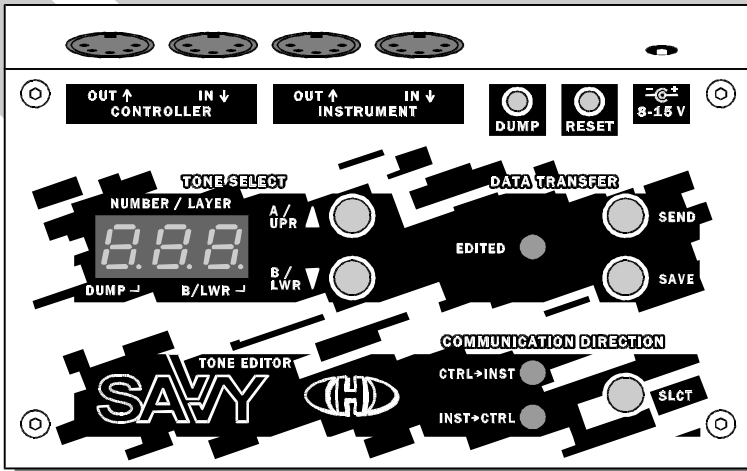


# SAVY

## Tone Parameters Editor & Controller



MIDI System Exclusive Communication  
Roland JX-8P

OS 003 ver. 2.0



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## 1 SYSEX MESSAGES STRUCTURE

For Roland JX-8P, SAVVY receives / transmits own specific SysEx messages with the following structure:

[hex]	[bin]	Byte	Range [dec]
F0	11110000	Start SysEx	
00	00000000	Manufacturer ID (always 3 byte)	
20	00100000		
21	00100001		
ii	0iiiiiii	Device ID <sup>1)</sup>	0 ~ 15 (MIDI Chnl) / 127 (Universal)
41	01000001	Model ID	
cc	0ccc0000	Command <sup>2)</sup>	16 / 32 / 48 / 64
03	00000011	Instrument ID = Roland JX-8P	
20	00100000	Version ID = OS ver. 2.0	
d1	0ddddd	Data Bytes <sup>3)</sup>	
..	.....		
dn	0ddddd		
xx	0xxxxxxx	Checksum <sup>4)</sup>	
F7	11110111	End SysEx	

### Remarks:

<sup>1)</sup> The 'Device ID' byte is equal to a number of active MIDI channel (00h for channel Nr. 1, 01h for channel Nr. 2 etc.) for both received and transmitted messages. For messages sent to SAVVY, universal ID 127 can also be set – "Universal ID" message will be always recognized independently on the active MIDI channel number.

<sup>2)</sup> The 'Command' byte specifies the message type i.e. the SAVVY activity after the whole SysEx message is received – see next chapters.

<sup>3)</sup> Number of databytes and their structure is variable in dependence on 'Command' byte. Length of the datablock can be 12, 84, 75 or 3 bytes.

<sup>4)</sup> The 'Checksum' byte confirms the validity of the SysEx message. It must be calculated as 7-bit complement of the sum of bytes from 'Model ID' to 'Data Bytes'. By other words, seven-bit sum of bytes from the 'Model ID' to 'Checksum' must be equal to zero (for the 'Checksum' calculation see also chapter 2).

### 1.1 BULK DUMP LOAD SYSTEM PARAMETERS COMMAND

By transmitting of the "**Bulk Dump Load System Parameters**" message to the device, it is allowed to change the content of system parameters memory bank saved in the device's user memory. This type of SysEx message is also sent from the device as immediate response to received "**Bulk Dump Request System Parameters**" SysEx command (see chapter 1.5). When **DUMP** button on the device's panel is pressed, "**Bulk Dump Load System Parameters**" message is sent from the device as one part of stream of SysEx messages.

Value of "**cc**" (Command) byte is 16 (i.e 10 hex) for "**Bulk Dump Load System Parameters**" command.

The data block "**d1...dn**" always contains 12 bytes with the following structure:

Byte	[hex]	[bin]	Range [dec]	Parameter
d1	xx	0xxxxxxx	0 ~ 15	Global Parameter: MIDI Channel
d2	00	00000000	0 <sup>1)</sup>	not used
d3	00	00000000	0 <sup>1)</sup>	not used
d4	xx	00fedcba		Inst → Ctrl Data Transfer Parameters:
			a: 0 ~ 1	Select Device ID for Bulk Dump
			b: 0 ~ 1	Send All CCs (Tone Change)
			c: 0 ~ 1	Send One CC (Parameter Change)
			d: 0 ~ 1	Transfer Pgm Chng from Inst to Ctrl
			e: 0 ~ 1	Accept Pgm Chng from Inst
			f: 0 ~ 1	Send Manual Tone Slct as Pgm Chng

Byte	[hex]	[bin]	Range [dec]	Parameter
d5	xx	00fedcba		Ctrl → Inst Data Transfer Parameters:
			a: 0 ~ 1	Cache Modifications in Edit Buffer
			b: 0 ~ 1	Cache Macro Settings in Edit Buffer
			c: 0 ~ 1	Cache Random Setting in Edit Buffer
			d: 0 ~ 1	Transfer Pgm Chng from Ctrl to Inst
			e: 0 ~ 1	Accept Pgm Chng from Ctrl
			f: 0 ~ 1	Send Manual Tone Slct as Pgm Chng
d6	0x	0000dcba		Global Parameters:
			a: 0 ~ 1	MIDI Errors Auto Reset
			b: 0 ~ 1	Remember Last Tone
			c: 0 ~ 1	Tone Number Format
			d: 0 ~ 1	Use Bank Select Command
d7	00	00000000	0 <sup>1)</sup>	not used
d8	00	00000000	0 <sup>1)</sup>	not used
d9	00	00000000	0 <sup>1)</sup>	not used
d10	00	00000000	0 <sup>1)</sup>	not used
d11	00	00000000	0 <sup>1)</sup>	not used
d12	0x	0000xxxx	0 ~ 15	Global Parameter: Display Brightness

**Remarks:**

<sup>1)</sup> These bytcec must be always equal to 0! If not, the SAVVY will not work correctly.

## 1.2 BULK DUMP LOAD INSTRUMENT PARAMETERS COMMAND

By transmitting of the "Bulk Dump Load Instrument Parameters" message to the device, it is allowed to change the content of instrument parameters memory bank saved in the device's user memory. This type of SysEx message is also sent from the device as immediate response to received "Bulk Dump Request Instrument Parameters" SysEx command (see chapter 1.5). When DUMP button on the device's panel is pressed, "Bulk Dump Load Instrument Parameters" message is sent from the device as one part of stream of SysEx messages.

Value of "cc" (Command) byte is 32 (i.e. 20 hex) for "Bulk Dump Load Instrument Parameters" command.

The data block "d1...dn" always contains 84 bytes with the following structure:

Byte	[hex]	[bin]	Range [dec]	CC Assignment to a Parameter
d1	7F	01111111	127 <sup>2)</sup>	not used
d2	7F	01111111	127 <sup>2)</sup>	not used
d3	7F	01111111	127 <sup>2)</sup>	not used
d4	7F	01111111	127 <sup>2)</sup>	not used
d5	7F	01111111	127 <sup>2)</sup>	not used
d6	7F	01111111	127 <sup>2)</sup>	not used
d7	7F	01111111	127 <sup>2)</sup>	not used
d8	7F	01111111	127 <sup>2)</sup>	not used
d9	7F	01111111	127 <sup>2)</sup>	not used
d10	7F	01111111	127 <sup>2)</sup>	not used
d11	7F	01111111	127 <sup>2)</sup>	not used
d12	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	DCO-1 RANGE
d13	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	DCO-1 WAVEFORM
d14	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	DCO-1 TUNE
d15	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	DCO-1 LFO MOD DEPTH
d16	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	DCO-1 ENV MOD DEPTH
d17	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	DCO-2 RANGE
d18	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	DCO-2 WAVEFORM
d19	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	DCO CROSSMOD
d20	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	DCO-2 TUNE
d21	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	DCO-2 FINE TUNE
d22	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	DCO-2 LFO MOD DEPTH
d23	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	DCO-2 ENV MOD DEPTH
d24	7F	01111111	127 <sup>2)</sup>	not used



Byte	[hex]	[bin]	Range [dec]	CC Assignment to a Parameter
d25	7F	01111111	127 <sup>2)</sup>	not used
d26	7F	01111111	127 <sup>2)</sup>	not used
d27	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	DCO DYNAMICS
d28	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	DCO ENV MODE
d29	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	MIXER DCO-1
d30	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	MIXER DCO-2
d31	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	MIXER ENV MOD DEPTH
d32	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	MIXER DYNAMICS
d33	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	MIXER ENV MODE
d34	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	HPF CUTOFF FREQ
d35	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	VCF CUTOFF FREQ
d36	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	VCF RESONANCE
d37	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	VCF LFO MOD DEPTH
d38	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	VCF ENV MOD DEPTH
d39	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	VCF KEY FOLLOW
d40	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	VCF DYNAMICS
d41	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	VCF ENV MODE
d42	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	VCA LEVEL
d43	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	VCA DYNAMICS
d44	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	CHORUS
d45	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	LFO WAVEFORM
d46	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	LFO DELAY TIME
d47	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	LFO RATE
d48	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	ENV-1 ATTACK TIME
d49	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	ENV-1 DECAY TIME
d50	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	ENV-1 SUSTAIN LEVEL
d51	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	ENV-1 RELEASE TIME
d52	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	ENV-1 KEY FOLLOW
d53	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	ENV-2 ATTACK TIME
d54	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	ENV-2 DECAY TIME
d55	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	ENV-2 SUSTAIN LEVEL
d56	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	ENV-2 RELEASE TIME
d57	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	ENV-2 KEY FOLLOW
d58	7F	01111111	127 <sup>2)</sup>	not used
d59	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	VCA ENV MODE
d60	7F	01111111	127 <sup>2)</sup>	not used
d61	7F	01111111	127 <sup>2)</sup>	not used
d62	7F	01111111	127 <sup>2)</sup>	not used
d63	7F	01111111	127 <sup>2)</sup>	not used
d64	7F	01111111	127 <sup>2)</sup>	not used
d65	7F	01111111	127 <sup>2)</sup>	not used
d66	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	Modifier: MOD RATE
d67	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	Modifier: MOD DEPTH
d68	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	Modifier: BRILLIANCE
d69	7F	01111111	127 <sup>2)</sup>	not used
d70	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	Modifier: ENV TIME
d71	7F	01111111	127 <sup>2)</sup>	not used
d72	7F	01111111	127 <sup>2)</sup>	not used
d73	7F	01111111	127 <sup>2)</sup>	not used
d74	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	Macro: ENV ATTACK
d75	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	Macro: ENV DECAY
d76	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	Macro: ENV SUSTAIN
d77	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	Macro: ENV RELEASE
d78	7F	01111111	127 <sup>2)</sup>	not used
d79	7F	01111111	127 <sup>2)</sup>	not used
d80	7F	01111111	127 <sup>2)</sup>	not used
d81	7F	01111111	127 <sup>2)</sup>	not used
d82	7F	01111111	127 <sup>2)</sup>	not used
d83	7F	01111111	127 <sup>2)</sup>	not used
d84	xx	0xxxxxxx	0 ~ 126 / 127 <sup>1)</sup>	RANDOM FUNCTION

**Remarks:**

<sup>1)</sup> Values 0 to 126 assign corresponding CC number to the parameter, value 127 means that no CC is assigned to the parameter.

<sup>2)</sup> These bytes must be always equal to 127! If not, the SAVVY will not work correctly.

**1.3 BULK DUMP LOAD TONE DATA COMMAND**

By transmitting of the "**Bulk Dump Load Tone Data**" message to the device, it is allowed to change the content of one part of tone data memory bank saved in the device's user memory. This type of SysEx message is also sent from the device as immediate response to received "**Bulk Dump Request Tone Data**" SysEx command (see chapter 1.5). When **DUMP** button on the device's panel is pressed, "**Bulk Dump Load Tone Data**" messages are sent from the device for each of stored tones as 128 parts of stream of SysEx messages.

Value of "cc" (Command) byte is 48 (i.e 30 hex) for "**Bulk Dump Load Tone Data**" command.

The data block "**d1...dn**" always contains 75 bytes with the following structure:

Byte	[hex]	[bin]	Range [dec]	Tone Parameter	Remark <sup>6)</sup> : TONE NAME CHR Values
d1	xx	00000xxx	0 ~ 5	BANK NUMBER <sup>1)</sup>	Value Character
d2	xx	0xxxxxxxx	0 ~ 127	TONE NUMBER <sup>2)</sup>	48 0
d3	xx	0xxxxxxxx	32 ~ 92 <sup>6)</sup>	TONE NAME (CHR1)	49 1
d4	xx	0xxxxxxxx	32 ~ 92 <sup>6)</sup>	TONE NAME (CHR2)	50 2
d5	xx	0xxxxxxxx	32 ~ 92 <sup>6)</sup>	TONE NAME (CHR3)	51 3
d6	xx	0xxxxxxxx	32 ~ 92 <sup>6)</sup>	TONE NAME (CHR4)	52 4
d7	xx	0xxxxxxxx	32 ~ 92 <sup>6)</sup>	TONE NAME (CHR5)	53 5
d8	xx	0xxxxxxxx	32 ~ 92 <sup>6)</sup>	TONE NAME (CHR6)	54 6
d9	xx	0xxxxxxxx	32 ~ 92 <sup>6)</sup>	TONE NAME (CHR7)	55 7
d10	xx	0xxxxxxxx	32 ~ 92 <sup>6)</sup>	TONE NAME (CHR8)	56 8
d11	xx	0xxxxxxxx	32 ~ 92 <sup>6)</sup>	TONE NAME (CHR9)	57 9
d12	xx	0xxxxxxxx	32 ~ 92 <sup>6)</sup>	TONE NAME (CHR10)	65 A
d13	20	00100000	32 <sup>3)</sup>	not used	66 B
d14	0x	000000xx	0 ~ 3	DCO-1 RANGE	67 C
d15	0x	000000xx	0 ~ 3	DCO-1 WAVEFORM	68 D
d16	xx	000xxxxxx	0 ~ 24	DCO-1 TUNE	69 E
d17	xx	0xxxxxxx	0 ~ 99	DCO-1 LFO MOD DEPTH	70 F
d18	xx	0xxxxxxx	0 ~ 99	DCO-1 ENV MOD DEPTH	71 G
d19	0x	000000xx	0 ~ 3	DCO-2 RANGE	72 H
d20	0x	000000xx	0 ~ 3	DCO-2 WAVEFORM	73 I
d21	0x	000000xx	0 ~ 3	DCO CROSSMOD	74 J
d22	xx	000xxxxxx	0 ~ 24	DCO-2 TUNE	75 K
d23	xx	0xxxxxxx	0 ~ 100	DCO-2 FINE TUNE	76 L
d24	xx	0xxxxxxx	0 ~ 99	DCO-2 LFO MOD DEPTH	77 M
d25	xx	0xxxxxxx	0 ~ 99	DCO-2 ENV MOD DEPTH	78 N
d26	00	00000000	0 <sup>4)</sup>	not used	79 O
d27	00	00000000	0 <sup>4)</sup>	not used	80 P
d28	00	00000000	0 <sup>4)</sup>	not used	81 Q
d29	0x	000000xx	0 ~ 3	DCO DYNAMICS	82 R
d30	0x	000000xx	0 ~ 3	DCO ENV MODE	83 S
d31	xx	0xxxxxxx	0 ~ 99	MIXER DCO-1	84 T
d32	xx	0xxxxxxx	0 ~ 99	MIXER DCO-2	85 U
d33	xx	0xxxxxxx	0 ~ 99	MIXER ENV MOD DEPTH	86 V
d34	0x	000000xx	0 ~ 3	MIXER DYNAMICS	87 W
d35	0x	000000xx	0 ~ 3	MIXER ENV MODE	88 X
d36	0x	000000xx	0 ~ 3	HPF CUTOFF FREQ	89 Y
d37	xx	0xxxxxxx	0 ~ 99	VCF CUTOFF FREQ	90 Z
d38	xx	0xxxxxxx	0 ~ 99	VCF RESONANCE	92 \ (backslash)
d39	xx	0xxxxxxx	0 ~ 99	VCF LFO MOD DEPTH	47 / (slash)
d40	xx	0xxxxxxx	0 ~ 99	VCF ENV MOD DEPTH	42 * (asterisk)
d41	xx	0xxxxxxx	0 ~ 99	VCF KEY FOLLOW	45 - (dash)
					46 . (dot)
					32 (space)

Byte	[hex]	[bin]	Range [dec]	Tone Parameter
d42	0x	000000xx	0 ~ 3	VCF DYNAMICS
d43	0x	000000xx	0 ~ 3	VCF ENV MODE
d44	xx	0xxxxxxx	0 ~ 99	VCA LEVEL
d45	0x	000000xx	0 ~ 3	VCA DYNAMICS
d46	0x	000000xx	0 ~ 2	CHORUS
d47	0x	000000xx	0 ~ 2	LFO WAVEFORM
d48	xx	0xxxxxxx	0 ~ 99	LFO DELAY TIME
d49	xx	0xxxxxxx	0 ~ 99	LFO RATE
d50	xx	0xxxxxxx	0 ~ 99	ENV-1 ATTACK TIME
d51	xx	0xxxxxxx	0 ~ 99	ENV-1 DECAY TIME
d52	xx	0xxxxxxx	0 ~ 99	ENV-1 SUSTAIN LEVEL
d53	xx	0xxxxxxx	0 ~ 99	ENV-1 RELEASE TIME
d54	0x	000000xx	0 ~ 3	ENV-1 KEY FOLLOW
d55	xx	0xxxxxxx	0 ~ 99	ENV-2 ATTACK TIME
d56	xx	0xxxxxxx	0 ~ 99	ENV-2 DECAY TIME
d57	xx	0xxxxxxx	0 ~ 99	ENV-2 SUSTAIN LEVEL
d58	xx	0xxxxxxx	0 ~ 99	ENV-2 RELEASE TIME
d59	0x	000000xx	0 ~ 3	ENV-2 KEY FOLLOW
d60	00	00000000	0 <sup>4)</sup>	not used
d61	0x	0000000x	0 ~ 1	VCA ENV MODE
d62	40	01000000	64 <sup>5)</sup>	not used
d63	40	01000000	64 <sup>5)</sup>	not used
d64	40	01000000	64 <sup>5)</sup>	not used
d65	40	01000000	64 <sup>5)</sup>	not used
d66	40	01000000	64 <sup>5)</sup>	not used
d67	40	01000000	64 <sup>5)</sup>	not used
d68	xx	0xxxxxxx	0 ~ 127	Modifier: MOD RATE
d69	xx	0xxxxxxx	0 ~ 127	Modifier: MOD DEPTH
d70	xx	0xxxxxxx	0 ~ 127	Modifier: BRILLIANCE
d71	40	01000000	64 <sup>5)</sup>	not used
d72	xx	0xxxxxxx	0 ~ 127	Modifier: ENV TIME
d73	40	01000000	64 <sup>5)</sup>	not used
d74	40	01000000	64 <sup>5)</sup>	not used
d75	40	01000000	64 <sup>5)</sup>	not used

**Remarks:**

- <sup>1)</sup> The 'Bank Number' byte specifies what tone data memory bank will be affected by the SysEx message.
- <sup>2)</sup> The 'Tone Number' byte specifies what part of selected tone data memory bank (i.e. what tone number) will be affected by the SysEx message.
- <sup>3)</sup> This byte must be always equal to 32! If not, the SAVVY will not work correctly.
- <sup>4)</sup> These bytes must be always equal to 0! If not, the SAVVY will not work correctly.
- <sup>5)</sup> These bytes must be always equal to 64! If not, the SAVVY will not work correctly.

#### 1.4 BULK DUMP REQUEST COMMAND

When the "Bulk Dump Request" SysEx message is sent to the device, the device responds immediately with "Bulk Dump Load" message (see above). This message contains data from requested memory bank saved in the device's user memory.

Value of "cc" (Command) byte is 64 (i.e 40 hex) for "Bulk Dump Request" command.

The data block "d1...dn" always contains 3 bytes the following structure:

Byte	[hex]	[bin]	Range	Meaning
d1	01	00000001		Sub-command: Bulk Dump Request
d2	xx	00xx0000	16 / 32 / 48 ~ 53 <sup>1)</sup>	Bank Type
d3	xx	0xxxxxxx	0 or 0 ~ 127 <sup>2)</sup>	Bank Part Number

##### Remarks:

<sup>1)</sup> The 'Bank Type' byte specifies the memory area for the command processing: 16 (i.e 10 hex) is for System Parameters Bank, 32 (i.e 20 hex) is for Instrument Parameters Bank and 48 ~ 53 (i.e 30 hex to 35 hex) is for a Tone Data Bank Nr. 1 to 6.

<sup>2)</sup> If Bank Type byte is 48 to 53 (i.e. Tone Data Bank Nr. 1 to 6), the 'Bank Part Number' byte specifies number of requested tone in the selected bank exactly (0 to 127). If 'Bank Type' byte is 16 or 32, the 'Bank Part Number' byte must be always equal to 0.

#### 1.5 BULK DUMP INITIALIZE COMMAND

When the "Bulk Dump Initialize" SysEx message is sent to the device, data in requested memory bank in the device's user memory are rewritten with default "factory reset" data. Original data are lost!

Value of "cc" (Command) byte is 64 (i.e 40 hex) for "Bulk Dump Initialize" command.

The data block "d1...dn" always contains 3 bytes the following structure:

Byte	[hex]	[bin]	Range	Meaning
d1	00	00000000		Sub-command: Initialize
d2	xx	00xx0000	16 / 32 / 48 ~ 53 <sup>1)</sup>	Bank Type
d3	xx	0xxxxxxx	0 or 0 ~ 127 <sup>2)</sup>	Bank Part Number

##### Remarks:

<sup>1)</sup> The 'Bank Type' byte specifies the memory area for the command processing: 16 (i.e 10 hex) is for System Parameters Bank, 32 (i.e 20 hex) is for Instrument Parameters Bank and 48 ~ 53 (i.e 30 hex to 35 hex) is for a Tone Data Bank Nr. 1 to 6.

<sup>2)</sup> If Bank Type byte is 48 to 53 (i.e. Tone Data Bank Nr. 1 to 6), the 'Bank Part Number' byte specifies number of requested tone in the selected bank exactly (0 to 127). If 'Bank Type' byte is 10 or 32, the 'Bank Part Number' byte must be always equal to 0.

## 2 SYSEX MESSAGES CREATING

### 2.1 SYSEX MESSAGES GENERATORS

As a support for the users we have made special software generators to create any SysEx messages to control the SAVVY editor. Usage of these generators is very easy for any user. Please see Manual Supplement for detailed description of SysEx Messages Generator.

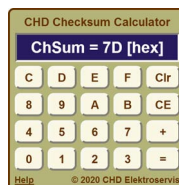
### 2.2 CHECKSUM CALCULATOR

If you want to create a SysEx message yourself, you need to calculate the 'Checksum' byte. This is difficult for most musicians because calculation with hexadecimal / binary numbers is necessary. For easy calculation of the checksum, special software **Checksum Calculator** is prepared.

The Checksum Calculator is based on Java scripts so it can run on any computer with web browser (Windows, OSX, etc.). Note that scripts and ActiveX elements must be enabled in the web browser for proper function of the calculator.

The Checksum Calculator is available at our website ([www.chd-el.cz](http://www.chd-el.cz)) on Support page.

The Checksum Calculator works on-line or it can be downloaded to your computer and then launched from it.







Tone Parameters Editor & Controller  
Model TPE-1 Nr. 8-361 / Bios v. 1.00 / OS Nr. 003 v. 2.0  
Document: 8361100-00320\_sysex

Manufacturer:  
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**SAVVY**

Tone Parameters Editor & Controller