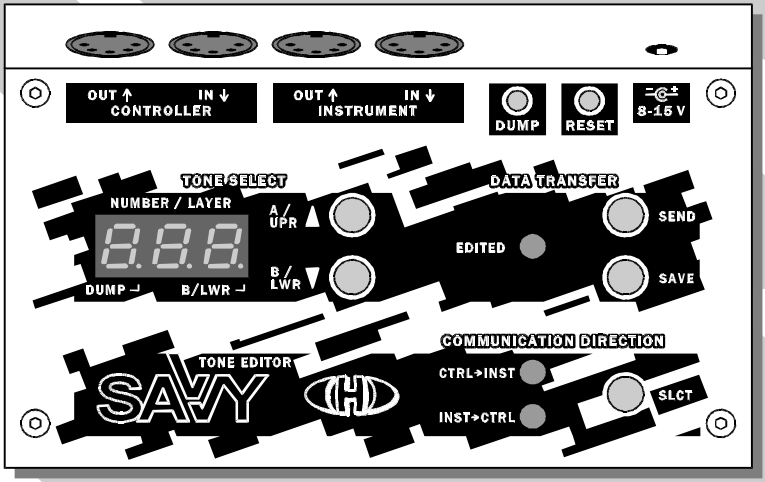
SAVY

Tone Parameters Editor & Controller



Manual Supplement

Roland JX-10, MKS-70 - Super JX (PWM)

OS 005 ver. 2.0

Contents:

1 FEATURES

Supported instruments: Roland – JX-10, MKS-70 – Super JX with Frederic Vecoven´s firmware upgrade version 4 (PWM). The firmware is not compatible with the original JX-10, MKS-70 and Vecoven ver. 3 firmware!

Number of tone memories: 512 (four memory banks)

Individual tone parameters (84x): all Roland JX-10 (Vecoven's upgrade v. 4) tone parameters assigned to MIDI CCs. Patch parameters are not supported.

Modifiers (4x): MOD RATE, MOD DEPTH, BRILLIANCE, ENV TIME

Macro (6x): ENV ATTACK TIME, ENV DECAY TIME, ENV SUSTAIN LEVEL, ENV RELEASE TIME, ENV-1 4-SEG ATTACK, ENV-2 4-SEG ATTACK

Random functions (13x): DCO-1 – Light, DCO-1 – Full, DCO-2 – Light, DCO-2 – Full, DCO X-Mod, DCO Sync, VCF – Light, VCF – Full, VCA, ENV-1, ENV-2, ENV-3, ENV-4, FX, ALL

Dual tone support: Independent control of both A (Upper) and B (Lower) tones within the active Patch Preset[1].

2 PREPARE THE INSTRUMENT

To use SAVVY with your Roland JX-10, you have to set following MIDI functions:

1) Press the **MIDI** button on the instrument panel, LED over the button lights.
2) Select "**[15] CONTROL CHANNEL**" parameter[2].
3) Set "**1**" value[3] of the parameter.
4) Select "**[21] SYSTEM EXCLUSIVE**" parameter.
5) Set "**ON**" value of the parameter.
6) Select "**[22] SYSEX APR**" parameter.
7) Set "**ON**" value of the parameter.
8) Select "**[23] SYSEX IPR**" parameter.
9) Set "**ON**" value of the parameter.

To save the above settings:

1) Set the **MEMORY PROTECT** switch on the rear panel of the instrument to "**OFF**" position (middle).
2) Press the **WRITE** button. LED over the **MIDI** button goes off and display shows "**WRITE MIDI SETTINGS?**".
3) Confirm the saving with **ENTER** button. Display shows "**WRITTEN!**" and LED over the **MIDI** button lights again.
4) Press the **MIDI** button. LED over the button goes off – the new MIDI setting is stored in instrument's memory now.

[1] See Owner´s manual - Chapter 4.2

[2] There are two ways to select a parameter and its value:
A) Select requested parameter with numeric ("**0**" to "**9**") buttons. Set value of the selected parameter with alpha dial. Repeat the procedure for next parameter.
B) Press **PARAM** button and select requested parameter with alpha dial. Press **VALUE** button and set value of the selected parameter with alpha dial. Press **PARAM** button again to select next parameter.

[3] SAVVY use MIDI channel Nr. 1 as a default after factory reset (see System Parameters table). It can be changed by the user anytime. All other MIDI commands for the Patch Preset control must be sent on the same MIDI channel.

3 INSTRUMENT PARAMETERS – MIDI CC ASSIGNMENT

- **Individual tone parameters -** MIDI CCs assigned to individual tone parameters control.
- **Modifiers** - MIDI CCs assigned to tone modifications controls (+/- offsets), that affect more tone parameters simultaneously accordingly to the fixed algorithms. In the middle position (i.e. value 64), the tone is not affected
- **Macros** – MIDI CCs assigned to macro functions that simplify control of more tone parameters simultaneously (e.g simplified ADSR envelope, etc.).
- **Random functions** - MIDI CC assigned to intelligent random functions set random values of selected tone parameters.
- **Tone layer selector** – MIDI CC assigned to switch / select the UPPER or LOWER Tone within the active Patch Preset

All changes of individual tone parameters, Modifiers and results of Macro and Random functions can be saved in SAVVY´s tone memories.

The following table shows factory assigned MIDI CCs numbers, however the assigned MIDI CCs are user definable[4] and can be changed by user.

INDIVIDUAL TONE PARAMETERS			
Parameter Name	**CC Nr.**	**Parameter Name**	**CC Nr.**
[11] DCO-1 RANGE	18	[53] PWM-2 LFO DEPTH	44
[12] DCO-1 WAVEFORM	20	[54] PWM-2 LFO SOURCE	41
[13] DCO-1 TUNE	19	[55] PWM-2 DYNAMICS	39
[14] DCO-1 LFO MOD DEPTH	21	[56] PWM-2 ENV SOURCE	40
[15] DCO-1 LFO SOURCE	67	[61] MIXER DCO-1	58
[16] DCO-1 ENV MOD DEPTH	22	[62] MIXER DCO-2	59
[17] DCO-1 DYNAMICS	23	[63] MIXER ENV MOD DEPTH	60
[18] DCO-1 ENV SOURCE	68	[64] MIXER DYNAMICS	61
[21] DCO-2 RANGE	24	[65] MIXER ENV SOURCE	62
[22] DCO-2 WAVEFORM	27	[71] VCF CUTOFF FREQ	50
[23] DCO-2 TUNE	25	[72] VCF RESONANCE	51
[24] DCO-2 LFO MOD DEPTH	28	[73] VCF LFO-1 MOD DEPTH	52
[25] DCO-2 LFO SOURCE	69	[74] VCF LFO-2 MOD DEPTH	53
[26] DCO-2 ENV MOD DEPTH	29	[75] VCF ENV MOD DEPTH	54
[27] DCO-2 DYNAMICS	30	[76] VCF KEY FOLLOW	55
[28] DCO-2 ENV SOURCE	70	[77] VCF DYNAMICS	56
[31] DCO CROSS MOD	46	[78] VCF ENV SOURCE	57
[32] DCO-2 FINE TUNE	26	[81] VCA LEVEL	71
[33] HPF CUTOFF FREQ	49	[82] VCA ENV SOURCE	73
[34] CHORUS	66	[83] VCA DYNAMICS	72
[41] PWM-1 WIDTH	35	[91] LFO-1 WAVEFORM	12
[42] PWM-1 ENV DEPTH	36	[92] LFO-1 DELAY TIME	14
[43] PWM-1 LFO DEPTH	37	[93] LFO-1 RATE	13
[44] PWM-1 LFO SOURCE	34	[94] LFO-1 LFO-2 DEPTH	47
[45] PWM-1 DYNAMICS	31	[95] LFO-1 SYNC	45
[46] PWM-1 ENV SOURCE	33	[A1] LFO-2 WAVEFORM	15
[51] PWM-2 WIDTH	42	[A2] LFO-2 DELAY TIME	17
[52] PWM-2 ENV DEPTH	43	[A3] LFO-2 RATE	16

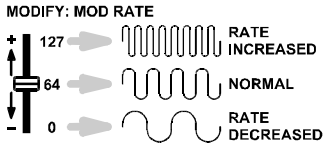
[4] To see how to change the assigned MIDI CCs or make new user map see chapter 5.

INDIVIDUAL TONE PARAMETERS - Continue			
Parameter Name	**CC Nr.**	**Parameter Name**	**CC Nr.**
[A4] LFO-2 LFO-1 DEPTH	48	[C5] ENV-2 TIME3 (DECAY for ENV 4-SEG Macro)	117
[A5] LFO-2 SYNC	63	[C6] ENV-2 LEVEL3 (SUSTAIN for ENV 4-SEG Macro)	118
[B1] ENV-1 TIME1	86	[C7] ENV-2 TIME4 (RELEASE for ENV 4-SEG Macro)	119
[B2] ENV-1 LEVEL1	87	[C8] ENV-2 KEY FOLLOW	85
[B3] ENV-1 TIME2	88	[D1] ENV-3 ATTACK TIME	74
[B4] ENV-1 LEVEL2	89	[D2] ENV-3 DECAY TIME	75
[B5] ENV-1 TIME3 (DECAY for ENV 4-SEG Macro)	104	[D3] ENV-3 SUSTAIN LEVEL	76
[B6] ENV-1 LEVEL3 (SUSTAIN for ENV 4-SEG Macro)	105	[D4] ENV-3 RELEASE TIME	77
[B7] ENV-1 TIME4 (RELEASE for ENV 4-SEG Macro)	106	[D5] ENV-3 KEY FOLLOW	78
[B8] ENV-1 KEY FOLLOW	79	[E1] ENV-4 ATTACK TIME	80
[C1] ENV-2 TIME1	107	[E2] ENV-4 DECAY TIME	81
[C2] ENV-2 LEVEL1	108	[E3] ENV-4 SUSTAIN LEVEL	82
[C3] ENV-2 TIME2	109	[E4] ENV-4 RELEASE TIME	83
[C4] ENV-2 LEVEL2	116	[E5] ENV-4 KEY FOLLOW	84
MODIFIERS			
Modifier Name	**CC Nr.**	**Modifier Name**	**CC Nr.**
MOD RATE	95	BRILLIANCE	93
MOD DEPTH	94	ENV TIME	91
MACROS			
Macro Name	**CC Nr.**	**Macro Name**	**CC Nr.**
ENV ATTACK TIME	110	ENV RELEASE TIME	113
ENV DECAY TIME	111	ENV-1 4-SEG ATTACK	114
ENV SUSTAIN LEVEL	112	ENV-2 4-SEG ATTACK	115
RANDOM FUNCTIONS			
Random Setting Name	**CC Nr.**		
DCO-1,2 / SYNC / VCF / VCA / ENV / LFO / FX	3		
TONE LAYER SELECTOR			
Layer Selector Name	**CC Nr.**		
A (UPPER) / B (LOWER)	9		

3.1 MODIFIERS

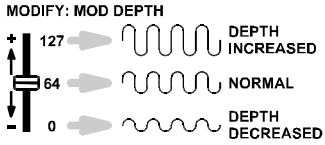
MOD RATE

MOD RATE is a new performance parameter. This modifier changes the rate of the **vibrato**, **growl, LFO delay** or **PWM** effects.



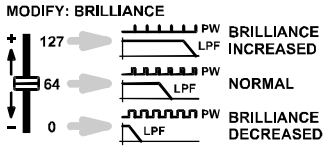
MOD DEPTH

MOD DEPTH is a new performance parameter. This modifier changes the depth of the **vibrato** or **growl** effects.



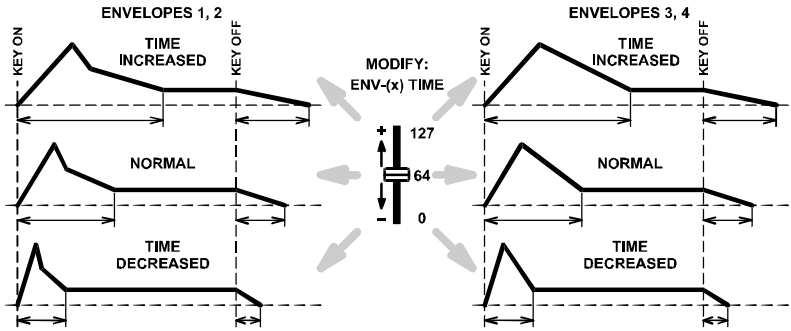
BRILLANCE

BRILLANCE is a new performance parameter. This modifier changes the **Brilliance / sharpness** of the tone



ENV TIME

ENV TIME are a new performance parameters. This modifiers offset all **time segments** of **all Envelope generators** (ENV-1, ENV-2, ENV-3, ENV-4) with single MIDI CC, while preserving all other tone settings (see picture below). The original tone color can be used with various lengths of envelope from short percussive to long evolving pad.



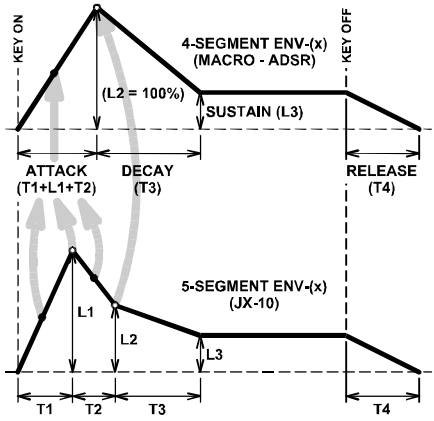
3.2 MACROS

ENV-1 4-SEG ATTACK

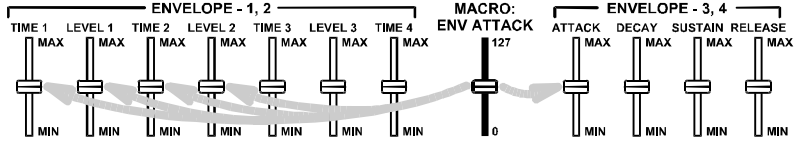
Roland JX-10 upgraded series instruments use 5-segment envelope generator for ENV-1. ENV-1 4-SEG ATTACK Macro emulates **Attack segment** of traditional 4-segment (ADSR) envelope, original tone parameters ENV-1 TIME3, ENV-1 LEVEL3, ENV-1 TIME4 then work as Decay, Sustain and Release segments for ENV-1 envelope generator.

ENV-2 4-SEG ATTACK

Roland JX-10 upgraded series instruments use 5-segment envelope generator for ENV-2. ENV-2 4-SEG ATTACK Macro emulates **Attack segment** of traditional 4-segment (ADSR) envelope, original tone parameters ENV-2 TIME3, ENV-2 LEVEL3, ENV-2 TIME4 then work as Decay, Sustain and Release segments for ENV-2 envelope generator.

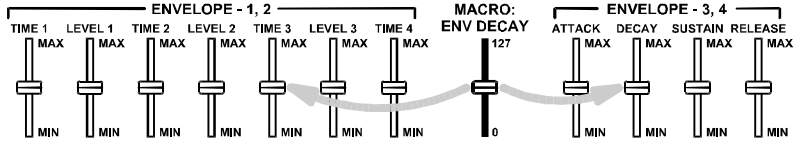


ENV ATTACK TIME



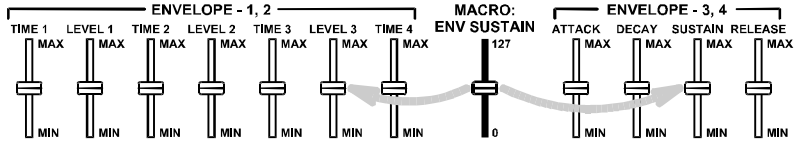
Joint control of **all** envelopes **Attack times** with a single MIDI CC. For envelopes 3 and 4, the CC controls ATTACK TIME parameters of both envelopes directly. For envelopes 1 and 2, the CC controls TIME1, LEVEL1, TIME2 and LEVEL2 parameters of both envelopes the same way as described for ENV-x 4-SEG ATTACK macros above.

ENV DECAY TIME



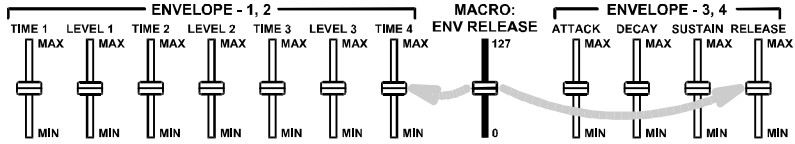
Joint control of **all** envelopes **Decay times** with a single MIDI CC. For envelopes 3 and 4, the CC controls DECAY TIME parameters of both envelopes directly. For envelopes 1 and 2, the CC controls TIME3 parameters of both envelopes directly.

ENV SUSTAIN LEVEL



Joint control of **all** envelopes **Sustain levels** with a single MIDI CC. For envelopes 3 and 4, the CC controls SUSTAIN LEVEL parameters of both envelopes directly. For envelopes 1 and 2, the CC controls LEVEL3 parameters of both envelopes directly.

ENV RELEASE TIME



Joint control of **all** envelopes **Release times** with a single MIDI CC. For envelopes 3 and 4, the CC controls RELEASE TIME parameters of both envelopes directly. For envelopes 1 and 2, the CC controls TIME4 parameters of both envelopes directly.

3.3 RANDOM FUNCTIONS

The random functions or "Intelligent random generator" use MIDI CC #3[5]. There are different random algorithms available as described in the table bellow:

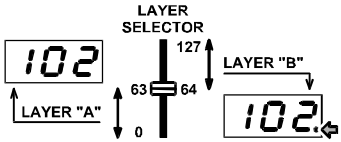
VALUES OF CC ASSIGNED TO RANDOM SETTING FUNCTION CONTROL		
CC Value	**Function**	**Description**
0 ~ 7	n/a	Not used
8 ~ 15	DCO-1 – Light	Limited number and range of DCO parameters without pitch modulation effects for more predictable results.
16 ~ 23	DCO-1 Full	All available DCO parameters in full range, including modulation for more excentric tones and sound effect.
24 ~ 31	DCO2– Light	Limited number and range of DCO parameters without pitch modulation effects for more predictable results.
32 ~ 39	DCO2– Full	All available DCO parameters in full range, including modulation for more excentric tones and sound effect.
40 ~ 47	DCO X-Mod	Specially designed combination of DCO-1 and DCO-2 parameters with Cross modulation, tested for more predictable results.
48 ~ 55	DCO Sync	Specially designed combination of DCO-1 and DCO-2 parameters with Oscillator Sync, tested for more predictable results.
56 ~ 63	VCF – Light	VCF limited range random (both HPF and LPF cutoff and resonance settings)
64 ~ 71	VCF – Full	All available VCF paramateres in full range (both HPF and LPF, including modulations)
72 ~ 79	VCA	VCA modulation parameters random
80 ~ 83	ENV-1	Envelope 1 (all parameters) random
84 ~ 87	ENV-2	Envelope 2 (all parameters) random
88 ~ 91	ENV-3	Envelope 3 (all parameters) random
92 ~ 95	ENV-4	Envelope 4 (all parameters) random
96 ~ 103	ENV-ALL	All four envelopes (all parameters) random
104 ~ 111	FX	Both LFOs and CHORUS (selected parameters) random
112 ~ 115	LFO-1	LFO 1 (all parameters) random
116 ~ 119	LFO-2	LFO 2 (all parameters) random
120 ~ 127	ALL	Full tone random for sound experimenting.

It is recommended to assign push buttons on your hardware MIDI controller with the different MIDI CC #3 values as described in the table above.

3.4 TONE LAYER SELECTOR FUNCTION

The Tone Layer Selector CC selects active layer of the active Patch Preset. Values of the CC from 0 to 63 set "**A (Upper)**" layer, values from 64 to 127 set "**B (Lower)**" layer[6]. Individual tone parameters are controlled only on active tone layer.

It is recommended to assign a "on-off" (bi-stable) push button on your hardware MIDI controller for switching between Tone Layers.



[5] Factory preset value. To see how to change number of assigned MIDI CC see chapter 5.2.
[6] Selected **B / Lower** layer is indicated by decimal point on SAVVY's display.

4 SYSTEM PARAMETERS

System Parameters define basic functions of SAVVY (MIDI channel for communication, MIDI data flow processing, tone number display format, display brightness, etc.).

SYSTEM PARAMETERS				
Parameter			Factory Default[7]	
Name	**Range**	**Description**	**Value**	**Description**
Global Parameters				
MIDI Channel	0 ~ 15	0: Chnl 1 … 15: Chnl 16	0	MIDI Channel Nr. 1
Use Bank Select Command	0 ~ 1	0: No / 1: Yes	1	Yes
MIDI Errors Auto Reset	0 ~ 1	0: Off / 1: On	1	On
Remember last tone	0 ~ 1	0: No / 1: Yes	1	Yes
Tone Number Format	0 ~ 1	0: 0 to 511 / 1: 1 to 512	1	Numbers 1 to 512
Display Brightness	0 ~ 15	0: min … 15: max	15	Maximal brightness
Inst → Ctrl Data Transfer				
Select Device ID for Bulk Dump	0 ~ 1	0: Universal / 1:MIDI Chnl Nr.	0	Universal ID Number
Send All CCs (Tone Change)	0 ~ 1	0: No / 1: Yes	1	Yes
Send One CC (Parameter Change)	0 ~ 1	0: No / 1: Yes	1	Yes
Send Manual Tone Slct as Pgm Chng	0 ~ 1	0: No / 1: Yes	1	Yes
Ctrl → Inst Data Transfer				
Cache Modifications in Edit Buffer	0 ~ 1	0: No / 1: Yes	1	Yes
Cache Macro Settings in Edit Buffer	0 ~ 1	0: No / 1: Yes	1	Yes
Cache Random Setting in Edit Buffer	0 ~ 1	0: No / 1: Yes	1	Yes
Accept Pgm Chng from Ctrl	0 ~ 1	0: No / 1: Yes	1	Yes

4.1 GLOBAL PARAMETERS

4.1.1 MIDI Channel

This parameter sets MIDI channel used for the instrument control (**0 for channel 1, 1 for channel 2, etc. up to 15 for channel 16**). All MIDI Channel messages are received and transmitted on selected MIDI channel only. MIDI channel for the SAVVY editor must be the same as selected MIDI channel of the controlled instrument!

4.1.2 Use Bank Select (CC #32)

If the parameter is 1 (i.e. "**YES**"), SAVVY uses the **CC #32** as the **Bank Select LSB** command for communication between the controller / PC and SAVVY. The CC #32 then defines number of active tone memory bank (0 to 3).

If the parameter is 0 (i.e. "**NO**"), the CC #32 can be used as universal CC for setting of a tone parameter (see chapter 3).

4.1.3 MIDI Errors Auto Reset

If the parameter is 1 (i.e. "**ON**") and an error in MIDI communication occurs, the **communication is reset** and the device continues normal operation.

If the parameter is 0 (i.e. "**OFF**") and an error in MIDI communication occurs, the **device stops operation** and the error status it indicated.

[7] Factory preset values are user editable. See chapter 5 for details..

4.1.4 Remember Last Tone

If the parameter is 1 (i.e. "**YES**"), SAVVY **remembers last selected tone number** after switching off (for next session).

If the parameter is 0 (i.e. "**NO**"), SAVVY always **starts with the first tone** number.

4.1.5 Tone Number Format

This parameter sets the displayed tone number format. It can be either **0** to **511** (parameter value is 0) or **1** to **512** (parameter value is 1).

4.1.6 Display Brightness

The parameter sets the display brightness (**0 for minimum, 15 for maximum**).

4.2 INST → CTRL DATA TRANSFER PARAMETERS

4.2.1 Select Device ID for Bulk Dump

The parameter selects identification number of the SAVVY editor for both transmitted and received MIDI Bulk Dump SysEx Messages.

If the parameter is 1 (i.e. "**MIDI Channel**"), the Device ID number is the same as number of MIDI channel chosen for MIDI communication with the instrument (i.e. global parameter MIDI Channel).

If the parameter is 0 (i.e. "**Universal ID Number**"), the Device ID number is equal to 127. SysEx messages will be in such setting recognized by any SAVVY editor independently on selected MIDI channel number.

4.2.2 Send All CCs (Tone Change)

If the parameter is 1 (i.e. "**YES**"), the SAVVY editor **transmits all CCs** assigned to tone parameters **when tone number is selected / changed** (manually by button on front panel or by APR SysEx message or Program Change command from the instrument).

If the parameter is 0 (i.e. "**NO**"), **no CCs are transmitted after tone select** / change.

4.2.3 Send One CC (Parameter Change)

If the parameter is 1 (i.e. "**YES**"), the SAVVY editor **transmits MIDI CC** assigned to a tone parameter each time the **parameter is changed on the instrument** (by IPR SysEx message).

If the parameter is 0 (i.e. "**NO**"), assigned **CC is not transmitted** after the parameter change.

4.2.4 Send Manual Tone Slct as Pgm Chng

If the parameter is 1 (i.e. "**YES**"), **Program Change** command is **sent to the controller / PC** each time the tone is changed manually (by buttons on SAVVY´s front panel). If “Use Bank Select Command” parameter (see chapter 0) is “YES”, the Bank Select LSB command (i.e. CC #32) is also sent.

If the parameter is 0 (i.e. "**NO**"), **Program Change** command is **not transmitted**.

4.3 CTRL → INST DATA TRANSFER PARAMETERS

4.3.1 Cache Modifications in Edit Buffer

If the parameter is 1 (i.e. "**YES**"), any **change of tone** parameters made by a "Modifier" CCs are **sent to the instrument and remain in edit buffer** (so they can be saved together with the tone parameters in SAVVY´s memory).

If the parameter is 0 (i.e. "**NO**"), the **changes** are only **sent to the instrument and not cached** in edit buffer.

4.3.2 Cache Macro Settings in Edit Buffer

If the parameter is 1 (i.e. "**YES**"), any **change of tone parameters** made by a "Macro" CC are **sent to the instrument and remain in edit buffer** (so they can be saved as a new tone parameters values in SAVVY´s memory).

If the parameter is 0 (i.e. "**NO**"), the **changes are only sent** to the instrument and they are **not cached** in edit buffer.

4.3.3 Cache Random Setting in Edit Buffer

If the parameter is 1 (i.e. "**YES**"), **changes** of tone parameters generated by the "Random" CC are sent to the instrument and **remain in edit buffer** (so they can be saved as a new tone parameters values in SAVVY´s memory).

If the parameter is 0 (i.e. "**NO**"), the **changes** are only sent to the instrument and they are **not cached**.

4.3.4 Accept Pgm Chng from Ctrl

If the parameter is 1 (i.e. "**YES**"), the editor **changes its tone** each time a **Program Change** command **is received** from the connected controller / PC. Number of newly selected tone bank conforms to value of the received Program Change command. If "Use Bank Select Command" parameter (see chapter 0) is "YES", the Bank Select LSB command (i.e. CC #32) is also accepted and active tone bank is also changed.

If the parameter is 0 (i.e. "**NO**"), **Program Change** command is **ignored** by the SAVVY.

5 SYSEX MESSAGES GENERATOR

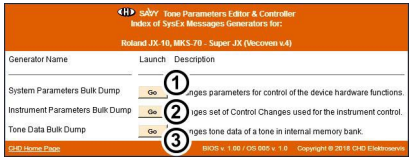
As a support for the users we have made software generator to create System Exclusive messages to control the SAVVY editor. Any necessary SysEx message can be created with this generator without difficult calculating of binary or hexadecimal numbers.

The generator is based on Java scripts so it can run on any computer with web browser (Windows, OSX, etc.)[8]. To send the generated commands you will also need a **utility to send the generated text[9] as a MIDI SysEx dump** (see chapter 6 for recommended software[10]).

Visit our website and download the "**syxgen_005-20_Roland-JX-10-V4PWM.zip**" archive for Roland JX-10 instrument. Expand the archive to a selected folder on your computer's hard drive (i.e. "**index.html**", "**00520_general.html**", "**00520_instrument.html**", "**00520_tone.html**" and "**00520_help.html**" files and "**media**" sub-folder).

To launch the SysEx messages generator, simply open the "**index.html**" file in your web browser (e.g. by clicking on the file icon). The generator type selector window opens.

Click on "**Go**" button to request either **System Parameters** ①, **Instrument Parameters** ② or **Tone Data** ③ SysEx message generator windows.

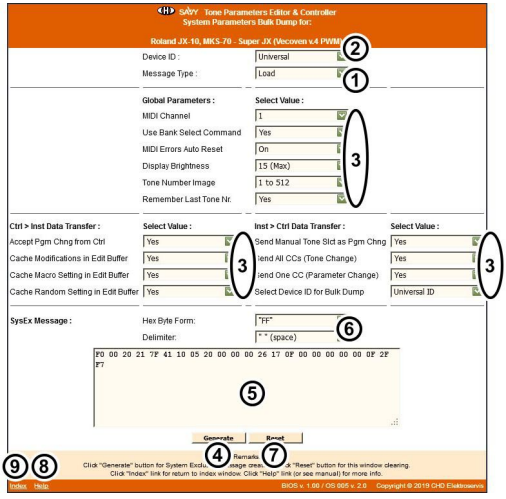


5.1 SYSTEM PARAMETERS WINDOW

5.1.1 Change the system parameters

To change / adjust the system parameters:

1. Select "**Load**" message type ①.
2. Select the "**Device ID**" ② (It is either the same number as active MIDI Channel Nr. or "**Universal**"[11]).
3. Select / adjust requested values of System parameters to be changed ③.
4. Click the "**Generate**" button ④.
5. The hexadecimal MIDI SysEx message is generated as a text in the "**SysEx Message**" field ⑤.
6. **Copy** the text in clipboard (CTRL+C) and **paste** (CTRL+V) to a MIDI Sysex software[12].
7. Send the message to SAVVY[13].
8. SAVVY starts operation with the new system parameters settings immediately, no reset is necessary.



[8] Note that scripts and ActiveX elements must be enabled in web browser for proper function of the generator.
[9] The generated format of the message is **text.** The text can not be saved as a *.syx or *.mid file directly, hence a text to SysEx utility is needed.
[10] It is not necessary to use the recommended utility. The same function is provided by various DAW and MIDI SysEx softwares. For required text format and instructions check the documentation of your DAW/software.
[11] "Universal" ID will be recognized by any SAVY editor.
[12] See Chapter 6.1.2 for recommended MIDI SysEx software.
[13] SAVVY must be set in "**CTRL→INST**" communication direction.

5.1.2 Request the contents of system memory

To request the contents of System paramters memory for backup in your computer:

1. Select "**Request**" message type ①.
2. Select the "**Device ID**" ② (It is either the same number as active MIDI Channel Nr. or "**Universal**"[14]).
3. Click the "**Generate**" button **④.**
4. The hexadecimal MIDI SysEx message is generated as a text in the "**SysEx Message**" field ⑤.
5. **Copy** the text in clipboard (CTRL+C) and **paste** (CTRL+V) in a MIDI Sysex software[15].
6. Send the message to SAVVY[16].
7. SAVVY responds immediately – it sends the System parameter settings as "**Load**" type SysEx message[17].
8. Now you can save the received message in your computer for further use.

5.1.3 Initialize data

To initialize the System data to factory default values:

1. Select "**Initialize**" message type ①.
2. Select the "**Device ID**" ② (It is either the same number as active MIDI Channel Nr. or "**Universal**"[18]).
3. Click the "**Generate**" button **④.**
4. The hexadecimal MIDI SysEx message is generated as a text in the "**SysEx Message**" field ⑤.
5. **Copy** the text in clipboard (CTR+C) and **paste** (CTRL+V) in a MIDI Sysex software[19].
6. Send the message to SAVVY[20].
7. SAVVY starts operation with the initialized system settings immediately, no reset is necessary.

5.1.4 Other functions

Select "**Hex Byte Form**" and "**Delimiter**" character ⑥ as required for your MIDI SysEx software[21]**.** Default setting of the generator is optimized for the recommended **Pocket MIDI** utility[22] (see Chapter 6). However some DAW or MIDI SysEx utilities require different format of the generated text message.

To clear the text field and return all values to their defaults, click the "**Reset**" button ⑦.

"**Help**" link ⑧ opens new window with brief help.

"**Index**" link ⑨ closes this window and returns to initial generator type selection window.

[14] "Universal" ID will be recognized by any SAVY editor.
[15] See Chapter 6.1.3 for recommended MIDI SysEx software.
[16] SAVVY must be set in "CTRL→INST" communication direction and your computer must be connected bi-directonally (both MIDI IN and OUT cables) with SAVVY.
[17] If you are using the recommended MIDI SysEx software, the message should be visible in the "MIDI In Monitor" window - see Chapter 6.1.3.
[18] "Universal" ID will be recognized by any SAVY editor.
[19] See Chapter 6.1.2 for recommended MIDI SysEx software.
[20] SAVVY must be set in "CTRL→INST" communication direction.
[21] See the documentation of your DAW for required format.
[22] The default format is also compatible with Bome SendSX and various other softwares.

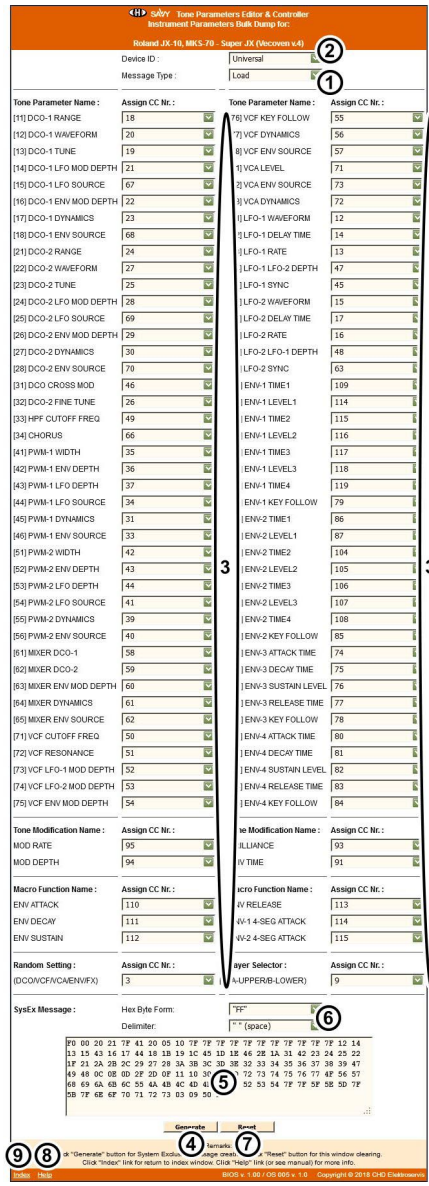
5.2 INSTRUMENT PARAMETERS WINDOW

5.2.1 Create / adjust the MIDI CC map

You can **create** your own user **MIDI CC map** in this generator window (e.g. to use your modern Virtual analogue synthesizer as a controller for your vintage instrument).

To create your own MIDI CC map:

1. Select "**Load**" message type ①.
2. Select the "**Device ID**" ② (It is either the same number as active MIDI Channel Nr. or "**Universal**"[23]).
3. For each of tone parameter and functions, select / change the respective MIDI CC[24] Nr. as you need ③.
4. Click the "**Generate**" button ④.
5. The hexadecimal MIDI SysEx message is generated as a text in the "**SysEx Message**" field ⑤.
6. **Copy** the text in clipboard (CTRL+C) and **paste** (CTRL+V) to a MIDI Sysex software[25].
7. Send the message to SAVVY[26].
8. SAVVY starts operation with the new user MIDI CC mapping immediately, no reset is necessary.



5.2.2 Request MIDI CC map

Actual **MIDI CC map** can be **saved** in your computer for backup. To request the MIDI CC map:

1. Select "**Request**" message type ①.
2. Select the "**Device ID**" ② (It is either the same number as active MIDI Channel Nr. or "**Universal**"[27]).
3. Click the "**Generate**" button ④.
4. The hexadecimal MIDI SysEx message is generated as a text in the "**SysEx Message**" field ⑤.
5. **Copy** the text in clipboard (CTRL+C) and **paste** (CTRL+V) in a MIDI Sysex software[28].
6. Send the message to SAVVY[29].

[23] "Universal" ID will be recognized by any SAVY editor.
[24] You can assign more than one parameter to a single MIDI CC Nr.
[25] See Chapter 6.1.2 for recommended MIDI SysEx software.
[26] SAVVY must be set in "CTRL→INST" communication direction.
[27] "Universal" ID will be recognized by any SAVY editor.
[28] See Chapter 6.1.3 for recommended MIDI SysEx software.
[29] SAVVY must be set in "CTRL→INST" communication direction and your computer must be connected bi-directonally (both MIDI IN and OUT cables) with SAVVY.

7. SAVVY responds immediately – it sends the MIDI CC map as "**Load**" type SysEx message[30].
8. Now you can save the received message in your computer for further use.

5.2.3 Initialize MIDI CC map

To **Initialize** the MIDI CC map **to factory default** values:

1. Select "**Initialize**" message type ①.
2. Select the "**Device ID**" ② (It is either the same number as active MIDI Channel Nr. or "**Universal**"[31]).
3. Click the "**Generate**" button ④.
4. The hexadecimal MIDI SysEx message is generated as a text in the "**SysEx Message**" field ⑤.
5. **Copy** the text in clipboard (CTR+C) and **paste** (CTRL+V) in a MIDI Sysex software[32].
6. Send the message to SAVVY[33].
7. SAVVY starts operation with the initialized MIDI CC map immediately, no reset is necessary.

5.2.4 Other functions

Select "**Hex Byte Form**" and "**Delimiter**" character ⑥ as required for your MIDI SysEx software[34]. Default setting of the generator is optimized for the recommended **Pocket MIDI** utility[35] (see Chapter 6). However some DAW or MIDI SysEx utilities require different format of the generated text message.

To clear the text field and return all values to their defaults, click the "**Reset**" button ⑦.

"**Help**" link ⑧ opens new window with brief help.

"**Index**" link ⑨ closes this window and returns to initial generator type selection window.

[30] If you are using the recommended MIDI SysEx software, the message should be visible in the "MIDI In Monitor" window - see Chapter 6.1.3.
[31] "Universal" ID will be recognized by any SAVY editor.
[32] See Chapter 6.1.2 for recommended MIDI SysEx software.
[33] SAVVY must be set in "**CTRL→INST**" communication direction.
[34] See the documentation of your DAW for required format.
[35] The default format is also compatible with Bome SendSX and various other softwares.

5.3 TONE DATA WINDOW

5.3.1 Create single user tone

A **single tone** can be **created** by entering the individual tone parameter values (e.g. to create tone from a Magazine paper sheets, Video tutorials or advices from other users).

To create your own user tone:

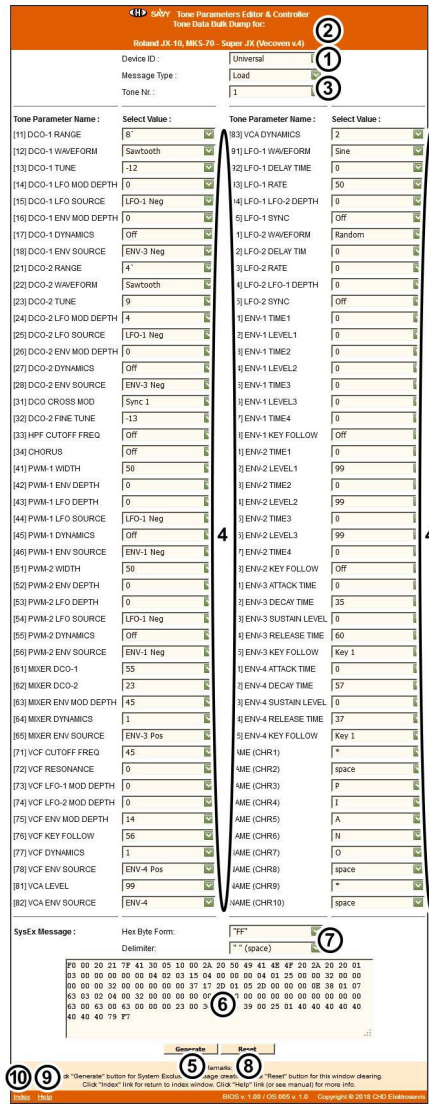
1. Select "**Load**" message type ①.
2. Select the "**Device ID**" ② (It is either the same number as active MIDI Channel Nr. or "**Universal**"[36]).
3. Select the "**Tone Nr.**" you want to create ③.
4. Select / change the respective value for each of tone parameters ④.
5. Click the "**Generate**" button ⑤.
6. The hexadecimal MIDI SysEx message is generated as a text in the "**SysEx Message**" field ⑥.
7. **Copy** the text in clipboard (CTRL+C) and **paste** (CTRL+V) to a MIDI Sysex software[37].
8. Send the message to SAVVY[38].
9. SAVVY saves the new tone to selected "**Tone Nr.**" for immediate use.

5.3.2 Request single tone

A **single tone** can be **backed up** (e.g. to share your sounds with other users).

To request single tone data:

1. Select "**Request**" message type ①.
2. Select the "**Device ID**" ② (It is either the same number as active MIDI Channel Nr. or "**Universal**"[39]).
3. Select the "**Tone Nr.**" you want to request / backed-up ③.
4. Click the "**Generate**" button ⑤.
5. The hexadecimal MIDI SysEx message is generated as a text in the "**SysEx Message**" field ⑥.
6. **Copy** the text in clipboard (CTRL+C) and **paste** (CTRL+V) in a MIDI Sysex software[40].



[36] "Universal" ID will be recognized by any SAVY editor.
[37] See Chapter 6.1.2 for recommended MIDI SysEx software.
[38] SAVVY must be set in "CTRL→INST" communication direction.
[39] "Universal" ID will be recognized by any SAVY editor.
[40] See Chapter 6.1.3 for recommended MIDI SysEx software.

7. Send the message to SAVVY[41].
8. SAVVY responds immediately – it sends the MIDI CC map as "**Load**" type SysEx message[42].
9. Now you can save the received message in your computer for further use.

5.3.3 Initialize single tone

To **Initialize** a single tone **to factory default** values:

1. Select "**Initialize**" message type ①.
2. Select the "**Device ID**" ② (It is either the same number as active MIDI Channel Nr. or "**Universal**"[43]).
3. Select the "**Tone Nr.**" you want to initialize ③
4. Click the "**Generate**" button ④.
5. The hexadecimal MIDI SysEx message is generated as a text in the "**SysEx Message**" field ⑤.
6. **Copy** the text in clipboard (CTR+C) and **paste** (CTRL+V) in a MIDI Sysex software[44].
7. Send the message to SAVVY[45].
8. SAVVY initializes and saves the selected tone immediately, no reset is necessary.

5.3.4 Other functions

Select "**Hex Byte Form**" and "**Delimiter**" character ⑥ as required for your MIDI SysEx software[46]. Default setting of the generator is optimized for the recommended **Pocket MIDI** utility[47] (see Chapter 6). However some DAW or MIDI SysEx utilities require different format of the generated text message.

To clear the text field and return all values to their defaults, click the "**Reset**" button ⑦.

"**Help**" link ⑧ opens new window with brief help.

"**Index**" link ⑨ closes this window and returns to initial generator type selection window.

[41] SAVVY must be set in "CTRL→INST" communication direction and your computer must be connected bi-directonally (both MIDI IN and OUT cables) with SAVVY.
[42] If you are using the recommended MIDI SysEx software, the message should be visible in the "MIDI In Monitor" window - see Chapter 6.1.3.
[43] "Universal" ID will be recognized by any SAVY editor.
[44] See Chapter 6.1.2 for recommended MIDI SysEx software.
[45] SAVVY must be set in "CTRL→INST" communication direction.
[46] See the documentation of your DAW for required format.
[47] The default format is also compatible with Bome SendSX and various other softwares.

6 RECOMMENDED MIDI SOFTWARE

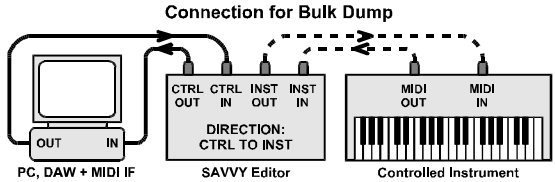
The hexadecimal MIDI SysEx messages created in the Generators (as described in chapter 5) are in **plain text format.** The text can not be saved as a *.syx or *.mid file directly, hence a text to SysEx capable utility or DAW is needed.

6.1 POCKET MIDI

Pocket MIDI[48] is a utility that can be used to send the text as a SysEx message. It is a simple MIDI monitoring tool for both Windows and Mac OSX platforms. **Pocket MIDI** is a **freeware** for commercial, non-profit or private use.

6.1.1 Setting up the computer[49] and software

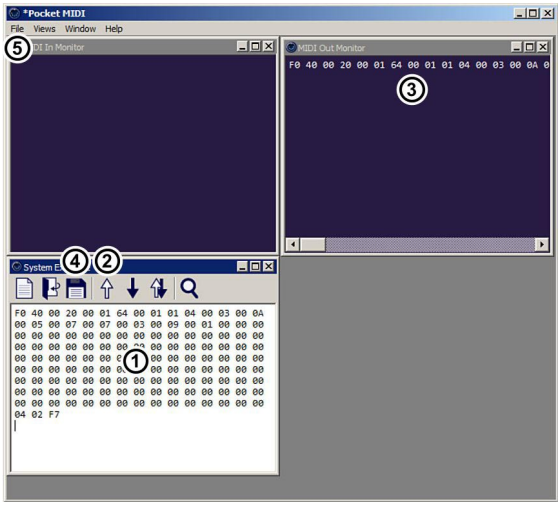
1. **Download** the **Pocket MIDI** utility at **https://www.morson.jp/pocketmidi-webpage/**
2. **Install** the utility in your computer.
3. **Connect** SAVVY accordingly to the figure "Connection for Bulk Dump"**.**
4. **Select** the MIDI interface **Input and Outputs** to device where the SAVVY is connected to (drop-down menu **Views → MIDI Settings → Input Port / Outpu Port**).



6.1.2 Send the text SysEx message to SAVVY

Basic procedure to send any SysEx data to SAVVY.

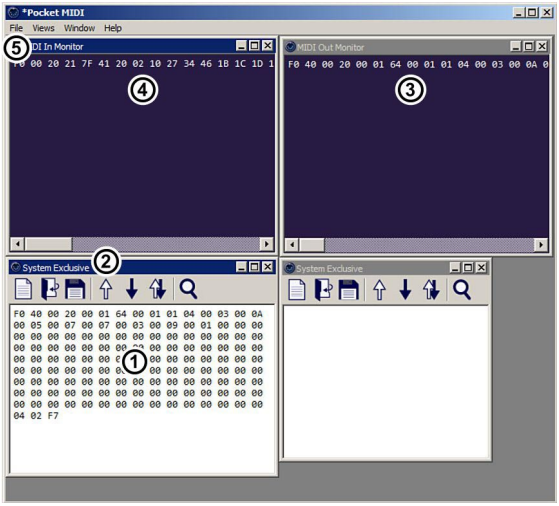
1. Generate required SysEx message in the SysEx Messages Generator (as described in Chapter 5)[50].
2. **Copy** the text in clipboard (CTR+C) and **paste** (CTRL+V) in "**System Exclusive**" window①**.**
3. Click the "↑" ("**Transmit**") arrow ② to send the data to SAVVY.
4. The sent message appears in the "**MIDI Out Monitor**" window ③.
5. Alternatively **you can save the file** for future use (either by the floppy icon ④ as a *.txt file or in the drop-down "**File**" menu ⑤ as a *.pocketmidi file).



6.1.3 Request the SysEx data from SAVVY

[48] Pocket MIDI is Copyright © MORSON JAPAN Co.,Ltd. All rights reserved.
[49] Computer MIDI interface must be active / switched on and all necessary MIDI drivers correctly installed.
[50] The correct "**FF**" Hex Byte Form and "**' ' (space)**" for Delimiter are the initial values after the generator is launched, so there is no need to change them for Pocket MIDI.

1. **Generate** required ("**Request**" type) SysEx message in the SysEx Messages Generator (as described in Chapter 5)[51].
2. **Copy** the text in clipboard (CTR+C) and **paste** (CTRL+V) in "System Exclusive" window ①.
3. Click the "↑" ("**Transmit**") arrow ② to send the data to SAVVY.
4. The sent message appears in the "**MIDI Out Monitor**" window ③.
5. SAVVY responds with "**Load**" type SysEx message. The received message appears in the "**MIDI In Monitor**" window ④.
6. Click on the "**MIDI In Monitor**" window heading and **Save** the data (File downdrop menu ⑤) as a *.pocketmidi file) for future use.
7. Alternatively **you can copy the data** (CTRL+C) from "**MIDI In Monitor**" window ④ and paste (CTRL+V) to any text editor and **save** as a *.txt or **document file.**



6.2 ALTERNATIVE SOFTWARE SOLUTIONS

There are various DAW and MIDI utilites[52] that can be used for the communication with SAVVY, both commercial and free. Among the others:

MIDI-OX (free for private users, paid for commercial users) – advanced MIDI tool for MS Windows computers:
http://www.midiox.com/

Bome SendSX (postcardware for private users, reasonably paid for commercial users) – Simple and effective MS Windows MIDI utility:
https://www.bome.com/products/sendsx

InerziaSysEx (commercial) – advanced MIDI tool for Mac OSX:
available on iTunes

Steinberg Cubase Pro (commercial) - DAW for both MS Windows and Mac OSX computers with full sysex support:
http://www.steinberg.net

Apple Logic Pro (commercial) – Mac OSX DAW with full sysex support (all versions up to Logic Pro X):
https://www.apple.com/logic-pro/

Cakewalk Sonar (commercial) – MS Windows DAW with full sysex support:
http://www.cakewalk.com/

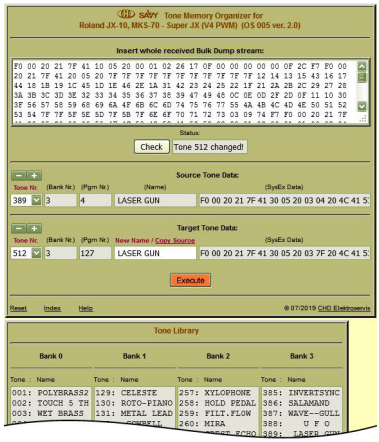
etc.

[51] The correct "**FF**" Hex Byte Form and "**' ' (space)**" for Delimiter are the initial values after the generator is launched, so there is no need to change them for Pocket MIDI.
[52] All mentioned products are copyright of their respective owners.

7 TONE MEMORY ORGANIZER

The Tone Memory Organizer is a support software what we have made for the users to rename and relocate individual tones stored in SAVVY's tone memory. Also whole tone banks can be copied, exchanged or initialized.

The software and guide how to use it are available for downloading at our website.



Tone Parameters Editor & Controller
Model TPE-1 Nr. 8-361 / Bios v. 1.00 / OS Nr. 005 v. 2.0
Document: 8361100-00520_manual

Manufacturer:
CHD Elektroservis, Czech Republic
www.chd-el.cz info@chd-el.cz


SAVVY
Tone Parameters Editor & Controller