Synth Controller manual addendum for
      Edition 'Sample Polka' for Korg Volca Sample

Tecnical requirements

The firmware of this editon comes in three versions:
- for the 'first' Volca Sample (without USB plug) running the original Korg firmware. Notes related to this edition are printed in red.
- for the 'first' Volca Sample (without USB plug) running the Pajen firmware
- for the 'second' Volca (with USB plug). Notes related to this Volca are printed in green.

These three versions all have minor technical differences which will be addressed by the suitable Synth Controller edition firmware. Please dump the appropriate edition for your Volca Sample version into the Controller. The faceplate is identical for all versions.

Required settings:
- **all 3 Volcas: global Parameter 7 (MidiRX) must be set to MSTon (LED is on)**
- **Volca1 Pajen: global Parameter 9 (chroimatically on channels 1-10) should read 'oNon' (LED on)**
- **Volca2: global Parameter 10 (Single/Multi) must be set to Mult (LED is off)**

For the Volca 1 we recommend running the Pajen firmware. It offers a clean transposition and control for all parameters. You can go back to the original Krg firmware any time if you want to.

The knobs for SAMPLE, LOOP, REVERSE and REVERB have no function if the Controller is used with the Volca 1 running the original Korg firmware because this combination does not support changing these paramerers over Midi CC. These parameters therefore need to be changed on the Volca itself.

Concept of the 'sample polka' edition

The Volca Sample is a great little piece of gear and – after having filled the 10 patterns with funny content – quickly becomes kind of boring or useless. The Synth Controller expands the Volca's possibilities by converting it into a 4, 6 or even 10 voice polyphonic Sample-Player.

There are already some approaches playing the Voca Sample polyphonically, the Pajen firmware even has this feature already built in. The benefit of the Synth Controller

running the 'sample polka' edition is: all voices of your Sample-Player will be edited at the same time when turning knobs on the Controller. If you would change e.g. AMP ATTACK on the Volca itself your change would just be valid for <u>one</u> of the polyphonic voices. The Synth Controller allows realtime edits for all Volca Sample Parameters, keeping all voices idential while playing it polyphonically.

The functions of the 'free' Parts (in Poly-Modes 4 and 6) can be used regularly, they even can be played chromatically with velocity on their dedicated Midichannel. The 'sample polka' offers a channel filter if the Midichannels of the non-poly Parts should be used by other equipment. Channel 16 allows playing all 10 Parts non-chromatic on different octaves, each from C upwards. The function on channel 11 being offered ny the Pajen Firmware's OMNI menu (e.g. pattern selection by note) can normally be used.

PAN SPREAD

PAN SPREAD distributes all currently used polyphonic voices automatically accross the Stereo panorama. There are 4 steps from 0 % (all voices centered) up to 100% (all voices equally distributed from fully left to most right). The distribution is randomly rearranged each time you change the spreading step to avoid repeating patterns in the panorama.

Finally PAN SPREAD offers DBL (=DOUBLE) mode: two adjacent Parts are triggered at the same time, one fully panned left, the other fully right – TRUE STEREO! The max. count of poly voices logically is halfed to 2, 3 or 4 voices *(why 4 and not 5 voices? Part 9&10 share a mute group and can not sound as the same time)*. When changing from 100% to DBL the voice allocation is reset. The first incoming midinote after the reset triggers Part 1&2, then 3&4 and so on. This allows to select suitable stereo samples for being played together. When using different samples it makes sense to turn the SAMPLE knob into position OFF – otherwise your sample assignment would be overwritten when changing the poly-count. See the following chapter for details.

Transmission of parameters when changing polycount

Switching between the polycount modes 4/6/10 is done by pressing one of the buttons. On each buttonpress the Controller transmits it's current knob positions to all used poly-Parts of the Volca. **Switching from 4 to 6 or 6 to 10 will overwrite the parameter settings of the Parts being added to polyphonic playing! No Undo!**

The parameter transmission also takes place when pressing the button of the already selected mode. Example: after powerup the Controller is always in 4-Voice mode. After pressing the „4" button again the Synth Controller will dump the current state of the

knobs to the Volca and overwrites Parts 1-4. The 4 Parts used by polymode will then automatically sound identical.

SAMPLE, LOOP, REVERSE and REVERB are not used by the VOLCA SAMPLE 1 running the original firmware and will not be transmitted when changing the polycount.

SAMPLE

The knob labeled SAMPLE selects a sample between 0 and 14 for all Parts used in polymode. Accordingly it's advisable to put samples into these Volca slots which are intended to be used by polyphonic playing (Piano, String, Synth-waveforms...). When set into position OFF, the SAMPLE number will <u>not</u> be transmitted when pressing the buttons for polycount selection. This makes sense in PAN SPREAD's DOUBLE mode with True-Stereo-Sample-Pairs or if you e.g. selected sample #55 mnually for the polyvoices and dont want it to be overwritten each time you press one of the Polycount buttons.

The knob SAMPLE does not have any function using the VOLCA SAMPLE 1 running the original Korg Firmware.

FILTER CH X-10

This switch handles midichannel filtering of the Synth Controller itself, it's not a parameter of the Volca. You can filter out the midichannels of the Parts not being used by polymode (5-10 or 7-10). In detail:

- FILTER OFF: the samples of the non-poly parts can be played chromatically on their according midichannel
- FILTER ON: the midi channels 5-10 / 7-10 will be filtered out by the Controller and will not be sent to the Volca. The channels can be used by external equipment.

VELO and LEVEL

LEVEL does not have any function unless VELO is set to position OFF, indicated by the arrow on the faceplate. If VELO is in position ON you can play the poly-voices with velocity. VELO turning into the OFF zone results in fixed velocity which can be dialed in with the LEVEL pot.
The VOLCA SAMPLE 1 running original Korg firmware as well as the Volca Sample 2 normally do not support velocity. The Synth Controller simulates Velocity by sending Midi Volume (CC #7) to the next allocated poly voice before the note is triggered. This logically leads to a small data overhead.

Handling of CC-Daten

CC data going into the Synth Controller is handles as follows:

- CC data on channel 1 will be sent to all polyphonic voices if the CC number is interpreted for sound editing by the Volcas Sample version.
- CC data on channel 1 which is not used by the Volca for editings will be passed unchanged.
- CC data on channels 2-16 will be passed unchanged.

Summary of properties and limitations

- The polyphonic voices are always addressed on midichannel 1. The other midichannels of Parts being used by polyphonic playing will be ignored.

- Parts 9 and 10 are muting each other. When using 10 voice mode you might experience cut decays.

- Parts not being used by polyphonic playing (5-10 / 7-10) can be played chromatically with velocity on their dedicated midichannel, unless the knob FILTER CH 2-10 is set to ON.

- On midichanal 16 it is possible to trigger the Parts 1-10 with velocity on different octaves each starting with the C.

- Midi Realtime data (Start, Stop, Clock) is always forwarded to the Volca.

- For making use if the Synth Controller's SAMPLE knob it is advisable to place the Samples intended to be used by polyphonic playing into the Volca Sample slots 0-14.

- The basic pitch of a sample being used by polyphonic playing can not be changed or tuned. The parameter SPEED will be overwritten by the Synth Controller on each triggered note. Pitch must be handled when creating and preparing the samples to be used and before they are dumped into the Volca. When using short samples like waveforms, the SAMPLE LENGTH parameter might be misused to change pitch in certain ranges.

- The Volca Sample does not consider <u>held</u> notes (Sustain). All samples will only be 'started' when playing the keyboard and will play to the end, according to the position of AMP DECAY And SAMPLE LENGTH / LOOP.

- Using MUTE on the Volca Sample itself is independent from the Synth Controller. Means: if a part is muted you wont hear it, even if it's triggered as a poly-voice. This feature might be used creatively.

- the edition firmware for Volca 1 running original Korg firmware does not make use of the knobs SAMPLE, LOOP, REVERSE and REVERB.

- the edition firmware for Volca 1 running original Korg firmware does not allow a 100% temperment, some pitches are slightly out of tune, especially to the ends of the keaboard. .. well, some people especially love this 'feature' :-)