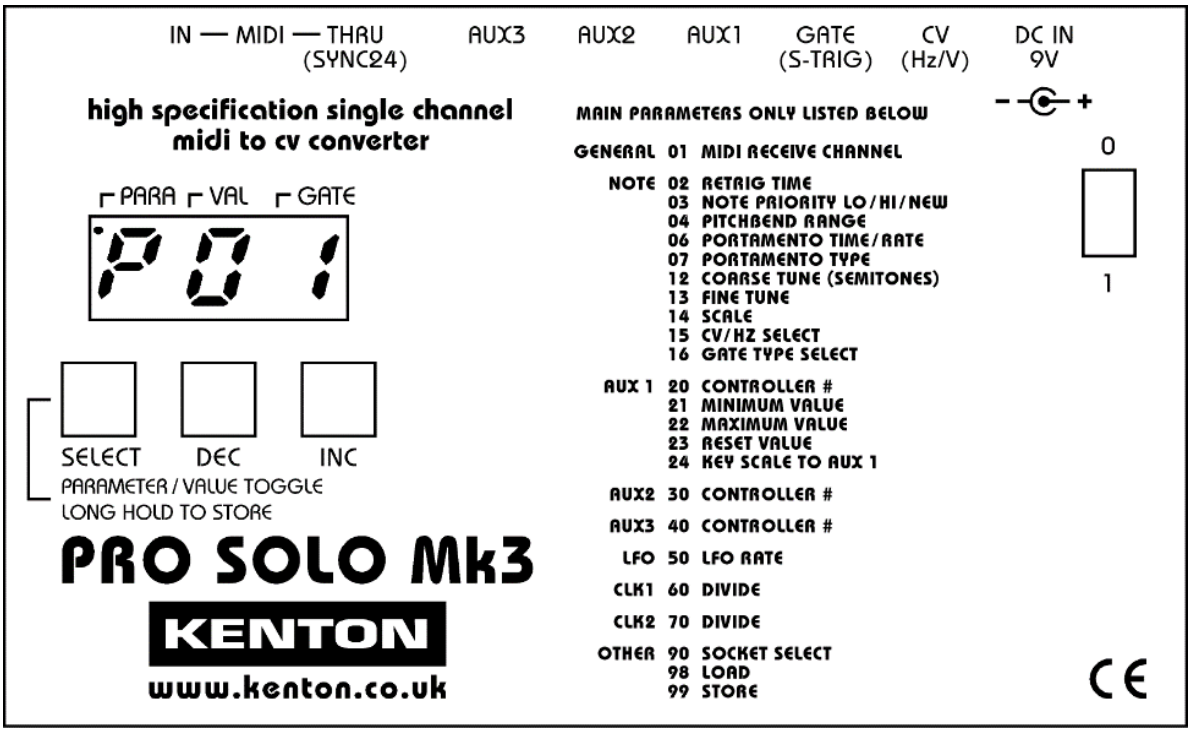
KENTON

PRO SOLO mk3

HIGH SPEC MIDI TO CV CONVERTER



SysEx Implementation

Introduction

There are four different types of System Exclusive message that the PRO SOLO Mk3 can receive:
Program Dump Request, Program Dump Receive, Info Change and Firmware Upgrade.

The first five bytes of SysEx are the same for every message type:

Byte	Data	Description
[1]	F0h	SysEx command
[2]	00h	Company ID
[3]	20h	Company ID
[4]	13h	Company ID (Kenton Electronics Ltd.)
[5]	1Ah	Product ID (PRO SOLO Mk3)
[6]	xxh	SysEx Device Number (00h to 0Fh) or 7Fh for firmware update

Program Dump Request

…		
[7]	10h	Program Dump Request
[8]	xxh	Program number to dump (01h to 20h), or 00h for the edit buffer
[9]	F7h	End of exclusive

The PRO SOLO Mk3 will respond by sending the requested program dump in the format given below.
Note: 'Socket Select' (Parameter 90) must be set to MIDI Out for this to work.

Examples:	F0	00	20	13	1A	00	10	**01**	F7	will request Program 1 to be dumped
(SysEx dev no. = 1)	F0	00	20	13	1A	00	10	**20**	F7	will request Program 32 to be dumped
	F0	00	20	13	1A	00	10	**00**	F7	will request the edit buffer to be dumped

Program Dump Receive

…		
[7]	40h	Program Dump Receive
[8]	xxh	Program number to write to (01h to 20h) or 00h for the edit buffer
[9]	00h / 01h	High 7 bits of data (either 00h or 01h for PRO SOLO Mk3)
[10]	0nnnnnnn	Where nnnnnnn = low 7 bits of data
…	…	[9] & [10] are repeated 48 times (for 48 bytes of data)
[105]	F7h	End of exclusive

Firmware Upgrade

…		
[7] to [65406]		Where 57225 bytes of 8-bit code are packed as 65400 bytes of 7 bits.
[65407]	F7h	End of exclusive

Note: The PRO SOLO Mk3 must start receiving the firmware upgrade within 20 seconds of "P01" appearing in the display after power-up, otherwise it will be ignored.

Info (Parameter) Change

…

[7]	20h	Info Change
[8]	00h	High 7 bits of parameter address (always 00h for PRO SOLO Mk3)
[9]	0nnnnnnn	Where nnnnnnn = low 7 bits of parameter address
[10]	00h / 01h	High 7 bits of data (either 00h or 01h for PRO SOLO Mk3)
[11]	0nnnnnnn	Where nnnnnnn = low 7 bits of data
[12]	F7h	End of exclusive

The PRO SOLO Mk3 is sent a two-byte address, which directly corresponds to a parameter. It is also sent two bytes of data, which represent the value at the parameter. It responds by changing the data and updating the display if necessary. The list of addresses and possible data values is below:

Note: All SysEx addresses and data are range checked and out-of-range values will either be ignored or adjusted to give a valid response.

Add.	Function	Range	Notes
00	MIDI Receive Channel	0 to 15	Corresponds to channels 1 to 16
01	Retrigger Time	0 to 25	0 = Off / 1 to 25
02	Note Priority	0 to 2	0 = New / 1 = Low / 2 = High
03	Pitch Bend Range	0 to 48	
04	Portamento Controller	253 > 0 > 119	(CCs) 0 to 119 / 253 = On / 254 = Off / 255 = Auto
05	Portamento Rate	1 to 127	
06	Portamento Type	0 or 1	0 = Fixed Rate / 1 = Fixed Time
07	LFO to CV Controller	252 > 0 > 119	See note (1)
08	LFO to CV Min Value	0 to 127	
09	LFO to CV Max Value	0 to 127	
10	LFO to CV Reset Value	0 to 127	
11	Coarse Tune	232 > 0 > 24	See note (2)
12	Fine Tune	129 > 0 > 127	129 to 255 negative / 0 to 127 positive
13	Scale	129 > 0 > 127	129 to 255 negative / 0 to 127 positive
14	CV / Hz Select	0 to 2	0 = CV / 1 = Hz / 2 = 1.2V
15	Gate Type	0 to 6	See note (3)
16	Aux 1 Controller	246 > 0 > 119	See note (4)
17	Aux 1 Min Value	0 to 127	Corresponds to -27 to +100
18	Aux 1 Max Value	0 to 127	Corresponds to -27 to +100
19	Aux 1 Reset Value	0 to 127	
20	Aux 1 Key Scale	0 to 127	
21	LFO to Aux 1 Controller	252 > 0 > 119	See note (1)
22	LFO to Aux 1 Min Value	0 to 127	
23	LFO to Aux 1 Max Value	0 to 127	
24	LFO to Aux 1 Reset Value	0 to 127	
25	Aux 1 Drum Trig. Note No.	0 to 127	
26	Aux 2 Controller	246 > 0 > 119	See note (4)
27	Aux 2 Min Value	0 to 127	Corresponds to -27 to +100
28	Aux 2 Max Value	0 to 127	Corresponds to -27 to +100
29	Aux 2 Reset Value	0 to 127	
30	Aux 2 Drum Trig. Note No.	0 to 127	
31	Aux 3 Controller	246 > 0 > 119	See note (4)
32	Aux 3 Min Value	0 to 127	
33	Aux 3 Max Value	0 to 127	
34	Aux 3 Reset Value	0 to 127	
35	Aux 3 Drum Trig. Note No.	0 to 127	

Continued on next page…

Add.	Function	Range	Notes
36	LFO Rate	0 to 191	
37	LFO Waveshape	0 to 8	See note (5)
38	LFO Sync	0 or 96	0 = Off / 1 to 96 corresponds to divide ratio
39	LFO Start Point Offset	0 to 255	
40	LFO Key-On Reset	0 or 1	0 = Off / 1 = On
41	Clock 1 Divide Ratio	0 to 24	0 = C24 / 1 to 23 = d2 to d24 / 24 = C48
42	Clock 1 Shift	0 to 255	
43	Clock 2 Divide Ratio	1 to 23	Corresponds to d2 to d24
44	Clock 2 Shift	0 to 255	
45	EG Attack Time	0 to 127	
46	EG Decay Time	0 to 127	
47	EG Sustain Level	0 to 127	
48	EG Release Time	0 to 127	
49	EG Invert	0 or 1	0 = Off / 1 = On
50	EG Reset to Zero	0 or 1	0 = Off / 1 = On
51	EG Attack Time CC	0 to 119	
52	EG Decay Time CC	0 to 119	
53	EG Sustain Level CC	0 to 119	
54	EG Release Time CC	0 to 119	
64	Socket Select	0 to 3	See note (6)
65	SysEx Device Number	0 to 15	Corresponds to numbers 1 to 16
66	Continue = Start	0 or 1	0 = Off / 1 = On
67	Drum Trigger Length	0 to 127	
68	Aux 1 Slew Rate	0 to 31	
69	Aux 2 Slew Rate	0 to 31	
70	Aux 3 Slew Rate	0 to 31	
71	Prog. Change Rx Enable	0 or 1	0 = Off / 1 = On

Notes:

(1) **252** = Ignore / **253** = Pitch Bend / **254** = Velocity / **255** = Aftertouch / (CCs) **0 to 119**

(2) **232** = -24 Semitones / **0** = No Transpose / **24** = + 24 Semitones (25 to 231 are invalid)

(3) **0** = Gate 5V / **1** = G 10V / **2** = G 15V / **3** = S no pull-up / **4** = S 5V pu / **5** = S 10V pu / **6** = S 15V pu

(4) **246** = EG / **247** = Drum Trig. / **248** = Start/Stop / **249** = CL2 / **250** = CL1 / **251** = Note Trig.
252 = Ignore / **253** = Pitch Bend / **254** = Velocity / **255** = Aftertouch / (CCs) **0 to 119**

(5) **0** = Tri / **1** = Saw Up / **2** = Saw Down / **3** = 10 / **4** = 20 / **5** = 30 / **6** = 40 / **7** = 50% Pulse / **8** = S&H

(6) **0** = MIDI Thru, Out / **1** = Sync 24 (fixed) / **2** = Sync 24 (Clock 1) / **3** = Sync 24 (Clock 2)

Examples (SysEx device number = 1):

F0 00 20 13 1A 00 20 **00 00 00 0F** F7 will set the MIDI Receive Channel to 16

F0 00 20 13 1A 00 20 **00 31 00 01** F7 will set the ADSR envelope to Inverted

F0 00 20 13 1A 00 20 **00 25 00 08** F7 will set the LFO wave to Sample & Hold

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