

**KS25B/49B/61B**  
**MIDI CONTROLLER**  
**MANUAL**

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# 1. INTRODUCTION

KS25B/49B/61B is a 25/49/61 key MIDI controller, providing profound assignable controllers and perfect solution to portable MIDI controller.

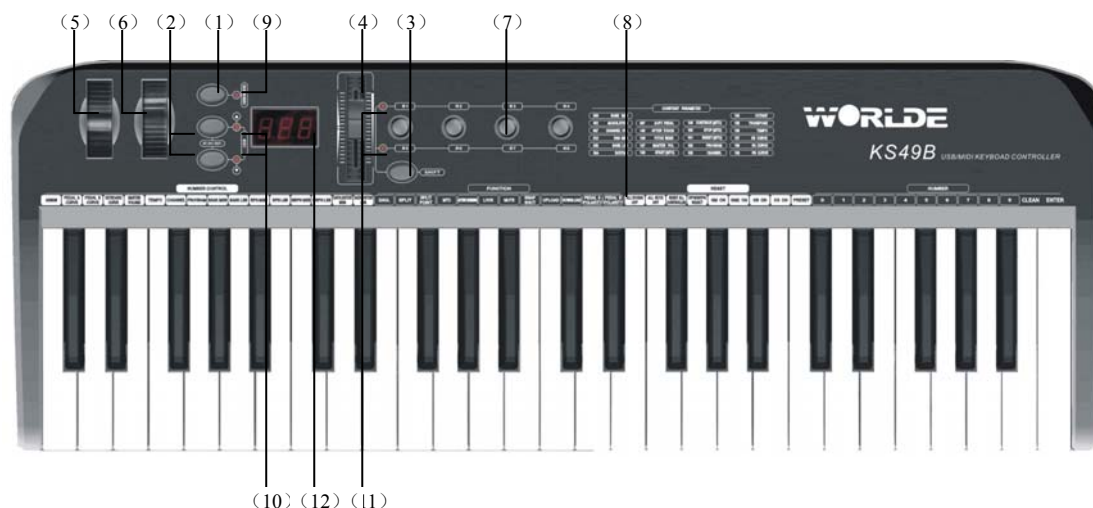
## 2. MAIN FEATURES

- 25/49/61 key professional touch response keyboard
- 1 assignable pedal interface (Pedal B), which can be connected to both switching type and continuous type pedal, and can be assigned as 152 controllers. (KS25B).
- 2 assignable pedal interfaces (Pedal A, Pedal B) can be connected to both switching type pedal and continuous type pedal, and can be assigned as 152 controllers. (KS49B/61B).
- 1 assignable slider (Slider), which can be assigned as 148 controllers.
- Pitch Bend Wheel and Modulation Wheel (Wheel P and Wheel M), which can be assigned as 148 controllers.
- Two assignable numeric pads (Data +/-), which can be assigned as 160 controllers.
- 1 editing button (Edit).
- 1 knob function group switching button (Switch).
- 4 assignable knobs, which can accomplish two groups of functions (R1~R4 and R5~R8) with each knob distributed with an independent channel. These knobs can be assigned as 160 controllers.
- Keyboard multi-functional buttons, which can provide functions such as voice adjustment, dual, touch sensitivity adjustment, numeric pad, etc.
- 1 MIDI OUT.
- USB interface, adaptable to USB 2.0. USB connection to PC powers the device.
- Compatible with Win 10/8/7/XP/Vista and Mac OSX, drive free and hot plug supporting.
- Compatible with mainstream pro audio and sequencer software, such as Cakewalk.

## 3. OPERATION INSTRUCTION

### 3.1. PARTS ILLUSTRATION

#### 3.1.1. FRONT PANEL



(1) EDIT button

It is to open/close keyboard multi-function.

(2) DATA +/- button

It is to assign numeric +/- button, and could be assigned as 160 controllers. The initial setting is 154<sup>th</sup> controller: octave adjustment.

(3) SWITCH button

It is to switch function groups of knobs R1~R4 and R5~R8.

(4) SLIDER Fader

It is an assignable fader that can be assigned as 148 controllers. The initial setting is 147<sup>th</sup> controller: master volume.

(5) PITCH BEND Wheel

It is an assignable wheel that can be assigned as 148 controllers. The initial setting is 146<sup>th</sup> controller: pitch bend wheel.

(6) MODULATION wheel

It is an assignable wheel that can be assigned as 148 controllers. The initial setting is 1<sup>st</sup> controller: modulation wheel.

(7) R1~R8 knobs

These are assignable knobs with an independent channel distributed to each knob, and each knob can be assigned as 160 controllers. The initial channel of R1~R4 is 0, initial controller numbers are 152, 153, 156, 157, which controls voice, channel, tempo and keyboard velocity curve respectively. The initial channels of R5~R8 are 0~3, initial controller number is 7, which controls the volume of channels 0~3 respectively. The function group of R1~R4 and R5~R8 is switched by SWITCH button.

**(8) Keyboard multi-function**

This function is turned on/off by EDIT button. When it is on, the keyboard provides functions shown on the picture, including voice adjustment, dual, touch sensitivity adjustment, numeric pads, and etc.

**(9) EDIT indicator**

When EDIT indicator is on, keyboard multi-function is on, vice versa.

**(10) OCTAVE/TRANSPOSE indicator**

When the indicator is on, it indicates that there's upper/lower octave adjustment; when the indicator flickers slowly, it indicates that there's upper/lower transpose adjustment; when the indicator flickers quickly, it indicates that there's upper/lower octave and transpose adjustment at the same time; when the indicator is off, it indicates that there's no upper/lower octave nor transpose adjustment.

**(11) Knob function group indicator**

When the corresponding indicator of R1~R4 is on, the current function group is R1~R4; if the indicator of R~R5 is on, the current knob function group is R5~R8.

**(12) LED**

It is to display the current number/status information.

### 3.1.2. REAR PANEL

**(1) MIDI OUT**

MIDI output interface.

**(2) PEDAL A**

Pedal A input interface, which can connect both switching type and continuous type pedals. It can be assigned as 152 controllers; the initial setting is soft pedal.

**(3) PEDAL B**

Pedal B input interface, which can connect both switching type and continuous type pedals. It can be assigned as 152 controllers; the initial setting is sustain pedal.

**(4) USB**

USB interface

**(5) DC9V**

9V power input interface.

**(6) OFF/ON**

Power Off/On.

### 3.2. CONNECTION/POWER/CONTROL

- ✓ KS25B/49B/61B gets connected to PC via the USB cable. This connection powers the keyboard and is used to transfer the MIDI data to PC. In addition, you can connect to other

devices such as a sound module to send out MIDI data via MIDI output port.

- ✓ KS25B can also be used standalone when connected to an optional 9V DC power supply. In this case the MIDI data will only be sent out via the MIDI output port.

### 3.3. ASSIGN CONTROLLERS

- ✓ Press EDIT button to enter keyboard multi-function mode, the indicator of EDIT is on. Press ASSIGN button to enter controller assignment mode, LED shows CHO, reminding the user to choose the controller that needs to be assigned. Operate the very controller to select it (For example, if you want to assign SLIDER, slide the Slider to select), the LED shows the controller number of the selected controller, input the desired assignable parameter value with numeric pad, and press ENTER to confirm (for example, if Slider is selected, input 147 and the Slider is assigned as Master Volume Controller).
- ✓ Assignable controllers reference: Appendix 1- Assignable controller List
- ✓ Assignable controller parameters reference: Appendix 2-Assignable Controller Parameter List.

### 3.4. PEDAL RESISTANCE CURVE

- ✓ You can adjust the pedal resistance curve to better adapt to pedals of different specifications and resistance values.
- ✓ Estimate resistance curve: Value of PA Curve or PB Curve= $(128 * \text{pedal resistance value}) / (10K + \text{pedal resistance value})$ . For instance, if the pedal resistance value is 10K, the value of PA Curve or PB Curve is:  $128 * 10K / (10K + 10K) = 64$ .
- ✓ For pedal resistance value, please refer to the technical specifications provided by the factory
- ✓ The estimation of resistance curve does not have to be very accurate, or you could just adjust it without calculation, as long as the travel and succession of the pedal satisfy your needs.
- ✓ The initial value of resistance curve is 64, adaptable to most pedals on the market.
- ✓ When you use switching type pedal, the recommended resistance curve value is 64.
- ✓ When DATA +/- is assigned as PA CURVE or PB CURVE, DATA +/- can be used to adjust resistance curve values. Press two buttons of DATA +/- at the same time to restore the resistance curve value to 64.
- ✓ When the knobs (R1~R4 or R5~R8) are assigned as PA CURVE or PB CURVE, they can be used to adjust pedal resistance value.
- ✓ Press EDIT button to enter into keyboard multi-function mode, press PA CURVE or PB CURVE multi-functional keys to enter into pedal resistance curve adjustment mode, input the pedal resistance value with numeric pad, then press ENTER to confirm. (KS49/61)

### 3.5. TEMPO

- ✓ When DATA +/- is assigned as TEMPO, it can be used to adjust tempo. Press DATA +/- at the same time to restore to the initial tempo 100.

- ✓ When the knobs (R1~R4 or R5~R8) are assigned as TEMPO, they (R1~R4 or R5~R8) can be used to adjust tempo.
- ✓ Press EDIT button to enter into keyboard multi-function mode, press TEMPO to enter into tempo adjustment mode, then input the tempo value with numeric pad, and press ENTER to confirm. (KS49B/61B)

### 3.6. PROGRAM

- ✓ When DATA +/- is assigned as PROGRAM, DATA +/- can be used to adjust program. Press DATA +/- at the same time to restore to the initial program number 0.
- ✓ When the knobs (R1~R4 or R5~R8) are assigned as PROGRAM, they (R1~R4 or R5~R8) can be used to adjust program.
- ✓ Press EDIT button to enter into keyboard multi-function mode, press PROGRAM button to enter into program adjustment mode, then input the program number with numeric pad and press ENTER to confirm.

### 3.7. MIDI CHANNEL

- ✓ When DATA +/- is assigned as CHANNEL, use DATA +/- to adjust MIDI channel. Press DATA +/- buttons at the same time to set channel to 0.
- ✓ When knob R1~R4 or R5~R8 are assigned as CHANNEL, use knob R1~R4 or R5~R8 to adjust general MIDI channel.
- ✓ Press EDIT button to enter keyboard multi-function mode, and then press CHANNEL to enter channel adjustment mode, and then use numeric pad to enter general midi channel number and press ENTER to confirm.
- ✓ Press EDIT button to enter keyboard multi-function mode, and then press CHANNEL to enter channel adjustment mode. Operate the desired knob from R1~R4 or R5~R8 to select that knob, and then use numeric pad to enter MIDI channel number and press ENTER to confirm.

### 3.8. TRANSPOSE

- ✓ When DATA +/- is assigned as TRANSPOSE, use DATA +/- to adjust transpose. Adjustment range is +/- 12 semitones. Press DATA +/- buttons at the same time to set Transpose to 0.
- ✓ Hold EDIT and use DATA +/- to adjust transpose. Adjustment range is +/- 12 semitones. Hold EDIT and DATA +/- at the same time to set transpose to 0.
- ✓ When knob R1~R4 or R5~R8 are assigned as TRANSPOSE, use knob R1~R4 or R5~R8 to adjust transpose. Adjustment range is +/- 12 semitones.

### 3.9. OCTAVE

- ✓ When DATA +/- is assigned as OCTAVE, use DATA +/- to adjust octave. Adjustment range is +/- 3 octaves. Press DATA +/- buttons at the same time to set Octave to 0.
- ✓ When knob R1~R4 or R5~R8 are assigned as OCTAVE, use knob R1~R4 or R5~R8 to adjust octave. Adjustment range is +/- 3 octaves.

### 3.10. DUAL

- ✓ Press EDIT button to enter keyboard multi-function mode, and then press DUAL to open/close dual function.
- ✓ Dual and keyboard split functions cannot be used simultaneously. Open dual will turn off keyboard split function.

### 3.11. KEYBOARD SPLIT

- ✓ Press EDIT button to enter keyboard multi-function mode, and then press SPLIT to open close keyboard split function.
- ✓ Dual and keyboard split functions cannot be used simultaneously. Open keyboard split will turn off Dual function. (KS49B/61B)

### 3.12. SPLIT POINT

- ✓ Press EDIT button to enter keyboard multi-function mode, and then press SPLIT POINT to select split point. Screen displays CHO to remind users to select the split point, and then press the desired split point note and then that note will be the new split point. (KS49B/61B)

### 3.13. MTC

- ✓ Press EDIT button to enter keyboard multi-function mode, and then press MTC to open/close sending MTC msg (F8).

### 3.14. ACTIVE SENSING

- ✓ Press EDIT button to enter keyboard multi-function mode, and then press ACTIVE SENSING to open/close active sensing msg (FE). (KS49B/61B)

### 3.15. LOCK

- ✓ Press EDIT button to enter keyboard multi-function mode, and then press LOCK to



open/close keyboard Lock function. No other controllers except keyboard can be operated under Lock mode. (KS49B/61B)

### 3.16. MUTE

- ✓ Press EDIT button to enter keyboard multi-function mode, and then press MUTE to open/close mute function. No msg will be transmitted under Mute mode.

### 3.17. SNAP SHOT

- ✓ Press EDIT button to enter keyboard multi-function mode, and then press SNAP SHORT, DATA +/-, SLIDER, WHEEL, PEDAL, R1~R4 and R5~R8 and etc all together to transmit those data at one time.

### 3.18. UPLOAD/DOWNLOAD

- ✓ Use USB port to connect with computer and upload or download user parameters: to upload KS25B/49B/61B panel parameters to computer, or, to download the parameters from computer to KS25B/49B/61B.
- ✓ The transmit messages are system exclusive messages in form of F0.....F7. According to different sequencer software, there are different ways to receive/send system msg: mainly record/playback style and system msg window style. Details are as follows.
  - Record Style. E.g. Cubase
    - ◇ From KS25B/49B/61B to computer (UPLOAD)
      1. Use USB cable to connect computer and KS25B/49B/61B;
      2. Set KS25B/49B/61B parameters;
      3. Open a new MIDI project in Cubase;
      4. Select KS25B/49B/61B as MIDI input and neglect output;
      5. Uncheck the box – SYSEX in RECORD to validate system msg. (FILE-> PREFERENCES-> MIDI-> MIDI FILTER);
      6. Cubase starts to record;
      7. Press EDIT button to enter keyboard multi-function mode, and then press UPLOAD, KS25B/49B/61B enters into system msg upload mode. SEu displays in the screen. After upload completes, screen displays don.
      8. Cubase stops recording.
      9. In Cubase, select MIDI->OPEN LIST EDITOR to find received system msg; press COMMENT to open system msg window and use EXPORT to save the msg in \*.SYS format.
    - ◇ From computer to KS25B/49B/61B (DOWNLOAD)
      1. Use USB cable to connect computer and KS25B/49B/61B;
      2. Open a new MIDI project in Cubase;

3. Select KS25B/49B/61B as MIDI output;
  4. Export saved system msg file (\*.SYS) into Cubase.
  5. Press EDIT button to enter keyboard multi-function mode, and then press DOWNLOAD, KS25B/49B/61B enters into system msg download mode. SEd displays in the screen.
  6. Cubase starts to playback and transmit system msg to KS25B/49B/61B;
  7. Screen displays don after KS25B/49B/61B receives correct system msg.
  8. Use SNAP SHOT function together to transmit preset setting msg to sequent device.
- System Msg Window Style. E.g. Cakewalk  
Operate KS25B/49B/61B in the same way as under Record Style, only different operation in sequencer software.
  - ◇ From KS25B/49B/61B to computer (UPLOAD)
    1. Use USB cable to connect computer and KS25B/49B/61B;
    2. Set KS25B/49B/61B parameters;
    3. Open a new MIDI project in Cakewalk;
    4. Select KS25B/49B/61B as MIDI input and neglect output;
    5. Open system msg window: VIEW->SYSX; select a BANK and ↓ ; select YOU START DUMP ON INSTRUMENT and then Cakewalk enters into system msg receive mode.
    6. Press EDIT button to enter keyboard multi-function mode, and then press UPLOAD, KS25B/49B/61B enters into system msg upload mode. SEu displays in the screen. After upload completes, screen displays don.
    7. Use SAVE in Cakewalk to save received msg in \*.SYS format.
  - ◇ From computer to KS25B/49B/61B (DOWNLOAD)
    1. Use USB cable to connect computer and KS25B/49B/61B;
    2. Open a new MIDI project in Cakewalk;
    3. Select KS25B/49B/61B as MIDI output;
    4. Open system msg window: VIEW->SYSX; select a BANK and import saved system msg file.
    5. Press EDIT button to enter keyboard multi-function mode, and then press DOWNLOAD, KS25B/49B/61B enters into system msg download mode. SEd displays in the screen.
    6. Use Cakewalk system msg send function to send system msg to KS25B/49B/61B;
    7. Screen displays don after KS25B/49B/61B receives correct system msg.
    8. Use SNAP SHOT function together to transmit preset setting msg to sequent device.

### 3.19. PEDAL POLARITY

- ✓ System can recognize or change pedal polarity. If you want pedal to transmit PEDAL ON msg while pressing the pedal and PEDAL OFF msg while releasing the pedal, you do not need to do any adjustment. Otherwise, you can press down the pedal while switching on this unit and release the pedal after the unit is turned on.
- ✓ Press EDIT button to enter keyboard multi-function mode, and press PEDAL A POLARITY or PEDAL B POLARITY to adjust pedal polarity. (KS49B/61B)

## 3.20. SWITCH KNOB FUNCTION GROUPS

- ✓ Press SWITCH to shift knob function group between R1~R4 or R5~R8.

## 3.21. ALL NOTE OFF

- ✓ Press EDIT button to enter keyboard multi-function mode, and then press ALL NOTE OFF to transmit all note off msg (Controller #123), in case of abnormal constant sound from system or external sound module.

## 3.22. ALL SOUND OFF

- ✓ Press EDIT button to enter keyboard multi-function mode, and then press ALL SOUND OFF to transmit all sound off MIDI msg (Controller #120), in case of abnormal constant sound from system or external sound module. (KS49B/61B)

## 3.23. RESET ALL CONTROLLERS

- ✓ Press EDIT button to enter keyboard multi-function mode, and then press RESET ALL CONTROLLER to transmit all reset MIDI msg (Controller #121).

## 3.24. GM/GS/XG ON

- ✓ Press EDIT button to enter keyboard multi-function mode, and then press GM/GS/XG ON to transmit GM initialization msg (F0 7E 7F 09 01 F7), GS initialization msg (F0 41 10 42 12 40 00 7F 00 41 F7), and XG initialization msg (F0 43 10 4C 00 00 7E 00 F7). (KS25B)

## 3.25. GM ON

- ✓ Press EDIT button to enter keyboard multi-function mode, and then press GM ON to transmit GM initialization msg (F0 7E 7F 09 01 F7). (KS49B/61B)

## 3.26. GM2 ON

- ✓ Press EDIT button to enter keyboard multi-function mode, and then press GM2 ON to transmit GM2 initialization msg (F0 7E 7F 09 03 F7). (KS49B/61B)

### **3.27. GS ON**

- ✓ Press EDIT button to enter keyboard multi-function mode, and then press GS ON to transmit GS initialization msg (F0 41 10 42 12 40 00 7F 00 41 F7). (KS49B/61B)

### **3.28. XG ON**

- ✓ Press EDIT button to enter keyboard multi-function mode, and then press XG ON to transmit XG initialization msg (F0 43 10 4C 00 00 7E 00 F7). (KS49B/61B)

### **3.29. PRESET**

- ✓ Press EDIT button to enter keyboard multi-function mode, and then press PRESET to return to factory preset.
- ✓ If using together with SNAP SHOT function it can transmit preset to sequent device. (KS49B/61B)

### **3.30. CLEAN**

- ✓ While using numeric pad to enter numbers, press CLEAN button to set the number to 0. (KS49B/61B).

### **3.31. RESET**

- ✓ If not especially mentioned, press DATA +/- buttons at the same time to set controlled parameter to 0.
- ✓ Note: please refer to above explanation for other unmentioned controllers.

## 4. APPENDIX

### 4.1. APPENDIX 1 ASSIGNABLE CONTROLLER LIST

NO.	ITEM	DEFAULT CHANNEL	PARAMTER RANGE	DETAULT PARAMETER	D.PARAMETER VALUE
1	Data +/-	0	0~159	154	0
2	Slider	0	0~147	147	0
3	Wheel 1	0	0~147	146	64
4	Wheel 2	0	0~147	1	0
5	Pedal A	0	0~151	64	0
6	Pedal B	0	0~151	67	0
7	A 1	0	0~159	152	0
8	A 2	0	0~159	153	0
9	A 3	0	0~159	156	100
10	A 4	0	0~159	157	0
11	B 1	0	0~159	7	100
12	B 2	1	0~159	7	100
13	B 3	2	0~159	7	100
14	B 4	3	0~159	7	100

### 4.2. APPENDIX 2 ASSIGNABLE CONTROLLER PARAMETER LIST

CONTROLLER NO.	CHINSE & ENGLISH DEFINITION		DEFAULT VALUE	VALUE RANGE
0	库选择 MSB	Bank Select MSB	0	0-127
1	颤音深度 MSB	Modulation MSB	0	0-127
2	呼吸控制 MSB	Breath MSB	127	0-127
3	控制器	Controller	0	0-127
4	踏板控制 MSB	Foot Controller MSB	127	0-127
5	滑音时间 MSB	Portamento time MSB	0	0-127
6	数据输入 MSB	Data Entry MSB	2	0-127
7	通道音量 MSB	Channel Volume MSB	100	0-127
8	平衡 MSB	Balance MSB	64	0-127
9	控制器	Controller	0	0-127
10	相位调整 MSB	Panpot MSB	64	0-127

11	表情 MSB	Expression MSB	127	0-127
12	效果控制 1 MSB	Effect Control 1 MSB	0	0-127
13	效果控制 2 MSB	Effect Control 2 MSB	0	0-127
14-31	控制器	Controller	0	0-127
32	库选择 LSB	Bank Select LSB	0	0-127
33	颤音深度 LSB	Modulation LSB	0	0-127
34	呼吸控制 LSB	Breath LSB	127	0-127
35	控制器	Controller	0	0-127
36	踏板控制 LSB	Foot Controller LSB	127	0-127
37	滑音时间 LSB	Portamento time LSB	0	0-127
38	数据输入 LSB	Data Entry LSB	0	0-127
39	通道音量 LSB	Channel Volume LSB	127	0-127
40	平衡 LSB	Balance LSB	64	0-127
41	控制器	Controller	0	0-127
42	相位调整 LSB	Panpot LSB	64	0-127
43	表情 LSB	Expression LSB	127	0-127
44-63	控制器	Controller	0	0-127
64	延音踏板	Sustain	0	0-127
65	滑音	Portamento	0	0-127
66	持续音	Sostenuto	0	0-127
67	弱音踏板	Soft Pedal	0	0-127
68	连音踏板	Legato FootSwitch	0	0-127
69	保持	Hold 2	0	0-127
70	声音控制	Sound Controller	64	0-127
71	共振	Resonance	64	0-127
72	释音	Release Time	64	0-127
73	起音	Attack Time	64	0-127
74	截止频率	Cutoff	64	0-127
75	衰减时间	Decay Time	0	0-127
76	颤音比率	Vibrato Depth	64	0-127
77	颤音深度	Vibrato Depth	64	0-127
78	颤音延迟	Vibrato Depth	64	0-127
79	声音控制	Sound Controller	64	0-127
80-83	控制器	Controller	0	0-127
84	连滑音控制	Portamento Control	0	0-127
85-90	控制器	Controller	0	0-127
91	混响效果深度	Reverb	40	0-127
92	效果	Effects	0	0-127
93	合唱效果深度	Chorus	0	0-127

94	效果深度	Effects	0	0-127
95	效果	Effects	0	0-127
96	数据累增	RPN Increment	0	0-127
97	数据递减	RPN Decrement	0	0-127
98	未登记的 LSB 数值	NRPN LSB	0	0-127
99	未登记的 MSB 数值	NRPN MSB	0	0-127
100	已登记的 LSB 数值	RPN LSB	0	0-127
101	已登记的 MSB 数值	RPN MSB	0	0-127
102-119	控制器	Controller	0	0-127
120	全部声音关	All Sound Off	0	0-127
121	所有控制器复位	Reset All Controllers	0	0-127
122	本地控制	Local Control	0	0-127
123	全部音符关	All Notes Off	0	0-127
124	全部关	OMNI Off	0	0-127
125	全部开	OMNI On	0	0-127
126	单音模式	Mono	0	0-127
127	复音模式	Poly	0	0-127
128	RPN	Pitch Bend Sensitivity (RPN)	2	0-127
129	RPN	Channel Fine Tuning (RPN)	64	0-127
130	RPN	Channel Coarse Tuning (RPN)	64	0-127
131	RPN	Modulation Depth Range (RPN)	64	0-127
132	NRPN	Vibrato Rate (NRPN)	64	0-127
133	NRPN	Vibrato Depth (NRPN)	64	0-127
134	NRPN	Vibrato Delay (NRPN)	64	0-127
135	NRPN	Filter Cutoff Frequency (NRPN)	64	0-127
136	NRPN	Filter Resonance (NRPN)	64	0-127
137	NRPN	EQ Low Gain (NRPN)	64	0-127
138	NRPN	EQ High Gain (NRPN)	64	0-127
139	NRPN	EQ Low Frequency (NRPN)	64	0-127
140	NRPN	EQ High Frequency (NRPN)	64	0-127
141	NRPN	EG Attack Time (NRPN)	64	0-127
142	NRPN	EG Decay Time (NRPN)	64	0-127
143	NRPN	EG Release Time (NRPN)	64	0-127
144	多音琴键压力	Polyphonic key pressure	100	0-127

145	通道触后	After touch	100	0-127
146	弯音轮	Pitch Bend	64	0-127
147	主音量	Master Volume	100	0-127
148	开始 (MTC)	Start (MTC)	-	-
149	继续 (MTC)	Continue (MTC)	-	-
150	停止 (MTC)	Stop (MTC)	-	-
151	复位 (MTC)	Reset (MTC)	-	-
152	音色	Program	0	0-127
153	全局通道	Global Channel	0	0-15
154	八度	Octave	0	-3~3
155	移调	Transpose	0	-12~12
156	速度	Tempo	100	20-250
157	键盘力度曲线	Keyboard Curve	0	0-4
158	踏板 A 曲线	Pedal A Curve	64	1-127
159	踏板 B 曲线	Pedal B Curve	64	1-127

### 4.3. 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	(1) Under Assign Mode: indicate the controller to be assign. (2) Under Split Point Mode: indicate keyboard Split point.
7	ON/OFF	Certain function On/Off, or pedal polarity positive/negative.
8	don	Certain function done.
9	Err	Operation error.
10	SEu	Parameters upload.
11	SEd	Parameters download.



#### 4.4. APPENDIX 4 TECHNICAL SPECIFICATIONS

NO.	ITEM	SPECIFICATIONS
1	Keyboard	<ul style="list-style-type: none"> <li>◆ KS25B: 25 Keys, C2-C4, Touch Response / Channel After Touch.</li> <li>◆ KS49B: 49 Keys, C1-C5, Touch Response / Channel After Touch.</li> <li>◆ KS61B: 61 Keys, C1-C6, Touch Response / Channel After Touch.</li> </ul>
2	Function	<ul style="list-style-type: none"> <li>◆ MIDI Data: Program Select, Bank Select, Sequencer Control, MTC, Controller Change, GM, GS, XG System Reset and etc.</li> <li>◆ Controllable Parameters: Transpose (incl. Octave Adjust), MIDI Transmit Channel, Velocity Curve Adjust, Keyboard Split Point and etc.</li> </ul>
3	Panel & Indicator	<ul style="list-style-type: none"> <li>◆ 4 Assignable Knobs.</li> <li>◆ 1 Knob Group Function Shift Button (incl. 2 Indicators.)</li> <li>◆ 2 Assignable Numeric +/- Buttons (incl. 2 Indicators.)</li> <li>◆ 1 Edit Button (incl. 1 Indicator.)</li> </ul>
4	Display	8 Segments, 3 Digits LED.
5	Input & Output	<ul style="list-style-type: none"> <li>◆ 1 MIDI Out.</li> <li>◆ 1 USB Port.</li> <li>◆ 1 Pedal Input. (KS25B)</li> <li>◆ 2 Pedal Inputs. (KS49B/61B)</li> <li>◆ 1 DC Input.</li> <li>◆ 1 Power Switch.</li> </ul>
6	Power Supply	<ul style="list-style-type: none"> <li>◆ 9V DC.</li> <li>◆ USB Power.</li> </ul>