

Keystation 49

USB MIDI CONTROLLER



V. APPENDIX

159	PEDAL CURVE	1-127
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5.3 APPENDIX 3 LED STATUS LIST

NO.	STATUS	DEFINITION
1	xxx	3 Digit Display
2	xx	Upper Transpose Value
3	-xx	Lower Transpose Value
4	x	Upper Octave Value
5	-x	Lower Octave Value
6	CHO	Reminding the user to choose.
7	ON/OFF	Certain function On/Off.
8	don	Certain function done.
9	Err	Operation error.
10	SEu	Data upload.
11	SEd	Data download.

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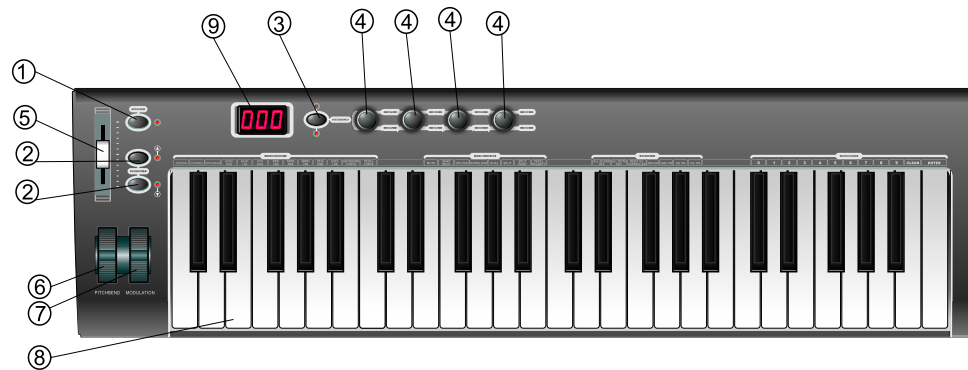
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4. 12 SPLIT	5
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4. 14 MUTE.....	5
4. 15 SNAP SHOT.....	5
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I. FEATURES

- 49 Keys with initial touch.
- Assignable SLIDER, PEDAL, PITCH BEND WHEEL, MODULATION WHEEL, ▲/▼BUTTONS, KNOBS.
- Multi-functional Keyboard.
- PC Upload and Download.
- Adjustable Keyboard velocity.
- MIDI OUT and USB interface. Power supply by USB and DC 9-12V.
- Compatible with Win XP/Vista and Mac OSX, drive free and hot plug supporting.
- Compatible with major sequencer software.

II. PANEL

2. 1. Front panel control



- (1) **EDIT**, Open/Close Keyboard's multi-function. The LED next to it indicates the status.
- (2) **▲/▼**, Assignable Data Buttons. Use the Global Channel. One press would change the value by one; Long press would change the value quickly; Press the two buttons at the same time to set octave to initial 0; Press the two buttons and EDIT at the same time to set transpose to initial 0. When the LED next to it is on, there's octave adjustment; when the LED flickers slowly, there's transpose adjustment; when the LED flickers quickly, there's octave and transpose adjustment. At the same time; when the LED is off, there's no octave nor transpose Adjustment.
- (3) **SWITCH**, Switch Knobs between A1~A4 and B1~B4. The LED indicates the selected group.
- (4) **A1~A4 and B1~B4 Knobs**, Assignable Knobs with an independent Channel And Controller distributed to each Knob.
- (5) **SLIDER**, Assignable fader. Use the Global Channel.
- (6) **PITCH BEND**, Assignable wheel. Use the Global Channel.

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CONTROLLER NO.	DEFINITION	VALUE RANGE
120	ALL SOUND OFF	0
121	RESET ALL CONTROLLERS	0
122	LOCAL CONTROL	0 OFF, 127 ON
123	ALL NOTES OFF	0
124	OMNI OFF	0
125	OMNI ON	0
126	MONO	0
127	POLY	0
128	(RPN) PITCH BEND SENSITIVITY	0-127
129	(RPN) CHANNEL FINE TUNING	0-127
130	(RPN) CHANNEL COARSE TUNING	0-127
131	(RPN) MODULATION DEPTH RANGE	0-127
132	(NRPN) VIBRATO RATE	0-127
133	(NRPN) VIBRATO DEPTH	0-127
134	(NRPN) VIBRATO DELAY	0-127
135	(NRPN) FILTER CUTOFF FREQUENCY	0-127
136	(NRPN) FILTER RESONANCE	0-127
137	(NRPN) EG ATTACK TIME	0-127
138	(NRPN) EG DECAY TIME	0-127
139	(NRPN) EG RELEASE TIME	0-127
140	POLYPHONIC KEY PRESSURE	0-127
141	AFTER TOUCH	0-127
142	PITCH BEND	0-127
143	(GM) MASTER VOLUME	0-127
144	(GM) MASTER BALANCE	0-127
145	(GM) MASTER FINE TUNING	0-127
146	(GM) MASTER COURSE TUNING	0-127
147	(GM2) REVERB TYPE	0-127
148	(GM2) REVERB TIME	0-127
149	(GM2) CHORUS TYPE	0-127
150	(GM2) MOD RATE	0-127
151	(GM2) MOD DEPTH	0-127
152	(GM2) FEEDBACK	0-127
153	(GM2) SEND TO REVERB	0-127
154	PROGRAM	0-127
155	GLOBAL CHANNEL	1-16
156	OCTAVE	-3~3
157	TRANSPOSE	-12~12
158	KEYBOARD CURVE	1-5

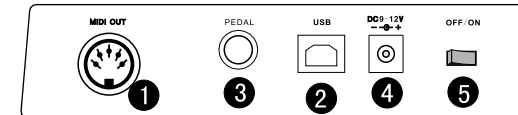
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CONTROLLER NO.	DEFINITION	VALUE RANGE
48	(LSB) GENERAL PURPOSE CONTROLLER 1	0-127
49	(LSB) GENERAL PURPOSE CONTROLLER 2	0-127
50	(LSB) GENERAL PURPOSE CONTROLLER 3	0-127
51	(LSB) GENERAL PURPOSE CONTROLLER 4	0-127
52-63	(LSB) UNDEFINED	0-127
64	SUSTAIN PEDAL	<63 OFF, >64 ON
65	PORTAMENTO	<63 OFF, >64 ON
66	SOSTENUTO	<63 OFF, >64 ON
67	SOFT PEDAL	<63 OFF, >64 ON
68	LEGATO FOOTSWITCH	<63 NORMAL, >64 LEGATO
69	HOLD 2	<63 OFF, >64 ON
70	VARIATION	0-127
71	RESONANCE	0-127
72	RELEASE TIME	0-127
73	ATTACK TIME	0-127
74	CUTOFF	0-127
75	DECAY TIME	0-127
76	VIBRATO RATE	0-127
77	VIBRATO DEPTH	0-127
78	VIBRATO DELAY	0-127
79	UNDEFINED	0-127
80	GENERAL PURPOSE CONTROLLER 5	0-127
81	GENERAL PURPOSE CONTROLLER 6	0-127
82	GENERAL PURPOSE CONTROLLER 7	0-127
83	GENERAL PURPOSE CONTROLLER 8	0-127
84	PORTAMENTO CONTROL	0-127
85-90	UNDEFINED	0-127
91	REVERB DEPTH	0-127
92	TREMOLO DEPTH	0-127
93	CHORUS DEPTH	0-127
94	CELESTE/DETUME DEPTH	0-127
95	PHATSER DEPTH	0-127
96	DATA INCREMENT	0-127
97	DATA DECREMENT	0-127
98	(LSB) NRPN	0-127
99	(MSB) NRPN	0-127
100	(LSB) RPN	0-127
101	(MSB) RPN	0-127
102-119	UNDEFINED	0-127

II. PANEL

- (7) **MODULATION**, Assignable wheel. Use the Global Channel.
 (8) **KEYBOARD MULTI-FUNCTION**.
 (9) **LED**, Show the current parameters /status. Please check **Section 5.3** for reference.

2. 2.REAR PANEL



- (1) **MIDI OUT**, MIDI output interface.
 (2) **USB**, USB interface.
 (3) **PEDAL**, Assignable pedal interface, for a switching or continuous pedal controller. Use the Global Channel.
 (4) **DC 9–12V**, 9–12V power input interface.
 (5) **OFF/ON**, Power Off/On.

III.INSTALLATION

You can connect keyboard to PC via the USB cable. The System would install the driver automatically. A new MIDI device called USB Audio Device will be available in your MIDI compatible applications.
 You can connect keyboard to other devices such as a sound module to transport MIDI data via MIDI output port.
 It can also be power by an optional 9–12V DC power supply.

IV.FUNCTIONS

4.1 KEYBOARD MULTI-FUNCTION

Press the EDIT button to enter/exit the KEYBOARD MULTI-FUNCTION mode.
Press the corresponding Function key to select the function you want.
Use the NUMERIC keys to enter the parameter value, if it is needed.
Use the CLEAN key to set the parameter value to 0, if it is needed.
Press the ENTER key to confirm the operation, if it is needed.

4.2 ASSIGN CONTROLLERS

To assign parameter to any SLIDER, PEDAL, WHEELS, ▲/▼BUTTONS or KNOBS, please enter the KEYBOARD MULTI-FUNCTION mode, then press ASSIGN key to enter controller assignment function, LED shows CHO. Now move the controller that you want to assign (For example, if you want to assign SLIDER, move the SLIDER), the LED shows the currently controller number of the selected controller, input the desired parameter with NUMERIC keys, then press ENTER to confirm (For example, if SLIDER is selected, input 7 and the SLIDER would be assigned as Channel Volume Controller).

Please check Section 5.1 and Section 5.2 for reference.

4.3 PROGRAM

This function would adjust the voice of current channel.

When Bank MSB/Bank LSB is 0, only Program Change message would be sent .
While Bank MSB/Bank LSB is not 0, Bank MSB, Bank LSB and Program Change message would be sent together.

By default, A1 is assigned to preset #154-PROGRAM, you can use A1 to adjust it.
As explained in Section 4.2, any other controller can be used as well if previously assigned to the preset.

Also you can use the KEYBOARD MULTI-FUNCTION to adjust it.

4.4 BANK MSB/BANK LSB

These functions are used to select the sound bank.

As explained in Section 4.2, any controller can be used to adjust these controllers if previously assigned to the preset.

Also you can use the KEYBOARD MULTI-FUNCTION to adjust it.

4.5 MIDI CHANNEL

The SLIDER, PEDAL, WHEELS, ▲/▼BUTTONS and KETBOARD use the same midi channel as Global Channel. The KNOBS can be assigned to the Global Channel Or independent Channel.

As explained in Section 4.2, any other controller can be used as well if previously assigned to the preset.

Also you can use the KEYBOARD MULTI-FUNCTION to adjust it.

To assign channel to the KNOBS, please enter the KEYBOARD MULTI-FUNCTION mode, then press CHANNEL key to enter channel assignment function. Now move the KNOBS that you want to assign, input the desired channel number with NUMERIC Keys, and press ENTER to confirm. The range is 0-16. 0 is to use the Global Channel , and 1-16 is to set an independent Channel.

V. APPENDIX

5.2 APPENDIX 2 CONTROLLER LIST

CONTROLLER NO.	DEFINITION	VALUE RANGE
0	(MSB) BANK SELECT	0-127
1	(MSB) MODULATION	0-127
2	(MSB) BREATH MSB	0-127
3	(MSB) UNDEFINED	0-127
4	(MSB) FOOT CONTROLLER	0-127
5	(MSB) PORTAMENTO TIME	0-127
6	(MSB) DATA ENTRY	0-127
7	(MSB) CHANNEL VOLUME	0-127
8	(MSB) BALANCE	0-127
9	(MSB) UNDEFINED	0-127
10	(MSB) PAN	0-127
11	(MSB) EXPRESSION	0-127
12	(MSB) EFFECT CONTROL 1	0-127
13	(MSB) EFFECT CONTROL 2	0-127
14-15	(MSB) UNDEFINED	0-127
16	(MSB) GENERAL PURPOSE CONTROLLER 1	0-127
17	(MSB) GENERAL PURPOSE CONTROLLER 2	0-127
18	(MSB) GENERAL PURPOSE CONTROLLER 3	0-127
19	(MSB) GENERAL PURPOSE CONTROLLER 4	0-127
20-31	(MSB) UNDEFINED	0-127
32	(LSB) BANK SELECT	0-127
33	(LSB) MODULATION	0-127
34	(LSB) BREATH	0-127
35	(LSB) UNDEFINED	0-127
36	(LSB) FOOT CONTROLLER	0-127
37	(LSB) PORTAMENTO TIME	0-127
38	(LSB) DATA ENTRY	0-127
39	(LSB) CHANNEL VOLUME	0-127
40	(LSB) BALANCE	0-127
41	(LSB) UNDEFINED	0-127
42	(LSB) PAN	0-127
43	(LSB) EXPRESSION	0-127
44	(LSB) EFFECT CONTROL 1	0-127
45	(LSB) EFFECT CONTROL 2	0-127
46-47	(LSB) UNDEFINED	0-127

V. APPENDIX

5.1 APPENDIX 1 ASSIGNABLE CONTROLLER LIST

ITEM	CHANNEL RANGE	INITIAL CHANNEL	CONTROLLER RANGE	INITIAL CONTROLLER
▲/▼	1~16 GLOBAL CHANNEL	1	0~159	(OCTAVE) 156
SLIDER			0~153	(VOLUME) 7
PITCH			0~153	(PITCH) 142
MODULATION			0~153	(MODULATION) 1
PEDAL			0~153	(SUSTAIN) 64
A1	0~16 0: GLOBAL CHANNEL 1~16: INDEPENDENT CHANNEL	0	0~159	(PROGRAM) 154
A2			0~159	(PAN) 10
A3			0~159	(REVERB) 91
A4			0~159	(CHORUS) 93
B1			0~159	(CUTOFF) 74
B2			0~159	(RESONANCE) 71
B3			0~159	(ATTACK) 73
B4			0~159	(RELEASE) 72

IV. FUNCTIONS

4.6 TRANSPOSE

This function allows the keyboard to change the pitch up/down by semi-tone. By default, you can hold EDIT and press ▲/▼ BUTTONS to adjust it. Adjustment range is +/- 12 semitones.

By default, you can hold EDIT and press ▲/▼ BUTTONS at the same time to set it to initial 0.

As explained in **Section 4.2**, any other controller can be used as well if previously assigned to the preset.

4.7 OCTAVE

This function allows the keyboard to change the pitch up/down by octave.

By default, ▲/▼ BUTTONS are assigned to preset #156-OCTAVE, you can use ▲/▼ BUTTONS to adjust it. Adjustment range is +/- 3 octaves.

By default, you can press ▲/▼ BUTTONS at the same time to set it to initial 0.

As explained in **Section 4.2**, any other controller can be used as well if previously assigned to the preset.

4.8 KEYBOARD CURVE

There are 5 keyboard curves that contain Soft, Hard and so on.

As explained in **Section 4.2**, any controller can be used to adjust it if previously assigned to the preset.

Also you can use the KEYBOARD MULTI-FUNCTION to it.

4.9 PEDAL CURVE

You can adjust the PEDAL CURVE to better work with pedals of different specifications and resistance values.

If the pedal's range is short, you should turn the PEDAL CURVE up.

If the pedal can't get to the max or the min, you should turn the PEDAL CURVE down.

You can estimate the pedal curve value by the expressions: $PEDAL\ CURVE = (128 * \text{pedal resistance value}) / (10K + \text{pedal resistance value})$. For instance, if the pedal resistance value is 10K, then the $PEDAL\ CURVE = 128 * 10K / (10K + 10K) = 64$. As explained in **Section 4.2**, any controller can be used to adjust it if previously assigned to the preset.

Also you can use the KEYBOARD MULTI-FUNCTION to adjust it.

4.10 RPN/NRPN

You should use RPN MSB, RPN LSB, DATA MSB and DATA LSB to send RPN message.

You should use NRPN MSB, NRPN LSB, DATA MSB and DATA LSB to send NRPN message.

As explained in **Section 4.2**, any controller can be used to adjust these controllers if previously assigned to the preset.

Also you can use the KEYBOARD MULTI-FUNCTION to adjust it.

4.11 DUAL

When DUAL is ON, KEYBOARD/WHEEL/PEDAL/SLIDER sends MIDI message for two channels.

IV.FUNCTIONS

You can use the KEYBOARD MULTI-FUNCTION to open/close DUAL function. DUAL and SPLIT functions cannot be used simultaneously. Open DUAL will turn off SPLIT function.

4.12 SPLIT

When SPLIT is ON, the keyboard is split to right section and left section by the SPLIT POINT, with each section use an own channel.

You can use the KEYBOARD MULTI-FUNCTION to open/close SPLIT function. DUAL and SPLIT functions cannot be used simultaneously. Open keyboard SPLIT Will turn off DUAL function.

4.13 SPLIT POINT

User can reset the SPLIT POINT.

Press EDIT button to enter the KEYBOARD MULTI-FUNCTION mode, then press SPLIT POINT, LED displays CHO, then press the desired split point note and then that note will be the new SPLIT POINT.

4.14 MUTE

No message will be transmitted under MUTE mode.

You can use KEYBOARD MULTI-FUNCTION to open/close MUTE function.

4.15 SNAP SHOT

All the SLIDER, PEDAL, WHEELS, ▲/▼BUTTONS, and KNOBS would send the data at one time when SNAP SHOT function is performed.

Please use the KEYBOARD MULTI-FUNCTION to perform it.

4.16 UPLOAD/DOWNLOAD

It can send and receive all configuration data in form of SysEx strings. To make use of that, a SysEx-compatible sequencing software like Cubase is needed. Make sure in MIDI filter settings in your software that SysEx data is not filtered out. To transfer the data from keyboard to your computer, start recording in your software. Then press EDIT button to enter the KEYBOARD MULTI-FUNCTION mode, then press UPLOAD to transmit the data at one time.

To transfer the data back from the computer to keyboard, make sure that the data is ready for transfer in your software. Press EDIT button to enter the KEYBOARD MULTI-FUNCTION mode, then press DOWNLOAD to start receiving of the data. Now start the transfer / playback of the data from your software.

4.17 PEDAL POLARITY

It can recognize or change the pedal polarity while switching on the unit. If you want to change the pedal polarity, you can press down the pedal while Switching Switching on the unit and release the pedal after the unit is turned on.

Also you can use the KEYBOARD MULTI-FUNCTION to change it.

4.18 ALL NOTE OFF

This is to transmit all notes off message, in case of abnormal constant sound from system or external sound module.

Please use the KEYBOARD MULTI-FUNCTION to perform it.

IV.FUNCTIONS

4.19 ALL SOUND OFF

This is to transmit all sound off message, in case of abnormal constant Sound from system or external sound module.

Please use the KEYBOARD MULTI-FUNCTION to perform it.

4.20 RESET ALL CONTROLLERS

This is to transmit reset all controllers message.

Please use the KEYBOARD MULTI-FUNCTION to perform it.

4.21 GM ON

This is to transmit GM initialization message.

Please use the KEYBOARD MULTI-FUNCTION to perform it.

4.22 GM2 ON

This is to transmit GM2 initialization message.

Please use the KEYBOARD MULTI-FUNCTION to perform it.

4.23 GS ON

This is to transmit GS initialization message.

Please use the KEYBOARD MULTI-FUNCTION to perform it.

4.24 XG ON

This is to transmit XG initialization message.

Please use the KEYBOARD MULTI-FUNCTION to perform it.