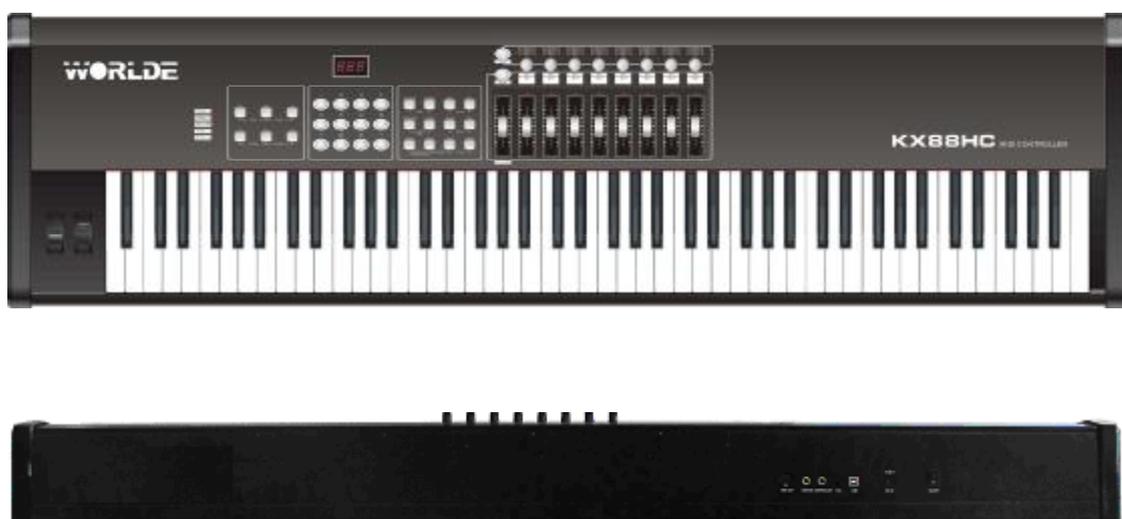

WORLDDE

KX MIDI Controller User's Manual

Model: KX61/76/88HC



HANGZHOU WORLDDE MUSIC ELECTRONIC CO., LTD

**Thank you for choosing WORLDE KX61/76/88HC
MIDI Controller.**

Please read “NOTICE” on Page 2 before use.

Please read this manual carefully before use.

Please keep this manual for reference.

Product List

Please check all the items in your KX61/76/88HC package:

- I The KX61/76/88HC product 1 pcs
- I USB cable 1 pcs
- I User’s manual CD 1 pcs

Contact

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NOTICE

Always follow the basic precautions listed below to avoid the possibility of serious injury or even death from electrical shock, damage, fire or other hazards. These precautions include, but are not limited to, the followings:

1. Read and understand all the instructions.
2. Always follow the instructions on the instrument.
3. Before cleaning the instrument, always remove the electric plug from the outlet as well as the USB cable. When cleaning, use a soft and dry cloth. Do not use gasoline, alcohol, acetone, turpentine or any other organic solutions; do not use liquid cleaner, spray cleaner or too wet cloth.
4. Do not use the instrument near water or moisture, such as bathtub, washbasin, washing sink in the kitchen or similar places.
5. Do not place the instrument on an unstable place where it might accidentally fall over.
6. Do not jam sinks or holes of the instrument; those sinks or holes are used for air circulation to prevent the instrument from overheating. Do not place the instrument near heat sink or any places with poor air circulation.
7. Do not place anything on the power cord. Make sure the power cord is set on a safe place, so nobody will step on it and no body will trip over it.
8. Do not insert anything in the instrument, which may cause fire or electrical shock. Do not splash any kind of liquid to the instrument.
9. Do not disassemble the instrument in case of accidental electrical shock.
10. Always take the instrument to a qualified service center in need of repair. You will endanger yourself if you open or remove the cover, and improper assembly may cause electrical shock in future use.
11. Unplug all the connectors and take the instrument to a qualified service center if anything in the below listed happens:
 - (1) The power cord or connector gets damaged or worn out.
 - (2) Any liquid gets into the instrument.
 - (3) The instrument gets rain or water splash.
 - (4) The instrument does not work properly after following all the instructions.
 - (5) The instrument falls down or gets broken.
 - (6) The instrument functions poorly.
12. Do not use the instrument in thunder; otherwise the thunder may cause long-distance electrical shock.
13. When the power cord is connected to the AC outlet, do not touch the naked part of the cord or the connector.
14. Keep the instrument away from dust, heat and vibration.
15. WORLDE is not responsible for any damage or data loss caused by improper operation to the instrument.
16. All the pictures and the LED displays in the manual are used for demonstration; they may be different from the real instrument.

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1. INTRODUCTION

KX61/76/88HC is 61/76/88-key USB-MIDI Controller, which supplies with professional keyboard of initial touch and profuse assignable controllers.

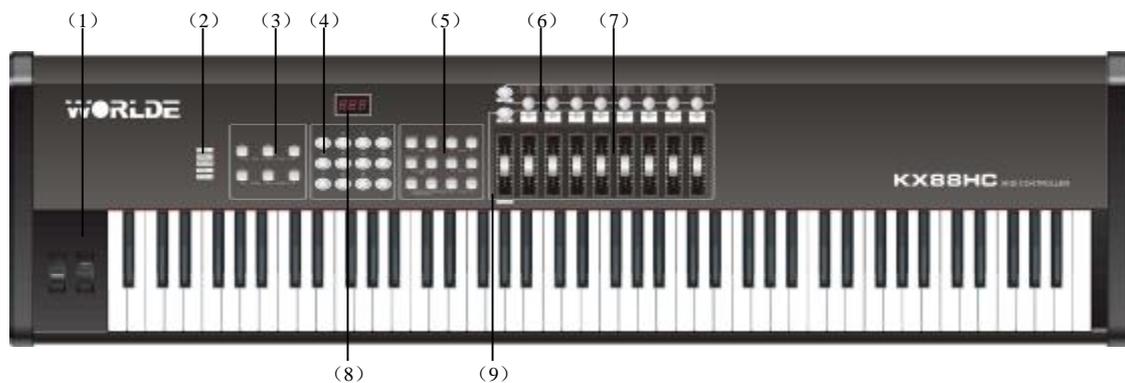
2. FEATURES

- I Expandable USB-MIDI controller.
- I 61Keys with Initial Touch/After Touch. (**KX61C**)
- I 76/88Keys Hammer Effect with Initial Touch/After Touch. (**KX76/88HC**)
- I 2xAssinable Pedal Interfaces (PEDAL A, PEDAL B), which can be assigned as 147 controllers.
- I 8xAssignable Dials, which can accomplish two groups of functions (KA1~KA8 and KB1~KB8). Each dial can establish an independent channel in each function group, and can be assigned as 143 controllers.
- I 8xAssignable Slider, realizing two groups of functions(SA1~SA8 and SB1~SB8). Each dial can establish an independent channel in each function group, and can be assigned as 143 controllers.
- I Assignable Pitch Bend Wheel and Modulation Wheel (WHEEL P and WHEEL M) ,which can be assigned as 143 controllers.
- I 6xAssignable Button (RTZ,REW,FF,REC,STOP,PLAY) , which can be assigned as 147 controllers.
- I 1xMaster Volume Slider. (M.VOLUME) .
- I 12xFunction selection button, providing functions like PROGRAM, CHANNEL, CURVE, TEMPO, OCTAVE, TRANSPOSE, DUAL, SPLIT, MUTE, and etc.
- I 10xData entry and +/- button.
- I 5xKeyboard Velocity Curve.
- I Supporting MIDI Sync, realizing Sync functions like tempo adjustment.
- I Built-in Memory, which can store/load 10 groups of user's parameter.
- I PC Upload and Download functions, useful for user setting save and transmit.
- I 1xMIDI OUT.
- I USB interface, adaptable to USB 1.1. Power supplied by USB and DC 9V.
- I Compatible with Win XP/Vista and Mac OSX. Drive free and hot-plug supported.
- I Compatible with major audio and sequencer software.
- I Optional expansion board.

3. OPERATION

3.1. PARTS ILLUSTRATION

3.1.1. FRONT PANEL



- (1) WHEEL P/WHEEL M, Assignable Wheel, which can be assigned as 143 controllers, with initial setting to be PITCH BEND and MODULATION.
- (2) Indicator of PEDAL A, PEDAL B, USB, WHEEL P and WHEEL M.
- (3) Assignable Button which can be assigned as 147 controllers, with the initial setting to be Controller No. 114~119.
- (4) Data entry and +/- Button.
- (5) Function Selection Button.
- (6) Assignable Dial, Function Group Switch Button and their Indicator. Dial can be assigned as 143 controllers, with each one establishing an independent channel in every function group.
- (7) Assignable Slider, Function Group Switch Button and their Indicator. Slider can be assigned as 143 controllers, with each one establishing an independent channel in every function group.
- (8) LED, displaying the information of current Number/Status.
- (9) M.VOLUME, Master Volume adjusting slider.

3.1.2. REAR PANEL



- (1) MIDI OUT, MIDI Output Interface.
- (2) PEDAL A, Pedal A Input Interface. It can be assigned as 147 controllers, with the initial setting to be Sustain Pedal.
- (3) PEDAL B, Pedal B Input Interface. It can be assigned as 147 controllers, with the initial setting to be Soft Pedal.

- (4) USB, USB Interface.
- (5) DC9V, 9V Power Input Interface.
- (6) OFF/ON, Power Switch.

3.2. CONNECTION/POWER/CONTROL

- ü KX61/76/88HC 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. The USB interface of KX61/76/88HC displays in PC as USB Audio Device.
- ü KX61/76/88HC can also be used independently when connected to 9V DC. In this case the MIDI data will only be sent out via the MIDI output port.

3.3. FUNCTION BUTTONS

3.3.1. PROGRAM

- ü Voice adjusting function button, adjusting the voice of current channel.
- ü When this button is valid, the indicator is ON, and the LED displays the current voice No. The voice can be adjusted or selected with NUMERIC button or +/- Button. The initial setting is 000, adjusting scale is 0~127.

3.3.2. CHANNEL

- ü Channel selection function button, selecting current MIDI channel.
- ü When this button is valid, the indicator is ON, and the LED displays the current channel No. The channel can be selected with NUMERIC button or +/- Button. The initial setting is 00, adjusting scale is 0~15.
- ü When this button is valid in ASSIGN mode, the MIDI channel of Dial and Slider can be adjusted.

3.3.3. TRANSPOSE

- ü Transpose adjusting function button. This function allows the keyboard to change the pitch up/down by semi-tone.
- ü When this button is valid, the indicator is ON, and the LED displays the value of current transpose. It can be adjusted by NUMERIC button or +/- button. The

initial value is 00, adjusting scale is -12~12, i.e. ascending/descending an octave. When the LED shows negative number, it means flat. The minus can be added or removed by holding – button.

3.3.4. OCTAVE

- ü Octave adjusting function button. This function allows the keyboard to change the pitch up/down by octave.
- ü When this button is valid, the indicator is ON, and the LED shows the value of current transposition. It can be adjusted by NUMERIC button or +/- button. The initial value is 0, adjusting scale is -3~3, i.e. ascending/descending three octaves. When the LED shows negative number, it means flat. The minus can be added or removed by holding – button.

3.3.5. CURVE

- ü Velocity Curve selection function button.
- ü When this button is valid, the indicator is ON, and the LED shows the number of current velocity curve. It can be adjusted by NUMERIC button or +/- button. The initial value is 0, adjusting scale is 0~4.

3.3.6. TEMPO

- ü Tempo adjusting function button, adjusting the tempo of MIDI Time Code (MTC).
- ü When this button is valid, the indicator is ON, and the LED shows the value of current tempo. It can be adjusted by NUMERIC button or +/- button. The initial setting is 100, adjusting scale is 20~250.

3.3.7. DUAL

- ü Dual switch function button.
- ü When Dual is ON, the indicator is ON, Keyboard/Wheel/Pedal/Touch sends MIDI info of two channels, with the voice/channel of both channels adjustable. The voice and channel of 2nd layer can be adjusted currently (Dual is ON).
- ü Dual and Split can not be used at the same time. When Dual is ON, Split is OFF.

3.3.8. SPLIT

- ü Keyboard Split ON/OFF function button.
- ü When Split is ON, the indicator is ON, Wheel/Pedal/Touch sends MIDI info of two channels, the keyboard is split to right section and left section by the split point, with each section use a own channel. The voice/channel of both channels is adjustable. The voice and channel of right section can be adjusted currently (Split is ON).
- ü Dual and Split can not be used at the same time. When Split is ON, Dual is OFF.

3.3.9. SPLIT POINT

- ü Default Split Point is the central C (MIDI No. 60). User can choose the Split Point.
- ü Hold the Split button, LED shows CHO, reminding user to select the SPLIT POINT. Press the key that needs to be the new Split Point, LED shows don, meaning this key is set to be the new Split Point.

3.3.10. TOUCH

- ü Channel After Touch ON/OFF function button.
- ü When Touch is ON, indicator is ON, and the system sends Channel After Touch info according to the velocity when pressing the keys.

3.3.11. MTC

- ü MIDI Time Code ON/OFF function button.
- ü When MTC is ON, indicator is ON, keyboard sends MTC info (F8) .

3.3.12. MUTE

- ü MUTE ON/OFF function button.
- ü When MUTE function is ON, indicator is ON, no MIDI info will be sent.

3.3.13. ASSIGN

- ü ASSING mode ON/OFF function button.
- ü When ASSIGN mode is ON, indicator is ON, default as assigning the controller

No. that is assignable. Operate the controller to be assigned and select the very controller (e.g. if you want to assign SA1, press SA/SB button to turn on the indicator of SA group, then slide SA1 to choose it), the indicator will be ON, LED shows the controller No. of current controller. Input the desired controller No. with NUMERIC button or +/- button (e.g. when SA1 is selected, LED shows the default No. 007. If you input 010, SA1 is assigned as PAN).

- ü When ASSIGN mode is ON, press CHANNEL button to assign the channel No. of the channel-assignable controller. Operate the controller that needs to be assigned channel, and select the very controller (e.g. if you want to assign the channel of SA1, press SA/SB button to turn on the indicator of SA group, slide SA1 to choose it), the indicator will be ON, LED shows the channel No. of current controller. Input the desired channel No. with NUMERIC button or +/- button (e.g. when SA1 is chosen, LED shows the default No. 00. If you input 01, the channel of SA1 is assigned as 01).
- ü Some Functions are invalid when Assign mode is valid.
- ü Assignable controller reference: Appendix 1- Assignable controller List
- ü Assignable controller parameters reference: Appendix 2-Assignable Controller Parameter List.

3.3.14. RESET

- ü Press PROGRAM and CHANNEL buttons at the same time to reset the system, restoring to factory setting, sending system initial setting info at the same time.

3.3.15. ALL NOTES OFF

- ü Press TRANSPOSE and OCTAVE buttons at the same time to send MIDI message of ALL NOTE OFF(Controller #123) in case of abnormal constant sound from system or external sound module.
- ü LED shows don when message is sent.

3.3.16. RESET ALL CONTROLLERS

- ü Press CURVE and TEMPO buttons at the same time to send MIDI message of RESET ALL CONTROLLERS (Controller #121).
- ü LED shows don when the message is sent.

3.3.17. GM ON

- ü Press DUAL and SPLIT buttons at the same time to send GM ON message (F0 7E 7F 09 01 F7) .
- ü LED shows don when the message is sent.

3.3.18. GS ON

- ü Press TOUCH and MTC buttons at the same time to send GS ON message (F0 41 10 42 12 40 00 7F 00 41 F7) .
- ü LED shows don when the message is sent.

3.3.19. XG ON

- ü Press MUTE and ASSIGN buttons at the same time to send XG ON message (F0 43 10 4C 00 00 7E 00 F7) .
- ü LED shows don when the message is sent.

3.3.20. SNAP SHOT

- ü Press TEMPO and MUTE buttons at the same time to send message of all user settings.
- ü LED show don when the message is sent.

3.4. ASSIGNABLE DIAL

(KA1~KA8, KB1~KB8)

- ü 8 dials that can be assigned channel and controller No. independently.
- ü There are two groups, switched by KA/KB button. If the indicator of KA is ON, KA1~KA8 are active; if indicator of KB is on, then KB1~KB8 are active.
- ü Operate the dial to select the dial, the very indicator is ON, LED shows the adjusting value.
- ü Input the No. with NUMERIC button and +/- button is OK when the dial is selected.
- ü Please refer to 3.3.14 as to how to assign channel and controller.

3.5. ASSIGNABLE SLIDER

(SA1~SA8, SB1~SB8)

- ü 8 sliders that can be assigned channel and controller No. independently.
- ü There are two groups, switched by KA/KB button. If the indicator of SA is ON, SA1~SA8 are active; if indicator of SB is ON, then SB1~SB8 are active.
- ü Operate the slider to select the slider, the very indicator is ON, LED shows the adjusting value.
- ü Input the No. with NUMERIC button and +/- button is OK when the slider is selected.
- ü Please refer to 3.3.14 as to how to assign channel and controller.

3.6. ASSIGNABLE BUTTONS

(RTZ,REW,FF,REC,STOP,PLAY)

- ü 6 buttons that can be assigned controllers independently.
- ü Then channel No. is 0.
- ü When the buttons are active, the value is 127 (for instance, default controller No. of RTZ is #114, B0 72 7F is sent when RTZ button is pressed) .
- ü It is common to set the 6 buttons as Sequencer remote control buttons, which needs to be assigned and connected in sequencer software. Take SONAR as an example, Select Options--Control Surfaces in SONAR, then create a Cakewalk Generic Surfaces in the pop-out window, select KX61/76/88HC as input (input to be USB Audio Device or Sound Card, it depends on connecting via USB or MIDI). Press ENTER, then add Control Surfaces to toolbar. The window Generic Surface appears when clicking the property of Control Surfaces. Select proper buttons, such as Play in Global Parameters, then press PLAY button on the keyboard, and click Learn, corresponding info will be displayed in the MIDI message on the right side of the window: Controller 119 (initial value)、Channel 1 (initial value). Change Trigger into 127, the assignment and connection of PLAY button is done. This also applies to other buttons.
- ü Please refer to 3.3.14 as to how to assign controllers.

3.7. ASSIGNABLE WHEEL

(WHEEL P, WHEEL M)

- ü 2 wheels that can be assigned controller No. independently.
- ü The channel No. is current channel No.
- ü Please refer to 3.3.14 as to how to assign controllers.

3.8. ASSIGNABLE PEDAL

(PEDAL A, PEDAL B)

- ü 2 pedal interfaces that can be assigned controller No. independently.
- ü The channel No. is current channel No.
- ü Please refer to 3.3.14 as to how to assign controllers.
- ü System can recognize or change pedal polarity. If you want pedal to transmit PEDAL ON message while pressing the pedal and PEDAL OFF message while releasing the pedal, you need to release the pedal before the system is powered on (or reset) .Otherwise, you need to press down the pedal before the system is powered on (or reset)

3.9. MASTER VOLUME

(M.VOLUME)

- ü It sends GM Master Volume message (F0 7F 7F 04 01 00 xx F7) .

3.10. SAVE/LOAD

- ü System built-in memory can save/load 10 groups of user parameter.
- ü Press RTZ and REW buttons at the same time to enter SAVE mode, LED shows S-. The saving position (group) can be selected by entry of number 0-9. For example, if you input 0, LED shows S0, meaning user parameter is saved at position (group) 0. 2 seconds afterwards, system returns to the status prior to saving. If no number is input 2 seconds after system enters to SAVE mode, system returns to the status prior to saving.
- ü Press REW and FF buttons at the same to enter LOAD mode, LED shows L-. If you input number 0-9, the user parameter that's saved at the very position (group) can be loaded, and SNAP SHOT function is also activated. For instance, if you input 0, LED shows L0, meaning to load the user parameter that's saved at position (group) 0. If no number is input 2 seconds after system enters to LOAD mode, system returns to the status prior to loading.

3.11. UPLOAD/DOWNLOAD

ü Connecting via USB interface to PC can accomplish upload and download of user parameter, i.e. to upload KX61/76/88HC panel parameters to computer, or, to download the parameters from computer to KX61/76/88HC.

ü 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 message: mainly record/playback style and system message window style.

Details are as follows:

I Record Style (Take Cubase as example)

2 From KX61/76/88HC to PC (UPLOAD)

1. Connect PC and KX61/76/88HC via USB interface;
2. Set KX61/76/88HC Parameters;
3. Open Cubase and create MIDI project;
4. Choose KX61/76/88HC as MIDI input, output can be ignored;
5. Validate the system message in File-Preferences...-MIDI-MIDI Filter (uncheck the box Sysex in Record);
6. Cubase starts recording;
7. Press REC and STOP buttons at the same time, KX61/76/88HC enters to system info uploading mode, LED shows SEu; don is shown when the upload is finished;
8. Cubase stops recording;
9. In Cubase, select MIDI-Open list Editor to find received system info; press Comment to open system info window, then select Export to save, in the format of *.sys;

2 From PC to KX61/76/88HC (DOWNLOAD)

1. Connect the PC to KX61/76/88HC via USB;
2. Open Cubase and create MIDI project;
3. Select KX61/76/88HC as MIDI output;
4. Load the previously saved system info in Cubase (*.sys) ;
5. Press STOP and PLAY buttons at the same time, KX61/76/88HC enters system info download mode, LED shows SEd;
6. Cubase starts playing, sends system info to KX61/76/88HC;
7. KX61/76/88HC receives the correct system info and shows don;
8. System starts SNAP SHOT function, sending the downloaded setting info to sequent device.

I System Info Receiving Window Style (Take Cakewalk as example)

Operate KX61/76/88HC in the same way as in Record Style, the only difference is the operation in sequencer software:

2 From KX61/76/88HC to PC (UPLOAD)

1. Connect PC to KX61/76/88HC via USB;
2. Set KX61/76/88HC parameters;

3. Open Cakewalk and create MIDI project;
 4. Select KX61/76/88HC as MIDI input, output can be ignored;
 5. Select View-Sysx to open system info window; select a Bank, and choose ↓ , then choose You start dump on instrument, Cakewalk enters system info receiving mode;
 6. Press REC and STOP button at the same time, KX61/76/88HC enters system info uploading mode, LED shows SEu; don is shown when upload is finished;
 7. Save the received info in Cakewalk, in the format of *.sys;
- ² From PC to KX61/76/88HC (DOWNLOAD)
1. Connect PC to KX61/76/88HC via USB;
 2. Open Cakewalk and create MIDI project;
 3. Select KX61/76/88HC as MIDI output;
 4. Select View-Sysx to open system info window; select a bank and load the previously saved system info;
 5. Press STOP and PLAY buttons at the same time, KX61/76/88HC enters system info downloading mode, LED shows SEd;
 6. Execute sending system info in Cakewalk to send system info to KX61/76/88HC;
 7. KX61/76/88HC shows don after received the correct system info;
 8. System starts SNAP SHOT function, sending the downloaded info to sequent device.
- ü Press STOP and PLAY buttons at the same time can enter/exit download mode.
- ü Most Functions are invalid when download mode is valid.

Notice:

- ü **Control and operation of other unstated controllers are basically the same. Please refer to above instruction.**
- ü **For the configuring and connection of the audio and sequencer software to KX61/76/88HC, please refer to the operation manual of the software.**

4. APPENDIX

4.1. APPENDIX 1 ASSIGNABLE CONTROLLER LIST

| NO | ITEM | CHANNEL RANGE | INITIAL CHANNEL | PARAMETER RANGE | INITIAL PARAMETER | INITIAL PARAMETER VALUE |
|----|---------|---------------------|-----------------|-----------------|-------------------|-------------------------|
| 1 | WHEEL P | 0~15 | 0 | 0~142 | 128 | 64 |
| 2 | WHEEL M | CURRENT CHANNEL | | | 1 | 0 |
| 3 | PEDAL A | 0~15 | 0 | 0~146 | 64 | 0 |
| 4 | PEDAL B | CURRENT CHANNEL | | | 67 | 0 |
| 5 | RTZ | 0 | 0 | 0~146 | 114 | 0 |
| 6 | REW | | | | 115 | 0 |
| 7 | FF | | | | 116 | 0 |
| 8 | REC | | | | 117 | 0 |
| 9 | STOP | | | | 118 | 0 |
| 10 | PLAY | | | | 119 | 0 |
| 11 | KA1 | 0~15 | 0 | 0~142 | 72 | 64 |
| 12 | KA2 | INDEPENDENT CHANNEL | | | 73 | 64 |
| 13 | KA3 | | | | 74 | 64 |
| 14 | KA4 | | | | 75 | 64 |
| 15 | KA5 | | | | 71 | 64 |
| 16 | KA6 | | | | 10 | 64 |
| 17 | KA7 | | | | 91 | 64 |
| 18 | KA8 | | | | 93 | 0 |
| 19 | KB1 | | | | 5 | 0 |
| 20 | KB2 | | | | 76 | 64 |
| 21 | KB3 | | | | 77 | 64 |
| 22 | KB4 | | | | 78 | 64 |
| 23 | KB5 | | | | 129 | 2 |
| 24 | KB6 | | | | 132 | 64 |
| 25 | KB7 | | | | 141 | 64 |
| 26 | KB8 | | | | 142 | 64 |
| 27 | SA1 | 0~15 | 0 | 0~142 | 7 | 100 |
| 28 | SA2 | INDEPENDENT CHANNEL | 1 | | | |
| 29 | SA3 | | 2 | | | |
| 30 | SA4 | | 3 | | | |
| 31 | SA5 | | 4 | | | |
| 32 | SA6 | | 5 | | | |

| | | | | | | |
|----|-----|--|----|--|--|--|
| 33 | SA7 | | 6 | | | |
| 34 | SA8 | | 7 | | | |
| 35 | SB1 | | 8 | | | |
| 36 | SB2 | | 9 | | | |
| 37 | SB3 | | 10 | | | |
| 38 | SB4 | | 11 | | | |
| 39 | SB5 | | 12 | | | |
| 40 | SB6 | | 13 | | | |
| 41 | SB7 | | 14 | | | |
| 42 | SB8 | | 15 | | | |

4.2. APPENDIX 2 ASSIGNABLE CONTROLLER PARAMETER LIST

| CONTROLLER NO. | DEFINITION | INITIAL VALUE | VALUE RANGE |
|----------------|----------------------|---------------|-------------|
| 0 | BANK SELECT MSB | 0 | 0-127 |
| 1 | MODULATION MSB | 0 | 0-127 |
| 2 | BREATH MSB | 127 | 0-127 |
| 3 | CONTROLLER | 0 | 0-127 |
| 4 | FOOT CONTROLLER MSB | 127 | 0-127 |
| 5 | PORTAMENTO TIME MSB | 0 | 0-127 |
| 6 | DATA ENTRY MSB | 2 | 0-127 |
| 7 | CHANNEL VOLUME MSB | 100 | 0-127 |
| 8 | BALANCE MSB | 64 | 0-127 |
| 9 | CONTROLLER | 0 | 0-127 |
| 10 | PAN MSB | 64 | 0-127 |
| 11 | EXPRESSION MSB | 127 | 0-127 |
| 12 | EFFECT CONTROL 1 MSB | 0 | 0-127 |
| 13 | EFFECT CONTROL 2 MSB | 0 | 0-127 |
| 14-31 | CONTROLLER | 0 | 0-127 |
| 32 | BANK SELECT LSB | 0 | 0-127 |
| 33 | MODULATION LSB | 0 | 0-127 |
| 34 | BREATH LSB | 127 | 0-127 |
| 35 | CONTROLLER | 0 | 0-127 |
| 36 | FOOT CONTROLLER LSB | 127 | 0-127 |
| 37 | PORTAMENTO TIME LSB | 0 | 0-127 |
| 38 | DATA ENTRY LSB | 0 | 0-127 |
| 39 | CHANNEL VOLUME LSB | 127 | 0-127 |

| | | | |
|---------|-----------------------|-----|-------|
| 40 | BALANCE LSB | 64 | 0-127 |
| 41 | CONTROLLER | 0 | 0-127 |
| 42 | PAN LSB | 64 | 0-127 |
| 43 | EXPRESSION LSB | 127 | 0-127 |
| 44-63 | CONTROLLER | 0 | 0-127 |
| 64 | SUSTAIN | 0 | 0-127 |
| 65 | PORTAMENTO | 0 | 0-127 |
| 66 | SOSTENUTO | 0 | 0-127 |
| 67 | SOFT PEDAL | 0 | 0-127 |
| 68 | LEGATO FOOTSWITCH | 0 | 0-127 |
| 69 | HOLD 2 | 0 | 0-127 |
| 70 | SOUND CONTROLLER | 64 | 0-127 |
| 71 | RESONANCE | 64 | 0-127 |
| 72 | RELEASE TIME | 64 | 0-127 |
| 73 | ATTACK TIME | 64 | 0-127 |
| 74 | CUTOFF | 64 | 0-127 |
| 75 | DECAY TIME | 64 | 0-127 |
| 76 | VIBRATO DEPTH | 64 | 0-127 |
| 77 | VIBRATO DEPTH | 64 | 0-127 |
| 78 | VIBRATO DEPTH | 64 | 0-127 |
| 79 | SOUND CONTROLLER | 64 | 0-127 |
| 80-83 | CONTROLLER | 0 | 0-127 |
| 84 | PORTAMENTO CONTROL | 0 | 0-127 |
| 85-90 | CONTROLLER | 0 | 0-127 |
| 91 | REVERB | 64 | 0-127 |
| 92 | EFFECTS | 0 | 0-127 |
| 93 | CHORUS | 0 | 0-127 |
| 94 | EFFECTS | 0 | 0-127 |
| 95 | EFFECTS | 0 | 0-127 |
| 96 | RPN INCREMENT | 0 | 0-127 |
| 97 | RPN DECREMENT | 0 | 0-127 |
| 98 | NRPN LSB | 0 | 0-127 |
| 99 | NRPN MSB | 0 | 0-127 |
| 100 | RPN LSB | 0 | 0-127 |
| 101 | RPN MSB | 0 | 0-127 |
| 102-119 | CONTROLLER | 0 | 0-127 |
| 120 | ALL SOUND OFF | 0 | 0-127 |
| 121 | RESET ALL CONTROLLERS | 0 | 0-127 |
| 122 | LOCAL CONTROL | 0 | 0-127 |

| | | | |
|-----|--------------------------------|----|-------|
| 123 | ALL NOTES OFF | 0 | 0-127 |
| 124 | OMNI OFF | 0 | 0-127 |
| 125 | OMNI ON | 0 | 0-127 |
| 126 | MONO | 0 | 0-127 |
| 127 | POLY | 0 | 0-127 |
| 128 | PITCH BEND | 64 | 0-127 |
| 129 | PITCH BEND SENSITIVITY (RPN) | 2 | 0-127 |
| 130 | CHANNEL FINE TUNING (RPN) | 64 | 0-127 |
| 131 | CHANNEL COARSE TUNING (RPN) | 64 | 0-127 |
| 132 | MODULATION DEPTH RANGE (RPN) | 64 | 0-127 |
| 133 | VIBRATO RATE (NRPN) | 64 | 0-127 |
| 134 | VIBRATO DEPTH (NRPN) | 64 | 0-127 |
| 135 | VIBRATO DELAY (NRPN) | 64 | 0-127 |
| 136 | FILTER CUTOFF FREQUENCY (NRPN) | 64 | 0-127 |
| 137 | FILTER RESONANCE (NRPN) | 64 | 0-127 |
| 138 | EG ATTACK TIME (NRPN) | 64 | 0-127 |
| 139 | EG DECAY TIME (NRPN) | 64 | 0-127 |
| 140 | EG RELEASE TIME (NRPN) | 64 | 0-127 |
| 141 | EQ LOW GAIN (NRPN) | 64 | 0-127 |
| 142 | EQ HIGH GAIN (NRPN) | 64 | 0-127 |
| 143 | START (MTC) | - | - |
| 144 | CONTINUE (MTC) | - | - |
| 145 | STOP (MTC) | - | - |
| 146 | RESET (MTC) | - | - |

4.3. APPENDIX 3 LED STATUS LIST

| NO. | Status | Description |
|-----|--------|-------------------------------------------|
| 1 | xxx | 3-digit Display |
| 2 | xx | Ascending Transpose Value/Channel No. |
| 3 | -xx | Descending Transpose Value |
| 4 | x | Ascending Octave Value/Velocity Curve No. |
| 5 | -x | Descending Octave Value |
| 6 | CHO | Reminder of Choosing Split Point |
| 7 | don | Operation done successfully |
| 8 | Err | Operation Error |
| 9 | SEu | Parameter Upload |
| 10 | SEd | Parameter Download |
| 11 | Sx | Save |

| | | |
|----|----|------|
| 12 | Lx | Load |
|----|----|------|

4.4. APPENDIX 4 TECHNICAL SPECIFICATIONS

| NO. | Item | Specification |
|-----|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Keyboard | <ul style="list-style-type: none"> u KX61C: 61Keys, C1-C6, Initial Touch/After Touch. u KX76HC: 76Keys, A2-C7, Hammer Effect with Initial Touch/After Touch. u KX88HC: 88Keys, A1-C7, Hammer Effect with Initial Touch/After Touch. |
| 2 | Function | <ul style="list-style-type: none"> u MIDI Data: Program Select, Bank Select, Sequencer Control, MIDI Time Clock, Controller Change, GM, GS, XG System Reset, etc. u Controllable Parameters: Transpose, Octave, MIDI Transmit Channel, Velocity Curve Adjust, Keyboard Split Point and etc. |
| 3 | Panel & Indicator | <ul style="list-style-type: none"> u 8xAssignable Dials (with 8 indicators). u 1xDial Function Group Switch Button (with 2 indicators). u 8xAssignable Sliders (with 8 indicators). u 1xSlider Function Group Switch Button (with 2 indicators). u 6xAssignable Buttons. u 2xAssignable Wheels (with 2 indicators). u 12xFunction Buttons (with 12 indicators). |
| 4 | Display | <ul style="list-style-type: none"> u 1 group of 8-segment, 3-digit LED |
| 5 | Input/Output Interface | <ul style="list-style-type: none"> u 1xMIDI Output Interface u 1xUSB Interface (with 1 indicator) u 2xPedal Input Interfaces (with 2 indicators) u 1xDC Input Interface u 1xPower Switch |
| 6 | Power Supply | <ul style="list-style-type: none"> u 9V DC u USB Power |