

# Ramp

## wave system quickstart

engineered by Squarp instruments



### microSD card slot

Store up to 2600 kits,  
from A0 to Z99.

### potentiometers

4 potentiometers to control effect values  
or advanced parameters of the 4 voices.

Pot 1 always controls voice 1,  
Pot 2 always controls voice 2, ...

### mode buttons ① ② ③ ④

Select the effect to be controlled with the  
4 potentiometers: pitch, bits, filter, freeze.  
If a button is double-pressed, it will select the  
advanced parameters of the samples:  
start point, length, envelope, run mode.

### dedicated audio outputs

4 voices (SP1, SP2, SP3, SP4)  
mono 16-bit 44100Hz

### midi input and midi thru

Thanks to midi in, control all samples parameters and effects values  
at the same time, and link your Ramples with midi thru.



### menu encoder

Press it to enter the settings menu,  
or rotate it to enter the kit selection list.

### assign button

Press it to enter the assign menu.  
Hold it and press ① ② ③ or ④ to create  
a mute group. Hold it and press **listen**  
to enter the Levels effect mode.

### red button

Press it to quit any mode previously entered.  
Hold it and press ① ② ③ or ④ to  
listen to a sample.

### cv inputs

Assignable cv inputs, to automate effect  
values or advanced parameters.

### gate inputs

Trig a sample (one shot, toggle loop or  
play only when gate is high).

### audio mix output

Unpatched audio outputs are  
normalised to the mix output

## Settings

Press the menu encoder and select a setting:

- **RESET** (reset all parameters & assignments to default)
- **RANDOM** (randomize effect values)
- **COPY** (copy all parameters & assignments)
- **PASTE** (paste the copied parameters & assignments)
- **STORE** (save current kit parameters & assignments on the SD card)
- **CHANNEL** (set the input midi channel of this unit)
- **SP1** (set the midi note 0...127 to trigger the sample 1)
- **SP2** (set the midi note 0...127 to trigger the sample 2)
- **SP3** (set the midi note 0...127 to trigger the sample 3)
- **SP4** (set the midi note 0...127 to trigger the sample 4)
- **VELOCITY** (assign the midi in note velocity to **LEVEL, PITCH, BIT, FILTER**)
- **BEND** (assign the midi in pitchbend to **ALL LEVEL, SP1...SP4 LEVEL, ALL PITCH, SP1...SP4 PITCH, ALL BITS, SP1...SP4 BITS, ALL FILTER, SP1...SP4 FILTER, ALL FREEZE, SP1...SP4 FREEZE**)
- **PROG CHANGE** (enable midi in PC to change the kit number)
- **CV IN** (input voltage = 0►5V, or -5V►5V)
- **PITCH** (enable/disable pitch chromatic quantizing)
- **SLICER** (enable/disable **START POINT** and **LENGTH** quantizing)
- **ANTICLIC** (enable/disable the fast envelope preventing clics)
- **VU-METER** (change the Vu-meter style, or disable it)
- **LAYERS** (set the multi-layers behaviour: **MANUAL, RANDOM, CYCLIC, REVERSE CYCLIC**, or controlled by **VELOCITY MIDI IN**)
- **SAVE SETTINGS** (save current settings on the SD card)
- **ASSIGN** (set the 4x CV inputs to be assigned globally, or per kit)
- **VERSION** (display the running OS version and the % of CPU used)

## Midi implementation chart

One rample unit = one midi channel (from 1 to 16, defined in the settings).

### Kit select messages

PC (or CC99)	kit select*	(0 to 99)
CC00 (PC MSB)	bank select*	(0 to 25 = A to Z)
CC100	select prev kit	(no value required)
CC101	select next kit	(no value required)

\* Send PC=35 to select the kit 35 of the current bank (current letter).  
Send CC00=3 and PC=99 to select the kit D99.

### Voices parameters messages

#	dest	param	value
CCx0	SPx	pitch	0 to 127 (63= no pitch)
CCx1	SPx	bits	0 to 127 (63= no bitcrush)
CCx2	SPx	filter	0 to 127 (63= no filter)
CCx3	SPx	freeze	0 to 127 (63= no freeze)
CCx4	SPx	start point	0 to 127 (0= default start)
CCx5	SPx	length	0 to 127 (127= default length)
CCx6	SPx	env	0 to 127 (63= no envelope)
CCx7	SPx	run mode	0 to 127 (63= one shot)
CCx8	SPx	level	0 to 127 (63= no drive)
CCx9	SPx	layer	0 to 127 (0= first layer)

... where **x** is the sample number, from 1 to 4. For example, CC10 controls the pitch of SP1, and CC38 controls the level of SP3.

Select a kit

Kits are organized in banks, from A0 to Z99.  
Rotate the encoder to select a kit, and load it by pressing the encoder.  
Fast scroll (bank select): hold **ASSIGN** and rotate the encoder.

Trig a sample

Use the gate input **1** to play **SP1** (sample 1), gate input 2 to play **SP2**, ...  
To pre-listen a sample, hold **LISTEN** and press the buttons ① ② ③ or ④

Exit

Press **LISTEN** to quit the current mode (kit select, assign mode, settings, ...)

Assign a CV input

Each of the 4 CV inputs can be assigned to any parameter of any voice.  
Press **ASSIGN**, select the CV input (►1, ►2, ►3, ►4), select the sample(s) to control (SP1, SP2, SP3, SP4, ALL SAMPLES) and finally select the effect parameter to assign.

Mute groups

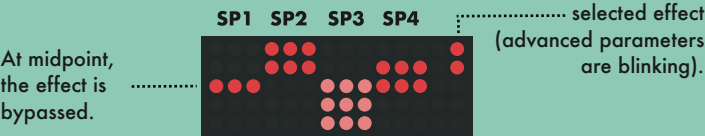
Mute groups allows each sample to be muted by one or more samples.  
Very handy to create open/close and conditional behaviors.  
While holding **ASSIGN**, select the sample to be group-muted (by pressing ① ② ③ or ④) and then select the sample triggering the mute (up to 3 samples).

Let's take a few examples :  
SP1 muted by SP2 : hold **ASSIGN**, press ① , ②, release **ASSIGN**  
SP2 muted by SP1+SP4 : hold **ASSIGN**, press ②, ① , ④, release **ASSIGN**  
delete SP1 mute group : hold **ASSIGN**, press ① , release **ASSIGN**

Effects and samples parameters

Each voice has its own "rack" of effects, and all audio effects can be enabled at the same time, allowing you to manipulate your samples in real time, from a gentle lowpass to a massive destruction!  
Each potentiometer controls the selected effect amount, per voice.  
Pot 1 will always control **SP1**, Pot 2 will control **SP2**, ...

Rotate a potentiometer (or select an effect with ① ② ③ or ④) to display the 4-voice effect values view:

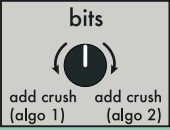


An effect value not matching its new pot position is displayed in low luminosity (anti-jump). Turn the pot towards the value to link it again.

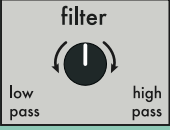
**Audio effects :**  
select an audio effect (**PITCH**, **BITS**, **FILTER**, **FREEZE**) with ① ② ③ or ④.



**PITCH**  
A great sounding pitch engine, based on a 6-pole linearizer. The range goes from -1octave to +1 octave.



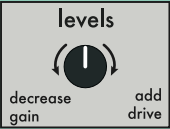
**BITS**  
Two different bitcrush algorithms, based on sample rate reduction and resolution reduction. It produces distortion and warms the audio signal.



**FILTER**  
A low resonance filter, DJ-style, cutting off the high frequencies (low pass) or the low frequencies (high pass).



**FREEZE**  
When enabled (pot ≠ midpoint), Rample will sample and loop a fraction of the played waveform, creating a glitching effect (two different algorithms).

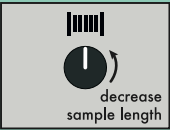


**LEVELS** hold **ASSIGN** and press **LISTEN**  
Turn the knob to the left to decrease the voice gain, or turn to the right to drive the signal.

**Samples advanced parameters :**  
double tap ① ② ③ or ④ to select **START POINT**, **LENGTH**, **ENV** or **RUN**



**START POINT**  
Set the start point (beginning of the sample playback). Depending on the setting **SLICING**, this parameter can be quantized.



**LENGTH**  
Set the length (duration) of the sample. Depending on the setting **SLICING**, this parameter can be quantized.



**ENV**  
Turn the knob to the left to add sample attack, or turn to the right to add sample decay.

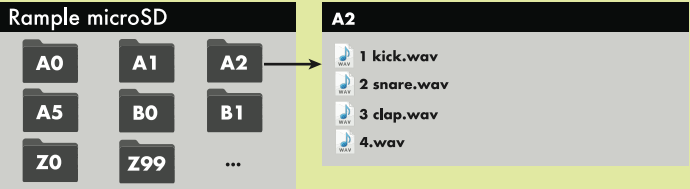


**RUN MODE**  
- one shot: a trig plays the sample entirely  
- toggle loop: a trig alternatively plays/stops the sample  
- gate high only: sample played only when gate is high

**Tip:** momentary edit the 4-voice values at the same time by holding an FX button and rotating the menu encoder (e.g. hold **PITCH** + rotate encoder). Pressing the encoder applies the momentary parameters.

How to make your own sample kits

The rule is simple: 1 kit = 1 folder. Inside the Rample SD card, each kit must be in a folder named **?X** where:  
**?** is the bank letter, from A to Z (handy for organizing your samples)  
**X** is the number of the kit, from 0 to 99  
In a folder, drop your favorite samples. The first character must be the number of the voice, from 1 to 4 (sample 1 to sample 4). For a better arrangement you can also add text to your samples name:

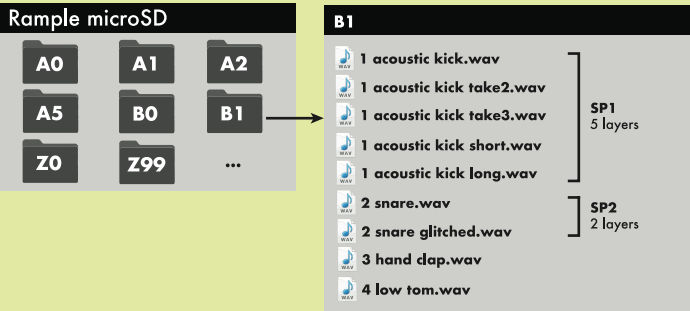


These files must be in a standard **.wav mono** format, **16-bit** or 8-bit, **44100** Hz. There is no size or duration limits, you can even play hours-long samples.

You can also play stereo files, please read the online manual.

Multi-layers kits

It's possible to "multisample" your kits: in a folder, add up to 12 samples per voice. These layers can be played randomly (by default), or in a controlled fashion (see **layer** setting). The following example shows **SP1** with 5 layers, **SP2** with 2 layers, **SP3** and **SP4** with only one layer.



Sample layer names are numerically and alphabetically sorted in Rample, handy to create a special order when controlling the layers with midi velocity or CV (first samples are triggered by lowest velocities).

We strongly advise to use only the provided microSD card, as its fastness is fundamental for Rample optimal playback. We do not guarantee Rample stability with other cards.

Please do not eject the SD card while Rample is playing.