Oenkenstein Audio

RUMBLE K II PLAYER

Operation Manual

RUMBLE K II Player Operation Manual

Content

1 Introduction

1.1 What is Rumble K II?

Rumble K II front panel:

Rumble K II back panel:

Rumble K II is an emulation of an additive wavetable Kawai K1 digital synthesizer from 1985. This Rack Extension mimics the operation system and the naming conventions on a Kawai K1 and also contains all the default patches: 64 Single instrument patches and 32 multi instrument patches.

Rumble K II is build as a patch or instrument browser and can be used as a synthesizer. This version of the Rumble K series has some additions such as Sine, Super and Sub oscillators, a Wave Loop Shaper, an Amp Envelope section with ADSR controls, Vibrato, Auto Bend, Pitch Bend, Frequency, Filter, Keys and Velocity panels, 3 effects devices and a Modulation Matrix.

The Rumble K series derives its name from the legendary guitar 101 hero and inventor of the power chord: Link Wray, who used to poke a pencil in an amplifier speaker to get a gritty, distorted sound.

1.2   About additive wavetable synthesis

Rumble K II uses additive wavetable synthesis to generate sounds. The additive synthesis is based on four Wave Loop oscillators that can be introduced in the sound - at various times, levels and durations. The sonic results of additive synthesis can vary dramatically; from standard analog type of synthesizer sounds, via emulations of existing instruments, to extremely complex and animated timbres.

2 Front of the device

2.1 Panels overview

- **Osc** Panel (1) with:
  - Wave Loop Preset bank or Sample Select, which holds information about Wave Loops used.
  - 4 oscillator types, each type holding 4 oscillators:
    - Maximum 4 Sine oscillators with Amplitude (AM) or Ring Modulation.
    - Maximum 4 Super oscillators.
    - Maximum 4 Sub oscillators.
    - 4 additive Wave Loop oscillators.
  - Shaper to change the waveforms of the 4 oscillators. Capable of producing distortion and adding harmonics.

The output of each oscillator is then going into panels 2,4,5,6,7,8 and 9:

- **Envelope** panel (2) with:
  - Envelope Amount.
  - ADSR.
  - Release Timer to trigger events on note or key release.

- **Vibrato** or LFO panel (4), default controlled by the Modulation Wheel with:
  - Synchronisation.
  - Depth.
  - Speed.
  - Shape.
  - Aftertouch controls.

- **Auto Bend** panel (5) with:
  - Depth.

- o Time.
- o Velocity and Keyboard Scaling sensitivity.
- o Aftertouch or Pressure (Prs).
- o The Prs Destination on the Auto Bend panel has 3 destinations.

- **Pitch Bend** panel (6) to change items about the behaviour of the Pitch Bend Wheel.

- **Frequency** panel (7) with:
    - o Coarse.
    - o Fine Tuning.
    - o and Keyboard Scaling to edit the pitch of the oscillators.

- **Frequency Filter** panel (8) with:
    - o Frequency Filter section to set the Cutoff, Resonance or Q.
    - o Envelope with ADSR controls.

- **Keys** panel (9) with:
    - o Low and High Key to define the keyboard layout.
    - o Low and High Velocity.

The output of the oscillators will then pass the Effects panels.

There are 3 **Effects** Panels with:
- **Phaser** panel (10).
- **Rotary** panel (11).
- **Filter** panel (12).

The output of the oscillators, modulation and the effects will then pass the Output panel.

- **Output** panel (3) with:
    - o Octave.
    - o Panning.
    - o Key Panning.
    - o Limiter.
    - o High Frequency Correction.
    - o Poly Mode.
    - o Sustain Pedal Mode.
    - o Glide (Portamento).
    - o Glide Time.
    - o And finally the Master Volume.

- **MIDI Note indicator**.

- **Patch Browser**.

3   Panels

Rumble is divided in panels, each with one or more sections. A column of buttons, displays or knobs in panels 1,2,4,5,6,7,8 and 9, corresponds with the Wave Loop oscillator's numbering 1 to 4.

3.1   Panel 1: Osc panel

3.1.1   Section 1: Sine oscillators

The Sine Wave oscillator can be used to reinforce the fundamental or sub-octave of a voice.

- **On / Off** (Sine Osc 1 - 4 On Off): Determines whether a Sine oscillator is added to the signal chain (Scale: On / Off. Default: Off). There are 4 Sine oscillators.
  Please note: Changing the Sine oscillators Mix, Tune, Key and AM, will change all four Sine oscillators at the same time.
- **Mix** (Sine Osc Mix): Determines the Sine oscillator's volume (Scale: 0 - 100. Default: 0). The Sine oscillators mix alters the overall volume for all the 4 sine oscillators at once.
- **Tune** (Sine Osc Tune): Determines the Sine oscillator's tuning or pitch (Scale: 0 - 100. Default: 53).
  The tuning of the Sine oscillator is not exactly pitched to middle C. It is out of tune with + 10 cents. Use the sine oscillator as a source for Amplitude (AM) or Ring Modulation.
- **Key** (Sine Osc Key Track On Off): Determines whether the Sine oscillator's tuning should follow the keyboard (Scale: On / Off. Default: On).
- **AM** (Sine Osc Ring Mod On Off): Determines whether the Sine oscillator will perform Amplitude Modulation (or Ring Modulation) with the corresponding Wave Loop oscillator (Scale: On / Off. Default: Off). For example: Turn the AM button and the button for Sine oscillator 3 to on. Wave Loop oscillator 3 now acts as the carrier and gets modulated by Sine oscillator 3. When the modulator is of subsonic frequency, the result is a slow or rapid variation in the volume level of the carrier signal which is referred to as tremolo. The frequency can be changed with the Tune knob.

3.1.2   Section 2: Super oscillators

The Super oscillator module adds up to 7 detuned sawtooth waves with square wave sub-oscillators to the Wave Loops playback.

- **On / Off** (Super Osc 1 - 4 On Off): Determines whether the Super oscillator is added to the signal chain (Scale: On / Off. Default: Off). There are 4 Super oscillators.
  Please note: Changing the Super oscillators Mix, Tune, Amt and Detune, will change all four Super oscillators at the same time.
- **Mix** (Super Osc Mix): Determines the Super oscillator's volume (Scale: 0 - 100. Default: 0). The Super oscillators mix alters the overall volume for all the 4 Super oscillators at once.
- **Tune** (Super Osc Tune): Determines the Super oscillator's tuning or pitch (Scale: 0 - 100. Default: 50).
- **Amt** (Super Osc Amount): Determines the number of the sawtooth waves (Scale: 1 - 7. Default: 4).
- **Detune** (Super Osc Detune): Determines the amount of detuning between the sawtooth waves (Scale: 0 - 100. Default: 0).

3.1.3   Section 3: Sub oscillators

The Sub oscillator module adds up to 7 detuned square wave sub-oscillators in combination with the Super oscillator to the Wave Loops playback.

- **Mix** (Super Osc Sub): Determines the Sub oscillator's volume (Scale: 0 - 100. Default: 0).
- Please note: Changing the Sub oscillators Mix will change all four Sub oscillators at the same time

3.1.4   Section 4: Wave Loop oscillators

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To construct your own sounds, Rumble K II provides a Wave Loop Preset bank as a starting point, based on the default instrument patches from a Kawai K1 digital synthesizer from 1985. The Wave Loop Preset bank consists of 64 presets. The presets can be selected with the Sample Select knob (1) or by clicking in the Wave Loop Preset bank display (2).

Each Wave Loop Preset holds 4 Wave Loop oscillators.
In the example below Wave Loop 1 with number 238 (Voice) is loaded in Wave Loop oscillator 1, Wave Loop 2 with number 235 (String) in Wave Loop oscillator 2 etc.
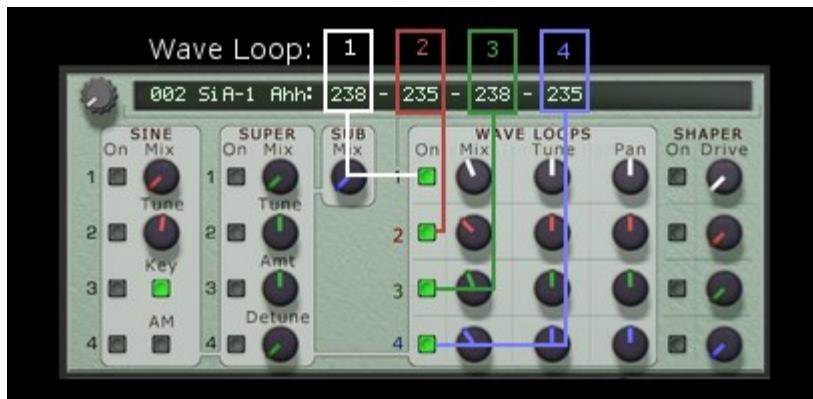
If you want to turn on Wave Loop oscillator number 1 to 4, click on the corresponding On button.

- **Sample Select** (Sample Select): Determines the Wave Loop Preset (Scale: 001 - 064. Default: 014).
- **On** (Wave Loop 1 - 4 On Off): Determines whether the Wave Loop oscillator is added to the signal chain (Scale: On / Off. Default: On).
- **Mix** (Wave Loop 1 - 4 Volume): Determines the volume of the Wave Loop oscillator (Scale: ∞ / + 12 dB. Default: ∞ for Wave Loops 1, 2 and 3 and -6 dB, for Wave Loop 4).
- **Tune** (Wave Loop 1 - 4 Tune): Determines the tuning or pitch of the Wave Loop oscillator in semitones (Scale: -36 / +36. Default: 0).
- **Pan** (Wave Loop 1 - 4 Pan): Determines the amount of panning of the Wave Loop oscillator (Scale: 0 - 100. Default: 50).

Overview Wave Loop Preset bank
A Wave Loop Preset has a preset name (004 SiA-2 12 String) and each preset holds 4 Wave Loops as a starting point to construct sounds and instruments: Wave Loop oscillators 1 to 4 (097 Clavi, 057 Digi Bass, 053 F Guitar and 217 F Guitar).

| Wave Loop Preset	Wave Loop 1	Wave Loop 2	Wave Loop 3	Wave Loop 4
001 SiA-1 Voice	221 Bowed String	238 Voice	221 Bowed String	238 Voice
002 SiA-1 Ahh	238 Voice	235 String Loop C - 15 C	238 Voice	235 String Loop C - 15 C
003 SiA-2 6 String	216 A Guitar	218 Guitar Harmo	052 A Guitar	100 A Guitar
004 SiA-2 12 String	097 Clavi	057 Digi Bass	053 F Guitar	217 F Guitar
005 SiA-3 String Pad	044 String Pad	235 String Loop C - 15 C	044 String Pad	044 String Pad
006 SiA-3 String Ens	044 String Pad	235 String Loop C - 15 C	044 String Pad	235 String Loop C - 15 C
007 SiA-4 Al's Rhodes	049 E Piano	155 E Piano	049 E Piano	155 E Piano
008 SiA-4 Digi Piano	049 E Piano	095 E Piano 2	096 E Piano 3	154 E Piano
009 SiA-5 Visitors	204 Synth	239 White Noise	169 Tube Bell	238 Voice Loop
010 SiA-5 Return Home	237 Pan Flute	238 Voice Loop	237 Pan Flute	238 Voice Loop
011 SiA-6 Pan Flute	064 Panflute	065 Harmonica	231 Pan Flute Attack	237 Pan Flute
012 SiA-6 Flute	063 Flute	001 Sinus C3	001 Sinus C3	237 Pan Flute
013 SiA-7 Trumpet	082 Trumpet	083 Trumpet	083 Trumpet	228 Trumpet
014 SiA-7 French Horn	024 Saw 11	041 French Horn Brass	041 French Horn Brass	004 Sinus C5
015 SiA-8 Gong of Kings	239 White Noise	255 Crash Alt	123 Bell	255 Crash Alt
016 SiA-8 1 Key Beat	205 Bass Drum	207 Tight Snare	211 H Hat	211 H Hat
017 SiB-1 Sitar	217 F Guitar	176 Sitar 1	177 Sitar 2	125 Sitar
018 SiB-1 Kimono	201 Koto	175 Koto	124 Koto	124 Koto
019 SiB-2 Piano 1	089 Piano 4	225 Piano	087 Piano 2	227 Piano Noise
020 SiB-2 Piano 2	090 Piano 5	088 Piano 3	087 Piano 2	227 Piano Noise

021 SiB-3 Jazz Harp	200 Harp	068 Harp	068 Harp	174 Harp E
022 SiB-3 Saxy	147 Brass	239 White Noise	078 Brass	080 Brass
023 SiB-4 Fuzz Clav	097 Clavi	156 Clavi	097 Clavi	156 Clavi
024 SiB-4 Harpsicord	157 Harpsichord 1	158 Harpsichord 2	098 Harpsichord	098 Harpsichord
025 SiB-5 Jazz Organ	072 Jazz Organ	072 Jazz Organ	003 Sinus G	006 Sinus G5
026 SiB-5 Deep Purple	139 Pipe Organ	139 Pipe Organ	139 Pipe Organ	239 White Noise
027 SiB-6 Clarinet	116 Clarinet 1	117 Clarinet 2	116 Clarinet 1	184 Pipe Organ 3 -2 C
028 SiB-6 Oboe	001 Sinus C3	118 Oboe	033 Square 1	099 Vibe
029 SiB-7 Bowed String	221 Bowed String	018 Saw 5	235 String Loop C - 15 C	018 Saw 5
030 SiB-7 Cellos	235 String Loop C - 15 C	048 E Piano	222 String Attack	046 El Grand
031 SiB-8 Pizzicato	224 Pizzicato	014 Saw 1	237 Pan Flute	014 Saw 1
032 SiB-8 Orchestra	235 String Loop C - 15 C	149 Orchestra	149 Orchestra	168 Tine
033 SiC-1 Stratocast	214 Strat Guitar C -35 C	219 Pull Bass	103 Strat 2	102 Strat 1
034 SiC-1 Steel Keys	036 Square 4	101 F Guitar	216 A Guitar	034 Square 2
035 SiC-2 Strut and Stuf	058 Pick Bass	213 Ride	238 Voice Loop	063 Flute
036 SiC-2 Club Piano	089 Piano 4	225 Piano	087 Piano 2	227 Piano Noise
037 SiC-3 Analog Brass	016 Saw 3	033 Square 1	018 Saw 5	018 Saw 5
038 SiC-3 Nasty Brass	027 Saw 14	025 Saw 12	027 Saw 14	025 Saw 12
039 SiC-4 Crocketts	226 El Grand	235 String Loop C - 15 C	235 String Loop C - 15 C	226 El Grand
040 SiC-4 Jan his Theme	174 Harp E	033 Square 1	238 Voice Loop	204 Synth
041 SiC-5 Reflection	033 Square 1	033 Square 1	235 String Loop C - 15 C	123 Bell
042 SiC-5 Ole	052 A Guitar	217 F Guitar	238 Voice Loop	235 String Loop C - 15 C
043 SiC-6 Heavy Hitter	226 El Grand	235 String Loop C - 15 C	235 String Loop C - 15 C	239 White Noise
044 SiC-6 Aftertouch	238 Voice Loop	186 Synth 2 Dis -26 C	236 Shakuhachi C - 18 C	238 Voice Loop
045 SiC-7 Terminator	237 Pan Flute	236 Shakuhach C - 18 C	231 Pan Flute Attack	254 H Hat Alt
046 SiC-7 Dragon Hall	237 Pan Flute	237 Pan Flute	237 Pan Flute	237 Pan Flute
047 SiC-8 Nomads	221 Bowed String	255 Crash Alt	235 String Loop C - 15 C	231 Pan Flute Attack
048 SiC-8 Arrangment	238 Voice Loop	235 String Loop C - 15 C	238 Voice Loop	235 String Loop C - 15 C
049 SiD-1 Ac Bass	055 Ac Bass 1	056 Ac Bass	104 Ac Bass	224 Pizzicato
050 SiD-1 Kick Bass	057 Digi Bass	226 El Grand	205 Bass Drum	216 A Guitar
051 SiD-2 Electric Bass	057 Digi Bass	105 Pull Bass 1	224 Pizzicato	216 A Guitar
052 SiD-2 Pull Bass	105 Pull Bass 1	219 Pull Bass	106 Pull Bass 2	059 Digi Bass
053 SiD-3 Marimba	076 French Horn	129 Steel Drum 1	203 Marimba C + 45 C	001 Sinus C3
054 SiD-3 Vybes	159 Vibe Dis + 2 C	051 Vibe	099 Vibe	099 Vibe
055 SiD-4 Glocken	164 Glocken 1 E + 15 C	164 Glocken 1 E + 15 C	066 Glocken	167 Tine 2 Fis + 35 C
056 SiD-4 Bellery	182 Steel Drum Ais + 13 C	001 Sinus C3	182 Steel Drum Ais + 13 C	001 Sinus C3
057 SiD-5 Steeldrums	182 Steel Drum Ais + 13 C	129 Steel Drum 1	130 Steel Drum 2	002 Sinus C
058 SiD-5 Music Box	218 Guitar Harmo	067 Tine	168 Tine	121 Oriental Bell
059 SiD-6 Kick and Snare	205 Bass Drum	206 Ac Snare	211 H Hat C	212 Crash C
060 SiD-6 Kick and E Snare	205 Bass Drum	208 E Snare	234 White Noise	208 E Snare
061 SiD-7 A Tom and Hi Hat	211 H Hat	211 H Hat	210 Ac Tom	239 White Noise
062 SiD-7 E Tom and Hi Hat	211 H Hat	211 H Hat	210 Ac Tom	239 White Noise
063 SiD-8 Ahh	001 Sinus C3	235 String Loop C - 15 C	238 Voice Loop	235 String Loop C - 15 C
064 SiD-8 Cymbals	212 Crash	213 Ride	213 Ride	123 Bell

*** Wave Loops without mentioning a note like Ais or Dis behind their name are all tuned C3. Some
Wave Loop names like '**186 Synth 2 Dis -26 C**' have a number behind their name followed by a capital 'C'.
The number indicates the Fine Tune correction needed measured in Cents (-26) to make the Wave
Loop sound in tune with the Wave Loop's names note (Dis).**

3.1.5 Section 5: Shaper

This is a very powerful sound shaping tool, providing fully customizable wave shaping, capable of producing distortion and harmonics. The Shaper in Rumble K II has a sine curve:

- **On / Off** (Osc 1 - 4 Shaper On Off): Determines whether the Shaper is added to the signal chain (Scale: On / Off. Default: Off).
- **Drive** (Osc 1 - 4 Shaper Drive): Determines the amount of waveshaping. More drive, more waveshaping / distortion. The Shaper has a heavy output if you turn it On or Off, as no automatic gain reduction is applied. Set or decrease the Wave Loop volume or mix by hand, when the Shaper Drive is increased. To avoid a sudden increase in volume when the Shaper is turned On, the Shaper Drive is set to 0 as default (Scale: 0 - 100. Default: 0).

3.2 Panel 2: Envelope panel

3.2.1 Section: Envelope

- **Amt** (Osc 1 - 4 Envelope Amount). Determines the amount the amp envelope affects the Wave Loop (Scale: 0 - 100. Default: 100).
- **Att** (Osc 1 - 4 Envelope Attack). Determines the time that a sound takes to peak (Scale: 0 - 100. Default: 0).
- **Dec** (Osc 1 - 4 Envelope Decay). Determines the time that the sound takes to fall from the peak to the sustain level (Scale: 0 - 100. Default: 100). Some Wave Loops produce a short click when the Decay is set to 0. When the Decay is set to 0,4 %, the click will be gone.
- **Sus** (Osc 1 - 4 Envelope Sustain). Determines the volume (relative to the peak) when the key is held down (Scale: ∞ / 0 dB. Default: 0 dB).
- **Rel** (Osc 1 - 4 Envelope Release). Determines the time the sound takes to die out after the key is released (Scale: 0 - 100. Default: 49,9).
- **Timer** (Osc 1 - 4 Release Timer). Used as a modulation source for attenuation of release-triggered voices depending on how long the note was held (Scale: 0 - 100. Default: 0).

Example of the Release Timer as a source in the Modulation Matrix on the back panel:

The result: All the active Sine Oscillators will be played as a note is released.

3.3 Panel 3: Output panel

3.3.1 Section 1: Output

- **Oct** (Octave). Determines the amount of tuning in octaves (Scale: -3 / +3. Default: 0).
- **Pan** (Pan). Determines the panning of the output (Scale: 0 - 100. Default: 50).
- **Vol** (Volume). Determines the master volume (Scale: ∞ / + 12,0 dB. Default: - 6,1 dB).
- **Poly** (Poly Mode On Off)**.** Select On if you want to play Rumble K II polyphonically. The maximum number of voices is 64. Select Off, if you want to play Rumble K II in monophonic mode and retrigger the envelopes as soon as you play a new note (Scale: On / Off. Default: On).
- **Key** (Key Pan On Off). Determines whether the panning should follow the keyboard scaling. When On, notes played in the lower range will output to the left channel. Notes in the higher range will output to the right channel (Scale: On / Off. Default: Off).

  Please note: In the Output section, enabling the "Key" setting yields a perfect L/R balance on Bb2 (A#2) instead of C3, or D#3 (which is middle note of the MIDI range). It is possible to correct the amount of semitones to get a more balanced panning across the keyboard in the Modulation Matrix when Key Panning is set to On: In one of the 3 Level slots or busses (Level Vel, Level Prs and Level KS), set Key as source, set Pan as destination and a correction value as Amount.

- **Lim** (Limiter On Off). Turns the Limiter in soft mode On or Off. The release time of this soft limiter is set to 10 seconds. The Limiter is used to keep voice levels in check - e.g. when very high filter resonance is used (Scale: On / Off. Default: Off).
- **Pedal** (Sustain Pedal Mode) Switches the Sustain Pedal Mode: Off, On, Latch (sustain notes until the next note is played) or Damper. In Damper mode, sustained voices are not released while either the sustain pedal or the key that triggered the voice are held. In the normal "On" mode, sustained voices are released when the sustain pedal is lifted regardless of whether the key that triggered the voice has been held again (Scale: Off / On / Latch / Damper. Default: On).
- **HF** (HF Correction On Off). This corrects for high frequency loss due to sample playback interpolation (Scale: On / Off. Default: Off).

3.3.2 Section 2: Glide

- **Glide** (Glide Mode). Switches pitch glide Off, On or Auto (only glides if a key is already held). Glide or Portamento makes note pitch glide from previous notes to new ones, at the time set with the Time knob. Default is Off. Glide can be used in both Poly Modes:
  - When Off there will be no glide.

- When On or Auto the pitch will glide between consecutive notes.
- **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).

3.4 Panel 4: Vibrato panel

Vibrato or Low Frequency Oscillator (LFO).

3.4.1 Section: Vibrato

- **On /Off** (Osc 1 - 4 Vibrato On Off). Determines whether the vibrato is added to the signal chain (Scale: On / Off. Default: Off).
- **Sync** (Osc 1 - 4 Vibrato Speed Sync). Set Rate units to Hz (cycles per second) or beats (quarter notes per cycle) (Scale: On / Off. Default: Off). The direction of the Speed knob in the Vibrato section is reversed when Sync is enabled. This is intended, although the behaviour is not common compared to other synthesizers.
- **W** (Osc 1 - 4 Vibrato Wheel On Off). Determines whether the Mod(ulation) Wheel affects the vibrato (Scale: On / Off. Default: On). When you toggle the Vibrato Wheel On and Off, you will notice, that it enables or disables the Modulation Wheel. When turned Off, changing the Mod Wheel has no effect to the pitch or speed.
- **Depth** (Osc 1 - 4 Vibrato Depth). Determines the amount by which the vibrato effect alters the pitch above and below the note pitch (Scale: -50 / +50. Default: 50).
  The Depth affects the pitch, even though Depth is at 0 and no other modulation is applied to the pitch (or the vibrato). In fact, when W (Vibrato Wheel On Off) is Off, Depth has no effect and the vibrato is always on. You would expect a setting of 0 to modulate the pitch by 0 cents (so no modulation).
  The Vibrato Depth knob acts as a switch to swap the function of the Modulation Wheel. The Vibrato Depth knob is bipolar (-50 to + 50). When Vibrato is set to On: Vibrato Depth with value of +50 will increase the amount of vibrato when the Modulation Wheel is turned upward or increased (Mod Wheel set to 0 = no Vibrato, Mod Wheel set to max = full vibrato).
  However, a Vibrato Depth with value of -50 will decrease the amount of vibrato when the Modulation Wheel is turned upward or increased (Mod Wheel set to 0 = full Vibrato, Mod Wheel set to max = no vibrato). Changing the amount of Vibrato Depth scales the swap function of the Modulation Wheel. A value of 0 disables the swap and the result is an 'always on Vibrato'.
- **Speed** (Osc 1 - 4 Vibrato Speed). Determines the vibrato rate (Scale: 0 - 100. Default: 0).
- **Shape** (Osc 1 - 4 Vibrato Shape). Determines the waveform for the vibrato effect (Scale: Sine / Tri / Sqr / Saw / Rnd / Drift. Default: Tri).
  Please note: When the tempo of the song is set higher than 301 BPM in Reason and the Vibrato Shape is set to Random or Drift, Rumble K II disables the inner working of the Vibrato Shape's Random and Drift function.
- **Prs** (Osc 1 - 4 Vibrato Prs to Depth). Pressure or Aftertouch to vibrato depth, links the amount of vibrato to Aftertouch, the amount of pressure on the key (Scale: -50 / +50. Default: 0).
- **Dest** (Osc 1 - 4 Vibrato Wheel Destination). Determines whether the Aftertouch (or the pressure on the key) controls the vibrato depth or vibrato speed (Scale: Depth / Speed. Default: Depth).

3.5 Panel 5: Auto Bend panel

3.5.1 Section 1: Auto Bend

Auto Bend bends notes in pitch.

- **On / Off** (Osc 1 - 4 Auto Bend On Off). Determines whether the auto(matic) bend is added to the signal chain (Scale: On / Off. Default: Off).
- **Depth** (Osc 1 - 4 Auto Bend Depth). Determines how much the pitch alters as each key is struck (Scale: -50 / +50. Default: +50).
- **Time** (Osc 1 - 4 Auto Bend Time). Determines the time for the auto bend (Scale: 0 - 100. Default: 50). When a note reaches the time set, the pitch will drop drastically to its original pitch or tuning. To have a more musical decay of the auto bend or just for experimental purposes, set the source to Constant, the destination to Decay and the amount to 50 or higher in the Auto Bend Vel section of the Modulation matrix on the back panel.

- **Vel** (Osc 1 - 4 Auto Bend Vel To Depth). Uses the chosen Vel(ocity) Curve in the Modulation Matrix to link the depth of the auto bend effect to key velocity (Scale: -50 / +50. Default: 0).
- **KS** (Osc 1 - 4 Auto Bend KS To Time). Uses the Keyboard Scaling (KS) to link the auto bend time to key position (Scale: -50 / +50. Default: 0).

3.5.2 Section 2: Aftertouch

- **On / Off** (Osc 1 - 4 Prs To Freq On Off). Determines whether the Aftertouch or pressure is added to the signal chain (Scale: On / Off. Default: Off).
- **Prs** (Osc 1 - 4 Prs To Freq). Pressure links the note pitch to Aftertouch, the amount of pressure on the key (Scale: -50 / +50. Default: 0).
- **Dest** (Osc 1 - 4 Prs Destination). Links the amount of Prs or Aftertouch to the chosen destination (Scale: Volume / Pan / Tune. Default: Tune).

3.6 Panel 6: Pitch Bend panel

3.6.1 Section: Pitch Bend

- **Pitch** (Osc 1 - 4 Pitch Bend Amount). The Pitch Bend wheel can be used for bending note pitches up and down. Rumble also responds to Pitch Bend MIDI data from a connected MIDI master keyboard. Range: + / - 24 semitones (+ / - 2 octaves) in steps of 100 (41 is default or 2 semitones, 0 = no pitch change, 100 = 2 octaves).
- **Pitch Wheel Destination** (Osc 1 - 4 Pitch Wheel Destination). The Pitch Wheel can be used to control Volume, Pan or Tune (default).

3.7 Panel 7: Frequency panel

3.7.1 Section: Frequency

- **Coarse** (Osc 1 - 4 Coarse). Determines the relative pitch of the source in semitones when Key Track is on (Scale: C-2 / G8. Default: C3).
- **Fine** (Osc 1 - 4 Fine Tune). Provides precise pitch adjustment (Scale: -82 / +82, one semitone. Default: 0).
- **Key** (Osc 1 - 4 Key Track). Determines the keyboard scaling. When set to a value of 10, each key produces a note of a different pitch. When set to a value of 0 all keys produce the same note. Use a value of -10 to 'flip' the keyboard scaling (Scale: -10 / +10. Default: +10).
- **KS** (Osc 1 - 4 KS To Freq). Uses Keyboard Scaling (KS) to link the Frequency or pitch to key position (Scale: -50 / +50. Default: 0). In the Modulation Matrix there are 5 KS curves you can choose as a source in the Modulation Matrix for the first 6 slots (Sine Osc Mod / Level Mod KS) where you can set Tune as destination. The Level Modulation slots offers the possibility to 'mix' two or three curves to the tuning of the Wave Loop oscillators:

3.8 Panel 8: Frequency Filter panel

3.8.1 Section 1: Filter

- **On / Off** (Osc 1 - 4 Filter On Off). Determines whether the frequency filter is added to the signal chain (Scale: On / Off. Default: Off).
- **Cut** (Osc 1 - 4 Filter Cutoff). Determines the amount of cutoff (Scale: 0 - 100. Default: 100).
- **Res** (Osc 1 - 4 Filter Resonance). Determines the amount of resonance (Scale: 0 - 100. Default: 0).

3.8.2 Section 2: Filter Envelope

- **Env** (Osc 1 - 4 Filter Envelope). Determines the amount of envelope applied to the filter (Scale: -100 / 100. Default: 75).
- **Att** (Osc 1 - 4 Filter Attack). Determines the time the filter amplitude takes to peak (Scale: 0 - 100. Default: 0).
- **Dec** (Osc 1 - 4 Filter Decay). Determines the time the filter amplitude takes to fall from the peak to the sustain level (Scale: 0 - 100. Default: 50).
- **Sus** (Osc 1 - 4 Filter Sustain). Determines the filter amplitude (relative to the peak) when the key is held down (Scale: ∞ / 0,0 dB. Default: 0,0 dB).

- **Rel** (Osc 1 - 4 Filter Release). Determines the time of the filter amplitude to die out after the key is released (Scale: 0 - 100. Default: 25).

3.9 Panel 9: Keys panel

3.9.1 Section 1: Keys

- **L Key** (Osc 1 - 4 Low Key). Determines the start point of the key range (Scale: C-2 (0) / G8 (127). Default: C2 (0)).
- **H Key** (Osc 1 - 4 High Key). Determines the end point of the key range (Scale: C-2 (0) / G8 (127). Default: G8 (127)).

3.9.2 Section 2: Velocity

- **Low Vel** (Osc 1 - 4 Low Velocity). Determines the start point of the velocity range (Scale 1 – 127. Default: 1)
- **Hi Vel** (Osc 1 - 4 High Velocity). Determines the end point of the velocity range (Scale 1 – 127. Default: 127).

3.10 Panel 10: Phaser panel

3.10.1 Section: Phaser

- **On / Off** (Phaser On Off). Determines whether phaser is added to the signal chain (Scale: On / Off. Default: Off).
- **Rate** (Phaser Rate). Determines the modulation rate of the phaser (Scale: 0 / 100. Default: 50).
- **Depth** (Phaser Depth). Determines the filter frequency modulation of the phaser (Scale: 0 / 100. Default: 50).
- **FBack** (Phaser Feedback). Determines the amount of feedback (Scale: 0 / 100. Default: 50).
- **Center** (Phaser Center). Determines the center filter frequency of the phaser (Scale: 0 / 100. Default: 50).
- **Spread** (Phaser Spread). Determines the offset between left and right center frequencies (Scale: 0 / 100. Default: 50).
- **Mix** (Phaser Mix). Determines amount of phaser added to the signal chain (Scale: 0 / 100. Default: 50).

3.11 Panel 11: Rotary panel

The Rotary is an emulation of a Leslie rotary speaker cabinet.

3.11.1 Section 1: Rotary

- **On / Off** (Rotary On Off). Determines whether rotary is added to the signal chain (Scale: On / Off. Default: Off).

- **Speed** (Rotary Speed). Determines rotary speed amount (Scale: Stop, Slow, Fast. Default: Slow).
- **Horn Acc** (Rotary Horn Acceleration). Determines the rotary acceleration and deceleration speed of the horn (Scale: 0 - 100. Default: 60).
- **Slow** (Rotary Horn Slow). Determines the rotation speed of the horn at "Slow" speed (Scale: 0 - 100. Default: 50).
- **Fast** (Rotary Horn Fast). Determines the rotation speed of the horn at "Fast" speed (Scale: 0 - 100. Default: 94).
- **Amp** (Rotary Horn Amp Mod). Determines the amplitude modulation of the horn signal (Scale: 0 - 100. Default: 50).
- **Bas Acc** (Rotary Bass Acceleration). Determines the rotary bass acceleration and deceleration speed (Scale: 0 - 100. Default: 25).
- **Slow** (Rotary Bass Slow). Determines the rotation speed of the bass at "Slow" speed (Scale: 0 - 100. Default: 55).
- **Fast** (Rotary Bass Fast). Determines the rotation speed of the bass at "Fast" speed (Scale: 0 - 100. Default: 91).
- **Amp** (Rotary Bass Amp Mod). Determines the amplitude modulation of the bass signal (Scale: 0 - 100. Default: 50).

3.11.2 Section 2: Overall

- **Freq** (Rotary Horn Freq Mod). Determines the frequency modulation of the horn signal (Scale: 0 - 100. Default: 50).
- **X - Over** (Rotary Crossover). Determines the crossover frequency between bass and horn (Scale: 0 - 100. Default: 50).
- **Bal** (Rotary Balance). Determines the volume balance between bass and horn (Scale: 0 - 100. Default: 50).
- **Mic** (Rotary Mic Angle). Determines the simulated microphone angle towards the simulated rotary speaker cabinet (Scale: 0 - 100. Default: 50)

3.12 Panel 12: Effects filter panel

3.12.1 Section: Filter

- **On / Off** (High Low Pass Filter On Off). Determines whether effects filter is added to the signal chain (Scale: On / Off. Default: Off).
- **Mode** (High Low Pass Filter Mode). Determines the effects filter mode. You can choose between a 12 dB / oct and 24 dB / oct lowpass filter as well as the LP+ filter, which is a "brickwall" lowpass filter with very steep roll-off. There is also a 6 dB / oct bandpass filter, a 12 dB / oct highpass filter and the "brickwall" HP+ filter. Note that the LP+ and HP+ filter types do not feature Resonance control (Scale: LP / LP 24 / LP+ / BP6 / HP12 / HP+. Default: HP12).
- **Cut** (High Low Pass Filter Cutoff). Determines the amount of the effects filter cutoff (Scale: 0 - 100. Default: 0).
- **Res** ((High Low Pass Filter Resonance). Determines the amount of the effects filter resonance (Scale: 0 - 100. Default: 0).

4 Back of the device
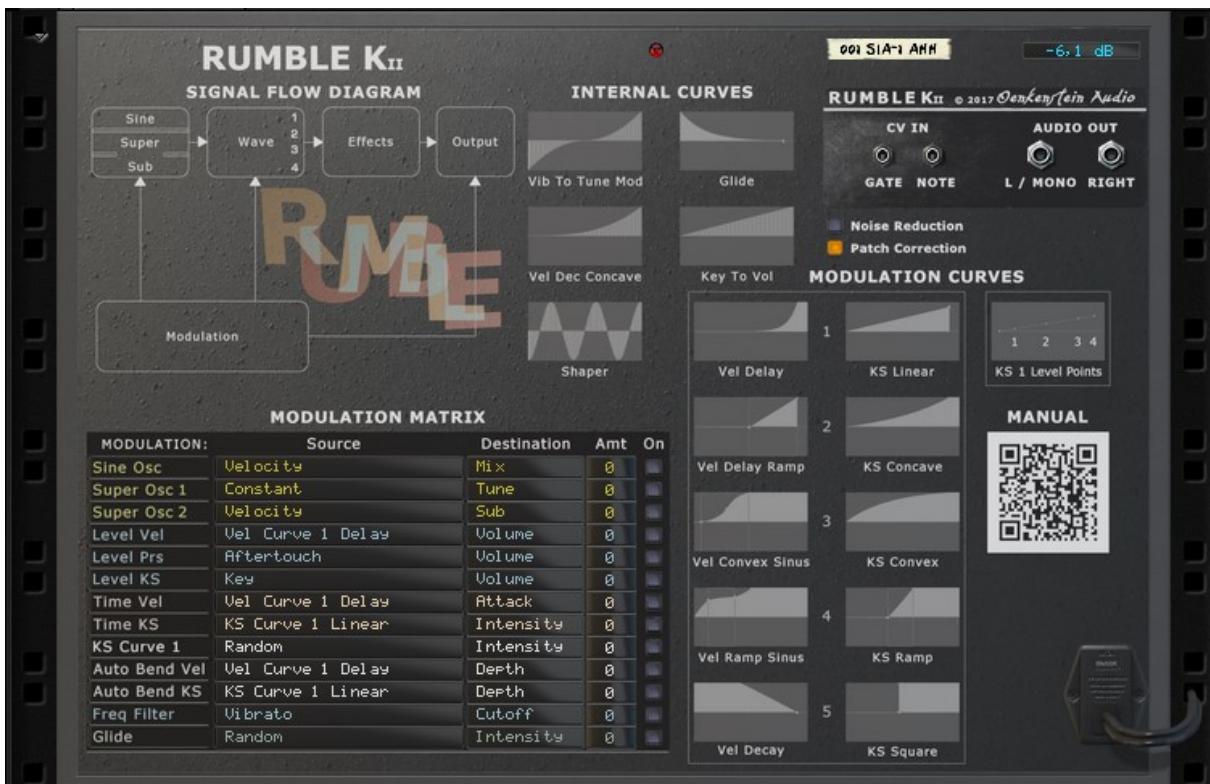
4.1 Volume Control

When routing cables, the volume control can be altered by changing the dB value in the volume display.

4.2 Sequencer Control Inputs

The Sequencer Control CV and Gate inputs allow you to play Rumble from another CV/Gate device (typically a Matrix or an RPG-8). The signal to the CV input controls the note pitch, while the signal to the Gate input delivers note on / off along with velocity.

4.3 Audio Output

These are the main audio outputs. When you create a new Rumble device, these outputs are auto-routed to the first available channel in the Reason main mixer.

4.4 Manual QR Code

Downloads the "Rumble K II Operation Manual.PDF" from www.oenkenstein.nl.

4.5 Noise Reduction / Patch Correction

4.5.1 Noise Reduction On / Off

Determines whether noise reduction is applied to the signal chain (Scale: On / Off. Default: Off). The Kawai K1 has low quality 8 bit short cycled samples and as they were recorded on tape before the analogue to digital conversion, some noise was added. Noise Reduction is a Low Pass 12 Filter centred at 9 kHz and follows the keyboard.

4.5.2 Patch Correction On / Off

When loading .repatch patches and the Patch Correction is turned On, the sound of the current patch triggered by sustained note input will be muted while the next patch is loading (Scale: On / Off. Default: On).
Please note: The status of the Patch Correction is not included when a .repatch or .cmb file is saved.

When Patch Correction is turned Off, changing .repatch files in the Patch Browser while notes are sustained may cause a sudden jump in volume and will play the oscillators from the old patch with the settings of the new patch. The change disappears when a new note is triggered.

4.6   Modulation Matrix Panel

Rumble K II has a Modulation Matrix with 13 modulation slots or busses, each with 24 sources.

- **Modulation:** Describes the items to modulate. In the Modulation Matrix you can alter parameters for both the Sine and Super oscillators and all the 4 Wave Loop oscillators at once. There are 9 items you can modulate:
  - Sine Osc (1 slot).
  - Sine Osc (1 slot).
  - Super Osc (2 slots).
  - Envelope Level (3 slots).
  - Envelope Time (2 slots).
  - Auto Bend (2 slots).
  - Freq Filter (1 slot).
  - Output Glide (1 slot).

- **Source**: Sets the source of the item to modulate. There are 24 different sources.
  - Constant
  - Random
  - Random +
  - Pitch Bend
  - Aftertouch
  - Mod Wheel
  - Key
  - Velocity
  - Release Timer
  - Filter Envelope
  - Amp Envelope
  - Glide Curve
  - Vibrato
  - Note Bend

- KS Curve 1 Linear

- KS Curve 2 Concave

- KS Curve 3 Convex

- KS Curve 4 Ramp

- KS Curve 5 Square

- Vel Curve 1 Delay

- Vel Curve 2 Delay Ramp

- Vel Curve 3 Convex Sinus

- Vel Curve 4 Ramp Sinus

- Vel Curve 5 Decay

- **Destination**: Sets the destination of the item to modulate.
- **Amount**: Determines the amount of modulation (Scale: - 100 / +100. Default: 0). Time Vel and Time KS have a minimum value of 0 and a maximum of 100.
- **On / Off**. Determines whether modulation is added to the signal chain (Scale: On / Off. Default: Off).

Please note: Wave Loop oscillators 1 to 4 with a Wave Loop number higher then 205 have their Wave Loop Mode set to Off internally. If one or both the envelope time slots (Time Vel and Time KS) are used on these Wave Loops, they may affect the timing of the Amp Envelope's Attack and Decay

4.7   Modulation

4.7.1   Curves

The curves (see section 4.6) are used as sources to alter destinations in the Modulation Matrix. The KS (Keyboard Scale) and Vel (Velocity) curves are almost similar to those on a Kawai K1. One curve can be shaped in the Modulation Matrix: The KS 1 Linear Curve has four Level Points. A point holds information about the linear curves level and time.
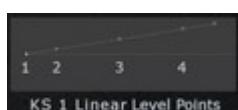
4.7.2   Modulation Wheel

The Mod Wheel can be used for controlling almost any parameter in Rumble K II. For example: Use the Mod(ulation) Wheel as a Source parameter in the Modulation Matrix and route it to the desired Destination parameter(s) with a certain Amount.

MODULATION:	Source	Destination	Amt	On
Sine Osc	Mod Wheel	Mix	100	
Super Osc 1	Mod Wheel	Tune	24	
Super Osc 2	Mod Wheel	Sub	100	
Level Vel	Mod Wheel	Volume	-25	
Level Prs	Mod Wheel	Pan	-100	
Level KS	Mod Wheel	Tune	12	
Time Vel	Mod Wheel	Attack	50	
Time KS	Mod Wheel	Attack	100	
KS Curve 1	Mod Wheel	Intensity	2	
Auto Bend Vel	Mod Wheel	Attack	0	
Auto Bend KS	Mod Wheel	Decay	0	
Freq Filter	Mod Wheel	Cutoff	0	
Glide	Mod Wheel	Intensity	12	

4.7.3   Random

You can make weird routings on almost all the internal functions of Rumble K II Light: In the next example all Sources are triggered at Random:

MODULATION:	Source	Destination	Amt	On
Sine Osc	Random	Mix	100	
Super Osc 1	Random +	Tune	100	
Super Osc 2	Random	Sub	-100	
Level Vel	Random	Volume	52	
Level Prs	Random	Pan	49	
Level KS	Random	Tune	12	
Time Vel	Random	Attack	89	
Time KS	Random	Attack	22	
KS Curve 1	Random	Time 3	66	
Auto Bend Vel	Random	Attack	80	
Auto Bend KS	Random	Decay	80	
Freq Filter	Random	Cutoff	100	
Glide	Random	Intensity	36	

4.8   Signal Flow Diagram (SDF)
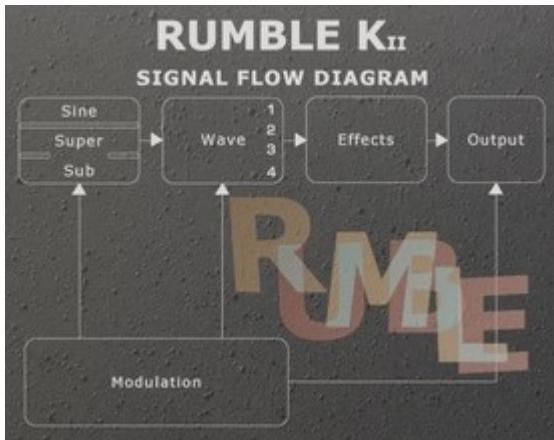
The Mix output of the Sub and Super oscillators are connected, sums independently from the Sine oscillator into the Wave Loop Mix.

The Mix output of the Sine oscillator goes into the Wave Loop Mix.
* If you change the Mix knob on one of the four Wave Loop oscillators, the overall volume of Sine-, Super- and Sub oscillators will change as well.

The Sine, Super and Sub oscillators are also affected by the Shapers Drive.

The sum of Osc panel will pass through the Envelope panel, the Vibrato panel, the Auto bend panel, The Pitch Bend panel, the Frequency panel, the Filter Panel and the Keys and Velocity panel.

The audio signal will then go through the 3 effects panels, The Phaser panel, the Rotary panel and the Filter panel before it goes into the final stage, the Output panel.

The Modulation Bus signal output only affects the destination chosen on the panel and alters the audio signal of all the 4 Wave Loop oscillators at once. There are no modulation sources and destinations for the Effects panels.

5   Instrument patches

Loading and saving patches is done in the same way as with any other internal Reason device. You can browse patches with the up and down buttons in the Patch Browser group. Or by clicking on the patch name in the display and selecting an item from the pop up menu.

5.1   About single instrument and multi instrument patches

The instruments patches are divided in 2 groups: Single instruments and multi instruments patches.

5.1.1   Single instrument patches

One Rumble K II device holds all the parameters to play and alter one Kawai K1 single instrument. All the patches are divided in four groups (A, B, C and D), each group item holds two instrument patches. The patch name starts with a number (001), a capital indicating single instrument patch (S), an 'i', then the group name (A) followed by a number ranging from 1 to 8 and finally the short name of the patch. For example: 004 SiA-4 Als Rhodes. All the single instrument patches can be found as .repatch files in the "*004 Techniques\001 Single Patches to build Multi Patch Combinators*" and "*003 Signature Patches\Single Repatch Instruments*" folders.

Please note: When browsing the simple instrument patches in these folders, sudden changes in sound might appear when a new patch is loaded. Therefore all the single instrument .repatch files are also put into Combinator files in the "*001 Single Patches Combinators"* folder. So, if you want to scroll through a folder with patches in the Patch browser without any artifacts during loading, it is best to play the single instrument patches from this folder or have Patch Correction enabled on the back panel.

5.1.2   Multi instrument patches

A multi instrument is built in a Combinator with several Rumble K II single instrument patches attached to a Mixer. For example: Multi patch IA-2 Pizz String is built from two single instrument patches: Pizzicato (Single instrument patch IB-8) and two times String Ens (Single instrument patch IA-3). All the multi instrument patches can be found as Combinator .cmb files in the "*002 Multi Patches Combinators*" folder. A Kawai K1 multi instrument can contain 8 single instrument patches.

Once a multi instrument patch is created with aid from the Combinator, the Combinator Programmer allows you to assign 4 rotaries and 4 knobs to a lot functions.

6   Combinator menu

The Combinator programmer menu exists from the following main menu items:

✓	No Target	
	Osc Sine	>
	Osc Super	>
	Osc Wave	>
	Osc Shaper	>
	Envelope Level	>
	Common Vibrato	>
	Common Auto Bend	>
	Common Aftertouch	>
	Common Pitch Bend	>
	Frequency	>
	Frequency Filter	>
	Keys	>
	Effects Phaser	>
	Effects Rotary	>
	Effects Filter	>
	Output	>
	Performance	>
	Receive Notes	
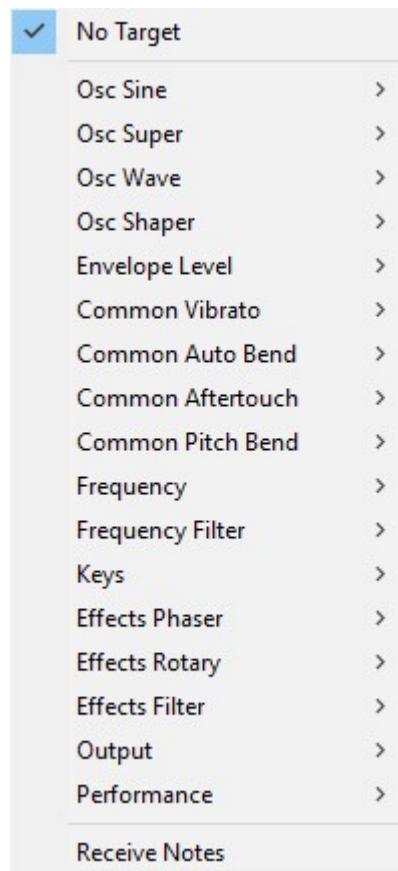
7   Patch List

Root folder:
- 001 IA-1 Voice and Orchestra.cmb
- 001 SiA-1 Ahh.repatch
- 003 IA-3 Air Piano.cmb
- 010 IB-2 Hampton.cmb
- 013 SiB-5 Jazz Organ.repatch
- 016 SiB-8 Pizzicato.repatch
- 023 SiC-7 Dragon Hall.repatch
- 024 IC-8 Raw Power.cmb
- 027 ID-3 Fusion.cmb
- 027 SiD-3 Vybes.cmb

001 Single Patches folder:
- 001 SiA-1 Voice.cmb
- 002 SiA-2 6 String.cmb
- 002 SiA-2 12 String.cmb
- 003 SiA-3 String Ens.cmb
- 003 SiA-3 String Pad.cmb
- 004 SiA-4 Als Rhodes.cmb
- 004 SiA-4 Digi Piano.cmb
- 005 SiA-5 Return Home.cmb
- 005 SiA-5 Visitors.cmb
- 006 SiA-6 Flute.cmb
- 006 SiA-6 Pan Flute.cmb
- 007 SiA-7 French Horn.cmb
- 007 SiA-7 Trumpet.cmb
- 008 SiA-8 1 Key Beat [Run].cmb
- 008 SiA-8 Gong Of Kings.cmb
- 009 SiB-1 Kimono.cmb
- 009 SiB-1 Sitar.cmb
- 010 SiB-2 Piano 1.cmb
- 010 SiB-2 Piano 2.cmb
- 011 SiB-3 Jazz Harp.cmb
- 011 SiB-3 Saxy.cmb
- 012 SiB-4 Fuzz Clav.cmb
- 012 SiB-4 Harpsicord.cmb
- 013 SiB-5 Deep Purple.cmb
- 013 SiB-5 Jazz Organ.cmb
- 014 SiB-6 Clarinet.cmb
- 014 SiB-6 Oboe.cmb
- 015 SiB-7 Bowed String.cmb
- 015 SiB-7 Cellos.cmb
- 016 SiB-8 Orchestra.cmb
- 016 SiB-8 Pizzicato.cmb
- 017 SiC-1 Steel Keys.cmb
- 017 SiC-1 Stratocast.cmb
- 018 SiC-2 Club Piano.cmb
- 018 SiC-2 Strut and Stuf.cmb
- 019 SiC-3 Analog Brass.cmb
- 019 SiC-3 Nasty Brass.cmb
- 020 SiC-4 Crocketts.cmb
- 020 SiC-4 Jan his Theme.cmb
- 021 SiC-5 Ole.cmb

- 021 SiC-5 Reflection.cmb
- 022 SiC-6 Aftertouch.cmb
- 022 SiC-6 Heavy Hitter.cmb
- 023 SiC-7 Dragon Hall.cmb
- 023 SiC-7 Terminator.cmb
- 024 SiC-8 Arrangment.cmb
- 024 SiC-8 Nomads.cmb
- 025 SiD-1 Ac Bass.cmb
- 025 SiD-1 Kick Bass.cmb
- 026 SiD-2 Electric Bass.cmb
- 026 SiD-2 Pull Bass.cmb
- 027 SiD-3 Marimba.cmb
- 027 SiD-3 Vybes.cmb
- 028 SiD-4 Bellery.cmb
- 028 SiD-4 Glocken.cmb
- 029 SiD-5 Music Box.cmb
- 029 SiD-5 Steel Drums.cmb
- 030 SiD-6 Kick and E Snare.cmb
- 030 SiD-6 Kick and Snare.cmb
- 031 SiD-7 A Tom and Hi Hat.cmb
- 031 SiD-7 E Tom and Hi Hat.cmb
- 032 SiD-8 Ahh Strings.cmb
- 032 SiD-8 Cymbals.cmb

002 Multi Patches folder:
- 000 Init Patch.cmb
- 001 IA-1 Voice and Orchestra.cmb
- 002 IA-2 Pizz String.cmb
- 003 IA-3 Air Piano.cmb
- 004 IA-4 Suspense.cmb
- 005 IA-5 Easy Song.cmb
- 006 IA-6 Lounge Lizz.cmb
- 007 IA-7 Quik Strike.cmb
- 008 IA-8 E Drum.cmb
- 009 IB-1 Captain Power.cmb
- 010 IB-2 Hampton.cmb
- 011 IB-3 Year 2010.cmb
- 012 IB-4 Clav Comp.cmb
- 013 IB-5 Nasty Split.cmb
- 014 IB-6 Wagner Str.cmb
- 015 IB-7 Big Combo.cmb
- 016 IB-8 Monsta Gong.cmb
- 017 IC-1 Stereo Bell.cmb
- 018 IC-2 String Guitar.cmb
- 019 IC-3 Mystery at Night.cmb
- 020 IC-4 Star Tours.cmb
- 021 IC-5 Piano String.cmb
- 022 IC-6 Major Minor.cmb
- 023 IC-7 1 Note Stack.cmb
- 024 IC-8 Raw Power.cmb
- 025 ID-1 2 Moon Sky.cmb
- 026 ID-2 Ceremony.cmb
- 027 ID-3 Fusion.cmb
- 028 ID-4 Peaceful.cmb
- 029 ID-5 Electric Pop.cmb
- 030 ID-6 Lite Side.cmb
- 031 ID-7 Exotic Seq.cmb

- 032 ID-8 Perc Ens.cmb

003 Signature Patches folder:

The name of a signature patch consists of 3 elements. Fist the abbreviation for the kind of instrument. Then the name of the signature patch followed with the abbreviation or full name of the sound designer.

Instrument types:

- BA or BS = Bass.
- DR = Drum.
- FX = Effects.
- KY = Keyboard.
- LD = Lead.
- PD = Pad.
- SQ = Sequencer.
- SY = Synthesizer.

Sound designers:

- NR = Navi Retlav.
- Buddaka = Buddaka.
- Loque = Loque.
- WtS = WongoTheSane.
- OS = Oenkenstein.

Some signature patches are using several Rack Extensions, which can be obtained at the Propellerhead Shop for free. You need the following Rack Extensions:

- ReMark by Selig.
- TMA-1 Commentator by Jiggery-Pokery.
- Audiomatic by Propellerhead.
- Pulsar by Propellerhead.
- AMP by Softube.
- Bass Amp by Softube.
- Saturation knob by Softube.

Patches:

- BA - Blue Giant - NR.cmb
- BA - Red Dwarf - NR.cmb
- BS - Mid Bass from AM to PM MW AT - Buddaka.cmb (uses Remark RE)
- BS - Mid Bass rAMbo MW K Velocity - Buddaka.cmb
- BS - Sublime - Loque.cmb
- DR - Thin Perc - WtS.cmb
- FX - Cat on LSD - WtS.cmb
- FX - Mountain Top - WtS.cmb
- FX - Ohm Sweet Ohm - WtS.cmb
- FX - Rise and Fall - WtS.cmb
- FX - Super Mario MW - Buddaka.cmb
- FX - WallE Mating Call - WtS.cmb
- FX - Woodstick - Loque.cmb
- KY - Abrupt Harpsichord - WtS.cmb
- KY - Barrel Organ - WtS.cmb
- KY - Buzzy Vibraphone - WtS.cmb
- KY - Cayman Stringer - Loque.cmb
- KY - El Buzzy Piano - WtS.cmb

- KY - Freeland Pipe - Loque.cmb (uses Saturation knob RE)
- KY - Fuzz Heaven - Loque.cmb
- KY - Like a Trumpet - Loque.cmb (uses Saturation knob RE)
- KY - LP Rhodes - WtS.cmb
- KY - OrganIC - Loque.cmb (uses Amp RE)
- KY - Pianet - WtS.cmb
- KY - Romantic - WtS.cmb
- KY - Sad Viking - Loque.cmb
- KY - Tropical Rhodes - WtS.cmb
- KY - Vox Organ - OS.cmb
- KY - Woodya Pluck Me - WtS.cmb
- LD - 50s SciFi - WtS.cmb
- LD - Bells Tinkywinky MW - Buddaka.cmb
- LD - Dist Gtr - WtS.cmb
- LD - Lead Saxy Synth MW AT - Buddaka.cmb
- LD - Maug - WtS.cmb
- LD - PercChoir - WtS.cmb
- LD - Retro GT - NR.cmb
- LD - Slide Whistle - WtS.cmb
- PD - 50s Strings - WtS.cmb
- PD - Airy Choir - WtS.cmb
- PD - Biggus Stringus - WtS.cmb
- PD - Flangy Dark Organ - WtS.cmb
- PD - Fourth Bell - WtS.cmb
- PD - Grand Mother - NR.cmb
- PD - Hopeful Strings - WtS.cmb
- PD - LA 2018 - WtS.cmb
- PD - ModGuyver MW AT - Buddaka.cmb
- PD - Ocean Pad - WtS.cmb
- PD - Pads Ambipur - Buddaka.cmb
- PD - Pads Dreams Come True MW - Buddaka.cmb
- PD - Pads Mysterious Atmoz MW AT - Buddaka.cmb
- PD - Phasy - WtS.cmb
- PD - Slow Phase - WtS.cmb
- PD - Soft Organ - WtS.cmb
- PD - Tape Flutter - WtS.cmb
- SQ - Arpifact MW [Run] - Buddaka.cmb
- SY - Buzzy - WtS.cmb
- SY - Ghost Sines - NR.cmb
- SY - Heavy Tuba - WtS.cmb
- SY - Klarinet - WtS.cmb
- SY - PolyStab - WtS.cmb
- SY - Reverse Pluck - WtS.cmb
- SY - Saw Time - NR.cmb
- SY - Slightly Breathy - WtS.cmb
- SY - Strawberry Sitar - WtS.cmb
- SY - Very Breathy - WtS.cmb
- SY - Very Very Breathy - WtS.cmb
- SY - Voice Pluck - WtS.cmb

Reason 8 and above:
- BS - MidBass Mod Guyver MW AT - Buddaka.cmb
- BS - MidBass Rock on MW AT - Buddaka.cmb (uses Pulsar RE)
- BS - MidBass The Wobbler MW AT - Buddaka.cmb
- BS - Sub Pipe - Loque.cmb (uses Saturation knob and Audiomatic RE)
- FX - BootU - Loque.cmb
- FX - Hexatone Mystery - WtS.cmb
- KY - Ambience Bells - Loque.cmb (uses TMA-1 and Audiomatic RE)

- KY - Amp Guitar Feedback - Loque.cmb (uses TMA-1 and Amp RE)
- KY - Bassy Plucky Guitary - Loque.cmb (uses Bass Amp RE)
- KY - Dance Piano - WtS.cmb
- KY - Deep Space Voxpipe - Loque.cmb
- KY - Wobble Piano - Loque.cmb
- PD - Omen - Loque.cmb (uses TMA-1 and Audiomatic RE)
- PD - String Ensemble - Loque.cmb
- SQ - Arp Baddaku - Buddaka MW.cmb (uses Pulsar RE)
- SQ - Arp Evolve MW AT - Buddaka.cmb (uses Audiomatic RE)

Reason 9 and above:
- FX - Hexatone Mystery - WtS.cmb

004 Techniques:
- Glide Modulation.cmb
- Mod Matrix set to On.cmb

8 Credits

- Kawai JP for permission, Kawai US for .sysex files and manual.
- José Kouwenhoven, coaching.
- Noel Gonzalez, promotion.
- Kenni, Reasontalk forum beta test hosting.
- Propellerhead Software AB for their support.
- Bart, manual and graphics.
- Marco Raaphorst, screenshots.
- Rob Kwakkelstein, suggestions.
- Chris Willem, support.
- Wongo the Sane, signature patches.
- Navi Retlav, signature patches.
- Buddaka, signature patches.
- Loque, signature patches.
- All the beta testers.

9   Appendixes

Connecting external devices
A note about connecting external devices, like the RPG 8 Arp, Matrix or other sequencers:
A connected RPG-8 works fine, until 60 Hz or 1 / 128 notes rate. Above the 75 Hz notes rate Rumble K II goes silent. In this case set the Gate Length on the RPG – 8 above a value of 47 and the sound 'comes back again'.

Browsing patches
Changing .repatch files in the Patch Browser while notes are sustained may cause a sudden jump in volume and will play the oscillators from the current patch with the settings of the new patch. The change disappears when a new note is triggered or when Patch Correction on the back panel is turned On.
For every .repatch file in the *'004 Techniques\001 Single Patches to build Multi Patch Combinators'* folder, there is also a Combinator or .cmb file in the '*001 Single Patches Combinators*'' folder. Combinator patches do not suffer from the behavior mentioned above.

Envelope decay
A few Wave Loops may produce a short click when the Envelope Attack and / or Envelope Decay are set to 0. When the Envelope Decay is set to 0,4 %, the click will be gone.

Vibrato
When the tempo of a song is set higher than 301 BPM in Reason and the Vibrato Shape is set to Random or Drift, Rumble K II disables the inner working of the Vibrato Shape's Random and Drift function.

Overdrive effect
When the Overdrive in the effects panel is turned to On, the output signal will change from stereo to mono. This results in a different behaviour for the Oct(ave), Pan(ning) and Key (Pan On Off) on the Output panel: The Octave should be manually shifted one octave lower to play notes above B4, panning will not produce any output on the right channel and the Key Pan will not work, although it is turned on.

Modulation Matrix
Wave Loop oscillators 1 to 4 with a Wave Loop number higher then 205, have their Wave Loop Mode set to Off internally. If one or both the envelope time slots (Time Vel and Time KS) are used on these Wave Loops, they may affect the timing of the Amp Envelope's Attack and Decay.

Aliasing
The Kawai K1 is notorious for its aliasing, which is regarded as a technical minus, but the aliasing makes the Kawai K1 have its own character. Also note that the Kawai K1 has low quality 8 bit short cycled samples and as they were recorded on tape before the analog-to-digital conversion, a lot of noise was added. You can correct the noise and hiss by setting the Noise Reduction on the back panel to On.

CPU load
To reduce CPU load, on the Output panel:
- Set Poly to Off.
- Set the Limiter to On.
- Decrease the Octave.

10 MIDI Implementation Chart

In the table below, first the MIDI CC Number is mentioned and is followed by the name of the function in Rumble K II:

[12] = Sine_Osc_1_On_Off
[13] = Sine_Osc_2_On_Off
[14] = Sine_Osc_3_On_Off
[15] = Sine_Osc_4_On_Off
[16] = Sine_Osc_Mix
[17] = Sine_Osc_Tune
[18] = Sine_Osc_Key_Track_On_Off
[19] = Sine_Osc_Ring_Mod_On_Off
[20] = Super_Osc_1_On_Off
[21] = Super_Osc_2_On_Off
[22] = Super_Osc_3_On_Off
[23] = Super_Osc_4_On_Off
[24] = Super_Osc_Mix
[25] = Super_Osc_Tune
[26] = Super_Osc_Amount
[27] = Super_Osc_Detune
[28] = Super_Osc_Sub
[29] = Sample_Select
[30] = Wave_Loop_1_On_Off
[31] = Wave_Loop_2_On_Off
[33] = Wave_Loop_3_On_Off
[34] = Wave_Loop_4_On_Off
[35] = Wave_Loop_1_Volume
[36] = Wave_Loop_2_Volume
[37] = Wave_Loop_3_Volume
[39] = Wave_Loop_4_Volume
[40] = Wave_Loop_1_Tune
[41] = Wave_Loop_2_Tune
[42] = Wave_Loop_3_Tune
[43] = Wave_Loop_4_Tune
[44] = Wave_Loop_1_Pan
[45] = Wave_Loop_2_Pan
[46] = Wave_Loop_3_Pan
[47] = Wave_Loop_4_Pan
[48] = Osc_1_Shaper_On_Off
[49] = Osc_2_Shaper_On_Off
[50] = Osc_3_Shaper_On_Off
[51] = Osc_4_Shaper_On_Off
[52] = Osc_1_Shaper_Drive
[53] = Osc_2_Shaper_Drive
[54] = Osc_3_Shaper_Drive
[55] = Osc_4_Shaper_Drive
[56] = Osc_1_Envelope_Attack
[57] = Osc_2_Envelope_Attack
[58] = Osc_3_Envelope_Attack
[59] = Osc_4_Envelope_Attack
[60] = Osc_1_Envelope_Decay
[61] = Osc_2_Envelope_Decay
[62] = Osc_3_Envelope_Decay
[63] = Osc_4_Envelope_Decay
[65] = Osc_1_Envelope_Sustain
[66] = Osc_2_Envelope_Sustain
[67] = Osc_3_Envelope_Sustain

[68] = Osc_4_Envelope_Sustain
[69] = Osc_1_Envelope_Release
[70] = Osc_2_Envelope_Release
[71] = Osc_3_Envelope_Release
[72] = Osc_4_Envelope_Release
[73] = Osc_1_Release_Timer
[74] = Osc_2_Release_Timer
[75] = Osc_3_Release_Timer
[76] = Osc_4_Release_Timer
[77] = Osc_1_Vibrato_On_Off
[78] = Osc_2_Vibrato_On_Off
[79] = Osc_3_Vibrato_On_Off
[80] = Osc_4_Vibrato_On_Off
[81] = Osc_1_Vibrato_Speed_Sync
[82] = Osc_2_Vibrato_Speed_Sync
[83] = Osc_3_Vibrato_Speed_Sync
[84] = Osc_4_Vibrato_Speed_Sync
[85] = Osc_1_Vibrato_Wheel_On_Off
[86] = Osc_2_Vibrato_Wheel_On_Off
[87] = Osc_3_Vibrato_Wheel_On_Off
[88] = Osc_4_Vibrato_Wheel_On_Off
[89] = Osc_1_Vibrato_Depth
[90] = Osc_2_Vibrato_Depth
[91] = Osc_3_Vibrato_Depth
[92] = Osc_4_Vibrato_Depth
[93] = Osc_1_Vibrato_Speed
[94] = Osc_2_Vibrato_Speed
[95] = Osc_3_Vibrato_Speed
[102] = Osc_4_Vibrato_Speed
[103] = Osc_1_Vibrato_Prs_To_Depth
[104] = Osc_2_Vibrato_Prs_To_Depth
[105] = Osc_3_Vibrato_Prs_To_Depth
[106] = Osc_4_Vibrato_Prs_To_Depth
[107] = Osc_1_Vibrato_Wheel_Destination
[108] = Osc_2_Vibrato_Wheel_Destination
[109] = Osc_3_Vibrato_Wheel_Destination
[110] = Osc_4_Vibrato_Wheel_Destination
[111] = Osc_1_Auto_Bend_On_Off
[112] = Osc_2_Auto_Bend_On_Off
[113] = Osc_3_Auto_Bend_On_Off
[114] = Osc_4_Auto_Bend_On_Off
[115] = Osc_1_Auto_Bend_Depth
[116] = Osc_2_Auto_Bend_Depth
[117] = Osc_3_Auto_Bend_Depth
[118] = Osc_4_Auto_Bend_Depth
[119] = Osc_1_Auto_Bend_Time
[128] = Osc_2_Auto_Bend_Time
[129] = Osc_3_Auto_Bend_Time
[130] = Osc_4_Auto_Bend_Time
[131] = Osc_1_Auto_Bend_Vel_To_Depth
[132] = Osc_2_Auto_Bend_Vel_To_Depth
[133] = Osc_3_Auto_Bend_Vel_To_Depth
[134] = Osc_4_Auto_Bend_Vel_To_Depth
[135] = Osc_1_Auto_Bend_KS_To_Time
[136] = Osc_2_Auto_Bend_KS_To_Time
[137] = Osc_3_Auto_Bend_KS_To_Time
[138] = Osc_4_Auto_Bend_KS_To_Time
[139] = Osc_1_Prs_To_Freq_On_Off
[140] = Osc_2_Prs_To_Freq_On_Off
[141] = Osc_3_Prs_To_Freq_On_Off

[142] = Osc_4_Prs_To_Freq_On_Off
[143] = Osc_1_Prs_To_Freq
[144] = Osc_2_Prs_To_Freq
[145] = Osc_3_Prs_To_Freq
[146] = Osc_4_Prs_To_Freq
[147] = Osc_1_Pitch_Bend_Amount
[148] = Osc_2_Pitch_Bend_Amount
[149] = Osc_3_Pitch_Bend_Amount
[150] = Osc_4_Pitch_Bend_Amount
[151] = Osc_1_Pitch_Wheel_Destination
[152] = Osc_2_Pitch_Wheel_Destination
[153] = Osc_3_Pitch_Wheel_Destination
[154] = Osc_4_Pitch_Wheel_Destination
[155] = Osc_1_Coarse
[156] = Osc_2_Coarse
[157] = Osc_3_Coarse
[158] = Osc_4_Coarse
[159] = Osc_1_Fine_Tune
[160] = Osc_2_Fine_Tune
[161] = Osc_3_Fine_Tune
[162] = Osc_4_Fine_Tune
[163] = Osc_1_Key_Track
[164] = Osc_2_Key_Track
[165] = Osc_3_Key_Track
[166] = Osc_4_Key_Track
[167] = Osc_1_KS_to_Freq
[168] = Osc_2_KS_to_Freq
[169] = Osc_3_KS_to_Freq
[170] = Osc_4_KS_to_Freq
[171] = Osc_1_Filter_On_Off
[172] = Osc_2_Filter_On_Off
[173] = Osc_3_Filter_On_Off
[174] = Osc_4_Filter_On_Off
[175] = Osc_1_Filter_Cutoff
[176] = Osc_2_Filter_Cutoff
[177] = Osc_3_Filter_Cutoff
[178] = Osc_4_Filter_Cutoff
[179] = Osc_1_Filter_Resonance
[180] = Osc_2_Filter_Resonance
[181] = Osc_3_Filter_Resonance
[182] = Osc_4_Filter_Resonance
[183] = Osc_1_Filter_Envelope
[184] = Osc_2_Filter_Envelope
[185] = Osc_3_Filter_Envelope
[186] = Osc_4_Filter_Envelope
[187] = Osc_1_Low_Velocity
[188] = Osc_2_Low_Velocity
[189] = Osc_3_Low_Velocity
[190] = Osc_4_Low_Velocity
[191] = Osc_1_High_Velocity
[192] = Osc_2_High_Velocity
[193] = Osc_3_High_Velocity
[194] = Osc_4_High_Velocity
[195] = Phaser_On_Off
[196] = Phaser_Rate
[197] = Phaser_Depth
[198] = Phaser_Feedback
[199] = Phaser_Center
[200] = Phaser_Spread
[201] = Phaser_Mix

[202] = Rotary_On_Off
[203] = Rotary_Speed
[204] = Rotary_Horn_Acceleration
[205] = Rotary_Horn_Slow
[206] = Rotary_Horn_Fast
[207] = Rotary_Horn_Amp_Mod
[208] = Rotary_Horn_Freq_Mod
[209] = Rotary_Crossover
[210] = Rotary_Bass_Acceleration
[211] = Rotary_Bass_Slow
[212] = Rotary_Bass_Fast
[213] = Rotary_Bass_Amp_Mod
[214] = Rotary_Balance
[215] = Rotary_Mic_Angle
[216] = High_Low_Pass_Filter_On_Off
[217] = High_Low_Pass_Filter_Mode
[218] = High_Low_Pass_Filter_Cutoff
[219] = High_Low_Pass_Filter_Resonance
[220] = Octave
[221] = Pan
[222] = Volume
[223] = Poly_Mode_On_Off
[224] = Key_Pan_On_Off
[225] = Limiter_On_Off
[226] = HF_Correction_On_Off
[227] = Sustain_Pedal_Mode
[228] = Glide_Mode
[229] = Glide_Time

11 Remote items list

Scope   Oenkenstein Audio   nl.oenkenstein.RK2

Remotable	Min	Max	Input type	Output type
Sine Osc 1 On Off	0	1	Toggle	ValueOutput
Sine Osc 2 On Off	0	1	Toggle	ValueOutput
Sine Osc 3 On Off	0	1	Toggle	ValueOutput
Sine Osc 4 On Off	0	1	Toggle	ValueOutput
Sine Osc Mix	0	4194304	Value	ValueOutput
Sine Osc Tune	0	4194304	Value	ValueOutput
Sine Osc Key Track On Off	0	1	Toggle	ValueOutput
Sine Osc Ring Mod On Off	0	1	Toggle	ValueOutput
Super Osc 1 On Off	0	1	Toggle	ValueOutput
Super Osc 2 On Off	0	1	Toggle	ValueOutput
Super Osc 3 On Off	0	1	Toggle	ValueOutput
Super Osc 4 On Off	0	1	Toggle	ValueOutput
Super Osc Mix	0	4194304	Value	ValueOutput
Super Osc Tune	0	4194304	Value	ValueOutput
Super Osc Amount	0	6	Value	ValueOutput
Super Osc Detune	0	4194304	Value	ValueOutput
Super Osc Sub	0	4194304	Value	ValueOutput
Sample Select	0	63	Value	ValueOutput
Wave Loop 1 On Off	0	1	Toggle	ValueOutput
Wave Loop 2 On Off	0	1	Toggle	ValueOutput
Wave Loop 3 On Off	0	1	Toggle	ValueOutput
Wave Loop 4 On Off	0	1	Toggle	ValueOutput
Wave Loop 1 Volume	0	4194304	Value	ValueOutput
Wave Loop 2 Volume	0	4194304	Value	ValueOutput
Wave Loop 3 Volume	0	4194304	Value	ValueOutput
Wave Loop 4 Volume	0	4194304	Value	ValueOutput
Wave Loop 1 Tune	0	4194304	Value	ValueOutput
Wave Loop 2 Tune	0	4194304	Value	ValueOutput
Wave Loop 3 Tune	0	4194304	Value	ValueOutput
Wave Loop 4 Tune	0	4194304	Value	ValueOutput
Wave Loop 1 Pan	0	4194304	Value	ValueOutput
Wave Loop 2 Pan	0	4194304	Value	ValueOutput
Wave Loop 3 Pan	0	4194304	Value	ValueOutput
Wave Loop 4 Pan	0	4194304	Value	ValueOutput
Osc 1 Shaper On Off	0	1	Toggle	ValueOutput
Osc 2 Shaper On Off	0	1	Toggle	ValueOutput
Osc 3 Shaper On Off	0	1	Toggle	ValueOutput
Osc 4 Shaper On Off	0	1	Toggle	ValueOutput
Osc 1 Shaper Drive	0	4194304	Value	ValueOutput
Osc 2 Shaper Drive	0	4194304	Value	ValueOutput

Osc 3 Shaper Drive	0	4194304	Value	ValueOutput
Osc 4 Shaper Drive	0	4194304	Value	ValueOutput
Osc 1 Envelope Attack	0	4194304	Value	ValueOutput
Osc 2 Envelope Attack	0	4194304	Value	ValueOutput
Osc 3 Envelope Attack	0	4194304	Value	ValueOutput
Osc 4 Envelope Attack	0	4194304	Value	ValueOutput
Osc 1 Envelope Decay	0	4194304	Value	ValueOutput
Osc 2 Envelope Decay	0	4194304	Value	ValueOutput
Osc 3 Envelope Decay	0	4194304	Value	ValueOutput
Osc 4 Envelope Decay	0	4194304	Value	ValueOutput
Osc 1 Envelope Sustain	0	4194304	Value	ValueOutput
Osc 2 Envelope Sustain	0	4194304	Value	ValueOutput
Osc 3 Envelope Sustain	0	4194304	Value	ValueOutput
Osc 4 Envelope Sustain	0	4194304	Value	ValueOutput
Osc 1 Envelope Release	0	4194304	Value	ValueOutput
Osc 2 Envelope Release	0	4194304	Value	ValueOutput
Osc 3 Envelope Release	0	4194304	Value	ValueOutput
Osc 4 Envelope Release	0	4194304	Value	ValueOutput
Osc 1 Release Timer	0	4194304	Value	ValueOutput
Osc 2 Release Timer	0	4194304	Value	ValueOutput
Osc 3 Release Timer	0	4194304	Value	ValueOutput
Osc 4 Release Timer	0	4194304	Value	ValueOutput
Osc 1 Vibrato On Off	0	1	Toggle	ValueOutput
Osc 2 Vibrato On Off	0	1	Toggle	ValueOutput
Osc 3 Vibrato On Off	0	1	Toggle	ValueOutput
Osc 4 Vibrato On Off	0	1	Toggle	ValueOutput
Osc 1 Vibrato Speed Sync	0	1	Toggle	ValueOutput
Osc 2 Vibrato Speed Sync	0	1	Toggle	ValueOutput
Osc 3 Vibrato Speed Sync	0	1	Toggle	ValueOutput
Osc 4 Vibrato Speed Sync	0	1	Toggle	ValueOutput
Osc 1 Vibrato Wheel On Off	0	1	Toggle	ValueOutput
Osc 2 Vibrato Wheel On Off	0	1	Toggle	ValueOutput
Osc 3 Vibrato Wheel On Off	0	1	Toggle	ValueOutput
Osc 4 Vibrato Wheel On Off	0	1	Toggle	ValueOutput
Osc 1 Vibrato Depth	0	4194304	Value	ValueOutput
Osc 2 Vibrato Depth	0	4194304	Value	ValueOutput
Osc 3 Vibrato Depth	0	4194304	Value	ValueOutput
Osc 4 Vibrato Depth	0	4194304	Value	ValueOutput
Osc 1 Vibrato Speed	0	4194304	Value	ValueOutput
Osc 2 Vibrato Speed	0	4194304	Value	ValueOutput
Osc 3 Vibrato Speed	0	4194304	Value	ValueOutput
Osc 4 Vibrato Speed	0	4194304	Value	ValueOutput
Osc 1 Vibrato Prs To Depth	0	4194304	Value	ValueOutput
Osc 2 Vibrato Prs To Depth	0	4194304	Value	ValueOutput
Osc 3 Vibrato Prs To Depth	0	4194304	Value	ValueOutput

Osc 4 Vibrato Prs To Depth	0	4194304	Value	ValueOutput
Osc 1 Vibrato Wheel Destination	0	1	Toggle	ValueOutput
Osc 2 Vibrato Wheel Destination	0	1	Toggle	ValueOutput
Osc 3 Vibrato Wheel Destination	0	1	Toggle	ValueOutput
Osc 4 Vibrato Wheel Destination	0	1	Toggle	ValueOutput
Osc 1 Auto Bend On Off	0	1	Toggle	ValueOutput
Osc 2 Auto Bend On Off	0	1	Toggle	ValueOutput
Osc 3 Auto Bend On Off	0	1	Toggle	ValueOutput
Osc 4 Auto Bend On Off	0	1	Toggle	ValueOutput
Osc 1 Auto Bend Depth	0	4194304	Value	ValueOutput
Osc 2 Auto Bend Depth	0	4194304	Value	ValueOutput
Osc 3 Auto Bend Depth	0	4194304	Value	ValueOutput
Osc 4 Auto Bend Depth	0	4194304	Value	ValueOutput
Osc 1 Auto Bend Time	0	4194304	Value	ValueOutput
Osc 2 Auto Bend Time	0	4194304	Value	ValueOutput
Osc 3 Auto Bend Time	0	4194304	Value	ValueOutput
Osc 4 Auto Bend Time	0	4194304	Value	ValueOutput
Osc 1 Auto Bend Vel To Depth	0	4194304	Value	ValueOutput
Osc 2 Auto Bend Vel To Depth	0	4194304	Value	ValueOutput
Osc 3 Auto Bend Vel To Depth	0	4194304	Value	ValueOutput
Osc 4 Auto Bend Vel To Depth	0	4194304	Value	ValueOutput
Osc 1 Auto Bend KS To Time	0	4194304	Value	ValueOutput
Osc 2 Auto Bend KS To Time	0	4194304	Value	ValueOutput
Osc 3 Auto Bend KS To Time	0	4194304	Value	ValueOutput
Osc 4 Auto Bend KS To Time	0	4194304	Value	ValueOutput
Osc 1 Prs To Freq On Off	0	1	Toggle	ValueOutput
Osc 2 Prs To Freq On Off	0	1	Toggle	ValueOutput
Osc 3 Prs To Freq On Off	0	1	Toggle	ValueOutput
Osc 4 Prs To Freq On Off	0	1	Toggle	ValueOutput
Osc 1 Prs To Freq	0	4194304	Value	ValueOutput
Osc 2 Prs To Freq	0	4194304	Value	ValueOutput
Osc 3 Prs To Freq	0	4194304	Value	ValueOutput
Osc 4 Prs To Freq	0	4194304	Value	ValueOutput
Osc 1 Pitch Bend Amount	0	4194304	Value	ValueOutput
Osc 2 Pitch Bend Amount	0	4194304	Value	ValueOutput
Osc 3 Pitch Bend Amount	0	4194304	Value	ValueOutput
Osc 4 Pitch Bend Amount	0	4194304	Value	ValueOutput
Osc 1 Pitch Wheel Destination	0	2	Value	ValueOutput
Osc 2 Pitch Wheel Destination	0	2	Value	ValueOutput
Osc 3 Pitch Wheel Destination	0	2	Value	ValueOutput
Osc 4 Pitch Wheel Destination	0	2	Value	ValueOutput
Osc 1 Coarse	0	127	Value	ValueOutput
Osc 2 Coarse	0	127	Value	ValueOutput
Osc 3 Coarse	0	127	Value	ValueOutput
Osc 4 Coarse	0	127	Value	ValueOutput

Osc 1 Fine Tune	0	4194304	Value	ValueOutput
Osc 2 Fine Tune	0	4194304	Value	ValueOutput
Osc 3 Fine Tune	0	4194304	Value	ValueOutput
Osc 4 Fine Tune	0	4194304	Value	ValueOutput
Osc 1 Key Track	0	4194304	Value	ValueOutput
Osc 2 Key Track	0	4194304	Value	ValueOutput
Osc 3 Key Track	0	4194304	Value	ValueOutput
Osc 4 Key Track	0	4194304	Value	ValueOutput
Osc 1 KS to Freq	0	4194304	Value	ValueOutput
Osc 2 KS to Freq	0	4194304	Value	ValueOutput
Osc 3 KS to Freq	0	4194304	Value	ValueOutput
Osc 4 KS to Freq	0	4194304	Value	ValueOutput
Osc 1 Filter On Off	0	1	Toggle	ValueOutput
Osc 2 Filter On Off	0	1	Toggle	ValueOutput
Osc 3 Filter On Off	0	1	Toggle	ValueOutput
Osc 4 Filter On Off	0	1	Toggle	ValueOutput
Osc 1 Filter Cutoff	0	4194304	Value	ValueOutput
Osc 2 Filter Cutoff	0	4194304	Value	ValueOutput
Osc 3 Filter Cutoff	0	4194304	Value	ValueOutput
Osc 4 Filter Cutoff	0	4194304	Value	ValueOutput
Osc 1 Filter Resonance	0	4194304	Value	ValueOutput
Osc 2 Filter Resonance	0	4194304	Value	ValueOutput
Osc 3 Filter Resonance	0	4194304	Value	ValueOutput
Osc 4 Filter Resonance	0	4194304	Value	ValueOutput
Osc 1 Filter Envelope	0	4194304	Value	ValueOutput
Osc 2 Filter Envelope	0	4194304	Value	ValueOutput
Osc 3 Filter Envelope	0	4194304	Value	ValueOutput
Osc 4 Filter Envelope	0	4194304	Value	ValueOutput
Osc 1 Low Velocity	0	4194304	Value	ValueOutput
Osc 2 Low Velocity	0	4194304	Value	ValueOutput
Osc 3 Low Velocity	0	4194304	Value	ValueOutput
Osc 4 Low Velocity	0	4194304	Value	ValueOutput
Osc 1 High Velocity	0	4194304	Value	ValueOutput
Osc 2 High Velocity	0	4194304	Value	ValueOutput
Osc 3 High Velocity	0	4194304	Value	ValueOutput
Osc 4 High Velocity	0	4194304	Value	ValueOutput
Phaser On Off	0	1	Toggle	ValueOutput
Phaser Rate	0	4194304	Value	ValueOutput
Phaser Depth	0	4194304	Value	ValueOutput
Phaser Feedback	0	4194304	Value	ValueOutput
Phaser Center	0	4194304	Value	ValueOutput
Phaser Spread	0	4194304	Value	ValueOutput
Phaser Mix	0	4194304	Value	ValueOutput
Rotary On Off	0	1	Toggle	ValueOutput
Rotary Speed	0	2	Value	ValueOutput

Rotary Horn Acceleration	0	4194304	Value	ValueOutput
Rotary Horn Slow	0	4194304	Value	ValueOutput
Rotary Horn Fast	0	4194304	Value	ValueOutput
Rotary Horn Amp Mod	0	4194304	Value	ValueOutput
Rotary Horn Freq Mod	0	4194304	Value	ValueOutput
Rotary Crossover	0	4194304	Value	ValueOutput
Rotary Bass Acceleration	0	4194304	Value	ValueOutput
Rotary Bass Slow	0	4194304	Value	ValueOutput
Rotary Bass Fast	0	4194304	Value	ValueOutput
Rotary Bass Amp Mod	0	4194304	Value	ValueOutput
Rotary Balance	0	4194304	Value	ValueOutput
Rotary Mic Angle	0	4194304	Value	ValueOutput
High Low Pass Filter On Off	0	1	Toggle	ValueOutput
High Low Pass Filter Mode	0	5	Value	ValueOutput
High Low Pass Filter Cutoff	0	4194304	Value	ValueOutput
High Low Pass Filter Resonance	0	4194304	Value	ValueOutput
Octave	0	6	Value	ValueOutput
Pan	0	4194304	Value	ValueOutput
Volume	0	4194304	Value	ValueOutput
Poly Mode On Off	0	1	Toggle	ValueOutput
Key Pan On Off	0	1	Toggle	ValueOutput
Limiter On Off	0	1	Toggle	ValueOutput
HF Correction On Off	0	1	Toggle	ValueOutput
Sustain Pedal Mode	0	3	Value	ValueOutput
Glide Mode	0	2	Value	ValueOutput
Glide Time	0	4194304	Value	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