P6-KBD
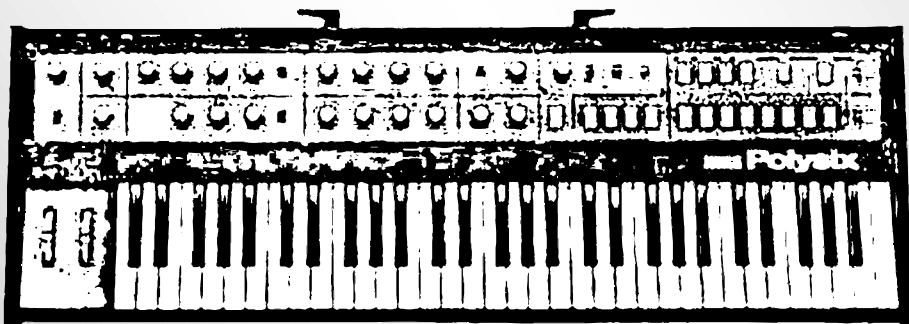
MIDI Interface for KORG POLYSIX Keyboard

Model 8-431
ver. 1.1

OWNER'S MANUAL
Rev. 2

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1　INTRODUCTION

P6-KBD is a MIDI retrofit for the Korg Polysix synthesizer. The device enables the Polysix to be controlled via MIDI as a MIDI expander. P6-KBD controls the instrument's keyboard and it also synchronizes the arpeggiator speed with MIDI Clock.

The interface works in one direction only – it only receives MIDI data. The instrument's keyboard, control panel sliders and switches **are not transmitted** as a MIDI data!

Standard Channel and Common System MIDI commands or System Exclusive messages are used for setting of the interface.

1.1　INTERFACE FUNCTIONS

Functional diagram of the interface is on fig. 1. The interface controls the instrument's **keyboard** in parallel manner - own instrument's keyboard can also be used together with the MIDI Notes.
The interface also can synchronize the **arpeggiator** speed to external MIDI Clock or ignore the synchronization data and use the Polysix's internal clock generator.

No other control elements (switches, sliders, etc.) or sound parameters of the instrument **are driven** via MIDI.

Fig. 1 – Functional block diagram
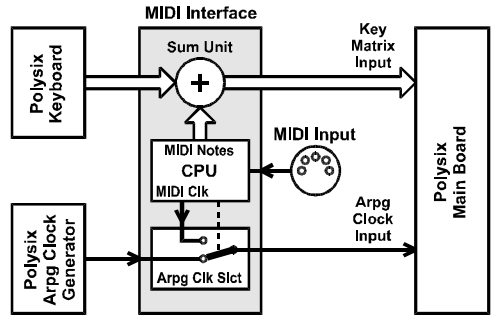
All interface's functions are controlled via parameters adjusted by user via MIDI commands (② and ③ on fig. 2). The interface does not have its own permanent memory for storing of edited parameters so all changes of the interface's parameters are temporary only!

Fig. 2 – Interface's parameters memory
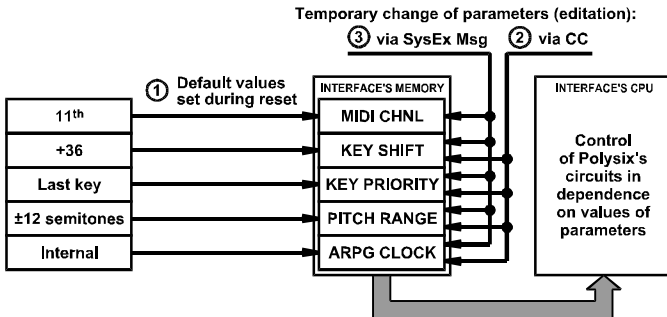
2   INTERFACE BASIC OPERATION

There are no controllers or indicators on the interface. All interface's parameters / functions are adjustable only via MIDI commands transmitted from a MIDI data source (DAW, sequencer, …).

After reset (during each instrument start-up), the interface's parameters are always set to their default values (① on fig. 2) as shows table 1.

During the interface operation, the parameters can be changed via MIDI CCs (② on fig. 2 - see chapter 3.1.2) or via SysEx messages (③ on fig. 2 - see chapter 3.3). All these changes are temporary only – they are lost when the instrument is switched off!

Table 1 – Default setting of the interface after a reset		
Function	Setting after reset	Corresponding value of the parameters
"MIDI Channel" choice	11th channel	MIDI Channel = 10
"Keyboard Shift" choice	+36 semitones	Key Shift = 36
"Key Priority" choice	Last received key (Note) priority	Key Priority = 0
"Pitch Bend Range" choice	±12 semitones	Pitch Bend Range = 12
"Arpeggio Clock Rate" choice	Internal instrument's generator	Arpeggio Clock Rate = 0

2.1   MIDI CHANNEL PARAMETER

This parameter sets the basic MIDI channel for communication with MIDI DAW / sequencer. Any of the 16 available channels can be set as well as MIDI OMNI mode[1].

Parameter values are 0 to 16. Values 0 to 15 represent MIDI channels 1 to 16. Value 16 is for OMNI MODE.

The value of this parameter can be adjusted only by MIDI System Exclusive Message (③ on fig. 2 - see chapter 3.3).

2.2   KEY SHIFT PARAMETER

This parameter transposes range of the instrument's keyboard in whole scale of MIDI notes. The parameter value specifies exactly the number of MIDI Note which is assigned to the lowest key of the instrument's keyboard.

Values of the parameter can be from 0 to 67. If value 0 is set (transposition is 0), the lowest key of the keyboard corresponds to MIDI Note Nr. 0 and the highest key corresponds to MIDI Note Nr. 60. If value 1 of the parameter is set, (transposition is +1), the lowest key of the keyboard corresponds to MIDI Note Nr. 1 and the highest key corresponds to MIDI Note Nr. 61. Etc., up to value 67 of the parameter (transposition is +67) when the lowest key of the keyboard corresponds to MIDI Note Nr. 67 and the highest key corresponds to MIDI Note Nr. 127. See fig. 3 for more details.

The value of this parameter can be adjusted by MIDI CC #16 (see chapter 3.1.2) or by SysEx message (see chapter 3.3).

[1] OMNI mode enables the instrument to receive data on all 16 MIDI channels simultaneously.

Fig. 3 – „Key Shift" parameter description

Range of acceptable MIDI Notes

Tone :
Note Nr.:

Default shift
after interface reset

Key Shift = +0
Key Shift = +12
Key Shift = +24
Key Shift = +36
Key Shift = +48
Key Shift = +60
Key Shift = +67

MIDI Notes

C0	0
C1	12
C2	24
C3	36
C4	48
C5	60
C6	72
C7	84
C8	96
C9	108
C10	120
G10	127
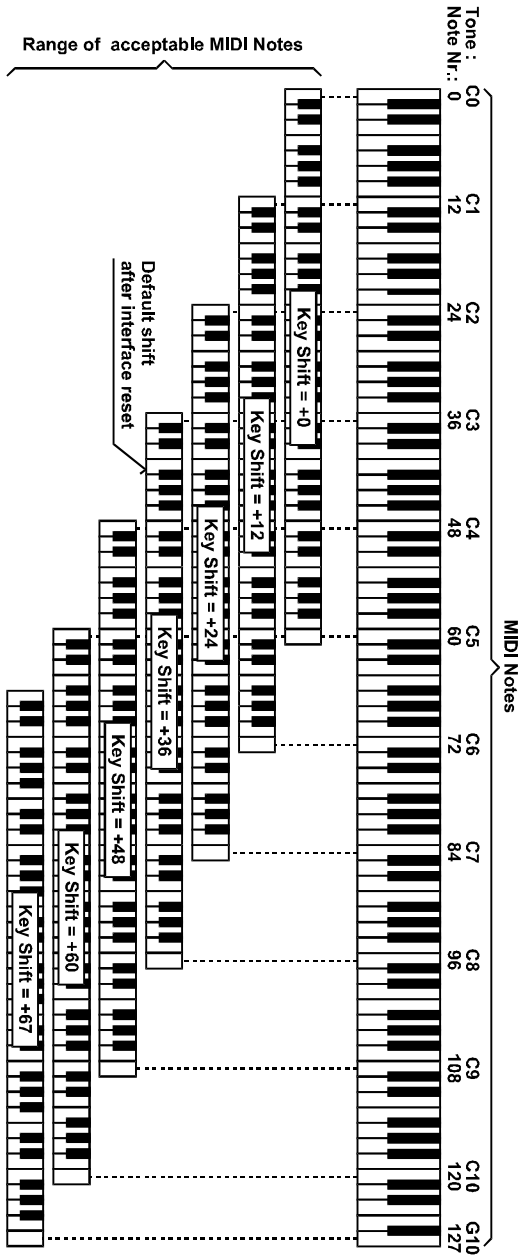
2.3   KEY PRIORITY PARAMETER

Value of the parameter adjusts incoming MIDI Note On/Off commands processing in case of all six tone generators of the instrument are being used (all six voices are sounding).

Valid parameter values are 0 to 3:

0 → LAST: Last key priority – the last pressed key always replaces the first key pressed.
1 → HIGHER: Higher key priority – if the last pressed key is of higher tone than any of the previously pressed keys, the lowest key tone is replaced.
2 → LOWER: Lower key priority – if the last pressed key is of lower tone than any of the previously pressed keys, the highest key tone is replaced.
3 → NONE: No priority – if all eight tone generators are being used, all Note On commands are ignored at the MIDI input.

The value of this parameter can be adjusted by MIDI CC #17 (see chapter 3.1.2) or by SysEx message (see chapter 3.3).

2.4   PITCH BEND RANGE PARAMETER

This parameter adjusts maximum range of the pitch bend controlled by the "Pitch Bend" ("Pitch Wheel") MIDI command [2].

Valid parameter values are 0 to 24. The 0 value switches the pitch bend off - MIDI command "Pitch Bend" is ignored. The values of 1 to 24 set the bend range in semitones, The ±2 octave transposition is available thus.

The value of this parameter can be adjusted by MIDI CC #18 (see chapter 3.1.2 or by SysEx message (see chapter 3.3).

2.5   ARPEGGIO CLOCK RATE PARAMETER

This parameter selects arpeggiator clock source and adjusts the arpeggiator tempo for MIDI clock synchronization.

Valid parameter values are 0 to 127.

The value of 0 switches the Polysix's internal clock generator on - the arpeggio speed is adjusted by the SPEED knob on the instrument's panel or by external clock impulses from the ARPEGGIO TRIG IN connector on the rear panel.

The parameter values 1 to 127 synchronize the arpeggiator speed according to the incoming MIDI Clock data. The parameter's value then sets prescaler of MIDI Clock, i.e. number of MIDI Clock pulses for one arpeggiator step. The value 1 represents 127 MIDI Clock pulses, 2 represents 126 MIDI Clock pulses, etc. up to value 127 which represents one MIDI Clock pulse length of the arpeggiator step. For the conversion rates see Table 2.

The value of this parameter can be adjusted by MIDI CC #19 (see chapter 3.1.2 or by SysEx message (see chapter 3.3).

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[2] Pitch Bend MIDI command affects only tones launched by MIDI Notes. Own instrument's keyboard is not affected.

Table 2 – Conversion of ARPEGGIO CLOCK RATE parameter value to length of arpeggiator step duration										
Parameter value	Number of notes for one arpeggio step									
	1/2	1/2 triplet	1/4	1/4 triplet	1/8	1/8 triplet	1/16	1/16 triplet	1/32	1/32 triplet	1/64 triplet
0	The arpeggiator tempo is controlled by internal instrument's tempo generator									
1	-	-	-	-	-	-	-	-	-	-	127
2	-	-	-	-	-	-	21	-	42	63	126
3	-	-	-	-	-	-	-	-	-	-	125
4	-	-	-	-	-	-	-	31	-	62	124
5	-	-	-	-	-	-	-	-	41	-	123
6	-	-	-	-	-	-	-	-	-	61	122
7	-	-	-	-	-	-	-	-	-	-	121
8	-	-	5	-	10	15	20	30	40	60	120
9	-	-	-	-	-	-	-	-	-	-	119
10	-	-	-	-	-	-	-	-	-	59	118
11	-	-	-	-	-	-	-	-	39	-	117
12	-	-	-	-	-	-	-	29	-	58	116
13	-	-	-	-	-	-	-	-	-	-	115
14	-	-	-	-	-	-	19	-	38	57	114
15	-	-	-	-	-	-	-	-	-	-	113
16	-	-	-	7	-	14	-	28	-	56	112
17	-	-	-	-	-	-	-	-	37	-	111
18	-	-	-	-	-	-	-	-	-	55	110
19	-	-	-	-	-	-	-	-	-	-	109
20	-	-	-	-	9	-	18	27	36	54	108
21	-	-	-	-	-	-	-	-	-	-	107
22	-	-	-	-	-	-	-	-	-	53	106
23	-	-	-	-	-	-	-	-	35	-	105
24	-	-	-	-	-	13	-	26	-	52	104
25	-	-	-	-	-	-	-	-	-	-	103
26	-	-	-	-	-	-	17	-	34	51	102
27	-	-	-	-	-	-	-	-	-	-	101
28	-	-	-	-	-	-	-	25	-	50	100
29	-	-	-	-	-	-	-	-	33	-	99
30	-	-	-	-	-	-	-	-	-	49	98
31	-	-	-	-	-	-	-	-	-	-	97
32	2	3	4	6	8	12	16	24	32	48	96
33	-	-	-	-	-	-	-	-	-	-	95
34	-	-	-	-	-	-	-	-	-	47	94
35	-	-	-	-	-	-	-	-	31	-	93
36	-	-	-	-	-	-	-	23	-	46	92
37	-	-	-	-	-	-	-	-	-	-	91
38	-	-	-	-	-	-	15	-	30	45	90
39	-	-	-	-	-	-	-	-	-	-	89
40	-	-	-	-	-	11	-	22	-	44	88

Parameter value	Number of notes for one arpeggio step										
	1/2	1/2 triplet	1/4	1/4 triplet	1/8	1/8 triplet	1/16	1/16 triplet	1/32	1/32 triplet	1/64 triplet
41	-	-	-	-	-	-	-	-	29	-	87
42	-	-	-	-	-	-	-	-	-	43	86
43	-	-	-	-	-	-	-	-	-	-	85
44	-	-	-	-	7	-	14	21	28	42	84
45	-	-	-	-	-	-	-	-	-	-	83
46	-	-	-	-	-	-	-	-	-	41	82
47	-	-	-	-	-	-	-	-	27	-	81
48	-	-	-	5	-	10	-	20	-	40	80
49	-	-	-	-	-	-	-	-	-	-	79
50	-	-	-	-	-	-	13	-	26	39	78
51	-	-	-	-	-	-	-	-	-	-	77
52	-	-	-	-	-	-	-	19	-	38	76
53	-	-	-	-	-	-	-	-	25	-	75
54	-	-	-	-	-	-	-	-	-	37	74
55	-	-	-	-	-	-	-	-	-	-	73
56	-	-	3	-	6	9	12	18	24	36	72
57	-	-	-	-	-	-	-	-	-	-	71
58	-	-	-	-	-	-	-	-	-	35	70
59	-	-	-	-	-	-	-	-	23	-	69
60	-	-	-	-	-	-	-	17	-	34	68
61	-	-	-	-	-	-	-	-	-	-	67
62	-	-	-	-	-	-	11	-	22	33	66
63	-	-	-	-	-	-	-	-	-	-	65
64	-	2	-	4	-	8	-	16	-	32	64
65	-	-	-	-	-	-	-	-	21	-	63
66	-	-	-	-	-	-	-	-	-	31	62
67	-	-	-	-	-	-	-	-	-	-	61
68	-	-	-	-	5	-	10	15	20	30	60
69	-	-	-	-	-	-	-	-	-	-	59
70	-	-	-	-	-	-	-	-	-	29	58
71	-	-	-	-	-	-	-	-	19	-	57
72	-	-	-	-	-	7	-	14	-	28	56
73	-	-	-	-	-	-	-	-	-	-	55
74	-	-	-	-	-	-	9	-	18	27	54
75	-	-	-	-	-	-	-	-	-	-	53
76	-	-	-	-	-	-	-	13	-	26	52
77	-	-	-	-	-	-	-	-	17	-	51
78	-	-	-	-	-	-	-	-	-	25	50
79	-	-	-	-	-	-	-	-	-	-	49
80	1	-	2	3	4	6	8	12	16	24	48
81	-	-	-	-	-	-	-	-	-	-	47

Table 2 – Conversion of ARPEGGIO CLOCK RATE parameter value to length of arpeggiator step duration (continue)

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Parameter value	Number of notes for one arpeggio step										
	1/2	1/2 triplet	1/4	1/4 triplet	1/8	1/8 triplet	1/16	1/16 triplet	1/32	1/32 triplet	1/64 triplet
82	-	-	-	-	-	-	-	-	-	23	46
83	-	-	-	-	-	-	-	-	15	-	45
84	-	-	-	-	-	-	-	11	-	22	44
85	-	-	-	-	-	-	-	-	-	-	43
86	-	-	-	-	-	-	7	-	14	21	42
87	-	-	-	-	-	-	-	-	-	-	41
88	-	-	-	-	-	5	-	10	-	20	40
89	-	-	-	-	-	-	-	-	13	-	39
90	-	-	-	-	-	-	-	-	-	19	38
91	-	-	-	-	-	-	-	-	-	-	37
92	-	-	-	-	3	-	6	9	12	18	36
93	-	-	-	-	-	-	-	-	-	-	35
94	-	-	-	-	-	-	-	-	-	17	34
95	-	-	-	-	-	-	-	-	11	-	33
96	-	1	-	2	-	4	-	8	-	16	32
97	-	-	-	-	-	-	-	-	-	-	31
98	-	-	-	-	-	-	5	-	10	15	30
99	-	-	-	-	-	-	-	-	-	-	29
100	-	-	-	-	-	-	-	7	-	14	28
101	-	-	-	-	-	-	-	-	9	-	27
102	-	-	-	-	-	-	-	-	-	13	26
103	-	-	-	-	-	-	-	-	-	-	25
104	-	-	1	-	2	3	4	6	8	12	24
105	-	-	-	-	-	-	-	-	-	-	23
106	-	-	-	-	-	-	-	-	-	11	22
107	-	-	-	-	-	-	-	-	7	-	21
108	-	-	-	-	-	-	-	5	-	10	20
109	-	-	-	-	-	-	-	-	-	-	19
110	-	-	-	-	-	-	3	-	6	9	18
111	-	-	-	-	-	-	-	-	-	-	17
112	-	-	-	1	-	2	-	4	-	8	16
113	-	-	-	-	-	-	-	-	5	-	15
114	-	-	-	-	-	-	-	-	-	7	14
115	-	-	-	-	-	-	-	-	-	-	13
116	-	-	-	-	1	-	2	3	4	6	12
117	-	-	-	-	-	-	-	-	-	-	11
118	-	-	-	-	-	-	-	-	-	5	10
119	-	-	-	-	-	-	-	-	3	-	9
120	-	-	-	-	-	1	-	2	-	4	8
121	-	-	-	-	-	-	-	-	-	-	7
122	-	-	-	-	-	-	1	-	2	3	6

Table 2 – Conversion of ARPEGGIO CLOCK RATE parameter value to length of arpeggiator step duration (continue)

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Table 2 – Conversion of ARPEGGIO CLOCK RATE parameter value to length of arpeggiator step duration (continue)										
Parameter value	**Number of notes for one arpeggio step**										
	1/2	**1/2 triplet**	**1/4**	**1/4 triplet**	**1/8**	**1/8 triplet**	**1/16**	**1/16 triplet**	**1/32**	**1/32 triplet**	**1/64 triplet**
123	-	-	-	-	-	-	-	-	-	-	5
124	-	-	-	-	-	-	-	1	-	2	4
125	-	-	-	-	-	-	-	-	1	-	3
126	-	-	-	-	-	-	-	-	-	1	2
127	-	-	-	-	-	-	-	-	-	-	1

3   MIDI IMPLEMENTATION

The interface has only the MIDI input so it **only receives** MIDI commands. The interface recognizes Channel commands, Common System commands and System Exclusive messages.

3.1   CHANNEL COMMANDS

The interface receives MIDI Channel commands on selected MIDI channel ("MIDI Channel" parameter – see chapter 2.1). In OMNI mode, the interface receives data on all 16 MIDI channels simultaneously.

3.1.1   NOTE ON/OFF

Interface receives Note On/Off in range of 61 MIDI Notes. The "Key Shift" parameter defines assignment of acceptable MIDI notes numbers to instrument's keys (see chapter 2.2).

When six valid MIDI notes are received (all six tone generators are already sounding), all following received MIDI Note On commands are processed according to the "Key Priority" parameter setting (see chapter 2.3).

3.1.2   CONTROL CHANGES (CCs)

The interface recognizes standard MIDI CCs Nr. 64, 120, 121, 123. Other CCs are used for adjusting the temporary settings of internal interface's parameters functions (CCs Nr. 16 to 19). Note that the setting is temporary only - until the next instrument restart.

CC Nr.	Name	Function	Valid value
Table 3 – Acceptable CC overview
CC #16 [1]	Key Shift	Controls "Key Shift" interface's parameter (See chapter 2.1)	0 ~ 127
CC #17 [1]	Key Priority	Controls "Key Priority" interface's parameter (See chapter 2.3)	0 ~ 31 = Last 32 ~ 63 = Higher 0 ~ 31 = Lower 65 ~ 127 = None
CC #18 [1]	Pitch Bend Range	Controls "Pitch Bend Range" interface's parameter (See chapter 2.4)	0 ~ 127
CC #19	Arpg Clock Rate	Controls "Arpeggio Clock Rate" interface's parameter (See chapter 2.5)	0 = Internal 1 ~ 127 = MIDI
CC #64 [1]	Hold	Standard MIDI function	0 ~ 63 = Off 64 ~ 127 = On
CC #120 [1]	All Sound Off	Standard MIDI function	0
CC #121	Reset All Controllers	Standard MIDI function	0
CC #123 [1]	All Notes Off	Standard MIDI function	0
Remarks: [1]) The CC is only relevant for received MIDI notes, not for own instrument's keyboard

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CC #16 – Key Shift controller

The received value of the CC #16 adjusts the "Key Shift" parameter (see chapter 2.2). Conversion of the CC value to the parameter value shows table 4.

Table 4 – Conversion of CC #16 value to ″Key Shift″ parameter value (in semitones)													
CC	Shift	CC	Shift	CC	Shift	CC	Shift	CC	Shift	CC	Shift	CC	Shift
0	+0	16	+8	32	+17	48	+25	64	+34	80	+42	96	+51	112	+59
1	+0	17	+9	33	+17	49	+26	65	+34	81	+43	97	+51	113	+60
2	+1	18	+9	34	+18	50	+26	66	+35	82	+43	98	+52	114	+60
3	+1	19	+10	35	+18	51	+27	67	+35	83	+44	99	+52	115	+61
4	+2	20	+10	36	+19	52	+27	68	+36	84	+44	100	+53	116	+61
5	+2	21	+11	37	+19	53	+28	69	+36	85	+45	101	+53	117	+62
6	+3	22	+11	38	+20	54	+28	70	+37	86	+45	102	+54	118	+62
7	+3	23	+12	39	+20	55	+29	71	+37	87	+46	103	+54	119	+63
8	+4	24	+12	40	+21	56	+29	72	+38	88	+46	104	+55	120	+63
9	+4	25	+13	41	+21	57	+30	73	+38	89	+47	105	+55	121	+64
10	+5	26	+13	42	+22	58	+30	74	+39	90	+47	106	+56	122	+64
11	+5	27	+14	43	+22	59	+31	75	+39	91	+48	107	+56	123	+65
12	+6	28	+14	44	+23	60	+31	76	+40	92	+48	108	+57	124	+65
13	+6	29	+15	45	+23	61	+32	77	+40	93	+49	109	+57	125	+66
14	+7	30	+15	46	+24	62	+32	78	+41	94	+49	110	+58	126	+66
15	+7	31	+16	47	+24	63	+33	79	+41	95	+50	111	+58	127	+67

CC #17 – Key Priority controller

The received value of the CC #17 adjusts the "Key Priority" parameter (see chapter 2.3). Conversion of the CC value to the parameter value shows table 5.

Table 5 – Conversion of CC #17 value to ″Key Priority″ parameter value			
CC	Priority	CC	Priority
0 ~ 31	Last	64 ~ 95	Lower
32 ~ 63	Higher	96 ~ 127	None

CC #18 – Pitch Wheel Range controller

The received value of the CC #18 adjusts the " Pitch Wheel Range " parameter (see chapter 2.4). Conversion of the CC value to the parameter value shows table 6.

Table 6 – Conversion of CC #18 value to ″Pitch Wheel Range″ parameter value (in semitones)									
CC	Range	CC	Range	CC	Range	CC	Range	CC	Range
0 ~ 4	±0	25 ~ 29	±5	50 ~ 54	±10	75 ~ 79	±15	100 ~ 104	±20
5 ~ 9	±1	30 ~ 34	±6	55 ~ 59	±11	80 ~ 84	±16	105 ~ 109	±21
10 ~ 14	±2	35 ~ 39	±7	60 ~ 64	±12	85 ~ 89	±17	110 ~ 114	±22
15 ~ 19	±3	40 ~ 44	±8	65 ~ 69	±13	90 ~ 94	±18	115 ~ 119	±23
20 ~ 24	±4	45 ~ 49	±9	70 ~ 74	±14	95 ~ 99	±19	120 ~ 127	±24

CC #19 – Arpeggio Clock Rate controller

The received value of the CC #19 adjusts the "Arpeggio Clock Rate " parameter (see chapter 2.5). Value of the CC corresponds to the parameter value directly (see table 1).

CC #64 – Hold

The controller works in a standard way: Holds the tone generators sounding when the "Hold" pedal is pressed. Values (second databyte) 64 to 127 are recognized as ON (pressed), values 0 to 63 are recognized as OFF (pedal released).

If the controller is active and the Note On command for an already playing note is received, the envelope generator is not trigged again - percussive sounds will not be played this way.

CC #120 – All Sound Off

When CC #120 is received, all tone generators are muted independently if they are active by "Note On" command or the "Hold" controller[3].

CC #121 – Reset All Controllers

When CC #121 is received, the CC #64 "Hold" is switched off and the "Pitch Bend" controller is set to the center position.

CC #123 – All Notes Off

When CC #123 is received, all tone generators are muted if the "Hold" controller is inactive. If the "Hold" is active "All Notes Off" command is executed after the "Hold" pedal release[4].

3.1.3 PITCH BEND (PITCH WHEEL)

"Pitch Bend" ("Pitch Wheel") has a standard function - it changes the tune of the notes played. The minimal / maximal range is adjusted by the "Pitch Wheel Range" parameter (±0 to ±24 semitones).

Since the interface does not have direct access to the control voltage (CV) of the instrument's tone generators, the tone is not detuned continuously but in semitone steps. Together with the tuning changes, the envelope generators are re-trigged.

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[3] All Sound Off MIDI command affects only tones launched by MIDI Notes. Own instrument's keyboard is not affected.
[4] All Notes Off MIDI command affects only tones launched by MIDI Notes. Own instrument's keyboard is not affected.

3.2   COMMON SYSTEM COMMANDS

The interface uses only "MIDI Clock" synchronization pulses and "System Reset" Common System commands.

3.2.1   CLOCK

If the "Arpg Clock Rate" parameter is equal to 0, MIDI Clock commands are ignored. For larger values of "Arpg Clock Rate", the interface receives synchronization impulses of the MIDI Clock for the arpeggiator tempo (see chapter 2.5).

The maximum arpeggiator tempo is limited by the instrument's hardware. At extremely high speeds or tempos, the arpeggiator might play out of tempo or omit notes.

3.2.2   RESET

The complete interface reset is done after the "Reset" command receiving - all parameters are adjusted to their default values (see table 1).

3.3   SYSTEM EXCLUSIVE MESSAGES

The System Exclusive communication enables user to adjust the values of all interface parameters[5].

System Exclusive communication is described in detail in standalone manual.

For easier creation of SysEx messages, please use the software generator available at manufacturer's web pages: **www.chd-el.cz**

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[5] For MIDI Channel parameter, this is the only possibility how to change it.

4   SYSEX MESSAGES GENERATOR

As a support for the users we have made software generator to create System Exclusive messages to control the interface. 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.)[6]. To send the generated commands you will also need an utility to send the generated text[7] as a MIDI SysEx dump (see chapter 5 for recommended software[8]).
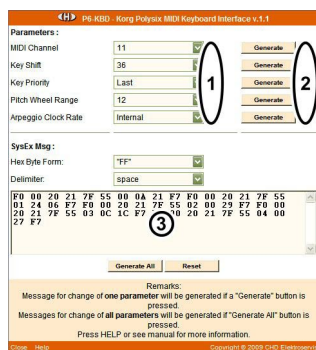
Visit our website and download the "**P6-KBD_syxgen.zip**" archive. Expand the archive to a selected folder on your computer's hard drive (i.e. "**P6-KBD.html**" and "**P6-KBD_help.html**" files and "**media**" sub-folder).

To launch the SysEx messages generator, simply open the "**P6-KBD.html**" file in your web browser (e.g. by clicking on the file icon). The generator window opens.

4.1   INDIVIDUAL PARAMETER SETTING

To temporary change / adjust one interface's parameter in edit buffer:
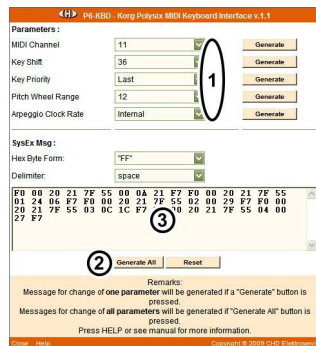
1. Select value of one requested parameter ①.

2. Click the corresponding "**Generate**" button (in the same row) ②.

3. The hexadecimal MIDI SysEx message is generated as a text in text field on bottom of the window ③.

4. **Copy** the text in clipboard (CTRL+C) and **paste** (CTRL+V) to a MIDI Sysex software[9].

5. Send the message to the interface.

6. The interface starts operation with the new parameter immediately.

4.2   ALL PARAMETERS SETTING

To change / adjust all interface's parameters in permanent memory:

1. Select values of all parameters ①.

2. Click the "**Generate All**" button ②.

3. The hexadecimal MIDI SysEx message is generated as a text in text field on bottom of the window ③.

4. **Copy** the text in clipboard (CTRL+C) and **paste** (CTRL+V) to a MIDI Sysex software[10].

5. Send the message to the interface.

6. The interface starts operation with the new parameters immediately.

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[6] Note that scripts and ActiveX elements must be enabled in web browser for proper function of the generator.

[7] 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.

[8] It is not necessary to use the recommended utility. The same function is provided by various DAW and MIDI SysEx software. For required text format and instructions check the documentation of your DAW/software.

[9] See chapter 5.2 for recommended MIDI SysEx software.

[10] See chapter 5.2 for recommended MIDI SysEx software.

4.3   OTHER FUNCTIONS

Select "**Hex Byte Form**" ① and "**Delimiter**" character ② as required for your MIDI SysEx software[11]. Default setting of the generator is optimized for the recommended **Pocket MIDI** utility[12] (see Chapter 5). However some DAW or MIDI SysEx utilities require different format of the generated text message. Required form of hex bytes and delimiter must be set before a Generate button is pressed.

To clear the text field and return all values to their defaults, click the "**Reset**" button ③.

"**Help**" link ④ opens new window with brief help.

"**Close**" link ⑤ closes browser panel with this SysEx Generator window.

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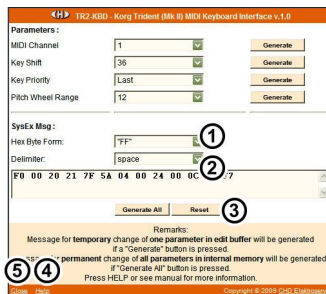
[11] See the documentation of your DAW for required format.
[12] The default format is also compatible with Bome SendSX and various other softwares.

5   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.

Pocket MIDI[13] 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.

5.1   SETTING UP THE COMPUTER[14] AND SOFTWARE

1. Download the **Pocket MIDI** utility at **https://www.morson.jp/pocketmidi-webpage/**

2. Install the utility in your computer.

3. Connect the instrument with the interface accordingly to the picture "**Connection for Bulk Dump**".

4. Select the MIDI interface **Outputs** to device where the interface is connected to (drop-down menu **Views → MIDI Settings → Input Port / Output Port**).

Connection for Bulk Dump
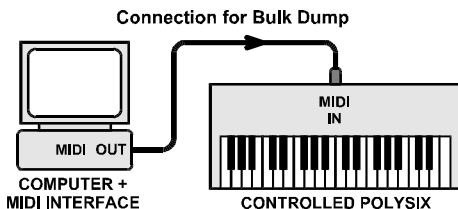
5.2   SEND THE TEXT SYSEX MESSAGE TO THE INTERFACE

Basic procedure to send any SysEx data to a MIDI device:

1. Generate required SysEx message in the SysEx Messages Generator (as described in Chapter 5)[15].

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 the interface.

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).

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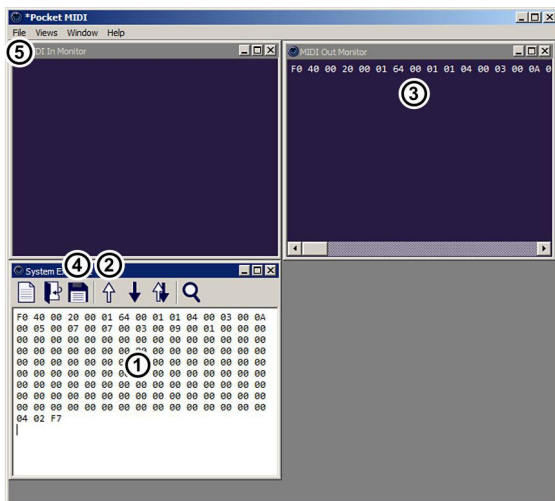
[13] Pocket MIDI is Copyright © MORSON JAPAN Co.,Ltd. All rights reserved.
[14] Computer MIDI interface must be active / switched on and all necessary MIDI drivers correctly installed.
[15] The correct "**FF**" Hex Byte Form and "**' ' (space)**" for Delimiter are the initial values after the SysEx Generator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

6   APPENDIX – MIDI IMPLEMENTATION CHART

Device : P6-KBD   **Date : 5 / 2009**
Model : 8-431   **Version : 1.1**

Function		Transmission	Reception	Remarks
Basic	Default	X	11	
Channel	Changed		1~16	[1])
Mode	Default	X	Mode 3	[2])
	Messages		X	
Note Number		X	0~127	[3])
Velocity	Note ON	X	X	
	Note OFF	X	X	
After	Key's	X	X	
Touch	Channel's	X	X	
Pitch Bender		X	O	
Control Changes	16	X	O	Own CC – Key Shift
	17	X	O	Own CC – Key Priority
	18	X	O	Own CC – Pitch Bend Range
	19	X	O	Own CC – Arpg Clock Rate
	64	X	O	Hold
	120	X	O	All Sound Off
	121	X	O	Reset All Controllers
Program Change		X	X	
System Exclusive		X	O	See description
System	Song Position	X	X	
Common	Song Select	X	X	
	Tune	X	X	
System	Clock	X	O	
Real Time	Command	X	X	
Others	Local ON/OFF	X	X	
	All Notes Off	X	O	
	Active Sensing	X	X	
	Reset	X	O	

Notes :
[1]) Can be changed by SysEx Msg
[2]) Can be changed to Mode 1 by SysEx Msg
[3]) Only block of 61 Notes can be accepted at a time - range depends on "Key Shift" parameter setting

Mode 1 : **OMNI ON, POLY**	Mode 2 : **OMNI ON, MONO**	**O** : Yes
Mode 3 : **OMNI OFF, POLY**	Mode 4 : **OMNI OFF, MONO**	**X** : No

7   APPENDIX - WARRANTY CONDITIONS

The equipment is provided with **thirty-months warranty** starting from the date of the equipment take-over by the customer. This date must be specified on warranty list together with dealer's confirmation.

During this period of time, all defects of equipment or its accessories, caused by defective material or faulty manufacturing, will be removed free of charge.

Warranty repair is asserted by the customer against the dealer.

Warranty period is to be extended for the time period, during which the product was under the warranty repair.

The relevant legal regulations take effect in case of cancellation of purchase contract.

The customer will lose the right for free warranty repair, if he will not be able to submit properly filled out warranty list or if the defects of the product had been caused by:

- unavoidable event (natural disaster),
- connecting the device to the incorrect supply voltage,
- inputs or outputs overloading by connecting the signals source or load source with not-corresponding characteristics etc.,
- faulty equipment operation, which is at variance with the instructions referred-to in the operating manual,
- mechanical damage caused by consumer during transportation or usage of equipment,
- unprofessional interference with the equipment or by equipment modification without manufacturer's approval.