

# ELEKTRON MACHINEDRUM SPS-1UW QUICK REFERENCE MANUAL

---

Revision R1, for OS1.29 (beta)

This document briefly covers the new functions of the new SPS-1UW User Wave, the sample enabled Machinedrum. Unfortunately the Users manual has not yet been updated, why this will have to do as your source of information for the SPS-1UW for the time being. This over view assumes that you are familiar with the Machinedrum concept. If this is the first time you are using the Machinedrum we recommend that you follow the included SPS-1 Users Manual first.

The SPS-1UW is delivered with 32 preset samples, 48 preset patterns and 14 preset kits. Before going on adding your custom samples and altering the patterns, take some time to listen through the patterns located in banks A,B and C, and listen to songs 1,2 and 3. These might inspire you with methods on how to use the SPS-1UW.

Please refer to the included SPS-1 Users Manual how to select and play patterns and songs.

## (1) SPS-1UW OVERVIEW

---

The SPS-1UW adds two MD-synths to the SPS-1: ROM and RAM.

The ROM machines are flash based and are loaded into the UW's extended DSP memory upon boot. There are 32 ROM machines that can store one sample each. All ROM machines are loaded with a preset sample as factory default, but can be exchanged by the user. The samples of the ROM machines are retained when the Machinedrum is powered down.

There are also two RAM machines, divided in two Record and two Play machines. The RAM machines can record up to two bars of sound from the input A/B or the output A/B. The content of the RAM machines is lost when the Machinedrum is powered down. They are intended for live use.

## (2) USING THE ROM MACHINES

-----

The ROM machines are located in the KIT->EDIT menu. The ROM MD-synth is found as the second last of the SYNTH-list. The ROM machines are labelled from ROM-01 to ROM-32.

All ROM machines offer the same parameters, however a few of the parameters for the last eight ROM machines, ROM-25 to ROM-32, have a slightly different function which will be explained below.

The parameters of the ROM machines are as described below:

PTCH – Pitch	DEC – Decay	HOLD – Hold	BRR – Bit Rate Reduction
STRT – Start	END – End	RTRG – Number of Retrigs	RTIM – Retrig Time

The specifications below are valid for ROM 01-24.

- Pitch** The Pitch parameter adjusts the pitch of the original sample up to two octaves up and down. For the first octave up and down three steps adjusts the pitch one semi-note, allowing pitched samples to be used for easy creation of melodies. The pitched values are found in the range between -36 and 36.
- Decay** The Decay parameter offers the same functionality as the rest of the SPS-1 Machinedrum machines, the only difference being that a Decay setting of 127 gives unlimited Decay. This might be handy for looped samples.
- Hold** The Hold parameter holds the amplitude envelope at maximum for the time specified. Hold at its maximum value keeps the amp env open for 1 bar (16 steps). The lowest setting of Hold=1 keeps the env open for a 1/8 of a step (one 1/32 note).
- BRR** The Bit Rate Reduction (BRR) allows to reduce the quality of the samples from full quality (BRR=0) seamlessly to 2-bit quality (BRR=127). The BRR effect bears similarities to a distortion effect.
- Start** The Start parameter control where the sample should start replay. The Start parameter is exponential, meaning it offers very fine control over the very beginning of the sample. This is convenient for percussion as the transients of the beginning can be fine tuned with surgical precision.

- End     The End parameter is similar to the Start parameter, but sets where the sample should stop play. As well as the Start parameter the end is exponential. If the End parameter is set lower than the start parameter the sample will be played in reverse. In that case it is beneficial to have the exponential control curve for the end parameter to be able to have fine control over the transients at the beginning of the sample.
- RTRG   The Number of Retrigger (RTRG) sets the amount of times the sample should be retriggered. If RTRG is set to its maximum value of 127 you will have unlimited retrigger.
- RTIM   The Retrig Time defines the delay between two subsequent Retrigger. You will need to set RTRG to a number higher than zero to notice any difference with the RTIM parameter.

\*TIP\* As Hold is locked to the tempo it can be used to keep the envelope for percussion or sounds open for certain note length that is retained as well if the tempo is altered.

\*TIP\* Set End lower than Start to play the full or a part of the sample in reverse

\*TIP\* Retrigger can be used for flam-type effects, as well as breaking out of the strict steps. To do this set RTRG to a low value and RTIM to a medium to high value.

\*TIP\* RTIM is locked to the tempo.

The ROM machines ROM-25 to ROM-32 are slightly different. Their functionality is optimised for loops.

The difference in functionality for ROM-25..32 is described below:

- Hold     Hold at its maximum value keeps the amp env open for 2 bars (32 steps). The setting of Hold=1 keeps the env open for a  $\frac{1}{4}$  of a step (one  $\frac{1}{16}$  note).
- Start     The Start parameter is linear, which makes it easy to find a specific position in a loop. For example, in a 2-bar loop,  $\frac{1}{4}$  note (4 steps: 1,5,9,13 etc) is located at  $128/8 = 16$  steps. So for each multiplication of 16 (0,16,32,48 and so on) you find each beat of the loop.
- End     The End parameter is similar to the Start parameter, but sets where the sample should stop play. Just like the Start parameter the End parameter is linear.

\*NEW\* As infinite Decay is introduced there might be moments where your Machinedrum keep making noise even though you pressed STOP. Therefore we have introduced STOP+STOP as a method to force all tracks plus the delay to go quiet. So, if the Machinedrum is running wild and you want to force it to turn quiet, press STOP twice quickly.

### (3) LOADING USER ROM SAMPLES

-----

When delivered all 32 ROM positions are filled with preset samples. These are necessary to be able to play the included preset patterns and songs. You can later restore the memory contents using the factory default reset, see chapter Early Startup Menu below.

To control the ROM sample library, please enter  
GLOBAL SLOT -> MIDI -> SAMPLE MGR

In this window you can see how much flash / DSP memory you have left in percent to the right.

You have three choices for handling the samples in the list named MODE to the left: Receive, Send and Erase.

The second list named POS / SIZE indicates the size in bytes for the different ROM sample positions. If the SIZE column tells “- -” it means that the position is empty / unused.

The Receive and Send options uses MIDI Sample Dump Standard (M-SDS) to transmit samples using MIDI. This is an official MIDI standard and is offered from various sample editors, for example Sound Forge and AWave. However, we recommend that you use our special C6 sample dump program offered from the support page of our web site. It is available for Mac OSX and Windows XP.

#### RECEIVE

-----

To receive a sample, select RECEIVE in the MODE column, then select which ROM sample position you wish to receive it into in the POS / SIZE column. If you select an already existing sample it will be erased and replaced with the newly transferred sample if the new sample was correctly received. After pressing YES you will see the text WAITING blinking in the lower right corner.

There are two methods of transferring samples by MIDI: Closed loop and Open loop. Closed loop needs both the IN and OUT ports to be connected to the sending device (normally a computer). You should now start the sample transfer from the host computer. If the sending device is using closed loop transfer you will see it on the host application.

If you initiate a sample transfer while the SPS-1UW is ready and blinking "WAITING" the blinking text should change to "RECEIVING". Also a counter counting the amount of data received should appear, and a bar being filled as the data is transferred. If everything goes well the bar should be filled up fully. If there was a sample on the position before you will see the UW "CLEANING" first, and then say "READY." for a few seconds. The ROM position received should then tell the size of the new sample.

The sample is now safely stored in the internal flash, and also loaded in the DSP ready to use.

\*TIP\* The SPS-1UW can receive several subsequent samples! Right after receiving one sample the sample manager checks if any more is on its way. If so it will be accepted and received for the next empty position (if any).

\*TIP\* The MIDI Sample Dump Standard offers Sample Position to be included in the dump. If you want to specify the sample position with the host program you can select the option "ORG" which can be found at the end of the POS / SIZE list.

\*TIP\* All sample speeds are accepted and handled by the SPS-1UW from 4 kHz up to 48 kHz. Also 96 kHz is accepted but is down-sampled to half the sampling speed.

\*TIP\* You can always cancel any operation with the CANCEL/NO key.

## TRANSMIT

-----

Select "SEND" in the left MODE column, then select the sample to transfer in the second POS / SIZE column.

The SPS-1UW will first try to do closed loop transfer as it offers handshaking and resending of erroneous data. Therefore it starts to

handshake and negotiate with the other side. If the other side does not respond, or if only the Machinedrum MIDI OUT port is connected to the host computer it will resort to open loop, which offers no error correction.

You will see what method is used in the bottom status text while the data counter and progress bar is being filled.

\*TIP\* If you want to transmit all samples there is a choice for this at the very end of the POS / SIZE list.

#### (4) USING THE RAM MACHINES

-----

The RAM machines are located in the KIT->EDIT menu. The RAM MD-Synth group is found as the last in the SYNTH-list. There are two RAM machines, and they are divided in one record and one play machine each:

RAM-R1, RAM Machine 1 RECORD  
RAM-R2, RAM Machine 2 RECORD  
RAM-P1, RAM Machine 1 PLAY  
RAM-P2, RAM Machine 2 PLAY

To get any sound out of a RAM-PLAY machine you must first use its corresponding RAM-RECORD machine to record audio.

The RAM-PLAY machines have the same parameters as ROM-25..32, so please refer to those for explanation of their functions.

The parameters of the RAM RECORD machines are as described below:

MLEV – Main A/B Level Rec	MBAL – Main A/B Balance	ILEV – Input A/B Level Rec	IBAL – Input A/B Balance
CUE1 – Pre- listen the input	CUE2 – Pre- listen the Rec.	LEN – Record Length	RATE – Record Rate

Please find the full specifications for the RAM RECORD machines below:

MLEV	Input is rerouted internally from the Main Output A/B to the RAM RECORD machine. This parameter sets the level of it to be recorded.
MBAL	The recording is made monophonic. The MBAL decides how the input should be balanced between left and right output.
ILEV	Input is also taken from the Input A/B. The ILEV sets the level of these inputs to be recorded.
IBAL	The recording is made monophonic. The IBAL decides how the input should be balanced between left and right input.
CUE1	The CUE1 sets the level of the pre-listening of what is going to be recorded if the RAM RECORD machine is triggered.
CUE2	The CUE2 sets the level of the pre-listening of what is being recorded by the RAM RECORD machine WHEN it is triggered and while it is recording.
Length	The Length parameter sets how long the recording will be performed. The maximum value of 127 is 2 bars. Each step is $\frac{1}{4}$ of a step. If low on DSP memory turning down the length can increase the recording quality.
RATE	The Rate parameter is normally set to its highest value. Turning it down decreases the sampling speed, introducing alias and artefacts in the sound.

The RAM machines can be used mainly for two purposes:

- 1) Input external audio, from for example a turntable and process it live inside the SPS-1UW. See below for examples of how to use it this way.
- 2) Resample the output of the SPS-1UW, and replay it with effects to do unique delay effects with a unique level of control

\*NOTE\* Some DSP memory is always reserved for the RAM machines. But the RAM machines benefit from free memory unused by the ROM samples. The more memory free the better RAM machine sample quality.

\*NOTE\* Please be very careful when using the CUE functions and resampling the output A/B. These can cause a feedback loop if used without thought.

## (5) EARLY STARTUP MENU

-----

Hold Function while power up the Machinedrum to enter the Early Startup menu. From here you can perform various maintenance tasks as described below.

1. Testmode – If you have any trouble with your Machinedrum and suspect it being a hardware problem, this is the test to perform. All tests presented on screen should pass with OK. Pressing the buttons and turning the encoders can help you test the functionality of the before mentioned buttons and encoders as well as the pixels of the LCD and the LED's.
2. Empty Reset – this reset will clear all kits, patterns, songs and global. However, it will retain your ROM samples in memory.
3. Factory Reset – this reset restores everything to the state you received your SPS-1UW. All ROM samples are restored to the factory default, as well as patterns, kits, songs and globals.
4. Soft Reset – this is a safe reset that should retain all data inside your SPS-1UW. If you experience any strange behaviour, this reset should be safe to try out before turning to the harder Empty and Factory reset. After a Soft Reset boot no samples are loaded to the DSP. This could allow for fixing sample-related problems in the sample manager.
5. MIDI upgrade – this option puts your Machinedrum ready to receive an OS upgrade by MIDI. We recommend that you use the Elektron C6 SYSEX utility available for Mac OSX and Windows XP to transfer a new OS. Keep an eye on Elektron support pages for new OS releases.
6. MIDI send – send upgrade. Use this to share your units OS with friends! Connect both MIDI IN and OUT on both machines from OS1.29 (needed on both units) and upwards to experience the Elektron turbo MIDI protocol!

## (6) UPDATES AND MORE INFO

-----

Please keep an eye on the Elektron and the Machinedrum websites for OS updates and updated information! Good luck!

The Elektron Machinedrum SPS-1UW Development Team:

Daniel Hansson, Anders Gärder, David Möllerstedt,  
Owland Eriksson, Charles Storm, Jesper Kouthoofd