Attack Curve.

    - Hold,
    - Decay,
    - Decay Curve.
    - Sustain,
    - Release,
    - Release Curve.
- **Oscillator Filterts** (**6**):
    - Filter Mode,
    - Filter Key to Cutoff.
    - Filter Cutoff.
    - Filter Cutoff Modulation Source.
    - Filter Cutoff Modulation Amount
    - Filter Resonance,
- **Oscillator Bode Frequency Shifter** (**7**):
    - Shifter Mix,
    - Shifter Shift.
    - Shifter Shift Modulation Source.
    - Shifter Shift Modulation Amount.
    - Shifter Range,
    - Shifter Feedback.
    - Shifter Mode.
- **Oscillator Output Send To** (**8**):
    - Send To Output Mode,
    - Bend Switch.

3.7.1 Section 1: Oscillator Type (1)

Shows the type and name of the oscillator.

- **1: Amt – Super Saw Amount**: Determines the amount of saw waveforms (Scale: 1 / 7. Default: 1).

3.7.2 Section 2: Oscillator Tune (2)

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- **1: Smi - Super Saw Tuning**: Determines the tuning or pitch of the oscillator in semitones (Scale: -36 / +36. Default: 0).
- **2: Fin - Super Saw Fine Tuning**. Provides precise pitch adjustment (Scale: -50 / +50 cents. Default: 0).

3.7.3 Section 3: Oscillator Volume (3)

- **1: Super Saw Volume - Vol**: Determines the oscillator volume (Scale: -∞ / 0,0 dB. Default: -∞ dB).

3.7.4 Section 4: Oscillator Panning (4)

- **1: Super Saw Pan - Pan**: Determines the panning of the output (Scale: -100 / 100. Default: 0).

3.7.5 Section 5: Oscillator Amplitude Envelope (5)

- **1: A - Super Saw Attack**: Determines the time that a sound takes to peak. When you press a key on your keyboard, the envelope is triggered. The attack parameter then controls how long it should take before the controlled parameter (pitch or filter) reaches the maximum value, when you press a key. By setting attack to a value of 0, the destination parameter would reach the maximum value instantly. By raising the Envelope Attack parameter, the value will instead slowly slide to its maximum (Scale: 0 seconds / 16 seconds. Default: 0 seconds). Values in seconds (s) shown in the tool tip are based on the Super Saw Attack Curve set to 0 %.
- **2: H - Super Saw Hold**: Determines how long the controlled parameter should stay at its maximum value before starting to decrease again. This can be used in combination with the Envelope Attack and Envelope Decay parameters to make a value reach its maximum level, stay there for a while (Envelope Hold) and then start dropping gradually down to the Envelope Sustain level (Scale: 0 seconds / 16 seconds. Default: 0 seconds).
- **3: D - Super Saw Decay**: Determines the time that the sound takes to fall from the peak to the Envelope Sustain level. After the maximum value for a destination has been reached and the Envelope Hold time has expired, the controlled parameter will start to gradually drop down to the Envelope Sustain level. How long it should take before it reaches the Envelope Sustain level is controlled with the Envelope Decay parameter. If the Envelope Decay is set to 0, the value will immediately drop down to the Envelope Sustain level (Scale: 0 seconds / 16 seconds. Default: 385 ms). Values in miliseconds (ms) shown in the tooltip are based on the Envelope Decay Curve set to 50 %.
- **4: S - Super Saw Sustain**: Determines the volume (relative to the peak) when the key is held down. The Envelope Sustain parameter determines the value the Amp Envelope should drop back to after the Envelope Decay. If you set Envelope Sustain to full level however, the Envelope Decay setting doesn't matter since the value will never decrease. A combination of Envelope Decay and Envelope Sustain can be used for creating envelopes that rise up to the maximum value, then gradually decrease to, and stay on a level somewhere in-between zero and maximum (Scale: -∞ / 0 dB. Default: 0 dB).
- **5: R – Super Saw Release**: Determines the time the sound takes to die out after the key is released. This works just like the Envelope Decay parameter, with the exception that it determines the time it takes for the value to fall back to zero after the key is released (Scale: 0 seconds / 16 seconds. Default: 59,8 ms).
- **6: AC – Super Saw Attack Curve**: Determines the curve for the Envelope Attack from a slow reach to the final value, following a linear curve, to a fast reach of the final value, following a logarithmic curve (Scale: -100 % / +100 %. Default: 0 %). Typically 75 - 90% for logarithmic curves.
- **7: DC – Super Saw Decay Curve**: Determines the curve for the Envelope Decay from a slow reach to the final, following a linear curve, to a fast reach of the final value, following a logarithmic curve (Scale: -100 % / +100 %. Default: -50 %). Typically 75 - 90% for logarithmic curves.
- **8: RC – Super Saw Release Curve**: Determines the curve for the Envelope Release from a slow reach to the final, following a linear curve, to a fast reach of the final value, following a logarithmic curve (Scale: -100 % / +100 %. Default: -50 %). Typically 75 - 90% for logarithmic curves.

3.7.6 Section 6: Filters (6)

These are standard synthesizer filter modules, so you should already be familiar with their function and characteristics. In version 1.0.1 the flters cuttoff and resonance are limited. In the updated version 1.1.2 the limiter on the filters is removed, making Dice Analog Synthesizer brighter and aggresive. A Filters Compatible Switch is placed on the back panel.

- **1: Super Saw Filter Mode**:: Determines the filter type. There are 6 filter types (Default: LP24).
    - LP6 1-pole Lowpass filter.
    - LP12 2-pole lowpass filter
    - LP24 4-pole lowpass filter
    - HP6 1-pole highpass filter
    - HP12 2-pole highpasas filter
    - BP6 2-pole bandpass filter
- **2: Super Saw Key Filter Tracking**: the filter key tracking is a feature that allows the filter cutoff frequency to follow the pitch of the keyboard. This means that as you play higher or lower notes on the keyboard, the filter cutoff frequency changes proportionally to maintain the same relative harmonic content in the sound. Set the amount to 31 for full keyboard tracking. (Scale: 0 / 31. Default: 0).
- **3: Super Saw Filter Cutoff**: Detemines the frequency point above which the filter starts attenuating or reducing the amplitude of the sound's harmonic components. In other words, it controls the amount of frequency content that is allowed to pass through the filter. (Scale: 20 Hz / 25 kHz seconds. Default: 25 kHz).
- **4: Super Saw Filter Cutoff Mod Source**: Determines the source of the filter modulation. Choose one source from the following option list:
    - Cons = Constant maximum value, which is also the default option.
    - Rnd = Random bipolar value between -1 and +1.
    - Rnd+ = Random unipolar value between 0 and 1.
    - PB = Pitch Bend, incoming MIDI pitch bend.
    - Aft = Aftertouch, incoming MIDI channel pressure.
    - MW = Modulation Wheel.
    - Key = Keyboard position relative to C3. Value increases by 1.0 per octave.
    - Vel = Velocity, incoming MIDI velocity.
    - Amp = Amp Envelope curve shaped by the Delay, Attack, Hold, Decay, Sustain and Release settings.
    - LFO = LFO or Low Frequency Oscillator.
    - Md1 = Mod 1 Envelope curve shaped by the Attack, Hold, Decay, Sustain and Release settings in the Mod 1 Envelope section on the back panel.
    - Md2 = Mod 2 Envelope curve shaped by the Attack, Hold, Decay, Sustain and Release settings in the Mod 2 Envelope section on the back panel.
    - Gli = Glide curve.
    - NB = Note Bend envelope curve.
- **5: Super Saw Filter Cutoff Mod Amount**: Determines the amount of modulation (Scale: -100 / +100. Default: 0).
- **6: Super Saw Filter Reso**: Determines the amount of emphasis or boost given to the frequencies around the filter cutoff point. The resonance can give the sound a more pronounced, "nasal" or "vocal" character and can be used creatively in sound design to add character or complexity to a sound. (Scale: 0 % / 100 %. Default: 0 %).

3.7.7 Section 7: Bode Frecuency Shifter (7)

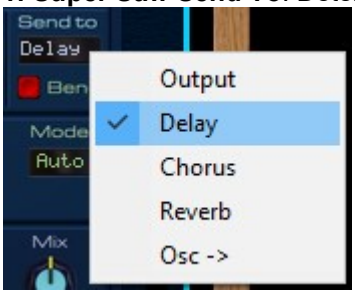
The Bode frequency shifter is an analog circuit that produces a natural, warm sound that is popular with many sound designers and musicians. It is often used to create a range of effects, including metallic, bell-like sounds, and chorus-like textures. The Bode frequency shift (inharmonic shift in Hertz, not pitch) is applied individually to each voice.

- **1: Super Saw Shifter Mix**: Determines the Dry / Wet mix. (Scale: 0 % / 100 %. Default: 0 %).
- **2: Super Saw Shifter**: Detemines the amount of linear scaling of shift, (Scale: 0% / 100 %. Default: 50 %).
- **3: Super Saw Shifter Mod Source**: Determines the source of the shifter modulation. Choose one source from the following option list:
    - Cons = Constant maximum value, which is also the default option.
    - Rnd = Random bipolar value between -1 and +1.
    - Rnd+ = Random unipolar value between 0 and 1.
    - PB = Pitch Bend, incoming MIDI pitch bend.
    - Aft = Aftertouch, incoming MIDI channel pressure.
    - MW = Modulation Wheel.
    - Key = Keyboard position relative to C3. Value increases by 1.0 per octave.
    - Vel = Velocity, incoming MIDI velocity.
    - Amp = Amp Envelope curve shaped by the Delay, Attack, Hold, Decay, Sustain and Release settings.
    - Md1 = Mod 1 Envelope curve shaped by the Attack, Hold, Decay, Sustain and Release settings in the Mod 1 Envelope section on the back panel.
    - Md2 = Mod 2 Envelope curve shaped by the Attack, Hold, Decay, Sustain and Release settings in the Mod 2 Envelope section on the back panel.
    - Gli = Glide curve.
    - NB = Note Bend envelope curve.
- **4: Super Saw Shifter Mod Amount**: Determines the amount of modulation (Scale: -100 / +100. Default: 0).
- **5: Super Saw Shifter Range**: Determines the Frequency shift in Hertz. Low values result in barber's pole phasing when Mix is set to 50% (Scale: 0,05 Hz / 5 kHz. Default: 50 Hz).
- **6: Super Saw Shifter Feedback**: Determines the feedback to add overtones or increase depth of phasing. (Scale: 0 % / 100 %. Default: 0 %).
- **7: Super Saw Shifter Mode**: Shifts frequencies up, down, or left and right channels in opposite directions. (Scale: 0 % / 100 %. Default: 0 %).

3.7.8 Section 8: Send Super Saw To and Bend (8)

The Send To determines the signal path of the oscillator. The Bend switch determines if the Bend modulation is applied to the oscillator.

- **1: Super Saw Send To**: Determines the destination of the oscillator sound.



You have the following options:

- Output: The oscillators sound goes straight to the Output section, bypassing all the effects.

- Delay: The oscillators sound goes to the Delay effects section, which is the default option.
- Chorus: The oscillators sound goes to the Chorus effects section.
- Reverb: The oscillators sound goes to the Linear Reverb effects section.
- Osc -> or Osc Out. On the back panel of the Dice Analog Synthersizer you can connect audio cables and route the oscillators output to an external device, such as a Line Mixer or an effect of your choice. Once connected, set the Send To to Osc Out to hear the result. Once set, the connected oscillator is subtracted from the main output internally.

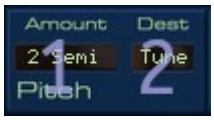
- **2: Super Saw Bend**: A switch to detemines if the Bend section is applied to the oscillator (Scale: On / Off. Default: Off).

3.8 Panel 3, Oscillator Tuning Modulation and LFO panel

3.9 Panel 3, Pitch Wheel Control

Although not physically present, Dice Analog Synthesizer automatically responds to an incomimg MIDI pitch wheel controller. Pitch Wheel Control can be set to different destinations with a desired amount.

3.9.1 Pitch Wheel Amount and Destination (1)



1: Amt – Pitch Wheel Amount: Determines the amount the pitch wheel should apply when moved or set to maximum (Scale: 000 / 100. Default: 41). If you want to change the scale of the Pitch Wheel tuning, set the amount according to the following table:

- 029 = 1 Semitone.
- 041 = 2 Semitones.
- 050 = 3 Semitones.
- 058 = 4 Semitones.
- 065 = 5 Semitones.
- 071 = 6 Semitones.
- 076 = 7 Semitones.
- 082 = 8 Semitones.
- 087 = 9 Semitones.
- 091 = 10 Semitones.
- 096 = 11 Semitones.
- 100 = 12 Semitones.

2: Dest - Pitch Wheel Destination: Determines the destination of the pitch wheel controller (Scale: Volume, Panning and Tune. Default: Tune).

3.10 Panel 3, Bend

3.10.1 Bend (2)

Bend bends the pitch of a note.

- **1: Depth – Bend Depth**: Determines the amount of pitch bend. (Scale: -50 % / +50 %. Default: 0).
- **2: A - Bend Attack**: Determines the time that a sound takes to peak. When you press a key on your keyboard, the envelope is triggered. The attack parameter then controls how long it should take before the controlled parameter (pitch or filter) reaches the maximum value, when you press a key. By setting attack to a value of 0, the destination parameter would reach the maximum value instantly. By raising the Envelope Attack parameter, the value will instead slowly slide to its maximum (Scale: 0 seconds / 16 seconds. Default: 0 seconds). Values in seconds (s) shown in the tool tip are based on the Bend Attack Curve set to 0 %.
- **3: H - Bend Hold**: Determines how long the controlled parameter should stay at its maximum value before starting to decrease again. This can be used in combination with the Envelope Attack and Envelope Decay parameters to make a value reach its maximum level, stay there for a while (Envelope Hold) and then start dropping gradually down to the Envelope Sustain level (Scale: 0 seconds / 16 seconds. Default: 0 seconds).
- **4: D - Bend Decay**: Determines the time that the sound takes to fall from the peak to the Envelope Sustain level. After the maximum value for a destination has been reached and the Envelope Hold time has expired, the controlled parameter will start to gradually drop down to the Envelope Sustain level. How long it should take before it reaches the Envelope Sustain level is controlled with the Envelope Decay parameter. If the Envelope Decay is set to 0, the value will immediately drop down to the Envelope Sustain level (Scale: 0 seconds / 16 seconds. Default: 385 ms). Values in miliseconds (ms) shown in the tooltip are based on the Envelope Decay Curve set to 50 %.

- **5: S - Bend Sustain**: Determines the volume (relative to the peak) when the key is held down. The Envelope Sustain parameter determines the value the Amp Envelope should drop back to after the Envelope Decay. If you set Envelope Sustain to full level however, the Envelope Decay setting doesn't matter since the value will never decrease. A combination of Envelope Decay and Envelope Sustain can be used for creating envelopes that rise up to the maximum value, then gradually decrease to, and stay on a level somewhere in-between zero and maximum (Scale: -∞ / 0 dB. Default: 0 dB).
- **6: R – Bend Release**: Determines the time the sound takes to die out after the key is released. This works just like the Envelope Decay parameter, with the exception that it determines the time it takes for the value to fall back to zero after the key is released (Scale: 0 seconds / 16 seconds. Default: 59,8 ms).
- **7: AC – Bend Attack Curve**: Determines the curve for the Envelope Attack from a slow reach to the final value, following a linear curve, to a fast reach of the final value, following a logarithmic curve (Scale: -100 % / +100 %. Default: 0 %). Typically 75 - 90% for logarithmic curves.
- **8: DC – Bend Decay Curve**: Determines the curve for the Envelope Decay from a slow reach to the final, following a linear curve, to a fast reach of the final value, following a logarithmic curve (Scale: -100 % / +100 %. Default: -50 %). Typically 75 - 90% for logarithmic curves.
- **9: RC – Bend Release Curve**: Determines the curve for the Envelope Release from a slow reach to the final, following a linear curve, to a fast reach of the final value, following a logarithmic curve (Scale: -100 % / +100 %. Default: -50 %). Typically 75 - 90% for logarithmic curves.

3.11 Panel 3, LFO

3.11.1 LFO (3)

A Low Frequency Oscillator does not produce sound in the audible range and is often used as a modulation source, whereby its shape and speed can be changed. Other modulation sources which can be shaped are the oscillator's amplitude envelope, the bend envelope and the 2 mod envelopes (Mod1 and Mod2 on the back panel).

- **1: Shape – LFO**: Determines the waveform for the LFO. (Scale: Sine, Triangle, Square, Saw, Random and Drift. Default: Sine).
- **2: Free - LFO**: Determines the duration of 1 cycle of the LFO waveform in Hz (Scale: 0,01 Hz / 100 Hz. Default: 1,00 Hz).
- **3: LFO Sync Switch**: Set Rate units to Hz (cycles per second) or beats (quarternotes per cycle). Scale: On / Off. Default: Off.
- **4: Sync - LFO Rate Synced**: Determines the duration of 1 cycle of the LFO waveform in beats (Scale: 1/16 to 1/1. Default: 1/4).
- **5: Trig - LFO Retrigger Switch**: When Off, all voices will be modulated together in sync. When On, the LFO for each voice starts from the beginning when the note is triggered (Scale: On / Off. Default: On).

3.12 Panel 3, Glide

3.12.1 Glide (4)

Glide or Portamento makes note pitch glide from previous notes to new ones.

- **1: Time – Glide Time**: The time it takes to glide from one note to the next (Scale: 0 / 100. Default: 0). When Glide Time is set to 0 the glide is turned off and thus modulation in the modulation matrix has no effect as well. Glide or its modulation will occur when the Glide Time value is set to 1 or higher (Zero = No glide, 1 = Start point of the Glide Time)..
- **2: Mod - Glide Time Mod Source**: Determines the source for the Glide modulation (Scale: Cons, Rnd, Rnd+, PB, Aft, MW, Key, Vel, Amp, LFO, Md1, Md2. Default: Cons).
- **3: Amt – Glide Time Mod Amount**: Determines whether the Glide Time modulation is added to the signal chain (Scale: On / Off. Default: On).
- **4: Mode – Glide Mode**: Determines the glide mode. (Scale: Off: No glide, On: Always glide, Auto: Only glide if a key is already held. Default: Auto).

3.13 Panel 4, Effects and Output Panel

Dice Analog Synthesizer oscillators output can be routed to 3 effects (Delay, Reverb and Chorus) and an output section.

3.14 Panel 4, Delay

Stereo delay effect with adjustable feedback routing and left / right spread.

3.14.1 Delay (1)

- **1: On - Delay Switch**: Determines whether delay is added to the signal chain (Scale: On / Off. Default: Off).

- **2: Free - Delay Time**: Determines the time of the interval between repeats of the delay in seconds (Scale: 0 seconds / 4 seconds. Default: 1 second).
- **3: Toggle switch - Delay Sync Switch**: Toggles mode between a synced delay based on quarter notes and a delay in seconds (Scale: On / Off. Default: On).
- **4: Sync - Delay Sync**: Determines the time of the interval between repeats of the delay based on tempo in the sequencer (Scale: 1/16 bar / 1/1 bar. Default: 1/4 bar).
- **4: FBack - Delay Feedback**: Determines the number of repeats of the delay (Scale: 0 % / 100 %. Default: 50 %).
- **5: Ratio - Delay Ratio**: Determines the channel to reduce. Negative values reduce the left channel delay, positive values reduce the right channel delay (Scale: 50:100 / 100:50. Default: 100:50).
- **6: Damp - Delay Damping**: Determines the progressive loss of high frequencies in the delay tail (Scale: 20 kHz / 1 kHz. Default: 20 kHz).
- **7: Mix - Delay Mix**: Determines the amount of delay mixed with the original sound (Scale: 0 % / 100 %. Default: 50 %).
- **8: Send To - Delay Send To**: The Send To determines the signal path of the delay effect

You have the following options:

- Output: The sound of delay effect goes straight to the Output section, bypassing the chorus and reverb effects.
- Chorus: The sound of delay effect goes to the Chorus effects section (default),
- Reverb: The sound of delay effect goes to the Linear Reverb effects section.

3.15 Panel 4, Reverb

Algorithmic reverb, emulating a digital reverb unit.

3.15.1 Linear Reverb (2)

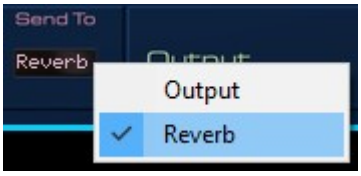
- **1: On - Reverb Switch**: Determines whether the linear reverb is added to the signal chain (Scale: On / Off. Default: Off).
- **2: Time - Reverb Time**: Determines the length of reverb tail (Scale: 0 % / 100 %. Default: 50 %).
- **3: PDelay - Reverb Pre Delay**: Determines the initial delay before reverb (Scale: 0 ms / 200 ms. Default: 0 ms).
- **4: Damp - Reverb Damping** (Reverb Damping): Determines the progressive loss of high frequencies in the reverb tail (Scale: 20 kHz / 2 kHz. Default: 20 kHz).
- **5: Mix - Reverb Mix** (Reverb Mix): Mix between dry and wet signal (Scale: 0 / 100 %. Default: 50).

3.16 Panel 4, Chorus

The Chorus effect takes an audio signal and mix it with one or more delayed, pitch modulated copies.

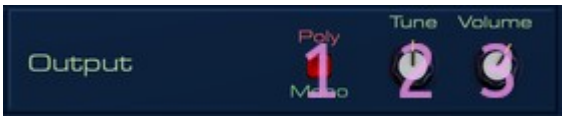
3.16.1 Chorus (3)

- **1: On - Chorus Switch**: Determines whether chorus is added to the signal chain (Scale: On / Off. Default: On).
- **2: Type - Chorus Modulation Type**: Determines the modulation type. (Scale: Sine wave LFO / Square wave LFO. Default: Sine).
- **3: Rate - Chorus Rate**: Determines the modulation rate in Hz (Scale: 0,10 Hz / 10 Hz. Default: 1,00 Hz).
- **4: Depth – Chorus Depth**: Determines the depth of the delay pitch modulation in milliseconds (Scale: 0 ms / 32 ms. Default: 8 ms).
- **5: Delay - Chorus Delay**: Determines the initial delay for each voice (Scale: 0 ms / 32 ms. Default: 8 ms).
- **6: Voices - Chorus Voices Amount** (Chorus Voices Amount): Determines the number of chorus voices (Scale: 1, 2 or 3 voices. Default: 3 voices).
- **7: Mix - Chorus Mix** (Chorus Mix): Determines the amount of chorus mixed with the original sound (Scale: 0 % / 100 %. Default: 50 %).
- **8: Send To - Chorus Send To**: The Send To determines the signal path of the chorus effect.



You have the following options:
  - Output: The sound of chorus effect goes straight to the Output section, bypassing the reverb effect.
  - Reverb: The sound of chorus effect goes to the Linear Reverb effects section.

3.17 Panel 4, Output panel



3.17.1 Output (4)

- **1: Poly- Mono Poly**: Select On if you want to play Dice Analog Synthesizer polyphonically. The maximum number of voices is 90 and the voice stealing is set to the oldest note. Select Off, if you want to play Dice Analog Synthesizer in monophonic mode and retrigger the envelopes as soon as you play a new note (Scale: On / Off. Default: On).
- **2: Tune – Master Tuning**: Determines the tuning for the whole synthesizert (Scale: Cons, Rnd, Rnd+, PB, Aft, MW, Key, Vel, Amp, LFO, Md1, Md2. Default: Key).
- **3: Volume - Master Volume**: Determines the master volume (Scale: -∞ / +12,0 dB. Default: -0,0 dB).

4 Back of the device

4.1 Panels overview

- **Logo**
- **Device name.**
- **MIDI Note indicator**
- **Device name.**
- **Oscillators** Panel (**1**) with:
  - Sine oscillator.
  - PWM (Pulse Width Modulation) oscillator.
  - Triangle oscillator.
  - Sub oscillator.
  - Noise oscillator.
  - Saw oscillator.
- **Oscillator Tuning Modulation and LFO** panel (**2**) with:
  - Power switch decoration.
  - Bend.
  - Serial number plate decoration.
  - Cooling decoration.
- **Effects** and **Output** panel (**3**) with:
  - Delay.
  - Reverb.
  - Chorus.
  - Audio Out
  - CV In (Gate and Note)
  - CV Out (Key and Vel)
  - Volume.
- **Mod Envelope 1** panel (**4**) with:

- Attack, Hold, Decay, Sustain and Release (AHDSR) faders.
- **Mod Envelope 2** panel (**5**) with:
  - Attack, Hold, Decay, Sustain and Release (AHDSR) faders.
- **Filters Compatible Switch** (**6**). In version 1.0.1 the flters cuttoff and resonance are limited. In the updated version 1.1.2 the limiter on the filters is removed, making Dice Analog Synthesizer brighter and aggresive.
- **Randomize configuration section** (**7**) with.
  - Randomize Switch.
  - Percentage fader.
  - Randomize Amp Switch (AHDSR).
  - Randomize Filters Switch.
  - Randomize Shifter Switch.
  - Randomize FX Switch.
  - Randomize Sine Switch.
  - Randomize Pulse Switch.
  - Randomize Triangle Switch.
  - Randomize Sub Switch.
  - Randomize Noise Switch.
  - Randomize Super Saw Switch.

4.2 Oscillators Panel Overview

The oscillators section consists of 6 rows with 7 different CV inputs and a stereo audio output.

- **Oscillators** Rows (**1 - 6**) with:
  - 6 Oscillator types:
    - 1: Sine oscillator.
    - 2: PWM (Pulse Width Modulation) oscillator.
    - 3: Triangle oscillator.

- 4: Sub oscillator.
- 5: Noise oscillator.
- 6: Saw oscillator.

5 Panels, rows and sections

Dice Analog Synthesizer is divided in panels, each with one or more rows with sections which are separated by vertical lines in the panel. A section provides a set of various CV inputs sockets with trim knobs, CV outputs sockets, audio ouputs sockets and faders. The trim knobs are used to scale an incoming CV signal.

5.1 Panel 1, Row 1: Sine Oscillator

The Sine oscillator row has 7 CV Inputs and a stereo output.

- **Oscillator Type**.
- **1: Oscillator Sine Tune CV Input** with trim knob.
- **2: Oscillator Sine Volume CV Input** with trim knob.
- **3: Oscillator Sine Pan CV Input** with trim knob.
- **Mod Envelope 1:**
  - Attack,
  - Attack Curve.
  - Hold,
  - Decay,
  - Decay Curve.
  - Sustain,
  - Release,
  - Release Curve.
- **4: Oscillator Sine Cutoff CV Input** with trim knob.
- **5: Oscillator Sine Resonance CV Input** with trim knob.
- **6: Oscillator Sine Shifter CV Input** with trim knob.
- **7: Oscillator Sine Shifter Range CV Input** with trim knob.
- **8: Oscillator Sine Osc Left and Right Out**.
- **9: Sine Out Solo and Sine Out Mute**.
- **10: Randomize Sine Switch**. Toggles between to randomize the Sine oscillator or not when the Randomize switch is On (Scale: Red dice = Off / Marine Blue.dice = On. Default = On).

5.2 Panel 1, Row 2: PWM Oscillator

The PWM oscillator row has 8 CV Inputs and a stereo output.

- **1: Oscillator Pulse Width CV Input** with trim knob.
- **2: Oscillator Pulse Tune CV Input** with trim knob.
- **3: Oscillator Pulse Volume CV Input** with trim knob.
- **4: Oscillator Pulse Pan CV Input** with trim knob.
- **Mod Envelope 2:**
  - Attack,
  - Attack Curve.
  - Hold,
  - Decay,
  - Decay Curve.
  - Sustain,

  - Release,
  - Release Curve.
- **5: Oscillator Pulse Cutoff CV Input** with trim knob.
- **6: Oscillator Pulse Resonance CV Input** with trim knob.
- **7: Oscillator Pulse Shifter CV Input** with trim knob.
- **8: Oscillator Pulse Shifter Range CV Input** with trim knob.
- **9: Oscillator Pulse Osc Left and Right Out**.
- **10: Pulse Out Solo and Pulse Out Mute.**
- **11: Randomize Pulse Switch**. Toggles between to randomize the Pulse oscillator or not when the Randomize switch is On (Scale: Red dice = Off / Marine Blue.dice = On. Default = On).

5.3 Panel 1, Row 3: Triangle Oscillator

The Triangle oscillator row has 7 CV Inputs and a stereo output.

- **Oscillator Type**.
- **1: Oscillator Triangle Tune CV Input** with trim knob.
- **2: Oscillator Triangle Volume CV Input** with trim knob.
- **3: Oscillator Triangle Pan CV Input** with trim knob.
- **4: Oscillator Triangle Cutoff CV Input** with trim knob.
- **5: Oscillator Triangle Resonance CV Input** with trim knob.
- **6: Oscillator Triangle Shifter CV Input** with trim knob.
- **7: Oscillator Triangle Shifter Range CV Input** with trim knob.
- **8: Oscillator Triangle Osc Left and Right Out**.
- **9**: **Triangle Out Solo and Triangle Out Mute**.
- **10: Randomize Triangle Switch**. Toggles between to randomize the Triangle oscillator or not when the Randomize switch is On (Scale: Red dice = Off / Marine Blue.dice = On. Default = On).

5.4 Panel 1, Row 4: Sub Oscillator

The Sub oscillator row has 7 CV Inputs and a stereo output.

- **Oscillator Type**.
- **1: Oscillator Sub Tune CV Input** with trim knob.
- **2: Oscillator Sub Volume CV Input** with trim knob.
- **3: Oscillator Sub Pan CV Input** with trim knob.
- **4: Oscillator Sub Cutoff CV Input** with trim knob.
- **5: Oscillator Sub Resonance CV Input** with trim knob.
- **6: Oscillator Sub Shifter CV Input** with trim knob.
- **7: Oscillator Sub Shifter Range CV Input** with trim knob.
- **8: Oscillator Sub Osc Left and Right Out**.
- **9**: **Sub Out Solo and Sub Out Mute**.
- **10: Randomize Sub Switch**. Toggles between to randomize the Sub oscillator or not when the Randomize switch is On (Scale: Red dice = Off / Marine Blue.dice = On. Default = On).

5.5 Panel 1, Row 5: Noise Oscillator

The Noise oscillator row has 6 CV Inputs and a stereo output.

- **Oscillator Type**.
- **1: Oscillator Noise Volume CV Input** with trim knob.
- **2: Oscillator Noise Pan CV Input** with trim knob.
- **3: Oscillator Noise Cutoff CV Input** with trim knob.
- **4: Oscillator Noise Resonance CV Input** with trim knob.
- **5: Oscillator Noise Shifter CV Input** with trim knob.
- **6: Oscillator Noise Shifter Range CV Input** with trim knob.
- **7: Oscillator Noise Osc Left and Right Out**.
- **8**: **Noise Out Solo and Noise Out Mute**.
- **9: Randomize Noise Switch**. Toggles between to randomize the Noise oscillator or not when the Randomize switch is On (Scale: Red dice = Off / Marine Blue.dice = On. Default = On).

5.6 Panel 1, Row 6: Super Saw Oscillator

The Super Saw oscillator row has 7 CV Inputs and a stereo output.

- **Oscillator Type**.
- **1: Super Saw Detune**. (Scale: 0 % / 100 %. Default: 25 %)
- **2: Oscillator Super Saw Tune CV Input** with trim knob.
- **3: Oscillator Super Saw Volume CV Input** with trim knob.
- **4: Oscillator Super Saw Pan CV Input** with trim knob.
- **5: Oscillator Super Saw Cutoff CV Input** with trim knob.
- **6: Oscillator Super Saw Resonance CV Input** with trim knob.
- **7: Oscillator Super Saw Shifter CV Input** with trim knob.
- **8: Oscillator Super Saw Shifter Range CV Input** with trim knob.
- **9: Oscillator Super Saw Osc Left and Right Out.**
- **10**: **Super Saw Out Solo and Super Saw Out Mute**.
- **11: Randomize Super Saw Switch**. Toggles between to randomize the Super Saw oscillator or not when the Randomize switch is On (Scale: Red dice = Off / Marine Blue.dice = On. Default = On).

5.7 Panel 2, Bend

Bend has 1 CV Input.

- **1: Key to Pan**: Determines the amount of panning according the key played (Scale: 0 / 100. Default: 0).
- **2: Limit – Limiter Switch**: Low-CPU safety limiter to keep levels in check, with a fixed 0 dBFS threshold (Scale: On / Off. Default: On).
- **3: Bend Depth CV Input** with trim knob.
- **4: Randomize Bend Switch:** Toggles between to randomize Bend section or not when the Randomize switch is On (Scale: Red dice = Off / Marine Blue.dice = On. Default = On).

5.8 Panel 3, Effects and Output Panel

Dice Analog Synthesizer oscillators output can be routed to 3 effects which have several CV Inputs,

- 1: Delay.
- 2: Reverb.
- 3: Chorus.
- 4: And an output section.

5.9 Panel 3, Delay

- **1: Randomize Delay Switch:** Toggles between to randomize Delay section or not when the Randomize switch is On (Scale: Red dice = Off / Marine Blue.dice = On. Default = On).
- **2: Delay Time CV Input** with trim knob.
- **3: Delay Feedback CV Input** with trim knob.
- **4: Delay Ratio CV Input** with trim knob.
- **5: Delay Mix CV Input** with trim knob.

5.10 Panel 3, Reverb

- **1: Randomize Reverb Switch:** Toggles between to randomize Reverb section or not when the Randomize switch is On (Scale: Red dice = Off / Marine Blue.dice = On. Default = On).
- **2: Reverb Time CV Input** with trim knob.
- **3: Reverb Mix CV Input** with trim knob.

5.11 Panel 3, Chorus

- **1: Randomize Chorus Switch:** Toggles between to randomize Chorus section or not when the Randomize switch is On (Scale: Red dice = Off / Marine Blue.dice = On. Default = On).
- **2: Chorus Rate CV Input** with trim knob.
- **3: Chorus Depth CV Input** with trim knob.
- **4: Chorus Mix CV Input** with trim knob.

5.12 Panel 3, Audio Out

These are the main audio Left (**1**) and Right (**2**) outputs. When you create a new Dice Analog Synthesizer device, these outputs are auto-routed to the first available channel in the Reason main mixer.

5.13 Panel 3, CV Input Gate and Note

Control Voltage (CV) Input for Gate (**1**) and Note (**2**).

5.14 Panel 3, CV Output Velocity and Key

Control Voltage (CV) Output. The Velocity (**1**) and the position of the Key (**2**) of your MIDI controller are translated into unipolar control voltage.

5.15 Panel 3: CV Input Volume

- **1: Master Volume CV Input** with trim knob..

5.16 Panel 4, Mod Envelope 1

The Mod Envelope sare used to make an AHDSR curve which are used as a modulation source in a modulation matrix.

- **1: A - Mod Envelope 1 Attack**: Determines the time that a sound takes to peak. When you press a key on your keyboard, the envelope is triggered. The attack parameter then controls how long it should take before the controlled parameter (pitch or filter) reaches the maximum value, when you press a key. By setting attack to a value of 0, the destination parameter would reach the maximum value instantly. By raising the Envelope Attack parameter, the value will instead slowly slide to its maximum (Scale: 0 seconds / 16 seconds. Default: 0 seconds). Values in seconds (s) shown in the tool tip are based on the Mod Envelope 1 Attack Curve set to 0 %.
- **2: H - Mod Envelope 1 Hold**: Determines how long the controlled parameter should stay at its maximum value before starting to decrease again. This can be used in combination with the Envelope Attack and Envelope Decay parameters to make a value reach its maximum level, stay there for a while (Envelope Hold) and then start dropping gradually down to the Envelope Sustain level (Scale: 0 seconds / 16 seconds. Default: 0 seconds).
- **3: D - Mod Envelope 1 Decay**: Determines the time that the sound takes to fall from the peak to the Envelope Sustain level. After the maximum value for a destination has been reached and the Envelope Hold time has expired, the controlled parameter will start to gradually drop down to the Envelope Sustain level. How long it should take before it reaches the Envelope Sustain level is controlled with the Envelope Decay parameter. If the Envelope Decay is set to 0, the value will immediately drop down to the Envelope Sustain level (Scale: 0 seconds / 16 seconds. Default: 385 ms). Values in miliseconds (ms) shown in the tooltip are based on the Envelope Decay Curve set to 50 %.
- **4: S - Mod Envelope 1 Sustain**: Determines the volume (relative to the peak) when the key is held down. The Envelope Sustain parameter determines the value the Amp Envelope should drop back to after the Envelope Decay. If you set Envelope Sustain to full level however, the Envelope Decay setting doesn't matter since the value will never decrease. A combination of Envelope Decay and Envelope Sustain can be used for creating envelopes that rise up to the maximum value, then gradually decrease to, and stay on a level somewhere in-between zero and maximum (Scale: -∞ / 0 dB. Default: 0 dB).
- **5: R – Mod Envelope 1 Release**: Determines the time the sound takes to die out after the key is released. This works just like the Envelope Decay parameter, with the exception that it

determines the time it takes for the value to fall back to zero after the key is released (Scale: 0 seconds / 16 seconds. Default: 59,8 ms).

- **6: AC – Mod Envelope 1 Attack Curve**: Determines the curve for the Envelope Attack from a slow reach to the final value, following a linear curve, to a fast reach of the final value, following a logarithmic curve (Scale: -100 % / +100 %. Default: 0 %). Typically 75 - 90% for logarithmic curves.
- **7: DC – Mod Envelope 1 Decay Curve**: Determines the curve for the Envelope Decay from a slow reach to the final, following a linear curve, to a fast reach of the final value, following a logarithmic curve (Scale: -100 % / +100 %. Default: -50 %). Typically 75 - 90% for logarithmic curves.
- **8: RC – Mod Envelope 1 Release Curve**: Determines the curve for the Envelope Release from a slow reach to the final, following a linear curve, to a fast reach of the final value, following a logarithmic curve (Scale: -100 % / +100 %. Default: -50 %). Typically 75 - 90% for logarithmic curves.

5.17 Panel 5, Mod Envelope 2

Works as Mod Envelope 1 (see above)

5.18 Panel 6, Filters Compatible

- **Filters Compatible Switch**: Determines if a limiter is applied to the filters cutoff and resonance. Toggles between Dice version numbers. Version 1.3.8 has no limiter applied to the filters (Scale: Blue button 1.3.8 = Off / Green button 1.0.1 = On. Default = Off).

5.19 Panel 7, Randomizer Configuration Section

In Dice Analog Synthesizer version 1.3.8 a randomize play and edit mode system is added.

In random play and edit mode, all the marine blue colored faders and knobs from the Amp Envelope (AHDSR), Filters Envelope, the Bode Frequency Shifter, Bend, Delay, Reverb and Chorus sections get randomised from its current position according to a Seed Percentage.

The Randomize Switch on the front panel or the big Randomize Switch on the back panel (3) activates / deactivates the random play and edit mode.
The Percentage knob on the front panel or the Percentage fader on the back panel (4) determines the Seed Percentage to apply when randomisation is active. A low percentage setting (15 %) wil change the sound of the current patch slighty. A high percentage (90 %) wil change the sound drastically.

The configuration on what the (big) Randomize Switch (3) should randomize can be found on the back panel.

The Randomizer Configuration section:

- First there are two configuration switches, Randomize During Edit Switch (1) and Randomize During Percentage Switch (2):

    - Randomize During Edit Switch (1):

    When turned On, randomisation takes places when you move a marine blue fader or knob. When turned Off (default), randomisation does not takes places when you move a marine blue fader or knob. Although the Randomize Switch is On, the faders and knobs behave like in 'Normal' mode.

- Randomize During Percentage Switch (2):
  When turned On (default), randomisation takes places when you move Percentage.
  When turned Off, randomisation does not takes places when you move Percentage. You need to turn the Randomize Switch Off and On again to hear the change.

- Second there is a column with Randomize Switches to set the randomization process on or off for:
  - The Amp Envelope (AHDSR) section for all the six oscillators (5).
  - The Filters Envelope section on for the six oscillators (6).
  - The Bode Frequency Shifter section for all the six oscillators (7).
  - And all the Effects including the Bend (15, 16, 17 and 18).

- Third there is a column with Randomize Switches to set the randomization process on or off for the six oscillators individually (9, 10, 11, 12, 13 and 14).
  On each oscillator the Amp Envelope (AHDSR), Filters Envelope and the Bode Frequency Shifter can be randomised.

Please notice: Changes made during Random play and edit mode are not stored in .repatch nor .cmb combinator patches. All other changes in 'Normal' mode are stored.

- **1: Randomize During Edit Switch:** When turned On, randomisation takes places when you move a marine blue fader or knob. When turned Off (default), randomisation does not takes places when you move a marine blue fader or knob and even when the Randomize Switch is On, the faders and knobs behave like in 'Normal' mode (Scale: Red dice = Off / Marine Blue.dice = On. Default = Off).
- **2: Randomize During Percentage Switch:** When turned On (default), randomisation takes places when you move Percentage. When turned Off, randomisation does not takes places when you move Percentage. You need to turn the Randomize Switch Off and On again to hear the change (Scale: Red dice = Off / Marine Blue.dice = On. Default = On).
- **3: Randomize Switch:** Toggles between to randomize Dice Analog Synthesizer or not (Scale: Red dice = Off / Marine Blue.dice = On. Default = Off).
- **4: Percentage:** The Percentage knob on the front panel or the Percentage fader on the back panel determines the Seed Percentage to apply when randomisation is active. A low percentage setting (15 %) wil change the sound of the current patch slighty. A high percentage (90 %) wil change the sound drastically (Scale: 0 % / 100 %. Default = 50 %).
- **5: Randomize Amp Switch:** Toggles between to randomize Amp envelope section (AHDSR) or not when the Randomize switch is On (Scale: Red dice = Off / Marine Blue.dice = On. Default = On).
- **6: Randomize Filters Switch:** Toggles between to randomize Filter section (cutoff and resonance) or not when the Randomize switch is On (Scale: Red dice = Off / Marine Blue.dice = On. Default = On).
- **7: Randomize Shifter Switch:** Toggles between to randomize Frequency Shifter section (Shifter Mix, Shifter, Shifter Range and Shifter Feedback) or not when the Randomize switch is On (Scale: Red dice = Off / Marine Blue.dice = On. Default = On).
- **8: Randomize FX Switch:** Toggles between to randomize the marine blue colored knobs and faders in the effects section (Bend, Delay, Reverb and Chorus) or not when the Randomize switch is On (Scale: Red dice = Off / Marine Blue.dice = On. Default = On).
- **9: Randomize Sine Switch:** Toggles between to randomize the marine blue colored knobs and faders on the Sine oscillator or not when the Randomize switch is On (Scale: Red dice = Off / Marine Blue.dice = On. Default = On).
- **10: Randomize Pulse Switch:** Toggles between to randomize the marine blue colored knobs and faders on the Pulse oscillator or not when the Randomize switch is On (Scale: Red dice = Off / Marine Blue.dice = On. Default = On).
- **11: Randomize Triangle Switch:** Toggles between to randomize the marine blue colored knobs and faders on the Triangle oscillator or not when the Randomize switch is On (Scale: Red dice = Off / Marine Blue.dice = On. Default = On).
- **12: Randomize Sub Switch:** Toggles between to randomize the marine blue colored knobs and faders on the Sub oscillator or not when the Randomize switch is On (Scale: Red dice = Off / Marine Blue.dice = On. Default = On).

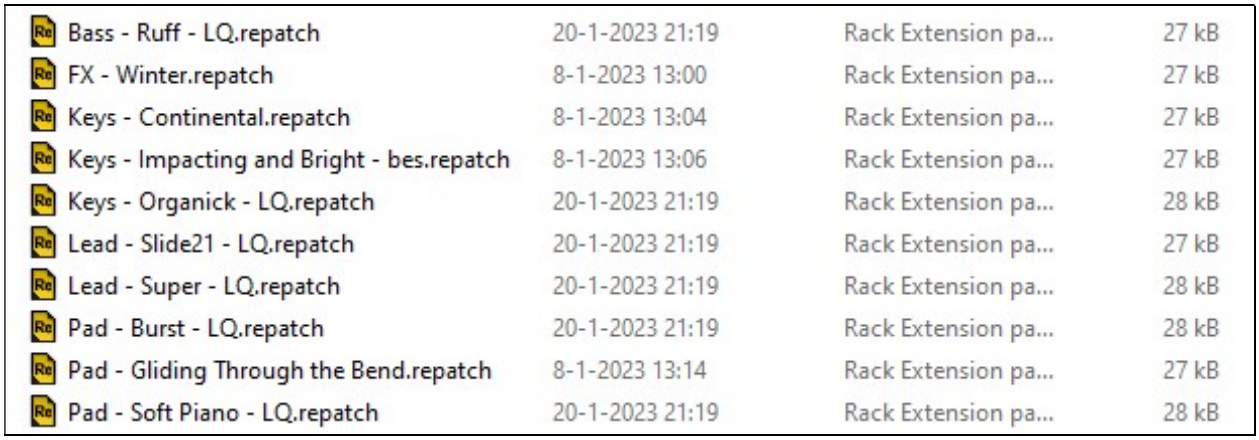
- **13: Randomize Noise Switch:** Toggles between to randomize the marine blue colored knobs and faders on the Noise oscillator or not when the Randomize switch is On (Scale: Red dice = Off / Marine Blue.dice = On. Default = On).
- **14: Randomize Super Saw Switch:** Toggles between to randomize the marine blue colored knobs and faders on the Super Saw oscillator or not when the Randomize switch is On (Scale: Red dice = Off / Marine Blue.dice = On. Default = On).
- **15: Randomize Bend Switch:** Toggles between to randomize the marine blue colored faders on in the Bend section or not when the Randomize switch is On (Scale: Red dice = Off / Marine Blue.dice = On. Default = On).
- **16: Randomize Delay Switch:** Toggles between to randomize the marine blue colored knobs in the Delay section or not when the Randomize switch is On (Scale: Red dice = Off / Marine Blue.dice = On. Default = On).
- **17: Randomize Reverb Switch:** Toggles between to randomize the marine blue colored knobs in the Reverb section or not when the Randomize switch is On (Scale: Red dice = Off / Marine Blue.dice = On. Default = On).
- **18: Randomize Chorus Switch:** Toggles between to randomize the marine blue colored knobs in the Chorus section or not when the Randomize switch is On (Scale: Red dice = Off / Marine Blue.dice = On. Default = On).

•

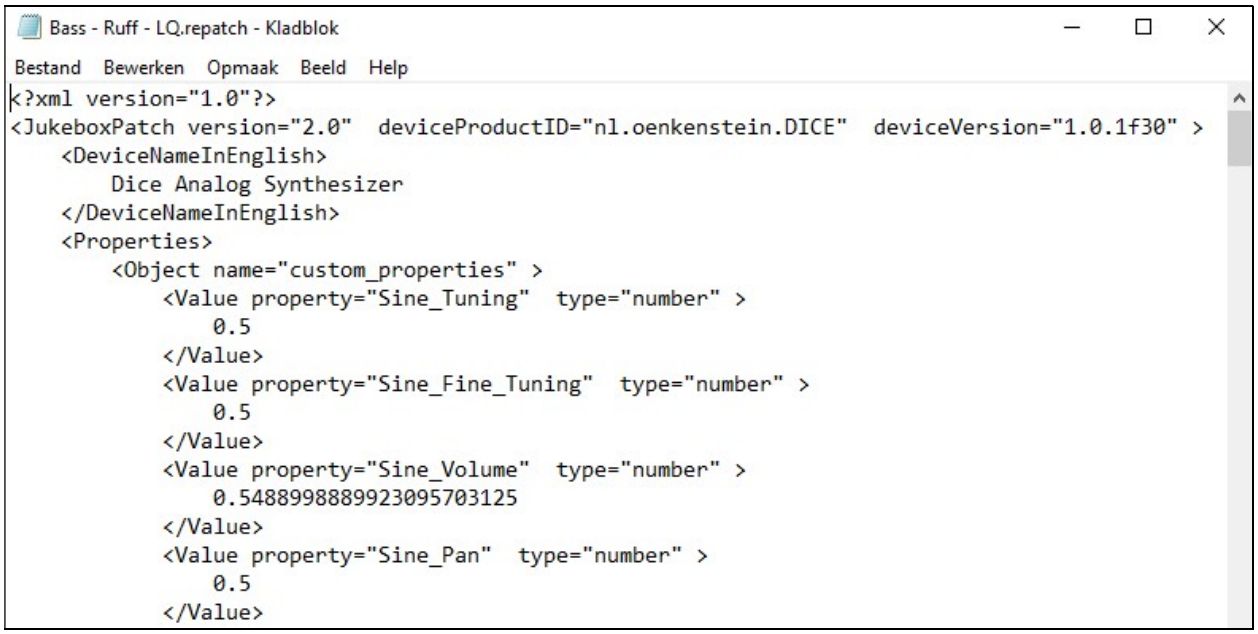
6 Patches

6.1 Randomizing Patches on the website

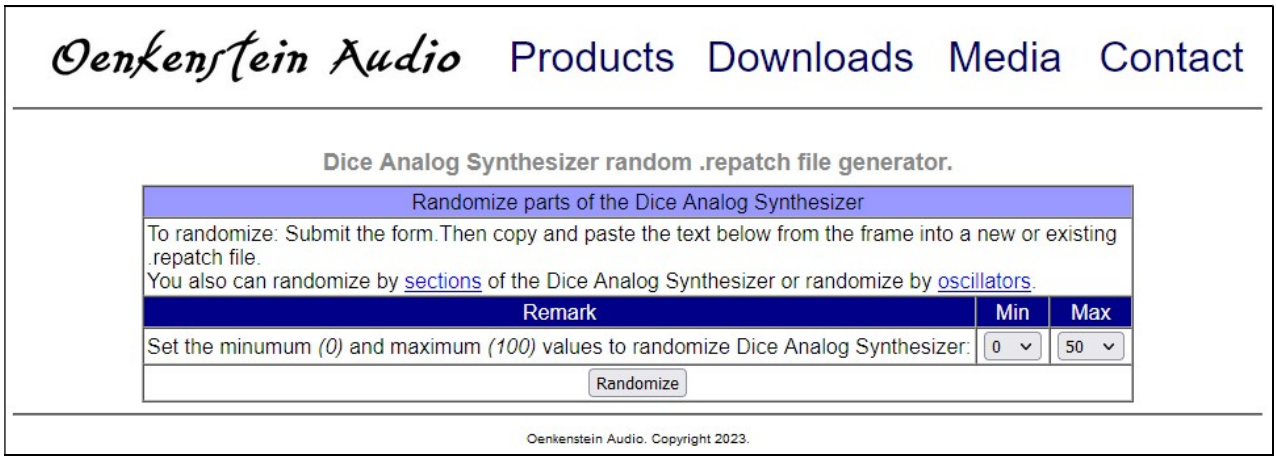
All Reason devices work with patches. Patches are stored as a text file on your computer. The text file has .repatch as file extension.



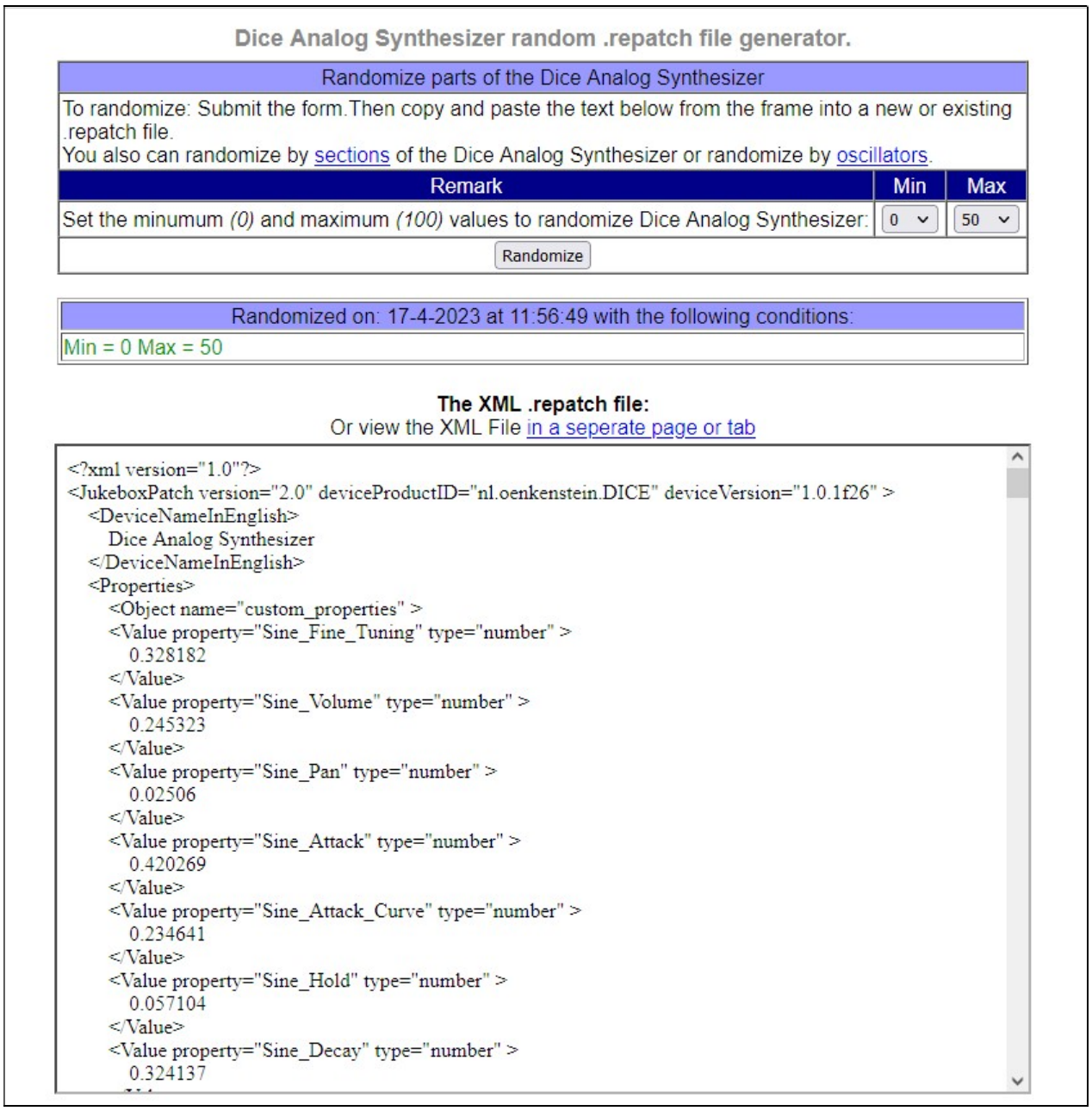
When you open the text file with a text editor you can see that it has a XML format.



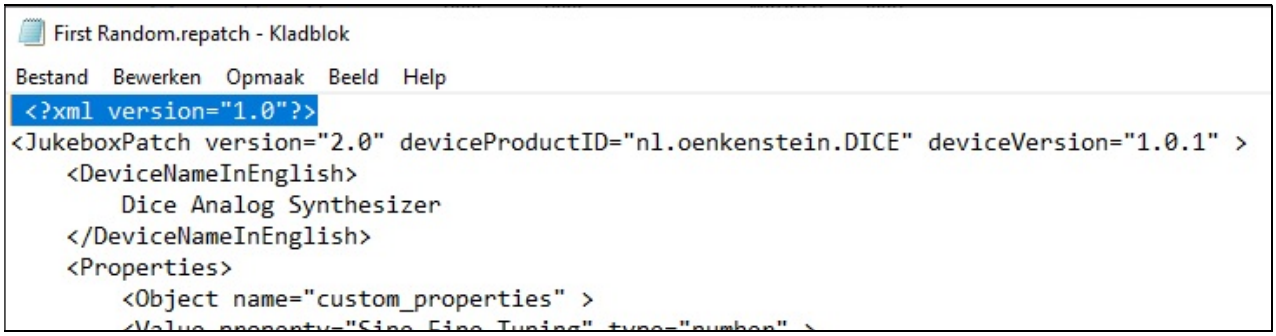
Dice Analog Synthesizer has a website where you can generate randomized XML .repatch files:
www.oenkenstein.nl/dicerandomize.asp



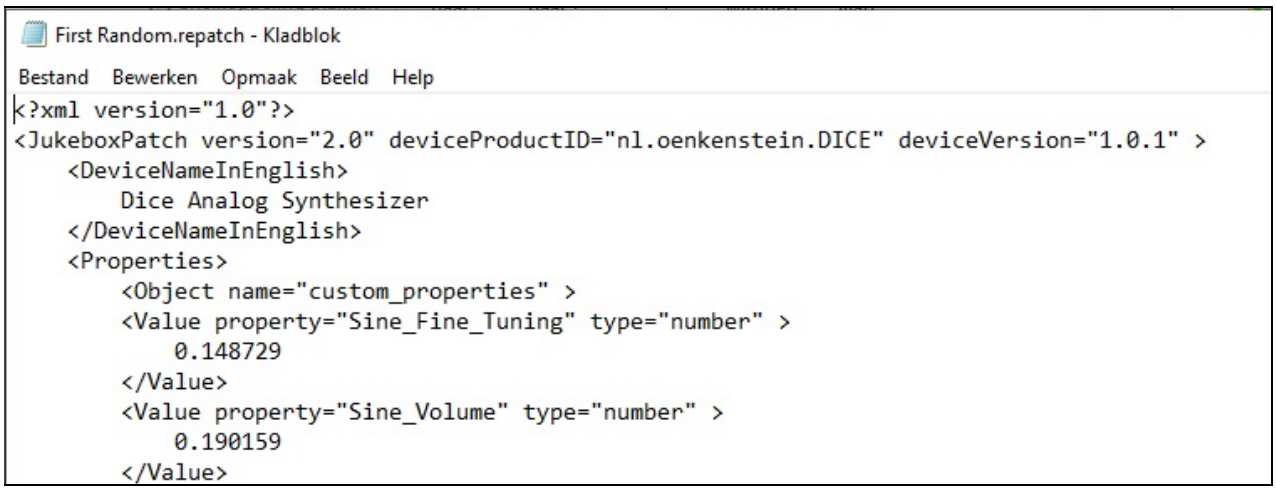
Once you have submitted the form by clicking on the Randomize button, the results are presented as an XML .repatch file in a frame.



Select the text from the frame and copy paste it into a new or existing .repatch file, which you can open with a text editor. If you have selected all the text in one go, remove the space in front of the first line of the pasted text after the pasting.

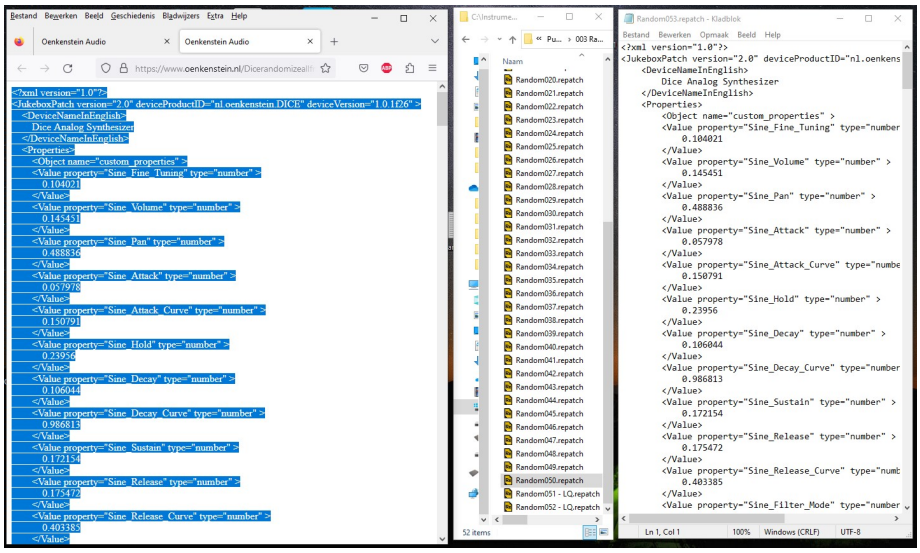


Then the text should look like this:



Now save the .repatch file with a suitable name and load the patch in Dice Analog Synthesizer.

You can also view the results in a separate tab or window and copy / paste the text in a .repatch file. When you press F5 or refresh the web browser tab or page, the results get randomized again. This allows you to make a lot of randomized patches in a short time as you do not have enter all the questions in the form again.



A result in Reason:

6.2 Patch List

List of all the patches released with the Dice Analog Synthesizer Rack Extension. Included are 160 signature patches made by 3 sound designers.

Please notice: 30 combinator patches in the '002 Combinators Reason 12' folder require Reason 12.

The following combinator patches in the '002 Combinators Reason 12' folders are using 5 third party Rack Extensions, which are free to download:

- Janittor CV Shaper by Lectric Panda LLC in the patch Bass - RUN - Acid Machine - LQ.
  https://www.reasonstudios.com/shop/rack-extension/janitor-cv-shaper/
- Janittor CV Shaper by Lectric Panda LLC in the patch Bass - RUN – Random Acid Machine - LQ.
  https://www.reasonstudios.com/shop/rack-extension/janitor-cv-shaper/
- Janittor CV Shaper by Lectric Panda LLC in the patch Drone - Endless Waiting - LQ.cmb
  https://www.reasonstudios.com/shop/rack-extension/janitor-cv-shaper/
- Janittor CV Shaper by Lectric Panda LLC in the patch FX - Frequency Shift - LQ.cmb
  https://www.reasonstudios.com/shop/rack-extension/janitor-cv-shaper/
- Miranda CV Delay Merger by Jiggery-Pokery Sound in the patch Drone - Sick – LQ.cmb.
  https://www.reasonstudios.com/shop/rack-extension/miranda-cv-delay-merger/
- Lolth CV Delay Splitter by Jiggery-Pokery Sound in the patch FX - Bender – LQ.cmb.

https://www.reasonstudios.com/shop/rack-extension/lolth-cv-delay-splitter/

- Lolth CV Delay Splitter by Jiggery-Pokery Sound in the patch FX - Doomwanderer - LQ.cmb.
  https://www.reasonstudios.com/shop/rack-extension/lolth-cv-delay-splitter/

- GClip Waveshaping Clipper by GVXT LTD in the patch Keys - Trance Anthem – LQ.cmb.
  https://www.reasonstudios.com/shop/rack-extension/gclip-waveshaping-clipper/

- kHs Trance Gate by Kilohearts AB in the patch Keys - Trancy Arps – LQ.cmb.
  https://www.reasonstudios.com/shop/rack-extension/khs-trance-gate/

The following 12 combinators have a 'RUN' button:

- Bass - RUN - Acid Machine – LQ
- Bass - RUN - Random Acid Machine – LQ
- Bass - The Lucky One – LQ
- Drum - RUN - Kick
- FX - Doomwanderer – LQ
- FX - Frequency Shift – LQ
- Lead - Dice Cube Runner – LQ
- Lead - Psycholine – LQ
- Perc - High Hats – LQ
- Perc - RUN - Elektro Drumkit
- Pluck - Jumping Arps – LQ
- Pluck - Jumping Jack – LQ

6.3 The sound designers

- Loque (LQ).
  Loque provided most of the patches and created a lot of Reason12 RUN combinators aimed for the specific house, techno and trance genres.
- Bes (Bes).
  Bes made 6 patches. The Reason 12 combinator Piano Bouncey is a light electronic piano and is an example of all the Bes patches: A short attack and decay, but with interesting sustain and release.
- Oenkenstein.
  He made some bread and butter patches. In each folder there is at least one Oenkenstein patch. The patches are made as a starting point for randomisation for each type of instrument.

6.4 The Patches

001 Combinators Reason 10
002 Combinators Reason 12
003 Random Generated by Website
Bass
FX
Keys
Lead
Pad
Perc
Pluck
Bass - Pad.repatch
Bass - Ruff - LQ.repatch
FX - Winter.repatch
Keys - Continental.repatch
Keys - Impacting and Bright - bes.repatch
Keys - Organick - LQ.repatch
Lead - Slide21 - LQ.repatch

Lead - Super - LQ.repatch
Pad - Burst - LQ.repatch
Pad - Gliding Through the Bend.repatch
Pad - Random Through the Bend.repatch
Pad - Soft Piano - LQ.repatch
Pad - Start Randomizing.repatch
001 Combinators Reason 10\Bass- High Mod - LQ.cmb
001 Combinators Reason 10\Dice Init Patch.cmb
001 Combinators Reason 10\Drum - RUN - Kick.cmb
001 Combinators Reason 10\FX - Glassdrops - LQ.cmb
001 Combinators Reason 10\Pad - Start Randomizing.cmb
002 Combinators Reason 12\Bass - High Mod - LQ.cmb
002 Combinators Reason 12\Bass - RUN - Acid Machine - LQ.cmb
002 Combinators Reason 12\Bass - RUN - Random Acid Machine - LQ.cmb
002 Combinators Reason 12\Bass - The Lucky One - LQ.cmb
002 Combinators Reason 12\Dice Init Reason 12 Frequency.cmb
002 Combinators Reason 12\Drone - Endless Waiting - LQ.cmb
002 Combinators Reason 12\Drone - Hidden Brainfog -LQ.cmb
002 Combinators Reason 12\Drone - Sick - LQ.cmb
002 Combinators Reason 12\FX - Bender - LQ.cmb
002 Combinators Reason 12\FX - Delayed Oscillators.cmb
002 Combinators Reason 12\FX - Diceboy -LQ.cmb
002 Combinators Reason 12\FX - Doomwanderer - LQ.cmb
002 Combinators Reason 12\FX - Frequency Shift - LQ.cmb
002 Combinators Reason 12\FX - Glassdrops.cmb
002 Combinators Reason 12\FX - Jaja -LQ.cmb
002 Combinators Reason 12\FX - Throw the Dice.cmb
002 Combinators Reason 12\Keys - Dicey - Bes.cmb
002 Combinators Reason 12\Keys - External Output.cmb
002 Combinators Reason 12\Keys - Piano Bouncey - Bes.cmb
002 Combinators Reason 12\Keys - Saw Formant.cmb
002 Combinators Reason 12\Keys - Trance Anthem - LQ.cmb
002 Combinators Reason 12\Keys - Trance Arps - LQ.cmb
002 Combinators Reason 12\Keys - Trancy Arps - LQ.cmb
002 Combinators Reason 12\Lead - Dice Cube Runner - LQ.cmb
002 Combinators Reason 12\Lead - Psycholine - LQ.cmb
002 Combinators Reason 12\Pad - Passionated Gate - LQ.cmb
002 Combinators Reason 12\Perc - High Hats - LQ.cmb
002 Combinators Reason 12\Perc - RUN - Elektro Drumkit.cmb
002 Combinators Reason 12\Pluck - Jumping Arps - LQ.cmb
002 Combinators Reason 12\Pluck - Jumping Jack - LQ.cmb
003 Random Generated by Website\Random001.repatch
003 Random Generated by Website\Random002.repatch
003 Random Generated by Website\Random003.repatch
003 Random Generated by Website\Random004.repatch
003 Random Generated by Website\Random005.repatch
003 Random Generated by Website\Random006.repatch
003 Random Generated by Website\Random007.repatch
003 Random Generated by Website\Random008.repatch
003 Random Generated by Website\Random009.repatch
003 Random Generated by Website\Random010.repatch
003 Random Generated by Website\Random011.repatch
003 Random Generated by Website\Random012.repatch
003 Random Generated by Website\Random013.repatch

003 Random Generated by Website\Random014.repatch
003 Random Generated by Website\Random015.repatch
003 Random Generated by Website\Random016.repatch
003 Random Generated by Website\Random017.repatch
003 Random Generated by Website\Random018.repatch
003 Random Generated by Website\Random019.repatch
003 Random Generated by Website\Random020.repatch
003 Random Generated by Website\Random021.repatch
003 Random Generated by Website\Random022.repatch
003 Random Generated by Website\Random023.repatch
003 Random Generated by Website\Random024.repatch
003 Random Generated by Website\Random025.repatch
003 Random Generated by Website\Random026.repatch
003 Random Generated by Website\Random027.repatch
003 Random Generated by Website\Random028.repatch
003 Random Generated by Website\Random029.repatch
003 Random Generated by Website\Random030.repatch
003 Random Generated by Website\Random031.repatch
003 Random Generated by Website\Random032.repatch
003 Random Generated by Website\Random033.repatch
003 Random Generated by Website\Random034.repatch
003 Random Generated by Website\Random035.repatch
003 Random Generated by Website\Random036.repatch
003 Random Generated by Website\Random037.repatch
003 Random Generated by Website\Random038.repatch
003 Random Generated by Website\Random039.repatch
003 Random Generated by Website\Random040.repatch
003 Random Generated by Website\Random041.repatch
003 Random Generated by Website\Random042.repatch
003 Random Generated by Website\Random043.repatch
003 Random Generated by Website\Random044.repatch
003 Random Generated by Website\Random045.repatch
003 Random Generated by Website\Random046.repatch
003 Random Generated by Website\Random047.repatch
003 Random Generated by Website\Random048.repatch
003 Random Generated by Website\Random049.repatch
003 Random Generated by Website\Random050.repatch
003 Random Generated by Website\Random051 - LQ.repatch
003 Random Generated by Website\Random052 - LQ.repatch
Bass\Bass - Analog.repatch
Bass\Bass - Bass.repatch
Bass\Bass - Blob - LQ.repatch
Bass\Bass - Contra - LQ.repatch
Bass\Bass - Down - LQ.repatch
Bass\Bass - Dull Vinyl - LQ.repatch
Bass\Bass - Juicy - LQ.repatch
Bass\Bass - Old Computer - LQ.repatch
Bass\Bass - Old Computer Later - LQ.repatch
Bass\Bass - Plopp - LQ.repatch
Bass\Bass - Pumping Heart - LQ.repatch
Bass\Bass - Reso - LQ.repatch
Bass\Bass - Ruff Phase - LQ.repatch
Bass\Bass - Sweating Pulse - LQ.repatch
Bass\Bass - Wobber - LQ.repatch

Bass\Bass - Wobble - LQ.repatch
FX\FX - Brassdude - LQ.repatch
FX\FX - Eerie.repatch
FX\FX - Fadin - LQ.repatch
FX\FX - Glassdrops - LQ.repatch
FX\FX - Metalstick - LQ.repatch
FX\FX - Mimicrap - LQ.repatch
FX\FX - Sprinting Ball - LQ.repatch
FX\FX - Tip - LQ.repatch
FX\FX - Wind Wave.repatch
Keys\Keys - Arpy Voice.repatch
Keys\Keys - Elektronika.repatch
Keys\Keys - Harmonium.repatch
Keys\Keys - Keys.repatch
Keys\Keys - Sweaty - bes.repatch
Keys\Keys - Talking Organ.repatch
Keys\Keys - Voxy Bassy.repatch
Keys\Keys - Warm Aah.repatch
Keys\Keys - Wow Wave.repatch
Lead\Lead - Mono Lead.repatch
Lead\Lead - Shif-Ting - LQ.repatch
Lead\Lead - Sweatheart - LQ.repatch
Lead\Lead - The Noise - LQ.repatch
Pad\Pad - Cold Air - LQ.repatch
Pad\Pad - Sad - LQ.repatch
Pad\Pad - Starmarine - LQ.repatch
Pad\Pad - Starmarine Brilliance - LQ.repatch
Pad\Pad - Tweety vs Tom - LQ.repatch
Pad\Pad - Warm Pad.repatch
Perc\Perc - Bella - LQ.repatch
Perc\Perc - Conga - LQ.repatch
Perc\Perc - Electro Kick - LQ.repatch
Perc\Perc - HiHats - LQ.repatch
Perc\Perc - Kick Subby.repatch
Perc\Perc - Snare.repatch
Perc\Perc - Synth in a Sink - Bes.repatch
Perc\Perc - The Old Phone and Drum patch - bes.repatch
Pluck\Pluck - Inharmonic Bell - LQ.repatch
Pluck\Pluck - My Friend - LQ.repatch
Pluck\Pluck - Reasonate (Slapback) - LQ.repatch
Pluck\Pluck - Reasonate - LQ.repatch
Pluck\Pluck - The Lil Strum - LQ.repatch
Pluck\Pluck - Toy Piano - LQ.repatch
Pluck\Pluck - Vibrorgan - LQ.repatch
Pluck\Pluck - Wodd Player - LQ.repatch

7 Credits

- Reasontalk, for the beta test forum hosting.
- Reason Studios for their support.
- Loque and Bes, signature patches.
- Anne, who gave me the parts of a speaking doll, who could randomly say short sentences.
- NoiseShadow for 2 free available refills with more then 5000 randomized patches: Diced_Patches_v1.zip and Diced_Patches_v2.zip.
- All the beta testers.

8 MIDI Implementation Chart

In the table below, first the MIDI CC Number is mentioned and is followed by the name of the function in Dice Analog Synthesizer:

[12] Randomize_Switch
[13] Percentage
[14] Filters_Switch
[15] Shifter_Switch
[16] Sine_Tuning
[17] Sine_Fine_Tuning
[18] Sine_Volume
[19] Sine_Pan
[20] Sine_Attack
[21] Sine_Attack_Curve
[22] Sine_Hold
[23] Sine_Decay
[24] Sine_Decay_Curve
[25] Sine_Sustain
[26] Sine_Release
[27] Sine_Release_Curve
[28] Sine_Filter_Mode
[29] Sine_Filter_Key_Tracking
[30] Sine_Filter_Cutoff
[31] Sine_Filter_Cutoff_Mod_Source
[33] Sine_Filter_Cutoff_Mod_Amount
[34] Sine_Filter_Reso
[35] Sine_Shifter_Mix
[36] Sine_Shifter
[37] Sine_Shifter_Mod_Source
[39] Sine_Shifter_Mod_Amount
[40] Sine_Shifter_Range
[41] Sine_Shifter_Feedback
[42] Sine_Shifter_Mode
[43] Send_Sine_To
[44] Sine_Bend
[45] Pulse_Width
[46] Pulse_Tuning
[47] Pulse_Fine_Tuning
[48] Pulse_Volume
[49] Pulse_Pan
[50] Pulse_Attack
[51] Pulse_Attack_Curve
[52] Pulse_Hold
[53] Pulse_Decay
[54] Pulse_Decay_Curve
[55] Pulse_Sustain
[56] Pulse_Release
[57] Pulse_Release_Curve
[58] Pulse_Filter_Mode
[59] Pulse_Filter_Key_Tracking
[60] Pulse_Filter_Cutoff
[61] Pulse_Filter_Cutoff_Mod_Source
[62] Pulse_Filter_Cutoff_Mod_Amount
[63] Pulse_Filter_Reso

[65] Pulse_Shifter_Mix
[66] Pulse_Shifter
[67] Pulse_Shifter_Mod_Source
[68] Pulse_Shifter_Mod_Amount
[69] Pulse_Shifter_Range
[70] Pulse_Shifter_Feedback
[71] Pulse_Shifter_Mode
[72] Send_Pulse_To
[73] Pulse_Bend
[74] Triangle_Tuning
[75] Triangle_Fine_Tuning
[76] Triangle_Volume
[77] Triangle_Pan
[78] Triangle_Attack
[79] Triangle_Attack_Curve
[80] Triangle_Hold
[81] Triangle_Decay
[82] Triangle_Decay_Curve
[83] Triangle_Sustain
[84] Triangle_Release
[85] Triangle_Release_Curve
[86] Triangle_Filter_Mode
[87] Triangle_Filter_Key_Tracking
[88] Triangle_Filter_Cutoff
[89] Triangle_Filter_Cutoff_Mod_Source
[90] Triangle_Filter_Cutoff_Mod_Amount
[91] Triangle_Filter_Reso
[92] Triangle_Shifter_Mix
[93] Triangle_Shifter
[94] Triangle_Shifter_Mod_Source
[95] Triangle_Shifter_Mod_Amount
[102] Triangle_Shifter_Range
[103] Triangle_Shifter_Feedback
[104] Triangle_Shifter_Mode
[105] Send_Triangle_To
[106] Triangle_Bend
[107] Sub_Tuning
[108] Sub_Fine_Tuning
[109] Sub_Volume
[110] Sub_Pan
[111] Sub_Attack
[112] Sub_Attack_Curve
[113] Sub_Hold
[114] Sub_Decay
[115] Sub_Decay_Curve
[116] Sub_Sustain
[117] Sub_Release
[118] Sub_Release_Curve
[119] Sub_Filter_Mode
[128] Sub_Filter_Key_Tracking
[129] Sub_Filter_Cutoff
[130] Sub_Filter_Cutoff_Mod_Source
[131] Sub_Filter_Cutoff_Mod_Amount
[132] Sub_Filter_Reso

[133] Sub_Shifter_Mix
[134] Sub_Shifter
[135] Sub_Shifter_Mod_Source
[136] Sub_Shifter_Mod_Amount
[137] Sub_Shifter_Range
[138] Sub_Shifter_Feedback
[139] Sub_Shifter_Mode
[140] Send_Sub_To
[141] Sub_Bend
[142] Noise_Type
[143] Noise_Volume
[144] Noise_Pan
[145] Noise_Attack
[146] Noise_Attack_Curve
[147] Noise_Hold
[148] Noise_Decay
[149] Noise_Decay_Curve
[150] Noise_Sustain
[151] Noise_Release
[152] Noise_Release_Curve
[153] Noise_Filter_Mode
[154] Noise_Filter_Key_Tracking
[155] Noise_Filter_Cutoff
[156] Noise_Filter_Cutoff_Mod_Source
[157] Noise_Filter_Cutoff_Mod_Amount
[158] Noise_Filter_Reso
[159] Noise_Shifter_Mix
[160] Noise_Shifter
[161] Noise_Shifter_Mod_Source
[162] Noise_Shifter_Mod_Amount
[163] Noise_Shifter_Range
[164] Noise_Shifter_Feedback
[165] Noise_Shifter_Mode
[166] Send_Noise_To
[167] Super_Saw_Amount
[168] Super_Saw_Tuning
[169] Super_Saw_Fine_Tuning
[170] Super_Saw_Volume
[171] Super_Saw_Pan
[172] Super_Saw_Attack
[173] Super_Saw_Attack_Curve
[174] Super_Saw_Hold
[175] Super_Saw_Decay
[176] Super_Saw_Decay_Curve
[177] Super_Saw_Sustain
[178] Super_Saw_Release
[179] Super_Saw_Release_Curve
[180] Super_Saw_Filter_Mode
[181] Super_Saw_Filter_Key_Tracking
[182] Super_Saw_Filter_Cutoff
[183] Super_Saw_Filter_Cutoff_Mod_Source
[184] Super_Saw_Filter_Cutoff_Mod_Amount
[185] Super_Saw_Filter_Reso
[186] Super_Saw_Shifter_Mix

[187] Super_Saw_Shifter
[188] Super_Saw_Shifter_Mod_Source
[189] Super_Saw_Shifter_Mod_Amount
[190] Super_Saw_Shifter_Range
[191] Super_Saw_Shifter_Feedback
[192] Super_Saw_Shifter_Mode
[193] Send_Super_Saw_To
[194] Super_Saw_Bend
[195] Pitch_Wheel_Amount
[196] Pitch_Wheel_Destination
[197] Bend_Depth
[198] Bend_Attack
[199] Bend_Attack_Curve
[200] Bend_Hold
[201] Bend_Decay
[202] Bend_Decay_Curve
[203] Bend_Sustain
[204] Bend_Release
[205] Bend_Release_Curve
[206] LFO_Shape
[207] LFO_Rate
[208] LFO_Sync_Switch
[209] LFO_Rate_Synced
[210] LFO_Retrigger_Switch
[211] Glide_Time
[212] Glide_Time_Mod_Source
[213] Glide_Time_Mod_Amount
[214] Glide_Mode
[215] Delay_Switch
[216] Delay_Time
[217] Delay_Sync_Switch
[218] Delay_Sync
[219] Delay_Feedback
[220] Delay_Ratio
[221] Delay_Damping
[222] Delay_Mix
[223] Send_Delay_To
[224] Reverb_Switch
[225] Reverb_Time
[226] Reverb_Pre_Delay
[227] Reverb_Damping
[228] Reverb_Mix
[229] Chorus_Switch
[230] Chorus_Modulation_Type
[231] Chorus_Rate
[232] Chorus_Depth
[233] Chorus_Delay
[234] Chorus_Voices_Amount
[235] Chorus_Mix
[236] Send_Chorus_To
[237] Mono_Poly
[238] Master_Tuning
[239] Master_Volume

9 Device Remote information

Scope

Manufacturer	Model
Oenkenstein Audio	nl.oenkenstein.DICE

Remotable	Min	Max	Input type	Output type
Sine Tuning	0	4194304	Value	ValueOutput
Sine Fine Tuning	0	4194304	Value	ValueOutput
Sine Volume	0	4194304	Value	ValueOutput
Sine Pan	0	4194304	Value	ValueOutput
Sine Attack	0	4194304	Value	ValueOutput
Sine Attack Curve	0	4194304	Value	ValueOutput
Sine Hold	0	4194304	Value	ValueOutput
Sine Decay	0	4194304	Value	ValueOutput
Sine Decay Curve	0	4194304	Value	ValueOutput
Sine Sustain	0	4194304	Value	ValueOutput
Sine Release	0	4194304	Value	ValueOutput
Sine Release Curve	0	4194304	Value	ValueOutput
Sine Filter Mode	0	5	Value	ValueOutput
Sine Key Filter Tracking	0	4194304	Value	ValueOutput
Sine Filter Cutoff	0	4194304	Value	ValueOutput
Sine Filter Cutoff Mod Source	0	13	Value	ValueOutput
Sine Filter Cutoff Mod Amount	0	4194304	Value	ValueOutput
Sine Filter Reso	0	4194304	Value	ValueOutput
Sine Shifter Mix	0	4194304	Value	ValueOutput
Sine Shifter	0	4194304	Value	ValueOutput
Sine Shifter Mod Source	0	12	Value	ValueOutput
Sine Shifter Mod Amount	0	4194304	Value	ValueOutput
Sine Shifter Range	0	4194304	Value	ValueOutput
Sine Shifter Feedback	0	4194304	Value	ValueOutput
Sine Shifter Mode	0	3	Value	ValueOutput
Send Sine To	0	4	Value	ValueOutput
Sine Bend	0	1	Toggle	ValueOutput
Pulse Width	0	4194304	Value	ValueOutput
Pulse Tuning	0	4194304	Value	ValueOutput
Pulse Fine Tuning	0	4194304	Value	ValueOutput
Pulse Volume	0	4194304	Value	ValueOutput
Pulse Pan	0	4194304	Value	ValueOutput
Pulse Attack	0	4194304	Value	ValueOutput
Pulse Attack Curve	0	4194304	Value	ValueOutput
Pulse Hold	0	4194304	Value	ValueOutput
Pulse Decay	0	4194304	Value	ValueOutput
Pulse Decay Curve	0	4194304	Value	ValueOutput
Pulse Sustain	0	4194304	Value	ValueOutput
Pulse Release	0	4194304	Value	ValueOutput
Pulse Release Curve	0	4194304	Value	ValueOutput
Pulse Filter Mode	0	5	Value	ValueOutput
Pulse Filter Key Tracking	0	4194304	Value	ValueOutput
Pulse Filter Cutoff	0	4194304	Value	ValueOutput
Pulse Filter Cutoff Mod Source	0	13	Value	ValueOutput
Pulse Filter Cutoff Mod Amount	0	4194304	Value	ValueOutput
Pulse Filter Reso	0	4194304	Value	ValueOutput

Pulse Shifter Mix	0	4194304	Value	ValueOutput
Pulse Shifter	0	4194304	Value	ValueOutput
Pulse Shifter Mod Source	0	12	Value	ValueOutput
Pulse Shifter Mod Amount	0	4194304	Value	ValueOutput
Pulse Shifter Range	0	4194304	Value	ValueOutput
Pulse Shifter Feedback	0	4194304	Value	ValueOutput
Pulse Shifter Mode	0	3	Value	ValueOutput
Send Pulse To	0	4	Value	ValueOutput
Pulse Bend	0	1	Toggle	ValueOutput
Triangle Tuning	0	4194304	Value	ValueOutput
Triangle Fine Tuning	0	4194304	Value	ValueOutput
Triangle Volume	0	4194304	Value	ValueOutput
Triangle Pan	0	4194304	Value	ValueOutput
Triangle Attack	0	4194304	Value	ValueOutput
Triangle Attack Curve	0	4194304	Value	ValueOutput
Triangle Hold	0	4194304	Value	ValueOutput
Triangle Decay	0	4194304	Value	ValueOutput
Triangle Decay Curve	0	4194304	Value	ValueOutput
Triangle Sustain	0	4194304	Value	ValueOutput
Triangle Release	0	4194304	Value	ValueOutput
Triangle Release Curve	0	4194304	Value	ValueOutput
Triangle Filter Mode	0	5	Value	ValueOutput
Triangle Filter Key Tracking	0	4194304	Value	ValueOutput
Triangle Filter Cutoff	0	4194304	Value	ValueOutput
Triangle Filter Cutoff Mod Source	0	13	Value	ValueOutput
Triangle Filter Cutoff Mod Amount	0	4194304	Value	ValueOutput
Triangle Filter Reso	0	4194304	Value	ValueOutput
Triangle Shifter Mix	0	4194304	Value	ValueOutput
Triangle Shifter	0	4194304	Value	ValueOutput
Triangle Shifter Mod Source	0	12	Value	ValueOutput
Triangle Shifter Mod Amount	0	4194304	Value	ValueOutput
Triangle Shifter Range	0	4194304	Value	ValueOutput
Triangle Shifter Feedback	0	4194304	Value	ValueOutput
Triangle Shifter Mode	0	3	Value	ValueOutput
Send Triangle To	0	4	Value	ValueOutput
Triangle Bend	0	1	Toggle	ValueOutput
Sub Tuning	0	4194304	Value	ValueOutput
Sub Fine Tuning	0	4194304	Value	ValueOutput
Sub Volume	0	4194304	Value	ValueOutput
Sub Pan	0	4194304	Value	ValueOutput
Sub Attack	0	4194304	Value	ValueOutput
Sub Attack Curve	0	4194304	Value	ValueOutput
Sub Hold	0	4194304	Value	ValueOutput
Sub Decay	0	4194304	Value	ValueOutput
Sub Decay Curve	0	4194304	Value	ValueOutput
Sub Sustain	0	4194304	Value	ValueOutput
Sub Release	0	4194304	Value	ValueOutput
Sub Release Curve	0	4194304	Value	ValueOutput
Sub Filter Mode	0	5	Value	ValueOutput
Sub Filter Key Tracking	0	4194304	Value	ValueOutput
Sub Filter Cutoff	0	4194304	Value	ValueOutput
Sub Filter Cutoff Mod Source	0	13	Value	ValueOutput
Sub Filter Cutoff Mod Amount	0	4194304	Value	ValueOutput
Sub Filter Reso	0	4194304	Value	ValueOutput

Sub Shifter Mix	0	4194304	Value	ValueOutput
Sub Shifter	0	4194304	Value	ValueOutput
Sub Shifter Mod Source	0	12	Value	ValueOutput
Sub Shifter Mod Amount	0	4194304	Value	ValueOutput
Sub Shifter Range	0	4194304	Value	ValueOutput
Sub Shifter Feedback	0	4194304	Value	ValueOutput
Sub Shifter Mode	0	3	Value	ValueOutput
Send Sub To	0	4	Value	ValueOutput
Sub Bend	0	1	Toggle	ValueOutput
Noise Type	0	3	Value	ValueOutput
Noise Volume	0	4194304	Value	ValueOutput
Noise Pan	0	4194304	Value	ValueOutput
Noise Attack	0	4194304	Value	ValueOutput
Noise Attack Curve	0	4194304	Value	ValueOutput
Noise Hold	0	4194304	Value	ValueOutput
Noise Decay	0	4194304	Value	ValueOutput
Noise Decay Curve	0	4194304	Value	ValueOutput
Noise Sustain	0	4194304	Value	ValueOutput
Noise Release	0	4194304	Value	ValueOutput
Noise Release Curve	0	4194304	Value	ValueOutput
Noise Filter Mode	0	5	Value	ValueOutput
Noise Filter Key Tracking	0	4194304	Value	ValueOutput
Noise Filter Cutoff	0	4194304	Value	ValueOutput
Noise Filter Cutoff Mod Source	0	13	Value	ValueOutput
Noise Filter Cutoff Mod Amount	0	4194304	Value	ValueOutput
Noise Filter Reso	0	4194304	Value	ValueOutput
Noise Shifter Mix	0	4194304	Value	ValueOutput
Noise Shifter	0	4194304	Value	ValueOutput
Noise Shifter Mod Source	0	12	Value	ValueOutput
Noise Shifter Mod Amount	0	4194304	Value	ValueOutput
Noise Shifter Range	0	4194304	Value	ValueOutput
Noise Shifter Feedback	0	4194304	Value	ValueOutput
Noise Shifter Mode	0	3	Value	ValueOutput
Send Noise To	0	4	Value	ValueOutput
Super Saw Amount	0	6	Value	ValueOutput
Super Saw Tuning	0	4194304	Value	ValueOutput
Super Saw Fine Tuning	0	4194304	Value	ValueOutput
Super Saw Volume	0	4194304	Value	ValueOutput
Super Saw Pan	0	4194304	Value	ValueOutput
Super Saw Attack	0	4194304	Value	ValueOutput
Super Saw Attack Curve	0	4194304	Value	ValueOutput
Super Saw Hold	0	4194304	Value	ValueOutput
Super Saw Decay	0	4194304	Value	ValueOutput
Super Saw Decay Curve	0	4194304	Value	ValueOutput
Super Saw Sustain	0	4194304	Value	ValueOutput
Super Saw Release	0	4194304	Value	ValueOutput
Super Saw Release Curve	0	4194304	Value	ValueOutput
Super Saw Filter Mode	0	5	Value	ValueOutput
Super Saw Filter Key Tracking	0	4194304	Value	ValueOutput
Super Saw Filter Cutoff	0	4194304	Value	ValueOutput
Super Saw Filter Cutoff Mod Source	0	13	Value	ValueOutput
Super Saw Filter Cutoff Mod Amount	0	4194304	Value	ValueOutput
Super Saw Filter Reso	0	4194304	Value	ValueOutput
Super Saw Shifter Mix	0	4194304	Value	ValueOutput

Super Saw Shifter	0	4194304	Value	ValueOutput
Super Saw Shifter Mod Source	0	12	Value	ValueOutput
Super Saw Shifter Mod Amount	0	4194304	Value	ValueOutput
Super Saw Shifter Range	0	4194304	Value	ValueOutput
Super Saw Shifter Feedback	0	4194304	Value	ValueOutput
Super Saw Shifter Mode	0	3	Value	ValueOutput
Send Super Saw To	0	4	Value	ValueOutput
Super Saw Bend	0	1	Toggle	ValueOutput
Pitch Wheel Amount	0	100	Value	ValueOutput
Pitch Wheel Destination	0	2	Value	ValueOutput
Bend Depth	0	4194304	Value	ValueOutput
Bend Attack	0	4194304	Value	ValueOutput
Bend Attack Curve	0	4194304	Value	ValueOutput
Bend Hold	0	4194304	Value	ValueOutput
Bend Decay	0	4194304	Value	ValueOutput
Bend Decay Curve	0	4194304	Value	ValueOutput
Bend Sustain	0	4194304	Value	ValueOutput
Bend Release	0	4194304	Value	ValueOutput
Bend Release Curve	0	4194304	Value	ValueOutput
LFO Shape	0	5	Value	ValueOutput
LFO Rate	0	4194304	Value	ValueOutput
LFO Sync Switch	0	1	Toggle	ValueOutput
LFO Rate Synced	0	12	Value	ValueOutput
LFO Retrigger Switch	0	1	Toggle	ValueOutput
Glide Time	0	4194304	Value	ValueOutput
Glide Time Mod Source	0	11	Value	ValueOutput
Glide Time Mod Amount	0	4194304	Value	ValueOutput
Glide Mode	0	2	Value	ValueOutput
Delay Switch	0	1	Toggle	ValueOutput
Delay Time	0	100	Value	ValueOutput
Delay Sync Switch	0	1	Toggle	ValueOutput
Delay Sync	0	12	Value	ValueOutput
Delay Feedback	0	4194304	Value	ValueOutput
Delay Ratio	0	100	Value	ValueOutput
Delay Damping	0	4194304	Value	ValueOutput
Delay Mix	0	4194304	Value	ValueOutput
Send Delay To	0	2	Value	ValueOutput
Reverb Switch	0	1	Toggle	ValueOutput
Reverb Time	0	4194304	Value	ValueOutput
Reverb Pre Delay	0	100	Value	ValueOutput
Reverb Damping	0	4194304	Value	ValueOutput
Reverb Mix	0	4194304	Value	ValueOutput
Chorus Switch	0	1	Toggle	ValueOutput
Chorus Modulation Type	0	1	Toggle	ValueOutput
Chorus Rate	0	100	Value	ValueOutput
Chorus Depth	0	100	Value	ValueOutput
Chorus Delay	0	100	Value	ValueOutput
Chorus Voices Amount	0	2	Value	ValueOutput
Chorus Mix	0	4194304	Value	ValueOutput
Send Chorus To	0	1	Toggle	ValueOutput
Mono Poly	0	1	Toggle	ValueOutput
Master Tuning	0	4194304	Value	ValueOutput
Master Volume	0	4194304	Value	ValueOutput
Randomize Switch	0	1	Toggle	ValueOutput

Percentage	0	4194304	Value	ValueOutput
Filters Switch	0	1	Toggle	ValueOutput
Shifter Switch	0	1	Toggle	ValueOutput
Mod Wheel	0	127	Value	ValueOutput
Breath Control	0	127	Value	ValueOutput
Expression	0	127	Value	ValueOutput
Sustain Pedal	0	127	Value	ValueOutput
Aftertouch	0	127	Value	ValueOutput
Pitch Bend	-8192	8191	Value	ValueOutput
Device Name	0	0	-	TextOutput
Patch Name	0	0	-	TextOutput
Select Patch Delta	0	0	Delta	TextOutput
Select Previous Patch	0	0	Trig	TextOutput
Select Next Patch	0	0	Trig	TextOutput